Planning Applications for a Concrete Batching Plant at Tsing Yi Town Lot Nos. 14&15

Environmental Assessment Report

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1 INTRODUCTION

1.1 Background

1.1.1 The Applicant would like to seek permission from the Town Planning Board (the Board) to operate a temporary concrete batching plant (CBP) for a period of 5 years at Tsing Yi Town Lot Nos. 14&15 and adjoining Government Land (GL), Tam Kon Shan Road, Tsing Yi, New Territories (the Site). The total site area is approximately 4,335 sq. meters, including approximately 1,057 sq. meters of GL. A CBP with ancillary supporting facilities (with total gross floor area (GFA) of about 1419.2 sq. meters and building height of not exceeding 31 meters) is proposed at the Site. The Site is accessible from Tsing Yi North Coastal Road via Tam Kon Shan Road.

1.1.2 AECOM has been commissioned to provide an Environmental Assessment (EA) to supplement the abovementioned planning application. This EA presents a study of the potential environmental impacts, including air quality, noise, water quality, land contamination and waste management, in order to confirm the environmental suitability of the Proposed Plant at the Site.

1.2 Existing Land Use

1.2.1 The Site partly falls within an area zoned “Other Specified Uses” annotated “Boatyard and Marine-oriented Industrial Uses” (“OU(BMIU)”) and area shown as “Road” on the Approved Tsing Yi Outline Zoning Plan (OZP) No.: S/TY/32, and partly falls outside the OZP planning scheme boundary. A planning permission for a temporary concrete batching plant is required from the Board for the use of CBP is a Column 2 use within the OU(BMIU) zone. The Site is located on Tam Kon Shan Road on Tsing Yi Island. Surrounding developments comprise industrial buildings and dockyards. The location of the Site is illustrated in **Figure 1.1**.

1.3 Potential Environmental Issues

1.3.1 The Site is currently fenced, partially vacant and occupied by vacant structure. Pre-existing jetty is available to support the operation of the CBP. Environmental impacts during construction and operation are of concern.

1.3.2 Concrete batching process is a dusty operation which poses potential dust nuisance to the nearby sensitive receivers. The Proposed Plant has been classified as specified process (SP) under the Air Pollution Control Ordinance (APCO) and is required to operate under a valid SP License. The dust impact due to the operation of the Proposed Plant will be evaluated to ensure the compliance with Air Quality Objectives (AQOs).

1.3.3 The existing major noise sources in the vicinity of the study area are traffic noise from Tam Kon Shan Road and Tsing Yi North Coastal Road, and fixed plant noise / industrial noise from the dockyard. In view of the existing environmental condition, cumulative fixed plant noise impact from nearby existing industrial buildings and the Proposed Plant would be expected. However, no noise sensitive receiver has been identified within 300m from the Subject Site. The noise impact is to be addressed qualitatively.

1.3.4 Other environmental issues including water quality, waste management and land contamination are considered minor. Their corresponding impacts are to be evaluated qualitatively.

1.3.5 In this EA, five key environmental issues associated with the operation of the Proposed Plant are identified and addressed in the following sections:

Section 3: Air Quality

Section 4: Noise

Section 5: Water Quality

Section 6: Waste Management

Section 7: Land Contamination

Section 8: Conclusion

2 DESCRIPTION OF PROPOSED CONCRETE BATCHING PLANT

2.1 Configurations of the Proposed Plant

2.1.1 The proposed CBP comprises silo and compartment with total capacity of approximately 2,200 tonnes for storage of cementitious materials for concrete production, which is classified as Specified Process (SP) in accordance with the Air Pollution Control (Specified Processes) Regulations. The design layout of the plant is shown in **Appendix 2.1**.

2.1.2 The CBP is planned to consist of 3 production line, with a total hourly processing capacity of 300m^3/hr. The production of concrete requires raw material including aggregates (mixed with sand), cementitious materials (cement, Pulverized Fuel Ash (PFA), Ground Granulated Blast-Furnace Slag (GGBS), Condensed Silica Fume (CSF)), admixtures and water. The concrete batching process mainly involves handling of raw material from delivery to storage, then respective weigh hoppers, concrete batch mixers and finally loading of mixed concrete onto concrete mixer trucks for delivery.

2.1.3 The CBP will be equipped with aggregate overhead bins with total capacity of 3000 tonnes, 6 sets of 350-tonne cementitious materials silos, 2 set of 50-tonne CSF silo, 3 wet concrete mixers, 2 aggregate receiving hoppers (one for barge and one for truck in case of emergency), 18 weigh hoppers (6 weigh hoppers for each mixer, including 1 for aggregate, 3 for cementitious materials, 1 for water/ice and 1 for admixture, in total 3 mixer), water tanks and admixture tanks. Aggregate and cement will be delivered to the plant by barge. The aggregate and cementitious materials within the plant will be transferred via enclosed conveyors and sealed pipeline respectively. The operation details of the proposed CBP are summarized in **Table 2.1**.

2.1.4 The operation details of the proposed CBP is summarized in **Table 2.1**. The normal operation period will be 07:00 to 21:00.

Table 2.1 Operation Details of Proposed CBP

Operation Parameter	Details
Hourly Processing Capacity	300 m^3/hr
Total Aggregate Storage Capacity	3000 Tonnes
Total Cementitious Materials Silos Capacity	2200 Tonnes
Mode of Operation	Batch
Proposed Plant Operation Period	14 hours between 07:00 to 21:00
Total No. of potential emission points related to the CBP operation	19

2.2 The Schematic Flow of Operation Process

2.2.1 The schematic flow diagram showing various components of the Proposed Plant is presented in **Appendix 2.2**.

Aggregate Handling

2.2.2 Aggregates will be delivered to the plant by barge. The compartments of the aggregate barge will be covered during transportation and unloading process to avoid any dust emission. During the unloading of aggregates, the compartment will remain covered as far as safety issue is concerned. Water spraying by sprinklers will be provided at the barge during the unloading process to keep the aggregate adequately wetted. When the unloading is complete, the empty barge will leave the barging location with the top cover remaining closed. Should the barge be required to park at the barging location overnight (between 21:00 to 07:00 next day), the stockpile on barge will be fully covered by top cover to prevent any dust pickup by gust.

2.2.3 The aggregates will be unloaded to the aggregate receiving hopper on the jetty (EP01) and then transferred via enclosed conveyors to overhead bins for concrete production. The aggregate receiving hopper will be covered in 3-side cladded and roof and installed with water

sprinkler to reduce dust emission during material unloading. The enclosed conveyors will be arranged such that there is minimal gap at the transfer points between conveyors so as to minimize free fall as far as practicable. Also, all transfer points along the conveyor pathway will be housed inside either fully cladded conveyor transfer tower or fully cladded structure housing the aggregate overhead bins. All transfer of aggregates will therefore be conducted in enclosed condition. No exhaust is required and no dust emission is anticipated.

2.2.4 The aggregates in overhead bins will be transferred to the respective aggregate weigh hopper through guiding chute with flexible seal. Aggregates will be weighed and then discharged through guiding chutes to the concrete mixer under a fully enclosed environment, i.e. the aggregate weigh hoppers will be covered on 4 sides such that the aggregate transfer process is fully enclosed. No exhaust is required and no dust emission is anticipated. The guiding chutes will be arranged such that there will be minimal gap to the mixer so as to minimize free fall as far as practicable.

2.2.5 Another ground aggregate receiving hopper (EP02) will receive aggregates delivered by aggregate tipper truck on haul road (EP17), which will be backup use in case of emergency.

Cementitious Materials Handling

2.2.6 Cement will be delivered by barge while cementitious materials such as PFA, GGBS and silica fume will be delivered by tanker trucks (around 7 trucks a day). The materials will be pumped to the overhead silos or the ground storage silos via pneumatically sealed cement pipes. The transfer process will thus be carried out in totally enclosed condition.

2.2.7 Each of the cementitious silo will be installed with a dust collector (EP09 – EP16). Before connecting the pumping pipe, the dust collector on the silo will be switched on and remain switched on during the whole transfer process. The cementitious materials will then be pumped to the silo via fully enclosed piping. All silos will be equipped with a pressure relief valve. The seating of the valve will be checked and valve will be reseated if necessary before each delivery of cementitious materials. Audible high level alarms will be installed in all silos to warn and prevent overfilling. The high level alarms will be interlocked with filling pipelines and the material filling line will be closed in time to prevent any overfilling, but in any case within 1 minute or less after the high level alarm has been triggered.

2.2.8 Cementitious materials from the silos will be transferred to respective weigh hoppers by a screw conveyor which will be pneumatically sealed such that fugitive dust emission will not be anticipated. All weigh hoppers will be housed inside the fully enclosed mixer tower and treated collectively by dust collector. The dust collectors will prevent escape of fugitive dust due to the transfer process to the atmosphere. The weighed cementitious materials in the respective weigh hoppers will then be discharged to the concrete mixer by gravity through pneumatically sealed piping.

Water, ice and Admixtures Handling

2.2.9 Water and ice will be weighed in the ice/water hopper and then added to the concrete mixer, while admixtures will be weighed by another weigh hopper. Water and admixtures will be transferred by pneumatically sealed pipe.

Concrete Mixing

2.2.10 The concrete mixers will be located in the mixing tower. The aggregates, cementitious materials, water and admixtures will be mixed in one of the concrete mixers (3 mixers in total) in a fully wetted and enclosed condition.

2.2.11 Each of the wet mixers will be installed with a dust collector (EP03 – EP05) with fabric filtering system. The dust collector of the mixer will be switched on prior to the transfer of any material to the mixer and will stay switched on whenever there is material inside it. Dust-laden air from the concrete mixer will be filtered through bag filters of dust collector, which will prevent escape of fugitive dust due to the material transfer and the wet mixing process.

2.2.12 The mixed and fully wetted concrete will be discharged into a concrete mixer truck directly by gravity via wet concrete guiding chute. No dust emission will be anticipated. Furthermore, the concrete unloading area will be enclosed on 2 sides with the roof by cladded structure.

Transportation of Raw Material and Product Concrete

2.2.13 All the haul roads within the Site (EP18 & EP19) will be paved and provided with water spraying by sprinklers in 1-hour intervals to maintain a wet surface. The speed limit for all the vehicles travelling in the abovementioned CBP area and on haul roads is 8 km/hr.

2.2.14 Water for ground washing will be collected by surface channel, where the water will be pumped to wastewater tanks for reuse in truck washing or recycled for concrete production.

2.2.15 The concrete mixer truck will go to the slump stand quality check point, where the quality inspection will take place. All vehicles leaving the CBP will be cleaned to wash off any dust/mud deposited on the wheels and vehicle body such that leaving no dust to the public road.

2.2.16 Concrete waste will be collected by the concrete reclaimer, where the cement slurry water will be separated from the aggregates. The separated aggregates will be wet in nature, i.e. no dust emission is expected.

2.2.17 The cement slurry water will pass through the filter press, where cement particles will be captured. The clear water will be recycled for concrete production. The solid waste (sludge cake collected by the filter press and aggregates collected by the concrete reclaimer) will be disposed of by waste disposal trucks

3 AIR QUALITY

3.1 Introduction

3.1.1 In this section, the potential air quality impact due to the construction and operation of the Proposed Plant is assessed qualitatively and quantitatively respectively, and evaluated against the Air Quality Objectives. The air quality within 500m away from the Subject Site boundary are discussed and sensitive receivers in this area are identified.

3.1.2 Air quality impact assessment is conducted based on the latest design of the Proposed Plant with the aid of an air quality dispersion model and a regional air quality model. The predicted cumulative air quality impacts are concluded at the identified sensitive receivers and in a spatial manner with the aid of contour plots at different altitude. Appropriate mitigation measures are proposed to minimize the potential air quality impact on the ambient air.

3.2 Environmental Legislation and Guidelines

Air Quality Objectives

3.2.1 The Air Pollution Control Ordinance (APCO) provides the statutory authority for controlling air pollutants from a variety of sources. In APCO, the Air Quality Objectives (AQOs) are stipulated as the air quality that should be achieved and maintained under the maximum allowable concentration for typical pollutants. Respirable Suspended Particulates (RSP) and Fine Suspended Particulates (FSP) are the dominant pollutants for concrete batching plant. Furthermore, AQOs have been reviewed and revised criteria has been enforced on 11 April 2025. The latest AQOs of relevant air pollutants are listed in below **Table 3.1**.

Table 3.1 Hong Kong Air Quality Objective Relevant to the Assessment

Pollutant	Time Average	Concentration Limit (µg/m^3) under current AQO [(1)(2)]
RSP [(4)]	24-hour	75 (9) [(3)]
	Annual	30
FSP [(5)]	24-hour	37.5 (18) [(3)]
	Annual	15
NO_2	1-hour	200 (18) [(3)]
	24-hour	120 (9) [(3)]
	Annual	40
SO_2	10-min	500 (3) [(3)]
	24-hour	40 (3) [(3)]

Note:
(1) All measurements of the concentration of gaseous air pollutants, i.e., sulphur dioxide and nitrogen dioxide, are to be adjusted to a reference temperature of 293 K and a reference pressure of 101.325 kPa.
(2) The annual average concentration is calculated as the arithmetic mean.
(3) The number in the bracket represents the number of exceedances allowed per year.
(4) Suspended particulates in air with a nominal aerodynamic diameter of 10 µm or smaller.
(5) Fine suspended particulates in air with a nominal aerodynamic diameter of 2.5 µm or smaller.

3.2.2 "A Guidance Note on the Technical, Management and Monitoring Requirements for Specified Process – Cement Works (Concrete Batching Plant) BPM 3/2 (2025)" (BPM) by EPD sets out definition for cement works, which are works where cement is handled, argillaceous and calcareous materials are used in the production of cement clinker or clinker is ground, and for which the total bulk storage capacity exceeds 50 tonnes, the total installed capacity of concrete mixers exceeds 3 m^3 or the total hourly concrete production rate exceeds 20 m^3. It requires that the particulates emission concentration limit of 10 mg/m^3 (expressed at reference condition, 0°C, 101.325 kPa) should be satisfied. Furthermore, the premises covered by the BPM should include a ship or barge.

3.3 Description of the Environment

Background Air Quality

3.3.1 The modelling approach involves the use of an integrated modelling system called Pollutant in the Atmosphere and their Transport in Hong Kong (PATHv3.0) which is developed and maintained by EPD to provide background pollutant concentration in assessing the total impact in the study area (*Guidelines on Assessing the 'TOTAL' Air Quality Impacts*). As Year 2028 has the highest vehicular emission in the study area for RSP, FSP and SO_2, while Year 2027 has the highest vehicular emission in the study area for NO_2 as discussed in **Section 3.5.11,** the dataset of Year 2028 in PATHv3.0 is selected for the assessment for RSP, FSP and SO_2, while Year 2027 in PATHv3.0 is selected for the assessment for NO_2. The background concentrations of RSP, FSP, NO_2 and SO_2 in the study area are extracted from PATHv3.0 and presented in **Table 3.2** and **Table 3.3**.

Table 3.2 Background Air Quality Extracted from PATH (Yr 2028)

Pollutant	Averaging Time	AQO	Data Summary	PATH v3.0 Grid in Year 2028			
				32,37	32,38	33,37	33,38
RSP	24-hour	75 (9)	10th	56.08	53.88	56.48	54.82
			Exceedance	0	0	0	0
	Annual	30	-	20.84	20.32	20.82	20.86
FSP	24-hour	37.5 (18)	19th	32.52	30.32	32.04	31.89
			Exceedance	10	6	9	7
	Annual	15	-	13.11	12.68	13.12	13.18
NO_2	1-hour	200 (18)	19th	94.56	94.35	97.17	98.64
			Exceedance	0	0	0	0
	Daily	120 (9)	10th	41.09	40.32	43.23	42.3
			Exceedance	0	0	0	0
	Annual	40	-	23.85	23.85	25.02	24.4
SO_2	10-minute	500 (3)	4th	28.5	23.58	22.5	22.89
			Exceedance	0	0	0	0
	24-hour	50 (3)	4th	7.39	7.29	7.26	7.28
			Exceedance	0	0	0	0

Table 3.3 Background Air Quality Extracted from PATH (Yr 2027)

Pollutant	Averaging Time	AQO	Data Summary	PATH v3.0 Grid in Year 2027			
				32,37	32,38	33,37	33,38
RSP	24-hour	75 (9)	10th	56.17	53.96	56.52	54.93
			Exceedance	0	0	0	0
	Annual	30	-	20.9	20.37	20.88	20.93
FSP	24-hour	37.5 (18)	19th	32.57	30.37	32.08	31.95
			Exceedance	10	6	9	7
	Annual	15	-	13.16	12.73	13.18	13.24
NO_2	1-hour	200 (18)	19th	95.89	95.47	98.07	99.32
			Exceedance	0	0	0	0
	Daily	120 (9)	10th	41.97	41.11	44.11	43.32
			Exceedance	0	0	0	0
	Annual	40	-	24.31	24.34	25.5	24.97
SO_2	10-minute	500 (3)	4th	28.52	24.26	22.51	22.89
			Exceedance	0	0	0	0
	24-hour	50 (3)	4th	7.44	7.33	7.3	7.31
			Exceedance	0	0	0	0

Air Sensitive Receivers

3.3.2 The CBP locates in the vicinity of Tam Kon Road at Tsing Yi Island. A site survey has been conducted on 12 December 2024 to identify the representative air sensitive receivers (ASRs) which are likely to be affected most by the operation of the CBP for assessment within 500m study area of the Subject Site (the study boundary) with reference to the Outline Zoning Plans (OZPs), OZP Plan No. S/TY/32 – Tsing Yi. While there are schools and residential buildings located in the southern part of the study boundary, they are located uphill and are shielded from the Project Site by the hills with no direct line of sight with the Project, and hence no direct impact is expected. Thus, ASRs in the southern part of the study boundary are not included in the assessment. The details of the identified ASRs are summarized in below **Table 3.4** and their locations in the study boundary are shown in **Figure 3.1**.

Table 3.4 Representative Air Sensitive Receivers

ASR	Coordinates		Description	Land Use	Horizontal Distance from the Project (m)	Assessment Height Above Ground (mAG)
	X	Y				
A01	827535.0	824705.4	DB Maintenance Centre	Shipyard	325	1.5, 5, 10
A02	827685.7	824668.4	Cheun Kee Seafood Restaurant	Eating Place	175	1.5, 5, 10, 15
A03	827844.6	824667.7	Wing Cheong Shipyard	Shipyard	15	1.5, 5, 10, 15
A04	827816.5	824667.6	Kwong Tat Loong Shipyard (Brothers) Limited	Shipyard	45	1.5, 5, 10, 15
A05	827920.5	824664.4	Leung Wan Kee Shipyard Limited	Shipyard	25	1.5, 5, 10, 15
A06	828018.6	824669.4	Green@Kwai Tsing	G/IC	120	1.5, 5
A07	828179.5	824706.5	Tsing Yi Northeast Park Office	Recreational	280	1.5, 5, 10, 15
A08	828289.1	824690.7	Queen's College Old Boys' Association S econdary School	Educational	390	1.5, 5, 10, 15, 20, 30
A09	828358.2	824749.3	Cheung On Estate Block 1 On Hoi House	Residential	460	1.5, 5, 10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110
A14	827791.2	824635.1	Environmental Protection Department Portable Emission Measurement System (PEMS) Laboratory	G/IC	75	1.5, 5

3.3.3 The assessment heights of the representative ASRs range from 1.5 meters above ground to up to its maximum physical heights, e.g. up to 15mAG at A02 and 110 mAG at A09.

3.4 Identification of Environmental Impact

Construction Phase

3.4.1 The development would mainly involve demolition of structures and the erection of equipment for the concrete batching plant. The erection of equipment for the three ancillary plants would involve minor construction activities such as minor excavation for foundation works and plant fabrication works. Potential construction dust would arise from these construction activities. Most of material to be handled would be the demolished debris which is around 1,100 tonnes. Spoil from the foundation works would be around 100 tonnes. The number of construction trucks or mechanical equipment is not known at this stage and they are subject to the future contractor. Nevertheless, dust mitigation measures stipulated in Air Pollution Control (Construction Dust) Regulation are proven effective measures in construction work sites and will be implemented to minimize the potential dust impact. Therefore, the potential construction dust impact is assessed qualitatively.

3.4.2 On-site use of diesel-powered engines is also the potential source for air pollutants, such as NO_2, SO_2, CO and smoke. The emissions from the NRMM are regulated under the *Air Pollution Control (Non-Road Mobile Machinery) (Emission) Regulation*. Fuel with sulphur content not exceeding 0.001% by weight will be used to minimise SO_2 emission in accordance with the *Air Pollution Control (Fuel Restriction) (Amendment) Regulation 2024*. In addition, the use of NRMMs with exempted label under the *Air Pollution Control (NRMM) Regulation* will be avoided as far as practicable. The equipment would also be properly maintained to minimise any emissions. Furthermore, the use of electric NRMMs is to be explored. On-site power supply will be provided and the use of diesel generators and machinery will be avoided during the construction stage, as far as practicable. In view of the minor impact by NRMMs, particulates from construction activities would be the major air pollutant during construction phase.

Odour from Dredging

3.4.3 Dredging would be required in the seafront fronting the proposed site to provide sufficient depth of water for vessels. The dredging scale proposed under the Project is small. The total volume of dredged sediments generated from the dredging operation would be approximately 4,000 m^3 and the dredging work would be conducted by one dredger (of about 8 m^3 capacity) at a dredging rate of no more than 500 m^3 per day. The dredged material would be well covered on-site with tarpaulin and would be removed off-site as soon as possible within 24 hours. In view of the transient nature of the dredging work and small dredging scale, odour nuisance would not be expected during dredging and transportation of the dredged sediment with the adoption of the good site practice as mentioned in **Section 3.7.14.**

Operation Phase

3.4.4 The Proposed Plant uses electricity as the power supply for its operation, thus no gaseous pollutants by fuel combustion is anticipated. Based on the design and operation of the Proposed Plant, the activities considered as major potential dust emission sources are identified as follows in accordance with the specification given in *Compilation of Air Pollutant Emission Factors (AP-42), 5th Edition* issued by U.S. Environmental Protection Agency.

(a) Aggregate handling at the seafront and inside the CBP;
(b) Loading of raw material to the storage silos;
(c) Loading of raw material to weigh hoppers;
(d) Loading of weighed raw material to mixers; and
(e) Vehicle movements on paved haul roads.

3.4.5 Best Practicable Means of air quality control measures suggested in BPM will be implemented in the design of the Proposed Plant and equipment. According to the characteristics of the emission points, different control measures to minimize air pollution will be adopted. Dust collectors, enclosures and water sprayers will be adopted to control the likely particulate emission due to the transport and handling of aggregates and cementitious materials.

3.4.6 Description of the emission points and the corresponding control measures are tabulated in **Table 3.5**.

Table 3.5 Dust Emission Points Due to Operation of CBP and Corresponding Control Measures

Emission Point Description	Control Measures
Delivery of aggregate by barge	• The compartments of the aggregate barge will be covered during transportation and unloading process to avoid any dust emission. • During the unloading of aggregates, the compartment will remain covered as far as safety issue is concerned. • Water spraying by sprinklers will be provided at the barge during the unloading process to keep the aggregate adequately wetted. • Stockpile on barge will be fully covered by top cover when parking at the barging location overnight.
Unloading of aggregates from barge to aggregate receiving hopper (EP01) and transfer of aggregate from aggregate barge receiving hopper to aggregate overhead bin	• The aggregate receiving hoppers will be covered in 3-side cladded and roof. • Water spraying by sprinkler will be provided inside the enclosure during unloading process such that dust will be suppressed and the aggregate is maintained adequately wetted. • The aggregates will be unloaded to the aggregate receiving hoppers and then transferred via enclosed conveyors to overhead bins for production. • The enclosed conveyors will be arranged such that there is minimal gap at the transfer points between conveyors so as to minimize free fall as far as practicable. • All transfer points along the conveyor pathway will be housed inside either fully cladded conveyor transfer tower or fully cladded structure housing the aggregate overhead bins. All transfer of aggregates will therefore be conducted in enclosed condition. No exhaust is required and no dust emission is anticipated.
Transfer of aggregate from aggregate overhead bin to aggregate weigh hoppers	• The aggregates in overhead bins will be transferred to the respective aggregate weigh hopper through guiding chute with flexible seal. • Aggregates will be weighed and then discharged through guiding chutes to the concrete mixer under a fully enclosed environment, i.e. the aggregate weigh hoppers will be covered on 4 sides such that the aggregate transfer process is fully enclosed. No exhaust is required and no dust emission is anticipated. • The guiding chutes will be arranged such that there is minimal gap to the mixer so as to minimize free fall as far as practicable.
Transfer of cementitious materials from cementitious materials tankers to silos (EP09-EP16)	• Cement will be delivered by barge while cementitious materials will be delivered to the plant by tanker trucks. • The materials will be pumped to the overhead silos or the ground storage silos via pneumatically sealed cement pipes. The transfer process will thus be carried out in totally enclosed condition. • Each cementitious material silo will be fitted with a dust collector incorporating a fabric filtering system.

Emission Point Description	Control Measures
	• Before connecting the pumping pipe at the cementitious materials tanker, the dust collector on the silo will be switched on and remain switched on during the whole transfer process. • The cementitious materials will be pumped to the silo via fully enclosed piping. All silos will be equipped with a pressure relief valve and the valve will be checked and reseated if necessary before each delivery of cementitious materials. • Audible high level alarms will be installed in all silos to warn and prevent overfilling. The high level alarms will be interlocked with filling pipelines and the material filling line will be closed in time to prevent any overfilling, but in case within 1 minute or less after the high level alarm has been triggered. • Dust-laden air in the silos will be filtered by fabric bags and vented through the dust collectors. The dust collectors can maintain a dust emission rate of less than 10 milligrams per cubic meter of air.
Weighing and batching of cementitious materials (EP06-EP08)	• Cementitious materials will be transferred from the silos to weigh hoppers by screw conveyor which is pneumatically sealed such that fugitive dust emission is not anticipated. • All weigh hoppers will be housed inside the fully enclosed mixer tower and treated collectively by dust collectors (EP06-EP08) with capability of treating ultra-fine particle. The dust collectors will prevent escape of fugitive dust due to the transfer process to the atmosphere. • The weighed cementitious materials will be discharged to concrete mixers through pneumatically sealed piping.
Mixing of raw material in the concrete mixer (EP03-EP05)	• The aggregate, cementitious materials, water and admixture will be mixed in one of the concrete mixers (3 mixers in total) under fully wetted and enclosed conditions. • Each of the wet mixer will be installed with a dust collector with fabric filtering system. The dust collector of the mixers will be switched on prior to the transfer of any material to the mixer and will stay switched on whenever there is material inside them. • Dust-laden air from the concrete mixer will be filtered through bag filters of dust collector, which prevents escape of fugitive dust due to the material transfer and the wet mixing process. The dust collector can maintain a dust emission rate of less than 10 milligrams per cubic meter of air.
Discharge of concrete to concrete mixer trucks	• The mixed and fully wetted concrete will be discharged into the concrete mixer truck directly by gravity. No dust emission is anticipated. • The concrete unloading area will be enclosed on 2 sides and roof by cladded structure.

Emission Point Description	Control Measures
Vehicle movement on paved haul road (EP18-EP19)	• All the haul roads within the Site will be paved and provided with water spraying by sprinkler in 1-hour intervals to maintain a wet surface. • Speed limit for all trucks travelling in the Site will be set as 8km/hr. • Vehicle movement will mainly involve concrete mixer trucks. Cement tanker for PFA/GGBS/Silica Fume is expected to be less than a truck per hour. • All vehicles leaving the CBP will be cleaned by vehicle washing facility to wash off any dust/mud deposited on the wheels and vehicle body such that leaving no dust to the public road.

Other Emission Sources

3.4.7 Vehicular emission from open road is also a significant contributor to ambient air pollutant concentration. Major road infrastructures namely Cheung Tsing Highway, Lantau Link and North West Tsing Yi Interchange are within the 500m study area of the Site. There is no PTIs/bus terminus, nor any bus depots within 500 m from the project site boundary. Coach parking is identified at Tsing Yi Northeast Park Car Park and HGV on-street parking site (for 8PM to 7AM) is identified outside Tsing Yi Northeast Park Car Park. Regarding roads inside the proposed CBP, there is no HGV parking assumed in the operation design. Concrete trucks are to undergo several procedures at the Project Site, e.g. drum cleaning, loading of concrete product, quality check, and truck washing before leaving the site. Cement / cementitious material tankers are to unload the raw material to silos with on-board pump. Both kinds of trucks require the power supply to perform these operations, i.e. engine stop is not anticipated. The air quality impact due to these open-road emission is considered in the cumulative air quality assessment, as well as the local roads connecting to the Site.

3.4.8 The proposed uses of the CBP would induce marine traffic during operation. Marine emission is expected and would pose potential air quality impact on the existing and proposed ASRs. Apart from the induced marine traffic, there are also existing marine routes within the 500m study boundary of the Project, including the route between Park Island Pier and Tsuen Wan Ferry Pier. All these existing marine traffic also contributes to cumulative air quality impact. The marine traffic inputs are provided by Marine Consultants and the marine emissions have been considered in the quantitative assessment.

Odour from Maintenance Dredging

3.4.9 Maintenance dredging would be carried out to maintain sufficient water depth for vessels once every year subject to the depth of sediment accumulated affecting operation of the vessels. The volume of sediment to be dredged during maintenance dredging would be less than 500m^3 in total. The volume of sediment would require one grab dredger only and the dredging period would be completed in a few days. In view of the limited dredging volume and short duration, odour impact from the maintenance dredging is considered negligible with the adoption of the good site practice as mentioned in **Section 3.7.14.**

3.5 Assessment Methodology

Emission Inventory of Project

3.5.1 Dust generating activities and corresponding air quality control measures are identified in **Table 3.5**. Emission rates by source are estimated in accordance with the USEPA *Compilation of Air Pollution Emission Factors (AP-42), 5th Edition* and summarized in **Table 3.6**. Detailed calculations of emission rates are presented in **Appendix 3.2**. The spatial distribution of effective dust emission sources is illustrated in the appendix as well. The diurnal profile of each emission source is also presented in **Appendix 3.2**.

Table 3.6 Emission Rates for the CBP

Emission Source	RSP Emission Rate	FSP Emission Rate	Remarks
Unloading of aggregates to Aggregate Receiving Hopper (EP01)	6.437×10^{-4} g/s	1.508×10^{-4} g/s	• Max. aggregate handling capacity: 610 Mg/hr • 65% and 40% of dust suppression by water sprays for particle size of 2.5 - 6μm and 0 - 2.5μm respectively • Reference to Table B.2.3, Appendix B.2, USEPA AP-42
Exhaust from Dust Collector for Mixers (EP03 – EP05)	1.523×10^{-3} g/s	6.924×10^{-4} g/s	• Max. emission concentration from exhaust = 2.29 mg/m^3 • Exhaust rate of Dust Collector: 7864 m^3/hr
Exhaust from Dust Collector for Weigh Hopper (EP06 – EP08)	2.564×10^{-3} g/s	7.541×10^{-4} g/s	• Max. emission concentration from exhaust = 3.08mg/m^3 • Exhaust rate of Dust Collector: 6000 m^3/hr
Exhaust from Dust Collector for Cement Silo (350T) (EP09, EP11, EP13)	6.120×10^{-3} g/s	2.782×10^{-3} g/s	• Max. emission concentration from exhaust = 5.79mg/m^3 • Exhaust rate of Dust Collector: 11196 m^3/hr
Exhaust from Dust Collector for PFA Silo (350T) (EP12)	1.163×10^{-2} g/s	5.286×10^{-3} g/s	• Max. emission concentration from exhaust = 7.01mg/m^3 • Exhaust rate of Dust Collector: 11196 m^3/hr
Exhaust from Dust Collector for GBBS Silo (350T) (EP10, EP14)	1.163×10^{-2} g/s	5.286×10^{-3} g/s	• Max. emission concentration from exhaust = 7.01mg/m^3 • Exhaust rate of Dust Collector: 11196 m^3/hr

Emission Source	RSP Emission Rate	FSP Emission Rate	Remarks
Exhaust from Dust Collector for Silica Fume Silo (50T) (EP15 – EP16)	5.815×10^{-3} g/s	2.643×10^{-3} g/s	• Max. emission concentration from exhaust = 3.51mg/m^3 • Exhaust rate of Dust Collector: 11196 m^3/hr
Paved haul roads inside project site and access to CBP (EP18 – EP19)	5.283×10^{-5} g/s·m at maximum, subject to number and average weight of vehicles travelling per hour	1.278×10^{-5} g/s·m at maximum, subject to number and average weight of vehicles travelling per hour	• 91.7% of dust suppression by watering every hour (calculated from *Equation (5-4) of USEPA's Control of Open Fugitive Dust Sources (EPA-450/3-98-008), as detailed in Appendix 3.2*).

Note:
(1) EP18 ─ EP19 is denoted as HR01 – HR03 in the model.
(2) Max. aggregate handling capacity, exhaust rate of dust collector, and max. emission concentration from exhaust are provided by design engineer.

Diurnal Profile

3.5.2 In this assessment, a diurnal profile is derived based on expected on-site raw material delivery and concrete production schedule to consider the diurnal variations in the emission rates in the Project. The diurnal profile of each emission source is presented in **Appendix 3.2**.

3.5.3 As there will only one barging point in the design, the delivery of aggregates and cement will not overlap. Aggregates will be delivered by barge and unloaded into the ground aggregate receiving hopper (EP01), which is assumed to be 100% active during 07:00 – 11:00 and 15:00 – 19:00. Cement will be delivered by barge and pumped to the cement silos (EP09, EP11 and EP13), which are expected to be 100% active during 11:00 – 15:00.

3.5.4 Other cement supplement materials will be delivered by tankers during 07:00 – 19:00. In every hour, it is expected that only one tanker truck will deliver either PFA or GGBS and complete unloading into their respective silos in one hour. Hence, dust collectors on PFA Silo (EP12) and GGBS Silos (EP10 and EP14) are assumed to be active 100% at alternate hours during 07:00–19:00. Furthermore, it is expected that there will only be one delivery of silica fume by tanker truck every day, which will take one hour for unloading. To account for different possible scenarios, where the silica fume tanker truck arrives with either PFA/GGBS tanker in either morning or evening, 100% activity for dust collector on silica fume silo (EP15 and EP16) is assumed for 07:00 – 09:00 and 17:00 – 19:00.

3.5.5 For concrete production, concrete production rate of 100% is assumed during 07:00 – 19:00. The profile is adopted for the emissions associated with the concrete production, i.e. the dust collectors on mixers (EP03 – EP05), the dust collectors on weigh hoppers (EP06 – EP08) and the haul roads used for transporting the concretes (HR01 – HR03).

Vehicular Emission from Open Roads

3.5.6 EMFAC-HK v4.3 was adopted to estimate the vehicular emission factors in NO_X, RSP and FSP in various travelling speeds and ambient conditions with reference to WRF meteorological data extracted from PATHv3.0. For short-term cumulative impacts, an approach of using daily profile of lowest temperature and relative humidity data in each hour for each month was adopted. For long-term cumulative impacts, an approach of using daily profile of averaged temperature and relative humidity data in each hour for each month was adopted.

3.5.7 The traffic data for each road in 500m study area comprises 24-hour traffic flow with vehicle percentage, travelling speed in 18 vehicle classes. Roads located in the southern part of the study boundary are located uphill and are shielded from the Project Site by the hills with no direct line of sight with the Project, and hence no direct impact by these roads is expected. Thus, these roads are not included in the vehicular emissions calculations. The agreement on the adopted traffic data by Transport Department (TD) is provided in **Appendix 3.4**. With reference to the traffic data, hourly emission factor of each open road is determined by summation of emission by each vehicle class which is product of traffic flow and emission factor at specific speed and ambient condition. The hourly emissions factors of RSP, FSP and NO_2 are further divided by the hourly flow to obtain a composite emission rate in g/s-m^2, ready for input to the dispersion model. The Smart Air Modelling Platform (SAMP v2.1) with ZEV scenario is used for the calculation of composite vehicular emission factor and emission rates. The detailed calculation of vehicular emission source was presented in **Appendix 3.4**.

3.5.8 Start emission refers to the air pollutants generated due to the ignition of the vehicle engines which is released at vehicle tailpipes. Start emission generally occurs on the local road where there is potential trip, while no start emission along district distributor or expressway is anticipated. For the assessment purpose, broad-brush approach is adopted, which assumes start emission at all local roads irrelevant to the actual location of engine start. Start emission is not assumed on district distributor and primary distributor. Also, all vehicle classes were assumed to have potential trip on local road, including minibus and franchised bus which usually starts its engine at its termini throughout its service route. After further review of the Study Area, most of the HGVs along the local roads in the assessment area are the working vehicles travelling to/from the Project, other industrial buildings and dockyards on Tam Kon Shan Road, which includes concrete mixer trucks and cement tankers. These working vehicles are not supposed to park along these roads. Please refer to Appendix 3.4 for more detailed justifications.

3.5.9 As discussed in **Section 3.4.6**, there is no PTIs/bus terminus, nor any bus depots within 500 m from the project site boundary. Coach parking is identified at Tsing Yi Northeast Park Car Park. Owing to the infrequent access to Tsing Yi Northeast Park Car Park, start emission of associated coaches are considered under Road 9, 10 and 11 by broad-brush approach. Vehicle classes that can park inside Tsing Yi Northeast Park Car Park (including PC, TAXI, LGV3, LGV4, LGV6, PLB, PV4, PV5, NFB6, NFB7, NFB8 and MC) were assumed to have potential start on Road 9,10 and 11. Frequency of start emission of a vehicle type on a road is estimated by its forecasted VKT, Trips/VKT ratio extracted from EMFAC-HK v4.3 and minor-road-to-all-road ratio (3.62%) extracted from 2023 Annual Traffic Census published by the Transport Department. SAMP v2.1 has accounted for the start emission when calculating the composite vehicular emission factor. The open road sources considered with start emission are illustrated in **Appendix 3.4**.

3.5.10 Also, the HGV on-street parking site (for 8PM to 7AM) outside Tsing Yi Northeast Park Car Park is identified and is assessed with precise approach. Data for the HGV on-street parking site was estimated by traffic forecast or by design. As the allowed hours for the on-street parking site for the HGVs is 8PM to 7AM, assuming all parked HGVs are leaving at 7AM, the soak time is assumed to be duration of parking (i.e. 8PM to 7AM of the following day). Maximum number of HGVs allowed to be parked overnight is determined by observation based on the length of the parking site (i.e. 10 HGVs). The start emissions calculation was conducted according to the “Technical Note on the Calculation of Start Emissions in Air Quality Impact Assessment”. Start emission factors of vehicle types at various soak times are extracted from EMFAC-HK v4.3. An approach of using the lowest temperature and relative humidity data in the year among all PATH grids covering the assessment area (i.e. 11ºC and 16%) was adopted. The detailed calculation of start emission is also presented in **Appendix 3.6.**

Determination of Assessment Year for Vehicular Emission

3.5.11 The operation of the Project is proposed to commission in 2026 and last for 5 years. The vehicular emission burden in each year during Year 2026to Year 2030 are thus assessed. Year 2028 is selected as assessment year for RSP and FSP because vehicular emission burden of RSP and FSP is the highest in Year 2028, while Year 2027 is selected as the assessment year for NOx as the vehicular emission burden of NOx is the highest in Year 2027, as shown in

Table 3.7. TD's endorsement of the traffic forecasts is provided in **Appendix 3.4**. The traffic data including 24-hr traffic flow with vehicle percentage, trips, daily vehicle-kilometer-travelled (VKT), speed fraction in 18 types of vehicle for the assessment year are presented in **Appendix 3.4**. Vehicular emission rate is calculated with zero emission vehicle scenario from SAMPv2.1. The detailed calculation of vehicular emission source is presented in **Appendix 3.4.**

Table 3.7 Vehicular Emission Burden in the Study Area

Year	Vehicular Emission Burden (tonne per year)		
	RSP	FSP	NOx
2026	0.2537	0.2332	7.6586
2027	0.3032	0.2787	**8.3571**
2028	**0.3036**	**0.2791**	7.8228
2029	0.2658	0.2444	6.6306
2030	0.2206	0.2029	5.4241

Remark:
Bolded figure denotes the highest value among modelled years.

Marine Emission

3.5.12 The operation of the Project would induce marine traffic. Marine emission is expected and would pose potential air quality impact on the proposed ASRs. Apart from the induced marine traffic, there is also existing marine traffic and a scheduled ferry route within the 500m study boundary of the Project, namely the scheduled route between Park Island Pier and Tsuen Wan Ferry Pier. All these existing marine traffic also contributes to cumulative air quality impact. Major air pollutants associated with marine emissions include NO_X, SO_2 and particulates.

3.5.13 The existing marine traffic was assessed with visual survey and the future marine traffic was projected with growth factors by Marine Consultant. The agreement on the adopted marine traffic data have been sought from Marine Department (MD). The marine traffic data of Year 2026, 2028 and 2030 are presented in **Appendix 3.5**. Given that the marine traffic within the study boundary attains the highest in Year 2030, the marine traffic data of Year 2030 is adopted for the assessment.

3.5.14 With reference to the Study on Marine Vessels Emission Inventory (MVEIS) by HKUST, the marine emission is estimated in activity-based approach. The emission factors were derived in units of works (gram per kilowatt-hour), dependent on fractional load of the equipment during different vessel activity modes. The calculation can be summarized as below:

$$Emission = P \times FL \times T \times EF$$

where P is the installed power of equipment;
FL is fractional load of equipment in a specific mode;
T is operation time-in-mode; and
EF is fractional load emission factor of equipment.

3.5.15 Typical power equipment installed on marine vessels are Main Engine (ME) for propulsion, Auxiliary Engine (AE) for electricity and Auxiliary Boiler (AB) for fuel pre-heating and pumping. Subject to the vessel types, different combinations of engines are equipped on a vessel. For example, all 3 kinds of engines are equipped on fully cellular container vessel, no ME for barge, and no AB for pleasure vessel.

3.5.16 The vessel types identified by the Marine Consultant are matched with equivalent vessel types considered in MVEIS. Typical engine power rating, engine type, fuel type of each vessel type are adopted from MVEIS. Moreover, when there are multiple sub-groups for the same vessel type in MVEIS, typically the one with the largest gross registered tonnage (GRT), deadweight tonnage (DWT) or passenger carrying capacity (PAX) is adopted as a conservative approach. The detailed assumptions are presented in **Appendix 3.5**. The vessel types considered in the assessment include:

- Fully Cellular Container Vessel (category RTV)
- Dry Bulk Carrier (category RTV)
- Semi-container Vessel (category RTV)
- Fast Launch (category FL)
- Tug (category TT)
- Local Ferry (category LF)
- Pleasure Vessel (category SC)
- Tug Boat (category SC)

3.5.17 Typical engine load factor by vessel type and by operation mode refers to MVEIS. Engine load factor of marine source was then determined according to its vessel type and its operation mode, which is defined according to the vessel speed with reference to MVEIS and shown in **Table 3.8**.

Table 3.8 Operation Mode of Marine Vessels

Operation Mode	Vessel Speed
Cruise / Fairway Cruise	Over 12 knots
Slow Cruise	8 to 12 knots
Maneuvering	1 to below 8 knots
Hotelling	Below 1 knot

3.5.18 The time-in-mode is estimated by the distance and vessel speed travelled in the corresponding mode.

3.5.19 Emission factors of RSP and FSP by vessel type and by operation mode refers to MVEIS and IMO Fourth Greenhouse Gas Study 2020. According to the *Air Pollution Control (Marine Light Diesel) Regulation*, the sulphur content of locally supplied marine light diesel is capped at 0.05%, so fuel with sulphur content of 0.05% is assumed to be used by local vessels such as Small Crafts (SCs), Tug Boats (TTs), Fast Launch (FLs) and Local Ferries (LFs). On the other hand, *Air Pollution Control (Fuel for Vessels) Regulation* stipulates the use of fuel with sulphur content of 0.5% for all vessels within Hong Kong waters. As such, fuel with sulphur content of 0.5% is assumed to be used by River Trade Vessels (RTV) and Ocean-going Vessels (OGVs) for modelling purpose as a conservative approach. Together with the parameters discussed above, emission of a marine source is estimated with the equation discussed above.

3.5.20 The stack parameters exit temperature and release height are determined by desktop review and site surveys whenever possible, and the other stack parameters (exit velocity and stack diameter) refer to previous studies concerning nearby waters such as the approved EIA Report of Lei Yue Mun Waterfront Enhancement Project (AEIAR-219/2018) and Route 11 (Section between Yuen Long and North Lantau) (AEIAR-255/2023). The emission inventory is summarized in **Appendix 3.5**.

Dispersion Modelling and Modelling Approach for the Proposed Plant

3.5.21 According to *Guidelines on Assessing the 'TOTAL' Air Quality Impacts* by EPD, an integrated modelling system PATHv3.0 which is developed and maintained by EPD will be applied to provide background pollutant concentrations in assessing the total impact in the study area. In addition, Weather Research and Forecast (WRF) meteorological data should be adopted for modelling.

3.5.22 American Meteorological Society (AMS) and U.S. Environmental Protection Agency (EPA) Regulatory Model (AERMOD), the HKEPD approved air dispersion model, has been employed to predict the air quality impacts at the representative ASRs due to the Project. Daily and annual averages of RSP and FSP concentrations are predicted at each identified ASRs at various assessment height, ranging from 1.5 metres to 110 metres above ground.

3.5.23 Hourly meteorological conditions including wind data, temperature, relative humidity, pressure, cloud cover and mixing height of Year 2019 are extracted from the WRF meteorological data adopted in the PATHv3.0 system. The dataset by WRF should be intact and consistent among

parameters. In order to avoid any missing hours misidentified by AERMOD and its associated components, the WRF met data is handled manually to set wind direction between 0° – 0.1° to be 360°. The height of the input data is assumed to be 9 metres above ground for the first layer of the WRF data as input.

3.5.24 The wind speed and mixing heights in the WRF data will be further adjusted before meteorological pre-processing by AERMET. The minimum wind speed is capped at 0.5 metre per second. The mixing height is capped between 119 metres and 2009 metres according to the observation in Year 2019 by HKO. After pre-processed by AERMET, the mixing height is verified once again and adjusted to the capped range if necessary.

3.5.25 Surface characteristic parameters such as albedo, Bowen ratio and surface roughness are required in the AERMET. The parameters are determined according to land use classified for the surrounding and the latest AERMOD Implementation Guide. The details of estimation is presented in **Appendix 3.3**. Elevated terrain in AERMOD is adopted for this assessment.

3.5.26 Further, dry deposition is applied in the model run. Particle size distribution is assigned for particles with aerodynamic diameters smaller than 10 μm to each type of source in the AERMOD in order to account for the particle deposition. The sources are divided into three types, (i) general concrete batching processes (further classified into 3 different processes as described in **Table 3.9**), (ii) aggregate handling and storage piles, and (iii) fugitive emission from paved roads. The particle size distributions for each type of source are summarized in **Table 3.9 – Table 3.11**.

Table 3.9 Particle Size Distribution of General Concrete Batching Process [(d) (e)]

Process	RSP to TSP Ratio [(a)]	FSP to RSP Ratio [(b)]
Cement unloading to elevated storage silo (Controlled)	34%	45%
Cement supplement unloading to elevated storage silo (Controlled)	53%	45%
Weigh Hopper Loading (Uncontrolled)	50%	29%
Mixer loading (central mix) (Controlled)	30%	45%

Average Particle Diameter (μm)	Normalized Fraction for RSP [(b)(c)]
0.5	12%
1.5	21%
2.25	12%
2.75	5%
3.5	11%
4.5	8%
5.5	6%
8	26%

Note:
(a) Derived from Table 11.12-1 Emission Factors for Concrete Batching, Chapter 11.12 Concrete Batching, AP-42, USEPA (Version 01/12)
(b) Derived from Category 3 “Mechanically Generated Aggregate, Unprocessed Ores”, Page B.2-13, Appendix B.2 Generalized Particle Size Distributions, AP-42, USEPA (Version 1/95)
(c) Control efficiency of fabric filter on different size of particle refers to Table B.2-3 Typical Collection Efficiencies of Various Particulate Control Device, Appendix B.2 Generalized Particle Size Distributions, AP-42, USEPA (Version 1/95)
(d) The cumulative percentage of all particle sizes maintains 100% in air dispersion model by applying percentage in 6 decimal places.
(e) Details of derivation of the figures are shown in Appendix 3.2

Table 3.10 Particle Size Distribution of Aggregate Handling and Storage Piles

Average Particle Diameter (μm)	Aerodynamic Particle Size Multiplier (k)[(a)]	Normalized Fraction[(b)]
1.25	0.053	15%
3.75	0.2	42%
7.5	0.35	43%

Note:
(a) Reference from Aerodynamic Particle Size Multiplier (k) For Equation 1 Table, Section 13.2.4.3 , AP-42 Fifth Version, USEPA
(b) Derived from dividing the respective aerodynamic particle size multiplier by that of RSP (i.e. 0.35)

Table 3.11 Particle Size Distribution of Fugitive Emission from Paved Roads

Average Particle Diameter (μm)	Particle Size Multiplier (g/VKT)[(a)]	Normalized Fraction[(b)]
1.25	0.15	24%
6.25	0.62	76%

Note:
(a) Reference from Table 13.2.1-1, Section 13.2.1.3 , AP-42 Fifth Version, USEPA
(b) Derived from dividing the respective particle size multiplier by that of RSP (i.e. 0.62)

Dispersion Modelling and Modelling Approach for Open Road

3.5.27 According to *Technical Note for Modelling Vehicular Emission Using AERMOD* by EPD, AERMOD is also used to assess the vehicular emission from open road.

3.5.28 The mixing zone of a road source needs to be defined in the AERMOD. The top of plume is defined as 1.7 times of the average height of vehicle fleet on the road. The average height of vehicle fleet is determined for each road and is weighted by the total daily traffic flow of each vehicle class. The suggested average vehicle height of each vehicle class refers to the same technical note.

Dispersion Modelling and Modelling Approach for Marine Emission

3.5.29 AERMOD was applied to assess the marine emission in the nearby waters. Marine emission is line source in nature because of the mobile vessels along the route. However, the emission also resembles point source for its high exhaust temperature, exhaust velocity and higher release height. In consideration of these similarities, the marine emission along a route was modelled by numerous of point sources along the route with an interval of 50m and its emission strength is equally allocated to these point sources.

3.5.30 High speed vessels, fishing vessels, pleasure vessels, government vessels (mostly patrol boats) and others (mostly tugboats) generally equip with horizontal stack based on site surveys. These vessels are therefore modelled as point source with horizontal release in AERMOD.

Cumulative Impact of Criteria Air Pollutants

3.5.31 Cumulative AQO pollutant concentration at ASR was derived by the sum of contributions by various sources, and background contribution from PATHv3.0 on hour-by-hour basis. Averaging results, namely 10-min, hourly, daily, and annual, were derived from the cumulative hour-by-hour results in accordance with *Title 40, Code of Federal Regulations, US Environmental Protection Agency (USEPA 40 CFR) Part 51 "Revision to the Guideline on Air Quality Models, January 2017*". For annual average, the sum of all valid hourly concentrations was divided by the number of valid hours during the year. For daily average, cumulative results at each ASR amongst 365 days were ranked by highest concentration and compared with the maximum allowable concentration to determine the number of exceedance throughout a year. The air quality impact on ASRs was then evaluated by number of exceedance per annum against the criteria of EIAO-TM and AQOs.

3.5.32 Ozone Limiting Method (OLM) has been adopted for the conversion of short-term NO_X to NO_2 based on the ozone background concentration from PATHv3.0. Regarding vehicular emission, NO_2 and NO were predicted separately in AERMOD. Following the principle of OLM, the total predicted vehicular NO_2 is estimated as below:

$$[NO_2]_{vehicular} = [NO_2]_{predicted} + MIN \{[NO]_{predicted}, \text{ or } (46/48) \times [O_3]_{PATH}\}$$

where

$[NO_2]_{vehicular}$	is the total predicted vehicular NO_2 concentration
$[NO_2]_{predicted}$	is the predicted NO_2 concentration
$[NO]_{predicted}$	is the predicted NO concentration
MIN	means the minimum of the two values within the bracket
$[O_3]_{PATH}$	is the representative O_3 PATH concentration (from other contributions)
(46/48)	is the molecular weight of NO_2 divided by the molecular weight of O_3

3.5.33 With reference to the *Guidance on Choice of Models and Model Parameters*, Jenkin method was adopted for the conversion of cumulative annual average NO_X to NO_2 by using the empirical relationship in observed annual mean of NO_X and NO_2 concentrations. The empirical relationship is derived from the annual mean observed data by relevant EPD's air quality monitoring stations (AQMS) including Tsuen Wan (the closest station), Tap Mun (background station with no vehicular emission), and Mong Kok roadside station (station dominated by vehicular emission). The resulting curve is adopted for the cumulative annual average NO_x to NO_2 conversion. Detailed derivation of NO_X-to-NO_2 conversion equation using Jenkin method is presented in **Appendix 3.7**.

3.5.34 According to "*Guidelines on the Estimation of 10-min average SO_2 Concentration for Air Quality Assessment in Hong Kong*", SO_2 concentration in 10-min average due to the stack emissions was estimated by applying stability-dependent multiplicative factor to 1-hour average model prediction by AERMOD.

3.6 Prediction and Evaluation of Impact

Cumulative Air Quality Impact

3.6.1 The 10th highest cumulative daily averages of RSP and 19th highest cumulative daily averages of FSP concentrations, as well their cumulative annual averages, at each representative ASR are presented in **Table 3.12** – **Table 3.15**, while the 4th highest cumulative 10-min and 4th highest cumulative daily averages of SO_2 concentrations, and 19th highest cumulative hourly, 10th highest daily and annual averages NO_2 concentrations at each representative ASR are presented in **Table 3.16** – **Table 3.20.** The prediction shows that the concentrations of the pollutant of concern would comply with the relevant AQOs at each representative ASR.

3.6.2 According to the predictions at discrete receptors in **Table 3.12** – **Table 3.15**, the worst predicted levels of cumulative daily RSP impact appear at 1.5m and 10m above ground, while those of cumulative annual RSP impact appear at 1.5m and 5m above ground for all representative ASRs. The worst predicted levels of cumulative daily FSP impact appear at 1.5m and 5m above ground, while those of cumulative annual FSP impact occur at 1.5m above ground. Contour plots of cumulative daily average of RSP concentrations at 1.5m and 10m above ground, and cumulative annual average of RSP concentrations at 1.5m and 5m above ground, cumulative daily average of FSP concentrations at 1.5m and 5m above ground and cumulative annual average of FSP concentrations at 1.5m above ground are presented in **Figure 3.2** – **Figure 3.8** respectively.

3.6.3 According to the predictions at discrete receptors in **Table 3.16** – **Table 3.17**, the worst predicted levels of cumulative 10-min and daily averages of SO_2 appear at 1.5m and 15m above ground for all representative ASRs. Contour plots of cumulative 10-min and daily averages of SO_2 concentrations at 1.5m and 15m above ground are presented in **Figure 3.9** – **Figure 3.12** respectively.

3.6.4 According to the predictions at discrete receptors in **Table 3.18** – **Table 3.20**, the worst predicted levels of cumulative hourly, daily and annual averages of NO_2 impact appear at 1.5m above ground for all representative ASRs, except the cumulative hourly average at A08 and daily average at A09, which occur at 5m and 10m respectively. Contour plots of cumulative hourly average of NO_2 concentrations at 1.5m and 5m above ground, daily average of NO_2 concentrations at 1.5m and 10m above ground, and annual averages of NO_2 concentrations at 1.5m above ground, are presented in **Figure 3.13**– **Figure 3.17** respectively.

3.6.5 Exceedance in annual RSP and FSP was generally predicted within the Subject Site and adjacent dockyard areas where slipways and temporary structures are located. It is confirmed that no air sensitive uses are located within the exceedance area.

3.6.6 In short, the predictions at discrete locations and spatial predictions within the study area showed that no adverse air quality impact on the nearby ASRs would be anticipated during the operation of the Proposed Plant.

Table 3.12 Predicted 10th Highest Cumulative Daily Average RSP Concentration (µg/m³) at ASRs

ASR	10th Highest Cumulative Daily Average RSP Concentration (µg/m³)													
	1.5mAG	5mAG	10mAG	15mAG	20mAG	30mAG	40mAG	50mAG	60mAG	70mAG	80mAG	90mAG	100mAG	110mAG
A01	54.5490	54.5819	54.5946	-	-	-	-	-	-	-	-	-	-	-
A02	55.5579	55.5191	55.3651	55.3132	-	-	-	-	-	-	-	-	-	-
A03	61.1906	60.3142	59.0514	56.0725	-	-	-	-	-	-	-	-	-	-
A04	59.2761	58.7010	57.6933	56.1574	-	-	-	-	-	-	-	-	-	-
A05	56.3075	54.7860	54.5722	54.4047	-	-	-	-	-	-	-	-	-	-
A06	54.1648	54.1550	-	-	-	-	-	-	-	-	-	-	-	-
A07	54.0592	54.0525	54.0383	54.0241	-	-	-	-	-	-	-	-	-	-
A08	55.0123	55.0103	55.0046	54.9902	54.9577	54.8797	-	-	-	-	-	-	-	-
A09	54.9052	54.8969	54.8881	54.8833	54.8785	54.8611	54.8418	54.8328	54.8298	54.8284	54.8276	54.8272	54.8269	54.8266
A14	57.6460	57.3549	-	-	-	-	-	-	-	-	-	-	-	-

Table 3.13 Predicted Cumulative Annual Average RSP Concentration (µg/m³) at ASRs

ASR	Cumulative Annual Average RSP Concentration (µg/m³)													
	1.5mAG	5mAG	10mAG	15mAG	20mAG	30mAG	40mAG	50mAG	60mAG	70mAG	80mAG	90mAG	100mAG	110mAG
A01	20.7712	20.7764	20.7523	-	-	-	-	-	-	-	-	-	-	-
A02	21.4847	21.3902	21.1521	21.0023	-	-	-	-	-	-	-	-	-	-
A03	24.4667	23.6584	22.7150	21.6564	-	-	-	-	-	-	-	-	-	-
A04	23.2224	22.7786	22.0428	21.3428	-	-	-	-	-	-	-	-	-	-
A05	21.3877	21.1830	20.9217	20.7442	-	-	-	-	-	-	-	-	-	-
A06	20.7026	20.6838	-	-	-	-	-	-	-	-	-	-	-	-
A07	20.5032	20.4994	20.4870	20.4740	-	-	-	-	-	-	-	-	-	-
A08	21.0442	21.0433	21.0390	21.0257	20.9919	20.9308	-	-	-	-	-	-	-	-
A09	20.9520	20.9463	20.9405	20.9358	20.9291	20.9113	20.8969	20.8878	20.8826	20.8797	20.8778	20.8765	20.8754	20.8745
A14	21.8429	21.5984	-	-	-	-	-	-	-	-	-	-	-	-

Table 3.14 Predicted 19th Highest Cumulative Daily Average FSP Concentration (µg/m³) at ASRs

ASR	19th Highest Cumulative Daily Average FSP Concentration (µg/m³)													
	1.5mAG	5mAG	10mAG	15mAG	20mAG	30mAG	40mAG	50mAG	60mAG	70mAG	80mAG	90mAG	100mAG	110mAG
A01	30.6508	30.6682	30.6581	-	-	-	-	-	-	-	-	-	-	-
A02	31.1616	31.0958	30.8999	30.7959	-	-	-	-	-	-	-	-	-	-
A03	31.9776	32.1107	31.8877	31.3614	-	-	-	-	-	-	-	-	-	-
A04	31.7588	31.7030	31.4771	30.9833	-	-	-	-	-	-	-	-	-	-
A05	30.9627	30.8671	30.7528	30.6804	-	-	-	-	-	-	-	-	-	-
A06	30.5018	30.4935	-	-	-	-	-	-	-	-	-	-	-	-
A07	30.4242	30.4213	30.4134	30.4067	-	-	-	-	-	-	-	-	-	-
A08	31.9815	31.9817	31.9802	31.9726	31.9499	31.9193	-	-	-	-	-	-	-	-
A09	31.9244	31.9202	31.9168	31.9153	31.9141	31.9071	31.9008	31.8978	31.8962	31.8949	31.8940	31.8932	31.8926	31.8922
A14	31.1376	30.9876	-	-	-	-	-	-	-	-	-	-	-	-

Table 3.15 Predicted Cumulative Annual Average FSP Concentration (µg/m³) at ASRs

ASR	Cumulative Annual Average FSP Concentration (µg/m³)													
	1.5mAG	5mAG	10mAG	15mAG	20mAG	30mAG	40mAG	50mAG	60mAG	70mAG	80mAG	90mAG	100mAG	110mAG
A01	12.9211	12.9199	12.9015	-	-	-	-	-	-	-	-	-	-	-
A02	13.3237	13.2395	13.0649	12.9976	-	-	-	-	-	-	-	-	-	-
A03	14.0153	13.9605	13.9207	13.4214	-	-	-	-	-	-	-	-	-	-
A04	13.7296	13.6495	13.4540	13.1755	-	-	-	-	-	-	-	-	-	-
A05	13.1342	13.0704	12.9875	12.9220	-	-	-	-	-	-	-	-	-	-
A06	12.8945	12.8871	-	-	-	-	-	-	-	-	-	-	-	-
A07	12.8101	12.8078	12.7991	12.7910	-	-	-	-	-	-	-	-	-	-
A08	13.3241	13.3241	13.3218	13.3116	13.2828	13.2307	-	-	-	-	-	-	-	-
A09	13.2457	13.2410	13.2364	13.2332	13.2284	13.2149	13.2041	13.1973	13.1934	13.1912	13.1899	13.1890	13.1883	13.1877
A14	13.3593	13.2701	-	-	-	-	-	-	-	-	-	-	-	-

Table 3.16 Predicted 4th Highest Cumulative 10-Min Average SO_2 Concentration (μg/m³) at ASRs

ASR	4th Highest Cumulative 10-Min Average SO2 Concentration (μg/m³)													
	1.5mAG	5mAG	10mAG	15mAG	20mAG	30mAG	40mAG	50mAG	60mAG	70mAG	80mAG	90mAG	100mAG	110mAG
A01	23.7310	23.7227	23.7142	-	-	-	-	-	-	-	-	-	-	-
A02	23.7398	23.7334	23.7293	23.7287	-	-	-	-	-	-	-	-	-	-
A03	23.6967	23.7009	23.7186	23.7470	-	-	-	-	-	-	-	-	-	-
A04	23.7048	23.7094	23.7255	23.7500	-	-	-	-	-	-	-	-	-	-
A05	23.6945	23.6986	23.7150	23.7399	-	-	-	-	-	-	-	-	-	-
A06	23.7140	23.7108	-	-	-	-	-	-	-	-	-	-	-	-
A07	23.8171	23.8063	23.7979	23.7943	-	-	-	-	-	-	-	-	-	-
A08	22.9459	22.9452	22.9441	22.9432	22.9422	22.9404	-	-	-	-	-	-	-	-
A09	22.9448	22.9440	22.9429	22.9419	22.9410	22.9392	22.9374	22.9358	22.9342	22.9326	22.9311	22.9296	22.9282	22.9269
A14	23.7189	23.7171	-	-	-	-	-	-	-	-	-	-	-	-

Table 3.17 Predicted 4th Highest Cumulative Daily Average SO_2 Concentration (μg/m³) at ASRs

ASR	4th Highest Cumulative Daily Average SO2 Concentration (μg/m³)													
	1.5mAG	5mAG	10mAG	15mAG	20mAG	30mAG	40mAG	50mAG	60mAG	70mAG	80mAG	90mAG	100mAG	110mAG
A01	7.3292	7.3284	7.3278	-	-	-	-	-	-	-	-	-	-	-
A02	7.3258	7.3252	7.3250	7.3252	-	-	-	-	-	-	-	-	-	-
A03	7.3267	7.3268	7.3276	7.3291	-	-	-	-	-	-	-	-	-	-
A04	7.3263	7.3263	7.3270	7.3281	-	-	-	-	-	-	-	-	-	-
A05	7.3255	7.3255	7.3262	7.3274	-	-	-	-	-	-	-	-	-	-
A06	7.3210	7.3204	-	-	-	-	-	-	-	-	-	-	-	-
A07	7.3125	7.3118	7.3110	7.3105	-	-	-	-	-	-	-	-	-	-
A08	7.2982	7.2979	7.2976	7.2973	7.2970	7.2966	-	-	-	-	-	-	-	-
A09	7.2976	7.2973	7.2969	7.2966	7.2963	7.2958	7.2954	7.2951	7.2948	7.2946	7.2943	7.2940	7.2937	7.2933
A14	7.3221	7.3217	-	-	-	-	-	-	-	-	-	-	-	-

Table 3.18 Predicted 19th Highest Cumulative Hourly Average NO_2 Concentration (μg/m³) at ASRs

ASR	19th Highest Cumulative Hourly Average NO2 Concentration (μg/m³)													
	1.5mAG	5mAG	10mAG	15mAG	20mAG	30mAG	40mAG	50mAG	60mAG	70mAG	80mAG	90mAG	100mAG	110mAG
A01	101.156	101.183	100.702	-	-	-	-	-	-	-	-	-	-	-
A02	113.992	109.878	103.004	101.144	-	-	-	-	-	-	-	-	-	-
A03	113.095	109.958	104.592	100.885	-	-	-	-	-	-	-	-	-	-
A04	107.906	107.253	103.383	100.686	-	-	-	-	-	-	-	-	-	-
A05	106.974	104.180	102.129	100.415	-	-	-	-	-	-	-	-	-	-
A06	101.565	101.641	-	-	-	-	-	-	-	-	-	-	-	-
A07	101.978	101.891	100.388	99.975	-	-	-	-	-	-	-	-	-	-
A08	106.989	107.127	106.317	105.705	103.025	100.577	-	-	-	-	-	-	-	-
A09	102.596	102.422	102.323	101.751	100.995	99.797	99.796	99.324	99.324	99.324	99.324	99.324	99.324	99.324
A14	112.296	109.271	-	-	-	-	-	-	-	-	-	-	-	-

Table 3.19 Predicted 10th Highest Cumulative Daily Average NO_2 Concentration (μg/m³) at ASRs

ASR	10th Highest Cumulative Daily Average NO2 Concentration (μg/m³)													
	1.5mAG	5mAG	10mAG	15mAG	20mAG	30mAG	40mAG	50mAG	60mAG	70mAG	80mAG	90mAG	100mAG	110mAG
A01	45.324	45.187	44.557	-	-	-	-	-	-	-	-	-	-	-
A02	55.133	52.055	45.767	44.312	-	-	-	-	-	-	-	-	-	-
A03	51.689	50.585	46.443	44.356	-	-	-	-	-	-	-	-	-	-
A04	50.510	49.109	45.696	44.325	-	-	-	-	-	-	-	-	-	-
A05	48.912	48.253	45.908	44.599	-	-	-	-	-	-	-	-	-	-
A06	46.013	45.967	-	-	-	-	-	-	-	-	-	-	-	-
A07	45.626	45.472	44.819	44.040	-	-	-	-	-	-	-	-	-	-
A08	51.861	49.756	49.503	48.892	47.957	47.334	-	-	-	-	-	-	-	-
A09	46.376	44.942	46.495	46.205	45.459	45.174	44.955	44.511	44.118	43.861	43.727	43.665	43.631	43.606
A14	43.587	43.571	-	-	-	-	-	-	-	-	-	-	-	-

Table 3.20 Predicted Cumulative Annual Average NO_2 Concentration (μg/m³) at ASRs

ASR	Cumulative Annual Average NO2 Concentration (μg/m³)													
	1.5mAG	5mAG	10mAG	15mAG	20mAG	30mAG	40mAG	50mAG	60mAG	70mAG	80mAG	90mAG	100mAG	110mAG
A01	26.349	26.266	25.944	-	-	-	-	-	-	-	-	-	-	-
A02	31.362	29.814	26.826	26.086	-	-	-	-	-	-	-	-	-	-
A03	30.024	29.045	27.018	26.053	-	-	-	-	-	-	-	-	-	-
A04	28.996	28.374	26.892	26.072	-	-	-	-	-	-	-	-	-	-
A05	27.409	27.078	26.299	25.940	-	-	-	-	-	-	-	-	-	-
A06	26.385	26.362	-	-	-	-	-	-	-	-	-	-	-	-
A07	26.635	26.509	25.916	25.385	-	-	-	-	-	-	-	-	-	-
A08	27.641	27.513	27.314	27.068	26.576	25.733	-	-	-	-	-	-	-	-
A09	26.297	26.109	25.920	25.815	25.719	25.499	25.334	25.235	25.181	25.149	25.131	25.119	25.110	25.104
A14	29.722	28.836	-	-	-	-	-	-	-	-	-	-	-	-

3.7 Mitigation Measures

Plant Operation

3.7.1 It should be noted that the mitigation measures applied in the calculations are based on the proposed configuration of the Project. Details of mitigation measures that will be implemented in the plant have been presented in **Table 3.5**.

3.7.2 Despite the air control technologies and control measures proposed, good operation and maintenance practices is vital in achieving the goals of air pollution control measures and ensuring the environmental performance of the Plant. Standard operation and maintenance procedures will be set up and followed by all the operation staff to keep all the air pollution control equipment in good operating condition. Adequate training will be given to the personnel for inspection and maintenance of all the air pollution control equipment.

3.7.3 The plant operator shall maintain high standard of housekeeping to prevent emission of fugitive dust. Loading, unloading, handling and storage of raw materials, products, wastes or by-products should be carried out in an acceptable manner so as to minimize dust emission impact on the surrounding environment.

3.7.4 All sprinkler system used for dust suppression shall be maintained in good condition during operation. The flow rate and operating pressure of the spraying liquid/solution shall be sufficient to suppress dust emission from the corresponding sources. The sprinkler system shall be able to cover the areas of emission points concerned.

3.7.5 Air pollution control equipment, including fabric filters with 99.9% dust removal efficiency, silo overfilling alarms and filling link interlock shall be maintained in good operation condition and put into use whenever the relevant plant served by the air control equipment is in operation.

3.7.6 In order to guarantee the control efficiency of the dust collectors implemented, the performance of dust collectors will be monitored by fitting a pressure gauge to indicate the adequate pressure drop across the filter throughout the operation.

3.7.7 The emission rate or concentrations at all identified emission sources shall also be monitored upon commissioning and during the operation of the Project. The sampling methods for the emission sources and the monitoring programme shall be agreed with the EPD prior to the operation of the proposed CBP.

3.7.8 The dust extraction and collection system shall be routinely inspected at least once per month. This system shall be maintained in good condition during production. Collected dust will be returned to process stream or disposed of without generating any fugitive dust.

3.7.9 The maintenance, repair, or general cleaning of the plant facilities and vehicle within the site boundary shall be carried out in such a manner that the air emission is minimized.

3.7.10 The plant operator shall take all practical measures to minimize air emissions which may be caused by handling the muddy waste generated from the plant operation. No accumulation and dumping of such waste are allowed in open area.

3.7.11 Malfunction or breakdown of equipment leading to abnormal emission shall be dealt with promptly. In any case, the abnormal emission due to equipment failure shall be stopped as soon as possible. Sufficient numbers of spare parts for air pollution control equipment shall be kept in stock to allow rapid repair of the equipment. Each fabric filter shall be inspected at least once per month.

3.7.12 Should any office or control room of the Project be located within any predicted exceedance zones discussed above, it is recommended that centralized air conditioning and air filtering system with recommended dust removal efficiency of at least 90% shall be installed to minimize the air quality impacts and achieve AQO compliance at these uses in the plant.

3.7.13 Together with proper operation and maintenance practices discussed above, the proposed measures should ensure that there will be no adverse air quality impacts on any nearby ASRs, as predicted by the air quality impact assessment. As a Specified Process defined under the APCO, a licence from EPD will be applied where the detailed design of plant and air quality control proposals will be formulated to ensure full compliance with relevant requirements under the APCO during operation.

Odour from Sediments from Dredging and Maintenance Dredging

3.7.14 The dredging activities during both construction and operation phases might result in odour impacts. The following precautionary measures are proposed to minimize the potential impacts:

- Loading of the dredged sediment to the barge should be controlled to avoid splashing and overflowing of the sediment slurry to the surrounding water.
- Any dredged sediment should be stored in enclosed tanks or properly covered as far as practicable to minimise its exposed area during its temporary storage and should be placed as far away from the identified ASRs as practically possible.
- Dredging rate should be controlled carefully.
- The dredged sediment is suggested to be delivered off-site for disposal every day as possible to avoid the dredged sediment for storage at the barge overnight.
- Dredged sediment placed on marine vessel for disposal should also be properly covered during transportation.
- The dredging activities are conducted during non-summer season.

With the implementation of these measures, the potential odour nuisance could be minimized and adverse odour impact at nearby ASRs is not expected.

4 NOISE

4.1 Introduction

4.1.1 The construction and operation of the concrete batching plant may induce potential noise impacts to surrounding noise sensitive receivers. Representative Noise Sensitive Receivers (NSRs) in the vicinity of the study area are identified. The potential noise impacts on these NSRs arising from the Proposed Plant are assessed and appropriate mitigation measures are proposed to alleviate the potential noise impacts where necessary.

4.2 Description of Environment

4.2.1 The Subject Site is located at Tsing Yi Town Lot Nos. 14& 15 at Tam Kon Shan Road in the northern Tsing Yi . It is located on marine frontage in the north and surrounded by areas of dockyards and marine-oriented industries in the east and west. Green@Kwai Tsing, site office and Tsing Yi Northeast Park are in the further east. Tam Kon Shan Road and Tsing Yi North Coastal Road is in the south of the Subject Site. The existing noise climate of the study area is dominated by the fixed plant noise from the existing dockyards and road traffic noise from the highways and local roads in the vicinity.

Noise Sensitive Receivers

4.2.2 In accordance with Annex 13 of the EIAO-TM, all domestic premises, including temporary housing accommodation, educational institution, hospital, medical clinic, home for the aged, convalescent homes, places of public worship, libraries, courts of law, performing arts centres, auditoria, amphitheatres and hostels shall be considered to be as NSRs. Representative NSRs are to be identified within the study boundary, which is 300 m from the Site.

4.2.3 Referring to the Tsing Yi Outline Zoning Plan No. S/TY/32, the land uses within 300m of the subject site are “Other Specified Uses” annotated “Boatyard and Marine-oriented Industrial Uses” (“OU(BMIU)”) and green belts, and there are no residential uses or educational institutes. After carrying out detailed desktop review and site survey, no noise sensitive receiver (NSR) is identified within the 300m of the subject site. The nearest NSR identified is The Met. Azure, which is located approximately 350m from the proposed CBP on top of the hill.

4.3 Environmental Legislation and Guidelines

Construction Noise

4.3.1 The Noise Control Ordinance (NCO) provides the statutory framework for noise control of construction work other than percussive piling, using Powered Mechanical Equipment (PME) between the hours of 1900 and 0700 hours or at any time on a general holiday (i.e. restricted hours). Noise control on construction activities taking place at other times is subject to the Noise assessment criteria for Daytime Construction Activities as stated in Professional Persons Environmental Consultative Committee (ProPECC) Practice Notes PN2/93 Noise from Construction Activities - Non-statutory. The noise assessment criteria are 75 dB(A) for domestic dwelling, 70 dB(A) for schools during normal teaching period and 65 dB(A) for schools during examination period.

Operation Fixed Plant Noise

4.3.2 Industrial fixed plant noise impacts were assessed in accordance with the criteria and methodology given in the Technical Memoranda made under the NCO, and Hong Kong Planning Standard and Guidelines (HKPSG).

4.3.3 The HKPSG states that all fixed noise sources should be so located and designed that when assessed in accordance with the Technical Memorandum for the Assessment of Noise from Places other than Domestic Premises, Public Places or Construction Sites (IND-TM), the level

of the intruding noise at the facade of the nearest sensitive use should be at least 5 dB(A) below the appropriate ANL shown in Table 2 of the IND-TM or, in the case of the background being 5 dB(A) lower than the ANL, the predicted noise level should not exceed the background.

4.3.4 Determination of the ANL depends on the area sensitivity rating (ASR), which is based on the characterization of the area within which they are located such as rural, village, low-density residential, or urban. Within these areas, the presence of "influencing factors" (such as the presence of industrial activities or major roads) can further affect the ASR and therefore the acceptable noise level. The ASR is determined from **Table 4.1** below.

Table 4.1 Area Sensitivity Ratings (ASRs)

Type of Area Containing NSR	Degree to which NSR is affected by IF		
	Not Affected	Indirectly Affected	Directly Affected
Rural Area	A	B	B
Low density residential area consisting of low-rise or isolated high-rise developments	A	B	C
Urban Area	B	C	C
Area other than those above	B	B	C

4.3.5 The ANLs for all ASRs are provided in **Table 4.2**.

Table 4.2 Acceptable Noise Levels for Fixed Noise Sources

Time Period	Acceptable Noise Level, dB(A)		
	ASR A	ASR B	ASR C
Daytime and Evening (0700 to 2300 hours)	60	65	70
Night (2300 to 0700 hours)	50	55	60

4.3.6 The surrounding area of the Project site is of industrial uses, which is not rural area, low density residential area, nor urban area. Therefore, the type of use of the area is considered as “area other than those above”. The area is directly affected by influencing factors, such as nearby industries and traffic noise from local roads and highways. With reference to **Table 4.1** above, ASR of “C” has been assumed for the NSR in the vicinity of the proposed Project site.

4.3.7 In any event, the ASR assumed in this report is for indicative assessment only. It should be noted that the fixed noise sources are controlled under Section 13 of the NCO. At the time of investigation, the Noise Control Authority shall determine noise impact from concerned fixed noise sources on the basis of prevailing legislation and practices being in force and taking account of contemporary conditions/situations of adjoining land uses. Nothing in this report shall bind the Noise Control Authority in the context of law enforcement against all the fixed noise sources being assessed.

4.3.8 The HKPSG recommends that the level of the intruding noise at the façade of the nearest sensitive use should be at least 5 dB(A) below the appropriate ANL or, in the case of background noise being 5 dB(A) lower than the ANL, the predicted noise level arising from the operation of the Proposed Plant at the façade of the nearest sensitive use should not exceed the background noise level.

4.4 Identification and Evaluation of Impact

Construction Phase

4.4.1 During the construction phase, the use of PME for the construction works of the proposed development would likely be the source of noise impact and would have the potential noise impact on the NSR located in the vicinity of the Subject Site.

4.4.2 In view of the nature of the development, the major construction activities would include minor excavation for foundation works and plant fabrication works. Potential noise impacts generated from the use of PME such as excavators, generators, air compressors, cranes, lorries, and pneumatic breakers for these construction activities would be expected.

4.4.3 In order to alleviate the potential construction noise impacts on the nearby NSRs, the following mitigation measures are suggested:

- Scheduling of work to avoid simultaneous operation of noisy equipment and erecting, as early as possible, any new structures which will have the effect of screening noise sources
- Noisy equipment should be located as far as possible from the NSR
- Implementation of good site practices to limit noise emissions at source
- Use of quieter PME
- Use of quieter alternative construction method
- Use of noise barriers/enclosure

4.4.4 With the implementation of the noise mitigation measures, it is anticipated that there would be no unacceptable construction noise impacts.

Operation Phase

4.4.5 In general, the CBP will operate from 07:00 to 21:00. The production rate and number of on-site vehicles are listed in **Table 4.3**.

Table 4.3 Production Rate and Number of On-site Vehicles during Normal Day

Activities / On-site Vehicles	07:00 – 21:00
Concrete Production Rate	100%
Concrete mixer truck per hour	43
PFA/GGBS/Silica Fume tanker per hour	2
Aggregates tipper truck per hour	0

4.4.6 However, no NSR has been identified within the study area and the nearest NSR, The Met, Azure, is 350m away on top of the hill. Given that sufficient separation distance from the NSR, more than 300m, the operational noise impact would become negligible. No adverse noise impact would be expected due to the operation of the propose CBP.

4.4.7 No further mitigation measures would therefore be required for the Proposed Plant.

5 WATER QUALITY

5.1 Introduction

5.1.1 The potential water quality impacts associated with the construction and operation of the proposed concrete batching plant are assessed in this section. Where necessary, mitigation measures are proposed to ensure that all residual impacts are in compliance with the relevant environmental legislation, standards and guidelines.

5.2 Environmental Legislation and Guidelines

5.2.1 The Water Pollution Control Ordinance (Cap.358) provides the major statutory framework for the protection and control of water quality in Hong Kong. According to the Ordinance and its subsidiary legislation, Hong Kong waters are divided into ten Water Control Zones (WCZ). Corresponding statements of Water Quality Objectives (WQO) are stipulated for different water regimes (marine waters, inland waters, bathing beaches subzones, secondary contact recreation subzones and fish culture subzones) in the WCZ based on their beneficial uses. The proposed concrete batching plant site is located within the Western Buffer Water Control Zone.

Technical Memorandum

5.2.2 Besides setting the WQOs, the WPCO controls effluent discharging into the WCZs through a licensing system. A Technical Memorandum on Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters was issued under the WPCO which gives guidance on the permissible effluent discharges based on the type of receiving waters (foul sewers, storm water drains, inland and coastal waters). The limits control the physical, chemical and microbial quality of effluents. The discharge standard will vary with the use of downstream water. Any new effluent discharge would be required to comply with the terms and conditions of a discharge licence, issued by EPD, under the WPCO.

Practice Notes

5.2.3 A Practice Note (PN) for Professional Persons was issued by the EPD to provide environmental guidelines for handling and disposal of construction site discharges. The PN 2/24 “Construction Site Drainage” provides good practice guidelines for dealing with various types of discharge from a construction site. Practices outlined in the PN should be followed as far as possible during construction to minimize the water quality impact due to construction site drainage.

5.3 Identification and Evaluation of Impact

Construction Phase

Dredging Works

5.3.1 The recent sounding survey showed that sedimentation has reduced the nearshore water depth at the barging point to below the level required for safe barging operations. To restore the nearshore water depth, a dredging works during construction is thus proposed to remove the accumulated sediment at the nearshore of the Site and restore adequate water depth for safe vessel navigation. The proposed dredging works is required to be carried out once during the construction phase of the Project. The extent of the dredging is illustrated in **Figure 6.1.** Approximately 4,000 m^3 of dredged sediment is involved based on the preliminary design and subject to further detailed analysis and the dredging is estimated to last 10 days based on the preliminary design. The dredging would cause potential water quality impacts on the water column.

5.3.2 Mitigation measures including deployment of silt curtain will be implemented during the dredging works. A silt curtain deployment plan should be submitted to EPD prior to the commencement of the dredging works, under which detailed silt curtain arrangement should be

proposed. The dredging works should be carried out in dry season to further minimize the potential water quality impact. With reference to *Recommended Pollution Control Clauses for Construction Contracts* (RPCC), all equipment shall be designed and maintained to minimize the risk of silt and other contaminants being released into the water column or deposited in locations other than designated location. All vessels shall be monitored to ensure that no dumping outside the approved location nor loss of material during transportation takes place. Loading of barges and hoppers shall be controlled to prevent splashing of dredged material to the surrounding water, and vessels shall not be filled to a level which will cause overflowing of material or polluted water during loading or transportation. With the implementation of these measures, no adverse water quality impact due to the dredging is anticipated. In case of any changes in the programme, the dredging works will be minimized during the wet season.

Land-based Works

5.3.3 Based on the engineering design, land-based works would be involved during the construction. Potential sources of water quality impact associated with the construction phase of the proposed concrete batching plant have been identified and include:

- excavation and foundation works;
- construction site runoff and drainage;
- general construction activities; and
- sewage effluent produced by on-site workforce.

Construction Site Runoff and Drainage

5.3.4 Runoff from the construction works areas during earthworks may contain increased loads of suspended solids and contaminants. Potential sources of pollution from site drainage include:

- runoff and erosion from exposed soil surfaces, earth working areas and stockpiles;
- bentonite slurries from foundation works.
- wash water from dust suppression sprays; and
- fuel and lubricants from maintenance of construction vehicles and mechanical equipment.

5.3.5 Mitigation measures should be implemented to control construction site runoff and drainage from the works areas, and to prevent runoff and drainage water with high levels of suspended solids from entering the nearby waters or local storm water drainage system. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities. With the implementation of adequate construction site drainage and provision of sediment removal facilities, it is anticipated that unacceptable water quality impacts would not arise.

General Construction Activities

5.3.6 On-site construction activities may cause water pollution from the following:

- uncontrolled discharge of debris and rubbish such as packaging, construction materials and refuse; and
- spillage of liquids stored on-site, such as oil, diesel and solvents etc., are likely to result in water quality impacts if they enter the nearby waters or local storm water drainage system.

5.3.7 Good construction and site management practices should be observed to ensure that litter, fuels and solvents do not enter the nearby watercourses or storm water drains.

Sewage Effluents

5.3.8 Domestic sewage would be generated from the workforce during the construction phase. However, this temporary sewage can be adequately treated by interim sewage treatment facilities, such as portable chemical toilets, which can be installed within the construction site. It is unlikely that sewage generated from the site would have a significant water quality impact,

provided that sewage is not discharged directly to the nearby waters or drainage channels, and chemical toilets are used and properly maintained.

5.3.9 Given the nature of the proposed development, the duration of the construction activities will be relatively short and only minimal excavation is required for foundation works. With the above recommended mitigation measures, it is anticipated the water quality impact will be insignificant during the construction phase.

5.3.10 However, no water sensitive receiver has been identified within 500m from the project site. No adverse water quality impact would be expected due to the construction of the Project. No further mitigation measures would therefore be required.

Operation Phase

5.3.11 During operation phase, the main sources of wastewater would be mixer truck cleaning activities, the wheel washing facility, general site cleaning, water spraying for dust suppression and lorries cleaning before exiting the plant. On-site wastewater recycling system will be provided to collect wastewater for recycling and reuse. 3 recycle water tanks with total capacity of 55,000L will be provided for storage of recycled wastewater from the on-site wastewater recycling system to minimize any potential discharge of wastewater. All transfer of aggregates will be conducted in enclosed condition and no potential water quality impact is expected during unloading of aggregates.

5.3.12 The plant has been designed to contain all production wastewater as well as surface runoff within the plant. Surface channel will be laid within the plant to collect any production wastewater and runoff. The ground will also be formed with gradient such that all surface runoff flows toward the middle of the Site and collected by the surface channel. The site arrangement and layout of surface channels are presented in **Appendix 5.1**. With the implementation of such site arrangement, no water will be discharged from the plant.

5.3.13 Wastewater generated from mixer truck cleaning activities will be collected at container and passed through the reclaimer to separate aggregates and slurry, after which the slurry water will be directed into the wastewater tanks. The slurry water will then pass through a filter press to capture cement particle. The clear water will be collected in the clear water tank where the water will be pumped to the water tank for recycling. The reclaimed water will be reuse for site cleaning, truck washing and/or concrete production. Details of the wastewater treatment is presented in **Appendix. 5.2**.

Stormwater Runoff

5.3.14 Surface runoff from the Site will be retained within the site and collected via the surface channels for recycling as discussed in **Section 5.3.12** and no water will be discharged from the plant. No adverse drainage impact to the existing drainage system would be expected.

Sewage Effluents by Work Force and Visitors (concrete mixer truck drivers)

5.3.15 Domestic sewage will be expected from the workforce and visitors (concrete mixer truck drivers) during the operation phase. Around 15 staffs will be required for the routine operation of the Proposed Plant. The sewage generated from the workforce and visitors is expected to be small in quantity. Purposedly-built toilets will be provided on-site. With the connection to public sewerage, the domestic sewage will be collected and discharged via the public sewerage network.

5.3.16 However, no water sensitive receiver has been identified within 500m from the project site and the closest WSR is illustrated in **Figure 5.1**.No adverse water quality impact would be expected due to the operation of the Project. No further mitigation measures would therefore be required. A Sewerage Impact Assessment (SIA) will be carried out and submitted to the satisfaction of SIG.

Maintenance Dredging

5.3.17 Maintenance dredging would be required during operation subject to the siltation rate. Should a maintenance dredging be required, it is expected to be carried out in two days. And the sediment volume to be removed under each maintenance dredging event is expected to be less than 500 m^3 in total. Deployment of silt curtain and relevant mitigation measures will be deployed during the maintenance dredging as mentioned in **Section 5.3.2.** No adverse water quality impact due to the maintenance dredging is anticipated.

6 WASTE MANAGEMENT

6.1 Introduction

6.1.1 This section includes the discussion of the following issues in relation to waste management:

- identifies the type of wastes that would be generated during construction and operation of the proposed concrete batching plant;
- assesses the potential environmental impacts that are associated with the handling and disposal of these wastes; and
- mitigation measures and good site practice, including waste handling, storage and disposal, were recommended with reference to the applicable legislation and guidelines.

6.2 Environmental Legislation and Guidelines

6.2.1 The criteria and guidelines for assessing waste management implications are set out in Annex 7 and Annex 15 of the EIAO-TM, respectively.

6.2.2 The following legislation relates to the handling, treatment and disposal of wastes in the Hong Kong SAR and has been used in assessing potential environmental impacts:

- Waste Disposal Ordinance (Cap. 354)
- Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354C)
- Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 354N)
- Land (Miscellaneous Provisions) Ordinance (Cap. 28)
- Public Health and Municipal Services Ordinance (Cap. 132) - Public Cleansing and Prevention of Nuisances Regulation
- Dumping at Sea Ordinance (Cap. 466)

Waste Management

6.2.3 The Waste Disposal Ordinance (WDO) prohibits the unauthorised disposal of wastes. Construction waste is defined as any substance, matter or thing that is generated from construction work and abandoned, whether or not it has been processed or stockpiled before being abandoned, but does not include any sludge, screenings or matter removed in or generated from any desludging, desilting or dredging works. Under the WDO, wastes can be disposed of only at designated waste disposal facilities.

6.2.4 Under the WDO, the Chemical Waste (General) Regulation provides regulations for chemical waste control, and administers the possession, storage, collection, transport and disposal of chemical wastes. The Environmental Protection Department (EPD) has also issued guideline documents, the “Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes”, “A Guide to the Chemical Waste Control Scheme”, and “A Guide to the Registration of Chemical Waste Producers”, which detail how the Contractor should comply with the regulations on chemical wastes.

6.2.5 The Public Cleansing and Prevention of Nuisances Regulation provides control on illegal tipping of wastes on unauthorised (unlicensed) sites.

Construction and Demolition (C&D) Material

6.2.6 The current policy related to the disposal of C&D material is documented in the Works Branch Technical Circular No. 2/93, ‘Public Dumps’. Construction and demolition materials that are wholly inert, namely public fill, should not be disposed of to landfill, but taken to public filling areas, which usually form part of reclamation schemes. The Land (Miscellaneous Provisions) Ordinance requires that dumping licences be obtained by individuals or companies who deliver public fill to public filling areas. The Civil Engineering & Development Department (CEDD) issues the licences under delegated powers from the Director of Lands.

6.2.7 Under the Waste Disposal (Charges for Disposal of Construction Waste) Regulation, enacted in January 2006, construction waste delivered to a landfill for disposal must not contain more than 50% by weight of inert material. Construction waste delivered to a sorting facility for disposal must contain more than 50% by weight of inert material, and construction waste delivered to a public fill reception facility for disposal must consist entirely of inert material.

6.2.8 Measures have been introduced under Practice Note for Authorized Persons and Registered Structural Engineers No. 243 (PNAP ADV-19) on Construction and Demolition Waste, to enhance the management of construction and demolition material, and to minimize its generation at source. A Waste Management Plan (WMP) shall be prepared by the contractor and agreed by the engineer. The WMP may cover the types of waste and their estimated quantities, measures for reducing waste generation, on-site material reuse, quantities of waste requiring off-site disposal, disposal outlet, monitoring and auditing programme, implementation of the trip-ticket system, etc.

Chemical Waste

6.2.9 Under the Waste Disposal (Chemical Waste) (General) Regulation, all producers of chemical waste must register with EPD and treat their wastes, either utilising on-site plant licensed by EPD, or arranging for a licensed collector to transport the wastes to a licensed facility. The regulation also prescribes the storage facilities to be provided on site, including labelling and warning signs, and requires the preparation of written procedures and training to deal with emergencies such as spillages, leakages or accidents arising from the storage of chemical wastes.

Dredged Sediment

6.2.10 The Dumping at Sea Ordinance (DASO) came into operation in April 1995 and empowers the Director of Environmental Protection (DEP) to control the disposal and incineration of substances and particles at sea for the protection of the marine environment. Under the Ordinance, a dumping permit from the DEP is required for the disposal of regulated substances within and outside the waters of Hong Kong. The permit contains terms and conditions which include the following specifications, but not limited to:

- Type and quantity of substances permitted to be dumped;
- Location of the disposal grounds;
- Requirement of equipment for monitoring the disposal operations; and
- Environmental monitoring requirements.

6.2.11 Marine disposal of any dredged/excavated sediment is subject to control under DASO. Dredged/excavated sediment destined for marine disposal is classified based on its contaminant levels with reference to the Administrative Guidance – Management Framework for Disposal of Dredged/Excavated Sediment. The Administrative Guidance stipulated a set of sediment quality criteria or Chemical Exceedance Levels (CEL) for contaminants including metals, metalloid and organic pollutants.

6.2.12 The Administrative Guidance - Management Framework for Disposal of Dredged/Excavated Sediment sets out the procedure for seeking approval to and the management framework for marine disposal of dredged/excavated sediment. It outlines the requirements to be followed in assessing and classifying the sediment and explains the marine disposal arrangement for the classified material. The sediment quality criteria for the classification of sediment were referred as the Lower Chemical Exceedance Level (LCEL) and Upper Chemical Exceedance Level (UCEL). The LCEL and UCEL are presented in Appendix A of the Administrative Guidance. Subject to the results of the chemical screening, biological screening may be required to determine the disposal requirement of the sediment. There are three types of disposal options for dredged / excavated sediments stipulated in the Administrative Guidance as listed below.

- Type 1 – Open Sea Disposal;
- Type 2 – Confined Marine Disposal; and
- Type 3 – Special Treatment/Disposal.

6.3 Prediction and Evaluation of Impacts

Construction Phase

6.3.1 Based on the engineering design, only land-based works would be involved during the construction, i.e. no marine work is expected. The construction activities to be carried out for the Proposed Plant would generate a variety of wastes that can be divided into distinct categories based on their composition and ultimate method of disposal. The identified waste types include:

- construction and demolition (C&D) materials from the excavation and construction works;
- general refuse from the workforce;
- chemical waste from any maintenance of construction plant and equipment; and
- dredged sediment from maintenance dredging.

Construction and Demolition (C&D) Materials

6.3.2 C&D materials contain a mixture of inert and non-inert materials. The inert portion, such as soil, rock, concrete, brick and asphalt etc., is known as “public fill” and the non-inert portion, including metal, timber, paper, glass and general garbage is known as “C&D waste”. C&D materials comprise unwanted materials generated during construction, including rejected structures and materials, materials which have been over-ordered and materials which have been used and discarded. Examples of C&D materials may include:

- wood from formwork and falsework (non-inert portion);
- material and equipment wrapping (non-inert portion);
- unusable/surplus concrete/grouting mixes (inert portion); and
- damaged/ surplus construction materials (inert portion such as bricks).

6.3.3 For the whole civil construction period, approximate 1,250 tonnes of C&D material will be generated, where there are around 950 tonnes from the demolition of existing buildings and around 300 tonnes from construction works. Demolished debris would comprise inert materials including reinforced concrete waste (700t), soil and gravel (100t), and other miscellaneous inert material (60t), and non-inert materials including waste steel (60t) and timber (30t). Excavated soil (around 300t) from foundation works is expected to be the major inert C&D materials during construction. The Contractor is responsible for transfer of C&D materials to public fill reception facilities or landfills, depending on the type of material and the percentage of inert material. The public fill inert portion should be reused on site or disposed delivered to public fill reception facilities for beneficial uses. The non-inert portion of the C&D materials should be reused or recycled, and disposal of at designated landfills as the last resort. Waste steel in the C&D material will be delivered to recycler to minimize disposal quantity to landfill, among which around 20 tonnes of steel can be recycled.

6.3.4 C&D materials should be sorted on-site and be separated as public fill (inert portion) and C&D waste (non-inert portion). Due to the inert nature of most of the C&D materials generated, disposal would be unlikely to raise environmental concerns. The quantity of non-inert C&D materials is considered to be small and is not envisaged to have any adverse impact on the capacity of landfills.

Chemical Wastes

6.3.5 The Waste Disposal (Chemical Waste) (General) Regulation defines chemical waste as any substance being scrap material or unwanted substances specified in its Schedule 1 and provides a complete list of such substances. However, substances likely to be generated by construction activities would mainly arise from the maintenance of equipment. These may include, but not be limited to, the following:

- scrap batteries or spent acid/alkali;
- used engine oils, hydraulic fluids and waste fuel;
- spent mineral oils/cleaning fluids from mechanical machinery; and
- spent solvents/solutions, some of which may be halogenated, from equipment cleaning activities.

6.3.6 The amount of chemical waste generated from the construction activities depends on the Contractor's on-site maintenance requirements and the amount of plant utilised. However, it is anticipated that the quantity of chemical waste would be minimal, e.g. a few hundred litres, due to the short-term construction of the Proposed Plant.

6.3.7 To mitigate any potential chemical waste impact to the environment, chemical wastes should be handled according to the *Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes*. Spent chemicals should be collected by a licensed collector for disposal at the CWTC or other licensed facility, in accordance with the *Waste Disposal (Chemical Waste) (General) Regulation*.

6.3.8 Provided that the handling, storage and disposal of chemical wastes are in accordance with these requirements, adverse environmental impacts would be negligible.

General Refuse

6.3.9 Throughout construction, the workforce would generate general refuse comprising food scraps, waste paper, empty containers, etc. Release of general refuse into the roadside gully/surface channel should not be permitted as introduction of these wastes is likely to have detrimental effects on water quality in the area. Rapid and effective collection of site wastes would be required to prevent waste materials being blown around by wind, flushed or leached into the aquatic environment, and odour nuisance. The work sites may also attract pests and vermin if the waste storage area is not well maintained and cleaned regularly. Disposal of refuse at sites other than approved waste transfer or disposal facilities can also result in similar impacts.

6.3.10 General refuse should be stored in enclosed bins or compaction units separate from C&D material. A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D materials. An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light material. Assuming a generation rate of 0.65 kg per worker per day and around 30 workers deployed for the construction works, approximately 20 kg of general refuse will be generated by the workforce per day, i.e. approximately 4,800 kg of total amount of general refuse in 12-month construction period. The collected general refuse will be recycled at recycling facilities and/or disposed of at designated landfill such as NENT or WENT.

6.3.11 With the implementation of the recommended waste management practices at the site, adverse environmental impacts arising from the storage, handling and transportation of refuse would not be expected.

Dredged Sediment

6.3.12 Maintenance dredging is required to remove the accumulated sediment at the nearshore of the Site in order to restore adequate water depth for safe vessel navigation. The proposed dredging works is required to be carried out once during the construction phase of the Project. The proposed dredging area is shown in **Figure 6.1**. Based on preliminary estimation and subject to further detailed analysis, the estimated volume of dredged sediment arising from the proposed maintenance dredging operation is expected to be approximately 4,000 m^3.

6.3.13 EPD conducts routine monitoring of the bottom sediment quality at 60 stations across the territory of Hong Kong waters. Among these 60 stations, the monitoring station Rambler Channel (VS10) is the closest to the Site. Location of VS10 is shown in **Figure 6.2**.

6.3.14 The sediment quality data at VS10 from 2019 to 2023, as extracted from the latest available EPD's Annual Marine Water Quality Report in 2023, is summarised in **Table 6.1**. As shown in **Table 6.1**, nickel, arsenic and all organic-polyaromatic hydrocarbons (PAHs) were below the LCEL in accordance with the Administrative Guidance. For cadmium, chromium, mercury, lead and total polychlorinated biphenyls (PCBs), the highest levels measured were equal to or above the corresponding LCEL but below the UCEL. For copper, both the arithmetic mean value and highest level measured had exceeded the UCEL. For silver and zinc, the arithmetic mean value had exceeded the corresponding LCEL but below the UCEL and the highest levels measured were above the corresponding UCEL.

Table 6.1 Summary of Sediment Quality Data at EPD Monitoring Station VS10 (Year 2019 to 2023)[1]

Contaminants	Lower Chemical Exceedance Level (LCEL)	Upper Chemical Exceedance Level (UCEL)	Arithmetic Mean Concentration (Data in Brackets Indicate Ranges)
Metals (mg/kg dry wt.)			
Cadmium (Cd)	0.8	4	0.4 (0.2 – 0.8)
Chromium (Cr)	80	160	67 (28 - 120)
Copper (Cu)	65	110	**140** (48 - **250**)
Mercury (Hg)	0.3	1	0.22 (0.10 - 0.37)
Nickel (Ni)	40	40	29 (13 - 37)
Lead (Pb)	75	110	56 (37 - 79)
Silver (Ag)	1	2	1.6 (0.5 – **3.2**)
Zinc (Zn)	200	270	220 (99 - **330**)
Metalloid (mg/kg dry wt.)			
Arsenic (As)	20	42	11.6 (6.8 - 16.0)
Organic-PAHs (µg/kg dry wt.)			
Low Molecular Weight PAHs[2]	550	3160	120 (90 - 200)

Contaminants	Lower Chemical Exceedance Level (LCEL)	Upper Chemical Exceedance Level (UCEL)	Arithmetic Mean Concentration (Data in Brackets Indicate Ranges)
High Molecular Weight PAHs[3]	1700	9600	370 (120 - 910)
Organic-non-PAHs (µg/kg dry wt.)			
Total PCBs[4]	23	180	20 (18 - 33)
Organometallics (µg TBT/L in interstitial water)			
Tributyltin	0.15	0.15	N/A[5]

Notes:
(1) Data extracted from EPD's Marine Water Quality in Hong Kong in 2023.
(2) Low molecular weight polyaromatic hydrocarbons (PAHs) include 6 congeners of molecular weight below 200, namely: Acenaphthene, Acenaphthylene, Anthracene, Fluorene, Naphthalene and Phenanthrene.
(3) High molecular weight polyaromatic hydrocarbons (PAHs) include 10 congeners of molecular weight above 200, namely: Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Dibenzo(a,h)anthracene, Benzo(g,h,i)perylene and Indeno(1,2,3-cd)pyrene.
(4) Total PCBs results are derived from the summation of 18 congeners. If the concentration of a congener is below report limit (RL), the result will be taken as 0.5xRL in the calculation.
(5) Sediment data is not available.

6.3.15 As the Site is flat and ready for construction of the Proposed Plant, only minimum backfilling works would be required under the Project and thus the reuse of dredged sediment on site as backfilling materials is unlikely. In view of the above, the dredged sediment would be disposed of at the designated marine disposal areas according to the Administrative Guidance. The disposal options for the dredged sediment should follow the procedures in the Administrative Guidance. Subject to agreement with Marine Fill Committee (MFC) of CEDD, the marine disposal sites for Type 1 – Open Sea Disposal are typically South Cheung Chau and East of Ninepin. For Type 2 – Confined Marine Disposal, the marine disposal sites are typically East Sha Chau. For Type 3 – Special Treatment/Disposal, the project proponent should identify and agree with DEP the most appropriate treatment and/or disposal arrangement. Seabed dredging should be minimised and the dredged marine sediment should be disposed of in a manner which minimizes the loss of pollutants into solution or by re-suspension. Mitigation measures will also be proposed in order to alleviate the adverse environmental impacts, including potential odour / dust emissions and water quality impacts, brought by dredged marine sediment. Given the recommended mitigation measures are implemented, adverse environmental impacts arising from dredged marine sediment will be minimal.

Operation Phase

Solid Waste

6.3.16 The major portion of solid waste arising from the Proposed Plant will be waste concrete, slurry, chemical wastes for maintenance of on-site plants and general refuse from site workers.

6.3.17 Waste concrete and slurry from washing will be diverted to the reclaimer to separate aggregates and slurry, after which the slurry will be directed into the wastewater tanks and the aggregate will be reused for production. The slurry water will then pass through a filter press to capture cement particle. The clear water will be collected in the clear water tank where the water will be pumped to the water tank for recycling. The solid waste including dried sludge cake collected by filter press and waste concrete / aggregates unfit for recycling will be disposed of at designated landfill such as NENT or WENT by waste disposal trucks. Estimated quantities for the solid waste is about 20 tonnes per day.

6.3.18 The Proposed Plant will be registered as a chemical waste producer prior to commencement of operation if chemical waste is expected to be generated. Estimated quantities for chemical waste is expected to be 1L per day. A licensed chemical waste collector will be engaged for proper disposal of the chemical waste at the CWTC or other licensed facility. Records of "Trip Ticket" will be maintained in the site office.

6.3.19 General refuse should be collected by on-site enclosed rubbish bins and collected by the waste collector on a daily basis or every two days, in order to minimize odour, pest and litter impact. Based on a generation rate of 1.02 kg[1] per worker per day and around 15 workers deployed at the plant, approximately 15.3 kg of general refuse will be generated daily during the operational phase. The general refuse collected by reputable waste collector will be recycled at recycling facilities and/or disposed of at designated landfill such as NENT or WENT.

6.3.20 Provided that the environmental control measures are properly implemented, no adverse environmental impact would be anticipated with respect to solid waste management. Formwork should avoid using standard wooden panels, instead alternative materials with high potential for reuse should be considered, such as steel formwork or plastic facing.

Dredged Sediment from Maintenance Dredging

6.3.21 Maintenance dredging would be required during operation subject to the siltation rate. Should a maintenance dredging be required, it is expected to be carried out in two days. And the sediment volume to be removed under each maintenance dredging event is expected to be less than 500 m^3 in total. Deployment of silt curtain and relevant mitigation measures will be deployed during the maintenance dredging as mentioned in **Section 5.3.2.** Seabed dredging should be minimised and the dredged marine sediment should be disposed of in a manner which minimizes the loss of pollutants into solution or by re-suspension. Mitigation measures will also be proposed in order to alleviate the adverse environmental impacts, including potential odour / dust emissions and water quality impacts, brought by dredged marine sediment. Given the recommended mitigation measures are implemented, adverse environmental impacts arising from dredged marine sediment will be minimal.

6.4 Mitigation Measures

Construction Phase

Construction and Demolition Materials

6.4.1 Careful design and planning together with good site management help reducing over-ordering and generation of C&D material such as concrete, mortar and cement grouts.

6.4.2 The inert C&D materials with suitable characteristics / size should be reused on-site as far as practicable. When disposing C&D material at public filling reception facility for beneficial reuse, the material should only consist of soil, rock, concrete, brick, cement plaster / mortar, inert building debris, aggregates and asphalt. The material should be free from household refuse, plastic, metals, industrial and chemical waste, animal and vegetable matter, and other material considered unsuitable by the Filling Supervisor. Prior to disposal of non-inert C&D materials, such as wood, steel, and other metals should be separated for reuse and/or recycling where practicable so as to minimize the quantity of waste to be disposed of at landfill.

6.4.3 Suitable areas should be setup within the site for sorting and providing temporary stockpiling of C&D materials. The following measures should be undertaken to abate the potential environmental impacts or nuisance:

- Surface of stockpiled soil should be regularly wetted with water especially during dry season;
- Disturbance of stockpiled should be minimized;
- Stockpiled soil should be properly covered with tarpaulin especially during predicted heavy storms; and
- Stockpiled areas should be enclosed where space is available.

[1] Per capita generation rate of waste = Per capita disposal rate / (1 - recovery rate). With reference to the Monitoring of Solid Waste in Hong Kong 2023, the per capita disposal rate and recovery rate of commercial and industrial (C&I) waste in 2023 is 0.55 kg/person/day and 46% respectively.

6.4.4 A trip-ticket system should be implemented to monitor the delivery of C&D materials to the designated public fill reception facility and landfill, and to avoid any fly-tipping. A recording system should be set up to keep track of the amount of waste generated, recycled and disposed, including the disposal sites. Warning signs should be put up to remind the designated disposal sites. CCTV should also be installed at the vehicular entrance and exit of the site to monitor handling of C&D materials disposal. To prohibit illegal dumping and landfilling of C&D materials, the dump trucks engaged on site should be equipped with GPS or equivalent automatic system for real time tracking and monitoring of their travel routings, parking locations and disposal activities. The dump trucks employed should be covered or with the use of enclosed containers to minimize windblown litter and dust during waste transportation.

Chemical Waste

6.4.5 For those processes which generated chemical waste, it may be possible to find alternative to eliminate the use of chemicals, to reduce the quantities generated or to select a chemical type with less impact on environmental, health and safety as far as possible.

6.4.6 Should any chemical waste be produced at the construction site, the Contractor will be required to register with the EPD as chemical waste producer and to follow the guidelines stated in the *Code of Practice on the Packaging, Labelling and Storage of Chemicals Wastes*. Chemical waste should be stored in appropriate containers and collected by a licensed chemical waste contractor. Chemical waste (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while chemical waste that cannot be recycled should be disposed of at either the CWTC, or another licensed facility, in accordance with the *Waste Disposal (Chemical Waste) (General) Regulation*.

General Refuse

6.4.7 General refuse should be stored in enclosed bins or compaction units separate from C&D material. A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D materials on a daily basis to minimize odour, pest and litter impacts. The collected general refuse would be disposed of at designated landfill. Clearly labelled recycling bins should be provided on site in order to encourage segregation and recycling of aluminium and plastic wastes, and wastepaper in order to reduce general refuse production.

6.4.8 The contractor should carry out an education programme for workers in avoiding, reducing, reusing and recycling of material generation. Posters and leaflets advising on the use of the bins should also be provided onsite as reminders. The recycle waste materials should then be collected by reliable waste recycling agents on a daily basis.

Dredged Sediment

6.4.9 The sediment should be dredged, handled, transported and disposed of in a manner that would minimise adverse environmental impacts.

6.4.10 For off-site disposal, the basic requirements and procedures specified under the Administrative Guidance shall be followed. Marine Fill Committee (MFC) of CEDD is managing the disposal facilities in Hong Kong for the dredged / excavated sediment, while EPD is the authority of issuing marine dumping permit under DASO.

6.4.11 For the purpose of site allocation and application of marine dumping permit, Sediment Sampling and Testing Plan (SSTP) shall be submitted to EPD for agreement under DASO. Site investigation works, based on the SSTP, shall be carried out in order to confirm the disposal arrangements of the dredged sediment. A Sediment Quality Report (SQR), reporting the chemical and biological screening results and the estimated quantities of sediment under different disposal options, shall then be submitted to EPD for agreement under DASO. The dredged sediments would be disposed of according to its determined disposal options and the Administrative Guidance. Previously obtained data or known history of the sediment in the

vicinity should be submitted to DEP for consideration of the most appropriate arrangements for handling these materials.

6.4.12 To ensure disposal space is allocated for the Project, the project proponent should be responsible for obtaining agreement from MFC on the allocation of the disposal site. The contractor(s), on the other hand, should be responsible for the application of the marine dumping permit under DASO from EPD for the sediment disposal.

6.4.13 In order to minimise the potential odour / dust emissions during dredging and transportation of the sediment, the sediments shall be wetted during dredging / material handling and shall be properly covered when placed on trucks or barges. Loading of the dredged sediments to the barge shall be controlled to avoid splashing and overflowing of the sediment slurry to the surrounding water.

6.4.14 If applicable, the barge transporting the sediments to the designated disposal sites shall be equipped with tight fitting seals to prevent leakage and shall not be filled to a level that would cause overflow of materials or laden water during loading or transportation. In addition, monitoring of the barge loading shall be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels shall be equipped with automatic self-monitoring devices as specified by the DEP.

Operation Phase

Solid Waste from Concrete Production

6.4.15 Waste concrete /aggregates will be reclaimed by reclaimer for recycling in production as detailed in **Section 6.3.17**. The solid waste including dried sludge cake collected by filter press and waste concrete / aggregates unfit for recycling will be disposed of at designated landfill by waste disposal trucks. The dump trucks employed should be covered or with the use of enclosed containers to minimize windblown litter and dust during waste transportation. A trip-ticket system should also be implemented to monitor the delivery of C&D materials to the designated landfill and to avoid any fly-tipping.

Chemical Waste

6.4.16 For those processes which generated chemical waste, it may be possible to find alternative to eliminate the use of chemicals, to reduce the quantities generated or to select a chemical type with less impact on environmental, health and safety as far as possible.

6.4.17 Should any chemical waste be produced at the construction site, the Contractor will be required to register with the EPD as chemical waste producer and to follow the guidelines stated in the *Code of Practice on the Packaging, Labelling and Storage of Chemicals Wastes*. Chemical waste should be stored in appropriate containers and collected by a licensed chemical waste contractor. Chemical waste (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while chemical waste that cannot be recycled should be disposed of at either the CWTC, or another licensed facility, in accordance with the *Waste Disposal (Chemical Waste) (General) Regulation*.

General Refuse

6.4.18 General refuse should be stored in enclosed bins or compaction units. A reputable waste collector should be employed by the contractor to remove general refuse from the site on a daily basis to minimize odour, pest and litter impacts. The collected general refuse would be disposed of at designated landfill. Clearly labelled recycling bins should be provided on site in order to encourage segregation and recycling of aluminium and plastic wastes, and wastepaper in order to reduce general refuse production.

6.4.19 The contractor should carry out an education programme for workers in avoiding, reducing, reusing and recycling of material generation. Posters and leaflets advising on the use of the bins should also be provided onsite as reminders. The recycle waste materials should then be collected by reliable waste recycling agents on a daily basis.

Dredged Sediment from Maintenance Dredging

6.4.20 The sediment should be dredged, handled, transported and disposed of in a manner that would minimise adverse environmental impacts. The mitigation measures should follow the same as presented in **Section 6.4.10 – Section 6.4.14**.

7 LAND CONTAMINATION

7.1 Introduction

7.1.1 This section presents the assessment of potential land contamination implication associated with the proposed development under the Project.

7.2 Environmental Standards and Guidelines

7.2.1 The relevant environmental guidelines and standards for the assessment of land contamination impacts include the following:

- Guidance Note for Contaminated Land Assessment and Remediation (Guidance Note) (EPD, April 2023)

  The Guidance Note sets out the requirements for proper assessment and management of potentially contaminated sites such as oil installations (e.g. oil depots, petrol filling stations), gas works, power plants, shipyards/boatyards, chemical manufacturing/processing plants, steel mills/metal workshops, car repairing/dismantling workshops and scrap yards. In addition, this Guidance Note provides guidelines on how site assessments should be conducted and analysed and suggests practical remedial measures that can be adopted for the remediation of contaminated sites.

- Practice Guide for Investigation and Remediation of Contaminated Land (Practice Guide) (EPD, April 2023)

  This guide outlines typical investigation methods and remediation strategies for the range of potential contaminants typically encountered in Hong Kong.

- Guidance Manual for Use of Risk-based Remediation Goals for Contaminated Land Management (Guidance Manual) (EPD, April 2023)

  The Guidance Manual introduces the risk-based approach in land contamination assessment and present instructions for comparison of soil and groundwater data to the Risk-Based Remediation Goals (RBRGs) for 54 chemicals of concern (COCs) commonly found in Hong Kong. The RBRGs were derived to suit Hong Kong conditions by following the international practice of adopting a risk-based methodology for contaminated land assessment and remediation and were designed to protect the health of people who could potentially be exposed to land impacted by chemicals under four broad post restoration land use categories. The RBRGs also serve as the remediation targets if remediation is necessary.

7.3 Assessment Methodology

7.3.1 A site appraisal was conducted to identify any current / historical potentially contaminating land uses within the Site. The site appraisal, including site walkover and desktop review, was carried out with reference to the Guidance Note, Guidance Manual and Practice Guide.

7.3.2 The site walkover was conducted within the Site to identify any existing contaminative land uses and contamination sources (or 'hotspots'). For the desktop review, the following information was reviewed:

- Available records of dangerous goods, chemical wastes, chemical spillage/leakage and fire incidents from Environmental Protection Department (EPD) and Fire Services Department (FSD);
- Bonding Engineering & Construction Co. Ltd, *Ground Investigation Report for Proposed Concrete Batching Plant in Lot 14 & 15 Tam Kon Shan Road, Tsing Yi,* June 2014;
- Hong Kong Geological Survey Map (Series HGM20) – Sheet No. 6 (1:20,000); and
- Selected aerial photographs and topographic maps held by the Lands Department.

7.3.3 If potentially contaminated land use(s) were identified within the Site, the potential land contamination impacts to the Project would be evaluated and the appropriate mitigation measures would be recommended.

7.4 Description of Environment

7.4.1 The Site is located at Tsing Yi Town Lot Nos. 14 & 15 and adjoining Government Land, Tam Kon Shan Road, Tsing Yi. The total site area is approximately 4,335 m^2. The Site is bounded by the sea to the north, Tam Kon Shan Road to the south, dockyards and industrial uses at the east and west. The site location plan is shown in **Figure 1.1**.

7.5 Identification of Potential Land Contamination Impact

Review of Historical Land Use

7.5.1 A review of the aerial photographs covering the Site has been undertaken. The aim of this review is to evaluate potential land contamination associated with historical land uses at the Site. A summary of the historical land uses is presented in **Table 7.1** and reviewed aerial photographs are shown in **Appendix 7.1**.

Table 7.1 Summary of Historical Land Uses

Year (Photo Reference No.)	Drawing No. in Appendix 7.1	Site Description
1963 (#1963-6348)	AP1	The Site was occupied by open water.
1973 (#04179)	AP2	The eastern and western portions of the Site were reclaimed. No other significant land uses changes were observed.
1983 (#47316)	AP3	The Site was further reclaimed and a shipyard, open storage and slipway were observed. No other significant land uses changes were observed.
1993 (#A36015)	AP4	A jetty was observed in the northwest of the Site. No other significant land uses changes were observed.
2003 (#CW53780)	AP5	The shipyard was abandoned. No other significant land uses changes were observed.
2013 (#CS45547)	AP6	The western portion of the Site was converted into private parking area. No other significant land uses changes were observed.
2023 (#E193635C)	AP7	The open storage was cleared and slipway was demolished. No other significant land uses changes were observed.

Source: *Survey and Mapping Office, Lands Department*

7.5.2 Based on the review of aerial photographs, the Site had been used as a shipyard, open storage, car parking, jetty and slipway. Shipyard and open storage are considered as a potentially contaminating land uses which may have potential land contamination implications to the Project.

Site Walkover

7.5.3 Site walkover was conducted on 12 December 2024 to investigate any land contamination issues associated with the current land uses and activities within the Site that may have potential land contamination implications to the Project. Questionnaire was conducted within available site representatives and the site walkover checklist is attached in **Appendix 7.2**. Findings of the site walkover, including the photographic records and site layout plan, are shown in **Figure 7.1**.

7.5.4 The Site is currently comprised of two buildings (the western building (approximately 939 m^2) and the eastern building (approximately 414 m^2)), an open area in the eastern portion (approximately 515 m^2), an access road in the central portion (approximately 985 m^2), a jetty in the northwest and the sea in the northeastern and northwestern portions of the Site.

7.5.5 Based on the site walkover, except for the northeastern and northwestern portions of the Site which are covered by the sea, the Site is generally concrete paved and largely vacant with private parking areas observed in the western building and the open area in the eastern portion of the Site. As reported by the site staff, the Site is an abandoned shipyard with ship building, repair and maintenance activities previously carried out in the western building and ship parts manufacturing previously carried out in the eastern building, while the central portion of the Site had been used as an access road. Ship repair and maintenance activities were also reportedly carried out in a small portion of the open area adjacent to the north of the eastern building (approximately 91 m^2). The shipyard was reportedly in operation between 1976 and 1994 and has been used as a private parking site since 2013.

7.5.6 Based on the site walkover and as reported by the site staff, there is a disused dangerous goods (DG) store located in the western building previously used for the storage of oxy-acetylene cylinders, and has been used as a storeroom for the storage of office / household appliances and equipment since operation of the shipyard was ceased (refer to Photo 0322 in **Figure 7.1**). As the disused DG store was used for the storage of gas only, potential land contamination issue associated with the disused DG store is not anticipated.

7.5.7 In addition, small quantities of chemicals including engine oil, hydraulic oil, turpentine and paint were observed within the eastern building and outside the disused DG store / storeroom of the Site above a covered box / wooden plank on concrete paved floor or directly on the concrete paved floor (refer to Photos 8518 and 8534 in **Figure 7.1**). According to the site staff, these chemicals are temporarily stored on-site and are used off-site only. No chemical spillage, oil stains or stressed vegetation were observed in the vicinity of the chemical storage areas. Given the chemicals stored were temporary and are reportedly used off-site only, and that no signs of land contamination were observed in the vicinity of the chemical storage areas, potential land contamination issue associated with the chemical storages is not anticipated.

7.5.8 Based on the above, no current potentially contaminating land uses / activities were identified at the Site.

Acquisition of Information from Government Departments

7.5.9 The Environmental Protection Department (EPD) and Fire Services Department (FSD) have been contacted for (i) records on any release of chemicals and chemical waste, (ii) records of dangerous goods (DG), (iii) records of Chemical Waste Producer(s) (CWP(s)) and (iv) records of reported fire incidents within the Site. EPD and FSD's replies on the request have been received and attached in **Appendix 7.3**. The Information is summarised below.

Environmental Protection Department

7.5.10 Based on the reply given by EPD on 20 December 2024, there were no chemical spillage / leakage records within the Site. Further to EPD's reply, a review of the available CWP records at EPD Southorn Office was undertaken on 7 January 2025. According to the records reviewed, there is 1 valid CWP record identified within the Site. The details of the CWP record are summarised in **Table 7.2** below. Location of the CWP is shown in **Figure 7.1**.

Table 7.2 Summary of Chemical Waste Producer within the Site

CWP ID	Status	Company Name	Address	Business Nature
1	Valid	Supercraft (HK) Ltd	T.Y.T.L. 14 & 15, Tsing Yi, N.T.	Boat building and repairing

7.5.11 The CWP record is likely to be associated with the operation of the former shipyard. There could be potential land contamination issues associated with former boat building and repairing activities carried out at the Site.

Fire Services Department

7.5.12 Based on the reply given by FSD on 16 January 2025, there were no records of DG license, fire incident or incident of spillage / leakage of DG found within the Site.

Site Geology

7.5.13 According to the 1:20,000 Geological Map Sheet 6 (Yuen Long), the Site is underlain by Fill. According to the available ground investigation (GI) records, the Site is located on reclaimed ground having a stratum of Fill with thickness of about 1.50m to 6.50m. Underlying the Fill is a relatively thin layer of Marine Deposit with thickness of about 3.00m to 4.50m and/or Alluvium with thickness of about 0.45m to 3.50m. Completely to highly decomposed Granodiorite ranged from 2.06m to 7.50m thickness was encountered beneath the Alluvium. The bedrock encountered was moderately to slightly decomposed Granodiorite, with reduced levels ranged from -1.65 mPD to -11.42 mPD.

7.5.14 Referring to the available groundwater monitoring records, shallow groundwater table was identified, which is generally from 1.8m to 2.5m below ground level.

Summary of Site Appraisal

7.5.15 Based on the site appraisal, the Site was formerly used as a shipyard (from 1976 to 1994) and open storage (from 1983 to 2023). The possible contaminating activities may include storage, handling and use of fuels and solvents (e.g. for thinning paints, cleaning and degreasing metal parts of equipment) for ship building, repair and maintenance activities, transfer and disposal of scrap metal, metal shaving dust and paint chips during manufacturing of ship parts. Locations of the concerned areas are shown in **Figure 7.2**. Details of the site appraisal are summarised in **Table 7.3**. Intrusive site investigation (SI) works is recommended to confirm any land contamination in the Site.

Future Land Use

7.5.16 Land contamination assessment on the potentially contaminated sites would need to be evaluated against the RBRGs and if there were presence of non-aqueous phase liquid (NAPL), soil saturation (C_{sat}) / solubility limits, as stipulated in Table 2.1 and Table 2.2 of the Guidance Manual.

7.5.17 The RBRGs were developed based on a risk assessment approach to suit the local environmental conditions and community needs in Hong Kong. Decisions on contaminated soil and groundwater remediation are based on the nature and extent of the potential risks that are posed to human receptors as a result of exposure to chemicals in the soil and/or groundwater. RBRGs were developed for four different land use scenarios as below reflecting the typical physical settings in Hong Kong under which people could be exposed to contaminated soil and groundwater:

- Urban Residential
- Rural Residential
- Industrial
- Public Park

7.5.18 As the future land use of the Site would be a concrete batching plant, the RBRGs for Industrial land use scenario are considered appropriate for the assessment. The proposed RBRGs land use scenario recommended for the Site is summarised in **Table 7.3**. Relevant RBRG levels, C_{sat} and solubility limits are shown in **Appendix 7.4**.

Table 7.3 Summary of Site Appraisal

Location (Affected Land Lot No.)[1]	Current Land Use	Site Observation / Current Potentially Contaminating Activities / Information from EPD and FSD	Past Potentially Contaminating Land Uses / Activities	Approx. Site Area (m^2)	Potential COCs[2]	Future Land Uses	RBRGs Land Use Scenario
The Site (TYTL Nos. 14 & 15 and STT538)	Private parking site	The Site is comprised of two buildings (the western building and the eastern building), an open area in the eastern portion, an access road in the central portion, a jetty in the northwest and the sea in the northeastern and northwestern portions of the Site. The Site is generally concrete paved and largely vacant with private parking areas in the western building and the open area in the eastern portion of the Site. There is a disused DG store located in the western building previously used for the storage of oxy-acetylene cylinders and has been used as a storeroom for the storage of office / household appliances and equipment since operation of the shipyard was ceased. In addition, small quantities of chemicals including engine oil, hydraulic oil, turpentine and paint were observed within the eastern building and outside the disused DG store / storeroom of the Site above a covered box / wooden plank on concrete paved floor or directly on the concrete paved floor. According to the site staff, these chemicals are stored on-site temporarily and are used off-site only. No chemical spillage, oil stains or stressed vegetation were observed in the vicinity of the chemical storage areas. Given the disused DG store was used for the storage of gas only, the chemicals observed were stored temporarily and are reportedly used off-site only, and that no signs of land contamination were observed in the vicinity of the chemical storage areas, potential	Shipyard (from year 1976 to year 1994) and open storage (from year 1983 to year 2023). The possible contaminating activities may include storage, handling and use of fuels and solvents (e.g. for thinning paints, cleaning and degreasing metal parts of equipment) for ship building, repair and maintenance activities, transfer and disposal of scrap metal, metal shaving dust and paint chips during manufacturing of ship parts.	4,335 m^2 Western Building: 939 m^2 Eastern Building: 414 m^2 Former Maintenance Area: 91 m^2 Former Open Storage: 985 m^2	• Metals (Full List) • Free cyanide • VOCs (Full List) • SVOCs (Full List) • PCRs • TBTO • Dioxins • Furans	Concrete batching plant	Industrial

Location (Affected Land Lot No.)[1]	Current Land Use	Site Observation / Current Potentially Contaminating Activities / Information from EPD and FSD	Past Potentially Contaminating Land Uses / Activities	Approx. Site Area (m^2)	Potential COCs[2]	Future Land Uses	RBRGs Land Use Scenario
		land contamination issue associated with the chemical storages is not anticipated. Based on the above, no current potentially contaminating land uses / activities were identified at the Site. Based on information from the EPD and FSD, there were no records of chemical spillage / DG / fire incident for the Site. However, there is 1 valid registered CWP associated with boat building and repairing at the Site.					

Note:
1. Refer to **Figure 7.1** for the site location.
2. The potential chemicals of concern (COCs) were determined based on findings of the site appraisal and the Practice Guide and took into account current and historical land uses.
   - Full list refers to the parameters as shown in Table 2.1 – Risk-Based Remediation Goals (RBRGs) for Soil & Soil Saturation Limit and Table 2.2 – RBRGs for Groundwater and Solubility Limit under Metals, Volatile Organic Compounds (VOCs), Semi-Volatile Organic Compounds (SVOCs) and Petroleum Carbon Ranges (PCRs) in the Guidance Manual for Use of Risk-Based Remediation Goals for Contaminated Land Management.
   - TBTO: Tributyltin oxide

7.6 Prediction and Evaluation of Potential Land Contamination Impact

7.6.1 Based on findings of the site appraisal, the Site was formerly used as a shipyard and open storage which may have potential land contamination implications to the Project.

7.6.2 As observed during the site walkover and according to information provided by the site staff, only limited and small-scale ship building, repair and maintenance activities were previously carried out at the eastern and western portions of the Site (total area of approximately 1,444 m^2) and the Site was concrete paved. The former open storage in the central portion of the Site was also of small-scale (approximately 985 m^2) and was concrete paved. In addition, based on information from the site staff, EPD and FSD, there were no records of chemical spillage / fire incident at the Site. Extensive contamination due to the operation of the former shipyard and open storage is not envisaged.

7.6.3 Land contamination assessment including intrusive site investigation (SI) works and, if required, remediation works are recommended to be carried out at a later stage of the Project prior to commencement of construction works and should follow EPD's Guidance Manual, Guidance Note and Practice Guide. Any soil/groundwater contamination would be identified and properly treated prior to the commencement of construction works under the Project. The potential Chemicals of Concern (COCs) may include metals, volatile organic chemicals (VOCs), semi-volatile organic chemicals (SVOCs), petroleum carbon ranges (PCRs), free cyanide, tributyltin oxide (TBTO), dioxins and furans and there are commercially available technologies that could tackle these COCs.

7.6.4 Given the above, land contamination impacts are considered not insurmountable to the Project if the recommended further works as outlined in **Section 7.7** were followed and contaminated soil and groundwater (if any) were properly treated using appropriate remediation methods and according to EPD's agreed Remediation Action Plan (RAP).

7.7 Recommended Further Works

7.7.1 A detailed land contamination assessment, including site appraisal (desktop review and site walkover) and SI works, shall be carried out in next stage of the Project prior to commencement of construction works to confirm the presence of land contamination within the Site. The detailed land contamination assessment will be carried out according to EPD's Guidance Manual, Guidance Note and Practice Guide.

7.7.2 In order to determine the extent and nature of any potentially contaminated areas, a Contamination Assessment Plan (CAP), detailing findings of the site appraisal and requirements for SI works would need to be submitted to EPD for endorsement. The SI works would need to be carried out according to the endorsed CAP. Following to the completion of the SI works, a Contamination Assessment Report (CAR) would be submitted to EPD for approval to document the findings of the SI works and the estimated extent of any contamination. If soil or groundwater contamination were identified, a Remediation Action Plan (RAP), discussing the appropriate remedial methods for the identified soil / groundwater contamination, would also be submitted to EPD for approval.

7.7.3 Remediation works (if necessary) would need be carried out according to the approved RAP. Upon completion of remediation work, a Remediation Report (RR) should be prepared and submitted to EPD to demonstrate that the decontamination work is adequate and is carried out in accordance with the approved CAR and RAP. No construction works, other than decontamination work, should be carried out before the approval of RR by EPD.

8 CONCLUSION

8.1 General

8.1.1 In order to confirm the acceptability of the Subject Site in respect of environmental aspects, an Environmental Assessment was carried out to examine the impacts associated with the proposed development during construction and operation phases. Potential environmental impacts including air quality, noise, water quality, waste management and land contamination issues associated with construction and operation of the proposed concrete batching plant have been assessed. It is concluded that no adverse environmental impacts on the Subject Site would be anticipated. The key findings of this assessment are summarized in the following sections.

8.2 Air Quality

8.2.1 Minor construction air quality impact would be arisen from the construction activities during the erection of the proposed plant. With the implementation of adequate air quality control measures, no adverse construction air quality impact shall be anticipated.

8.2.2 The design of the Plant and its operation plan has incorporated air pollution control technologies and control measures to abate the air quality impact generated by the production of wet concrete. Together with proper operation and maintenance practices, the air quality impact due to the operation of the Proposed Plant shall be at acceptable level and has been confirmed by the model predictions. Cumulative air quality impact arising from the Proposed Plant, and vehicular emission and marine emission within 500m assessment area have been evaluated. The prediction results indicated that the cumulative NO_2, SO_2, RSP and FSP concentrations at all existing ASRs would comply with AQOs. No adverse air quality impact due to the Proposed Plant would be anticipated.

8.3 Noise

8.3.1 With the implementation of adequate construction noise mitigation measures, it is anticipated that there would be no unacceptable noise impact on nearby NSR during the construction phase.

8.3.2 There is no existing and planned sensitive use in the vicinity. No adverse impact would therefore be anticipated. No further mitigation measure is required.

8.4 Water Quality

8.4.1 Provided that proper site management practices are followed to prevent construction site runoff and drainage water with high SS from entering nearby nullah and downstream sensitive receivers during construction phase, no adverse water quality impact is anticipated.

8.4.2 No adverse water quality impact would be expected as no wastewater will be discharged from the plant during operation. All production wastewater will be recycled. Domestic sewage from workforce and visitors (concrete mixer truck drivers) will be collected and discharged via the public sewerage network.

8.5 Waste Management

8.5.1 Provided that the identified waste arisings of the construction works are handled, transported and disposed of using approved methods and that the recommended good site practices are adhered to, adverse environmental impacts are not anticipated.

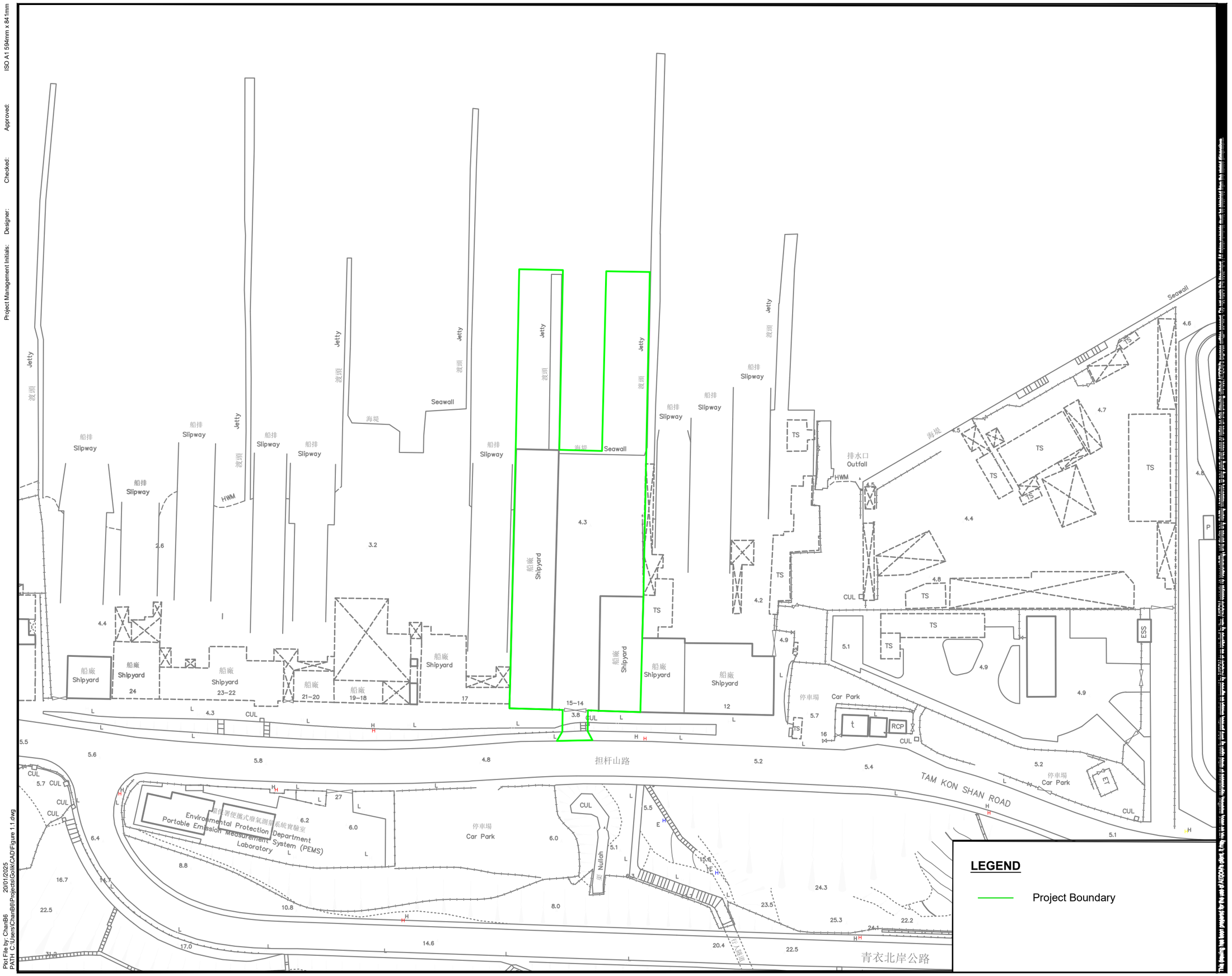
8.5.2 Provided that the environmental control measures are properly implemented, no adverse environmental impact would be anticipated with respect to solid waste management.

8.6 Land Contamination

8.6.1 Based on findings of the site appraisal, the Site was formerly used as a shipyard and open storage which may have potential land contamination implications to the Project. Further works including site appraisal, submission of CAP, intrusive SI works and, if required, remediation works were recommended to be carried out at next stage of the Project prior to commencement of the construction works and would need to follow EPD's Guidance Manual, Guidance Note and Practice Guide. With the implementation of the recommended further works for the Project, any soil/groundwater contamination would be identified and properly treated prior to the construction works. No insurmountable land contamination impacts to the Project are therefore anticipated.

FIGURES

Project Management Initials: Designer: Checked: Approved: ISO A1 594mm x 841mm



LEGEND

Project Boundary

AECOM

PROJECT

PLANNING APPLICATION OF A CONCRETE BATCHING PIANT AT TSING YI TOWN LOT NOS. 14&15

CLIENT

CONSULTANT

AECOM Asia Company Ltd.
www.aecom.com

SUB-CONSULTANTS

ISSUE/REVISION

NO.	DATE	DESCRIPTION	CHK.

STATUS

SCALE / **DIMENSION UNIT**

A3 1 : 1000

KEY PLAN

PROJECT NO. / **CONTRACT NO.**

60739290 N/A

SHEET TITLE

Location Plan

SHEET NUMBER

60739290/EA/FIGURE 1.1

Plot File by: ChanB6 20/01/2025
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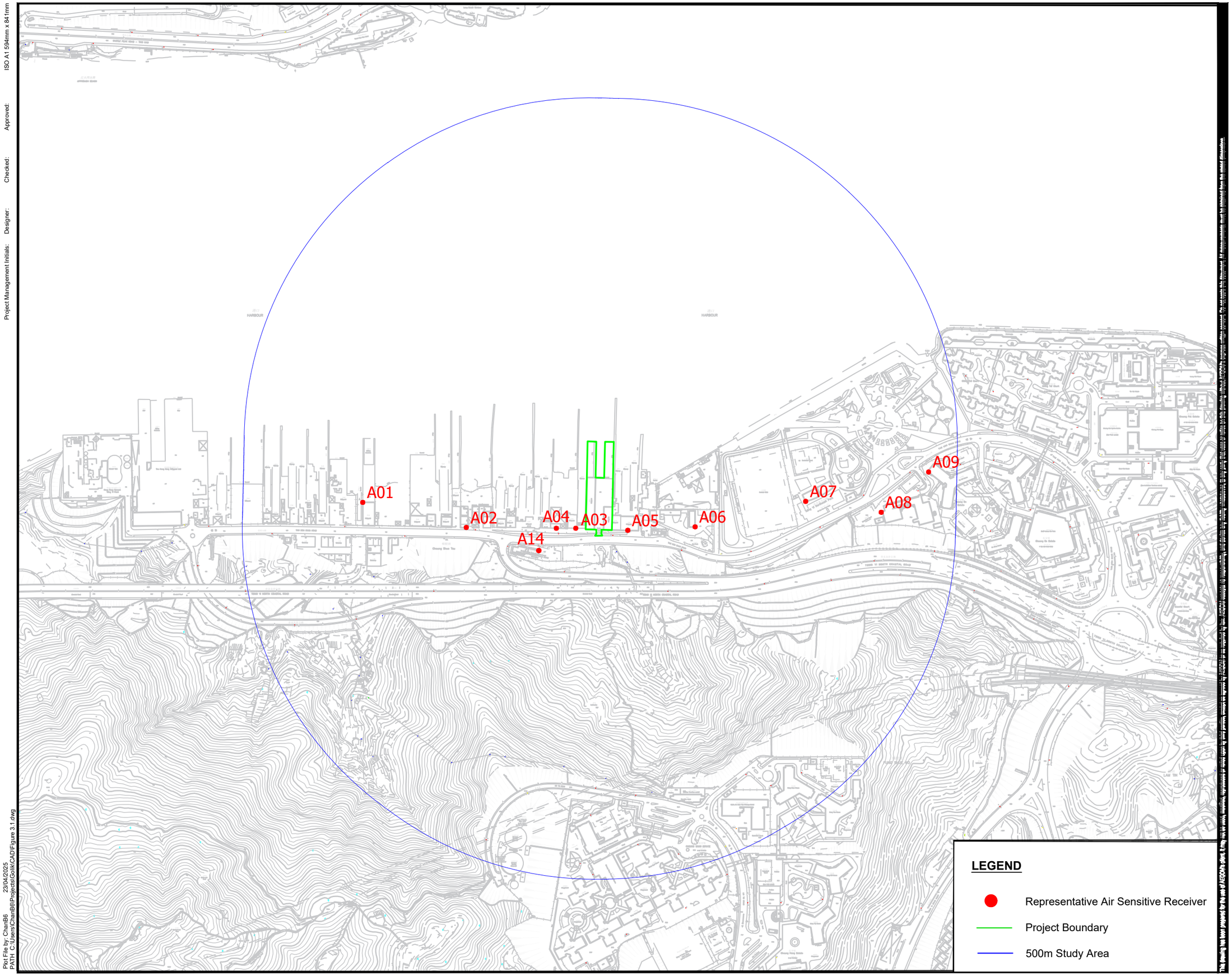
ISO A1 594mm x 841mm

Approved:

Checked:

Designer:

Project Management Initials:



Plot File by: ChanB6
PATH: C:\Users\ChanB6\Projects\Golik\CAD\Figure 3.1.dwg
23/04/2025

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PROJECT

PLANNING APPLICATION OF A CONCRETE BATCHING PIANT AT TSING YI TOWN LOT NOS. 14&15

CLIENT

CONSULTANT

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SUB-CONSULTANTS

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NO.	DATE	DESCRIPTION	CHK.

STATUS

SCALE / **DIMENSION UNIT**

A3 1 : 5000

KEY PLAN

PROJECT NO. / **CONTRACT NO.**

60739290 N/A

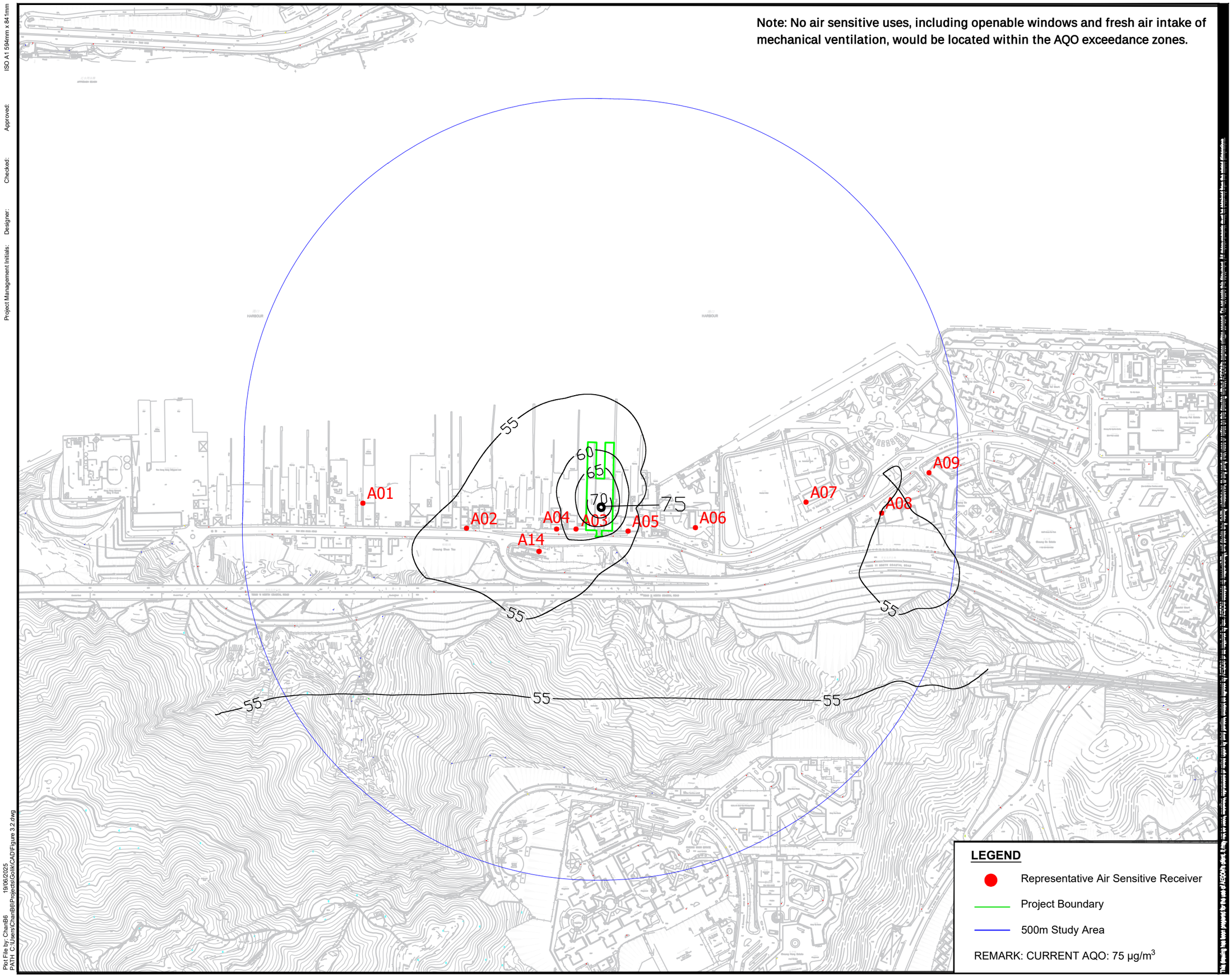
SHEET TITLE

Location of Representative Air Sensitive Receivers

SHEET NUMBER

60739290/EA/FIGURE 3.1

Note: No air sensitive uses, including openable windows and fresh air intake of mechanical ventilation, would be located within the AQO exceedance zones.



LEGEND

- Representative Air Sensitive Receiver
- Project Boundary
- 500m Study Area

REMARK: CURRENT AQO: 75 μg/m^3

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NO.	DATE	DESCRIPTION	CHK.

STATUS

SCALE | **DIMENSION UNIT**

A3 1 : 5000

KEY PLAN

PROJECT NO. | **CONTRACT NO.**

60739290 | N/A

SHEET TITLE

10th Highest Cumulative Daily RSP Concentration (μg/m3) at 1.5m Above Ground

SHEET NUMBER

60739290/EA/FIGURE 3.2

ISO A1 594mm x 841mm
Approved:
Checked:
Designer:
Project Management Initials:

Plot File by: ChanB6 19/06/2025
PATH: C:\Users\ChanB6\Projects\Golik\CAD\Figure 3.2.dwg

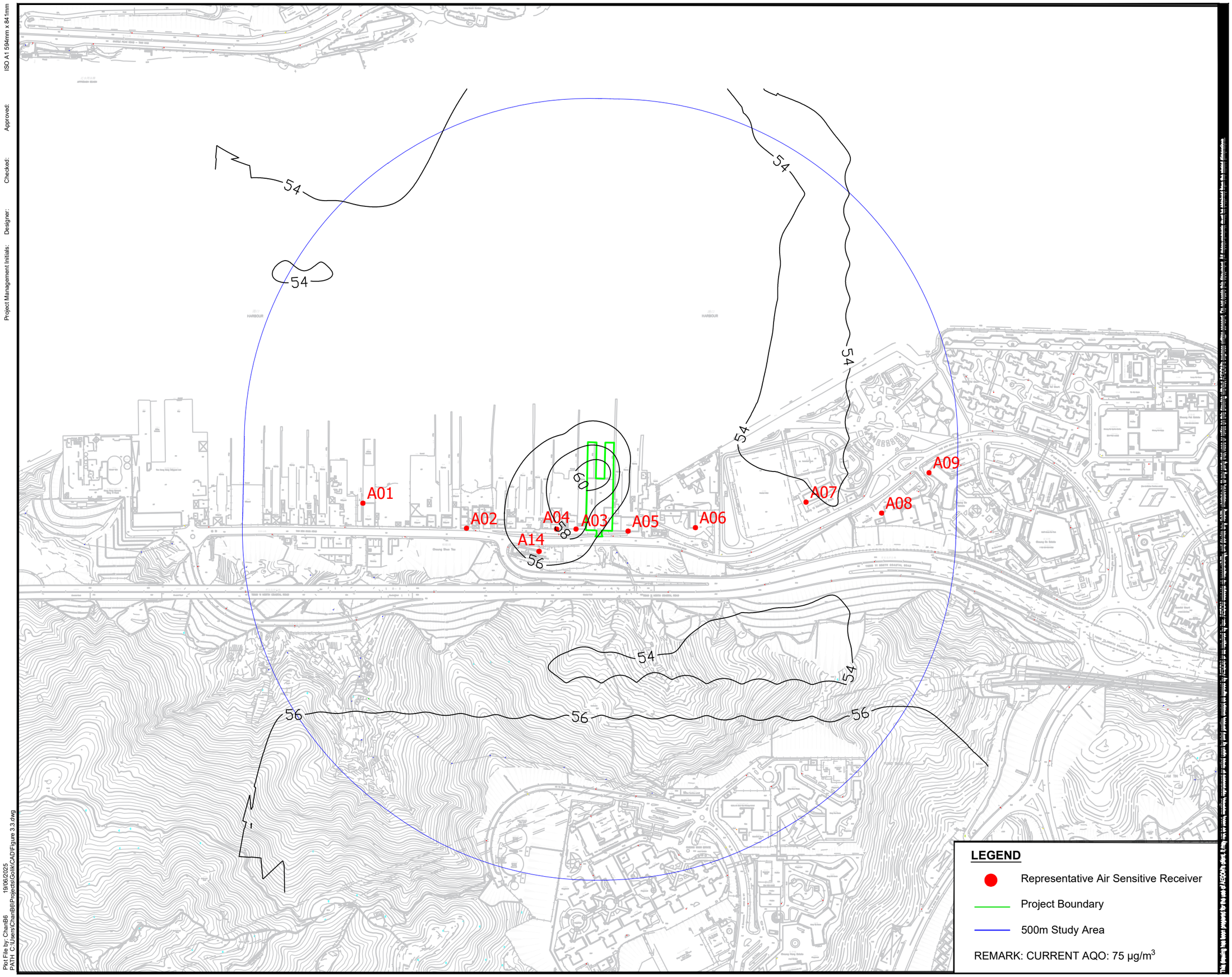
ISO A1 594mm x 841mm

Approved:

Checked:

Designer:

Project Management Initials:



LEGEND

- Representative Air Sensitive Receiver
- Project Boundary
- 500m Study Area

REMARK: CURRENT AQO: 75 μg/m^3

Plot File by: ChanB6
PATH: C:\Users\ChanB6\Projects\Golik\CAD\Figure 3.3.dwg
19/06/2025

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STATUS

SCALE / **DIMENSION UNIT**

A3 1 : 5000

KEY PLAN

PROJECT NO. / **CONTRACT NO.**

60739290 N/A

SHEET TITLE

10th Highest Cumulative Daily RSP Concentration (μg/m3) at 10m Above Ground

SHEET NUMBER

60739290/EA/FIGURE 3.3

ISO A1 594mm x 841mm

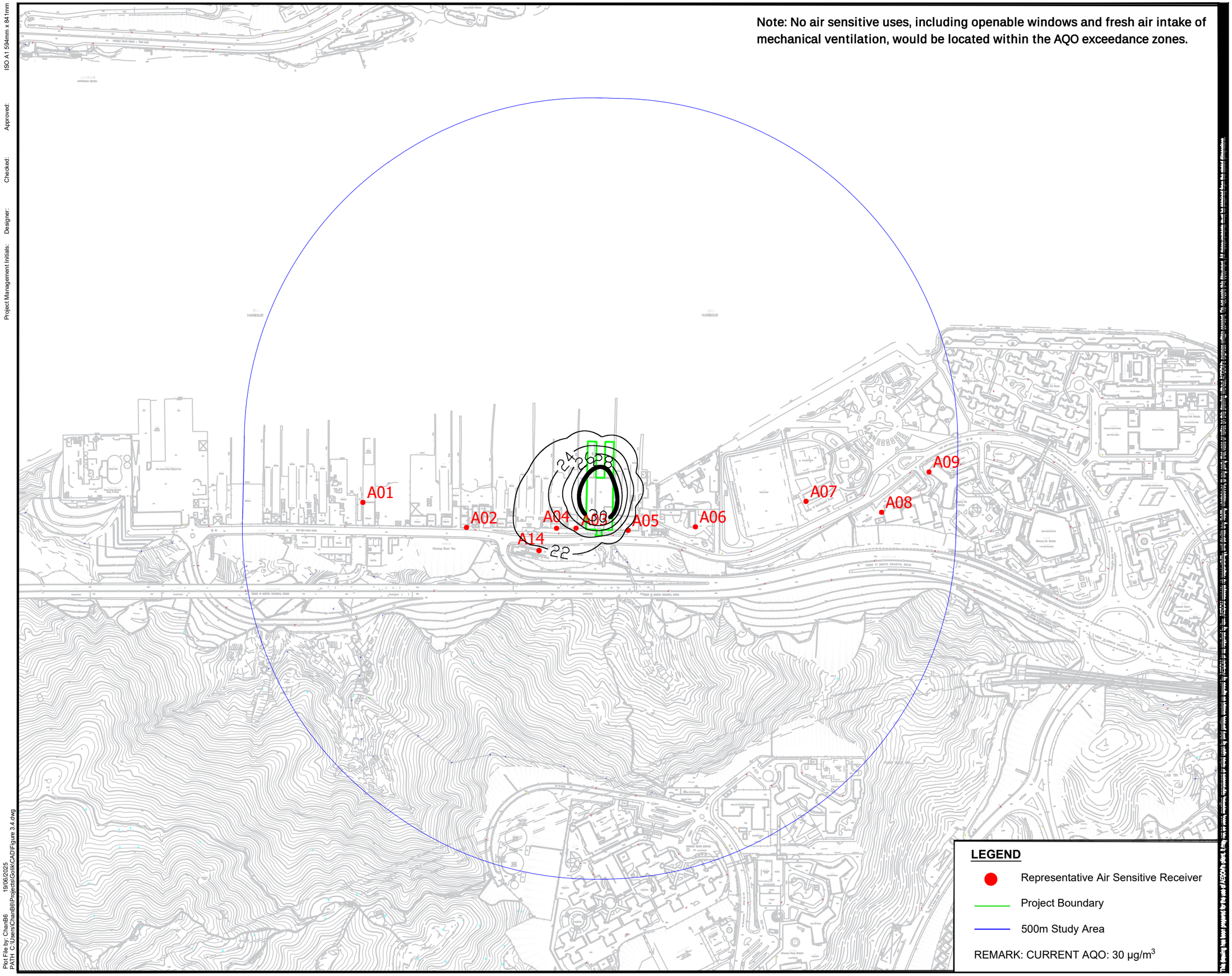
Approved:

Checked:

Designer:

Project Management Initials:

Note: No air sensitive uses, including openable windows and fresh air intake of mechanical ventilation, would be located within the AQO exceedance zones.



LEGEND

- Representative Air Sensitive Receiver
- Project Boundary
- 500m Study Area

REMARK: CURRENT AQO: 30 μg/m^3

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NO.	DATE	DESCRIPTION	CHK.

STATUS

SCALE / **DIMENSION UNIT**

A3 1 : 5000

KEY PLAN

PROJECT NO. / **CONTRACT NO.**

60739290 N/A

SHEET TITLE

Cumulative Annual RSP Concentration (μg/m3) at 1.5m Above Ground

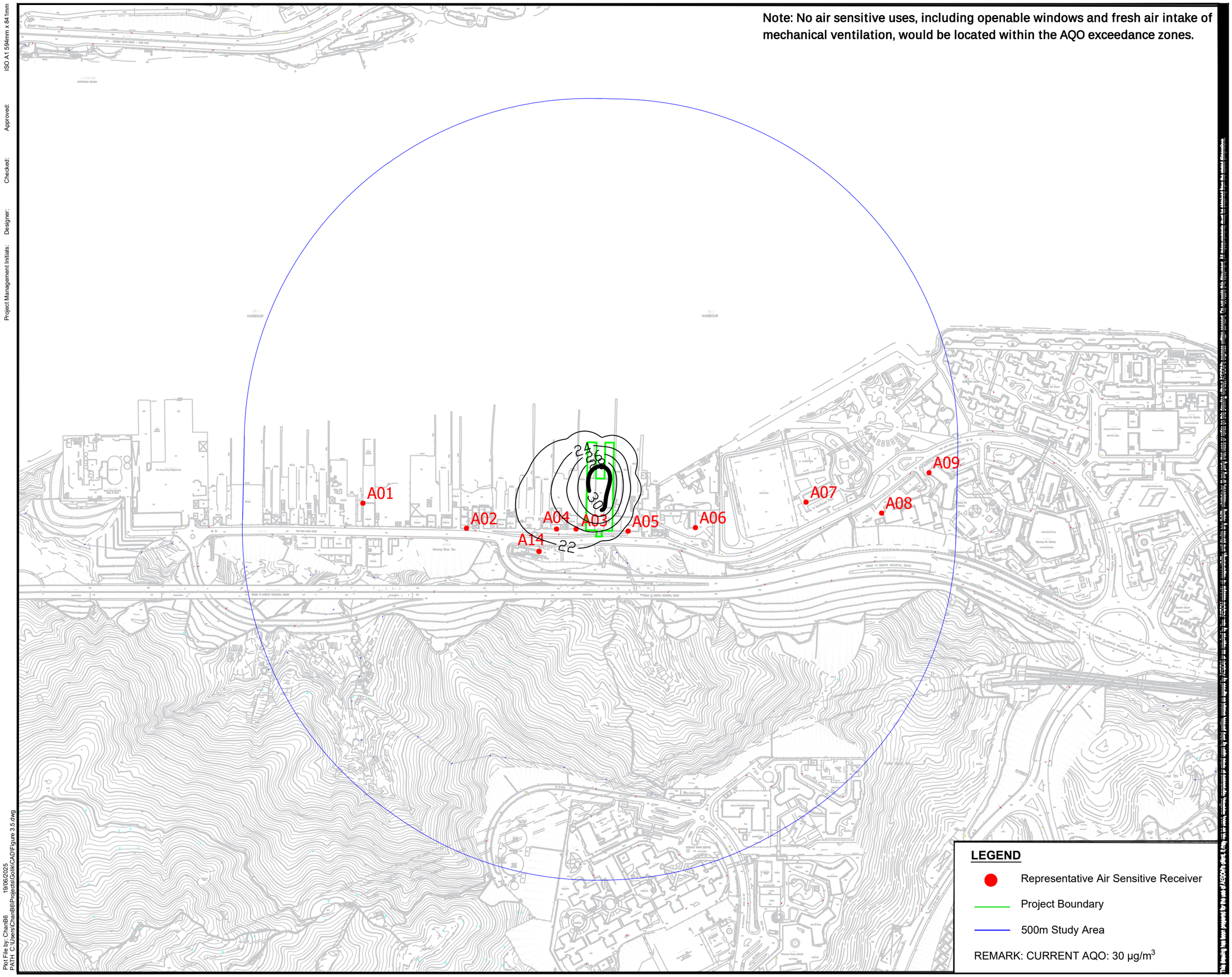
SHEET NUMBER

60739290/EA/FIGURE 3.4

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Plot File by: ChanB6 19/06/2025
PATH: C:\Users\ChanB6\Projects\Golik\CAD\Figure 3.4.dwg

Note: No air sensitive uses, including openable windows and fresh air intake of mechanical ventilation, would be located within the AQO exceedance zones.



LEGEND

- Representative Air Sensitive Receiver
- Project Boundary
- 500m Study Area

REMARK: CURRENT AQO: 30 μg/m^3

ISO A1 594mm x 841mm

Approved:

Checked:

Designer:

Project Management Initials:

Plot File by: ChanB6
PATH: C:\Users\ChanB6\Projects\Golik\CAD\Figure 3.5.dwg
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NO.	DATE	DESCRIPTION	CHK.

STATUS

SCALE

DIMENSION UNIT

A3 1 : 5000

KEY PLAN

PROJECT NO.

CONTRACT NO.

60739290 N/A

SHEET TITLE

Cumulative Annual RSP Concentration (μg/m3) at 5m Above Ground

SHEET NUMBER

60739290/EA/FIGURE 3.5

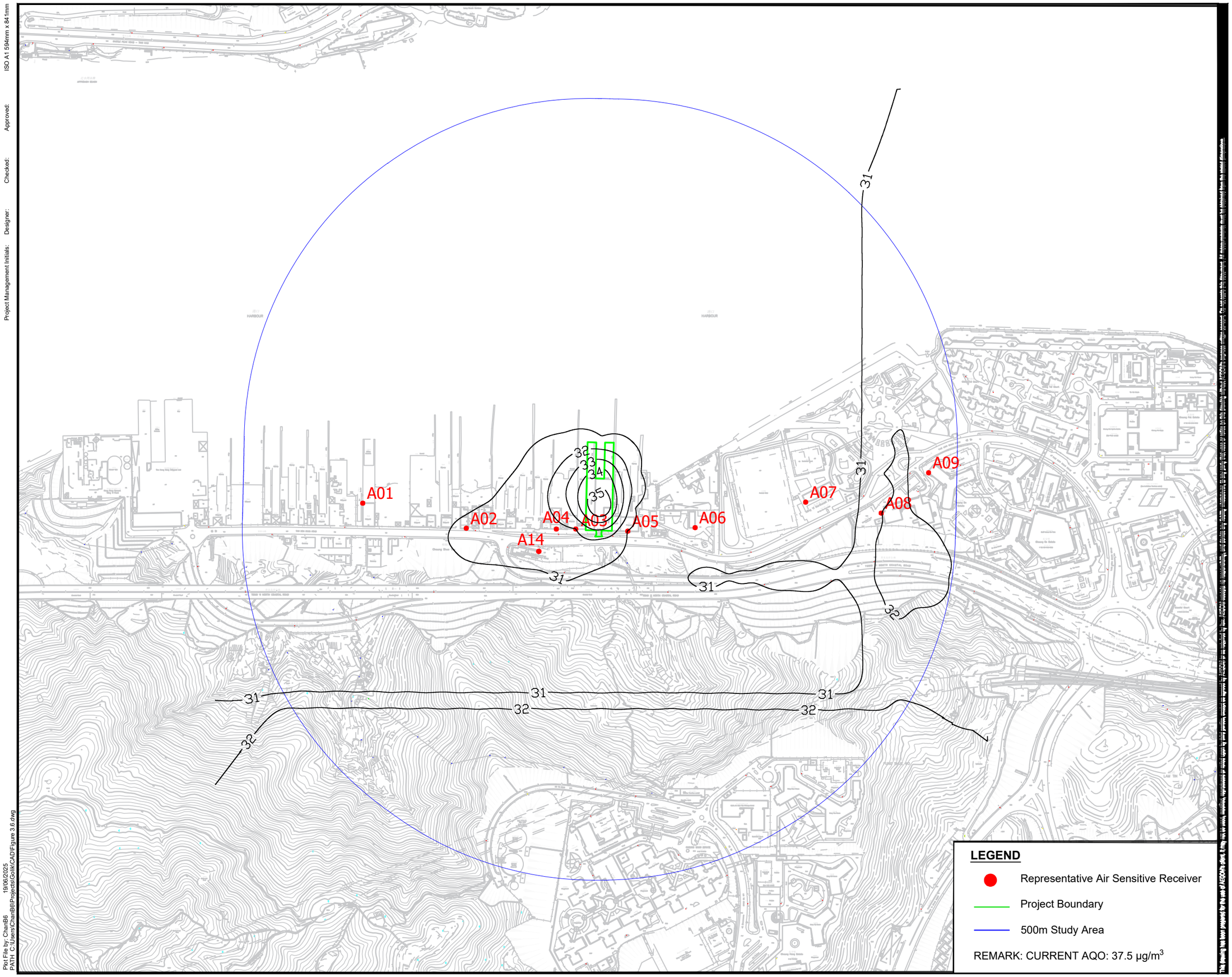
ISO A1 594mm x 841mm

Approved:

Checked:

Designer:

Project Management Initials:



LEGEND

- Representative Air Sensitive Receiver
- Project Boundary
- 500m Study Area

REMARK: CURRENT AQO: 37.5 μg/m^3

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PATH: C:\Users\ChanB6\Projects\Golik\CAD\Figure 3.6.dwg

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STATUS

SCALE / **DIMENSION UNIT**

A3 1 : 5000

KEY PLAN

PROJECT NO. / **CONTRACT NO.**

60739290 N/A

SHEET TITLE

19th Highest Cumulative Daily FSP Concentration (μg/m3) at 1.5m Above Ground

SHEET NUMBER

60739290/EA/FIGURE 3.6

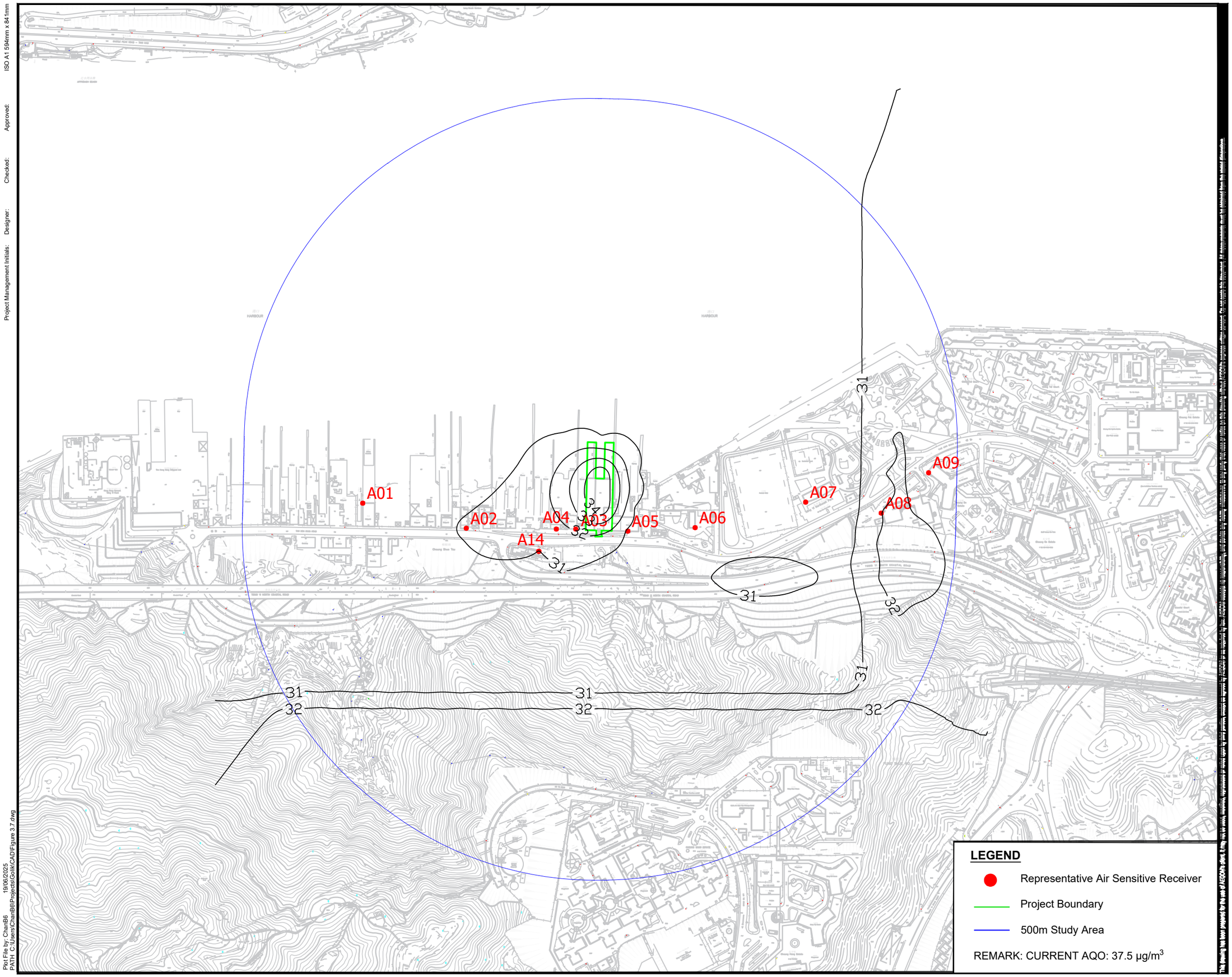
ISO A1 594mm x 841mm

Approved:

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Project Management Initials:



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STATUS

SCALE / **DIMENSION UNIT**

A3 1 : 5000

KEY PLAN

PROJECT NO. / **CONTRACT NO.**

60739290 N/A

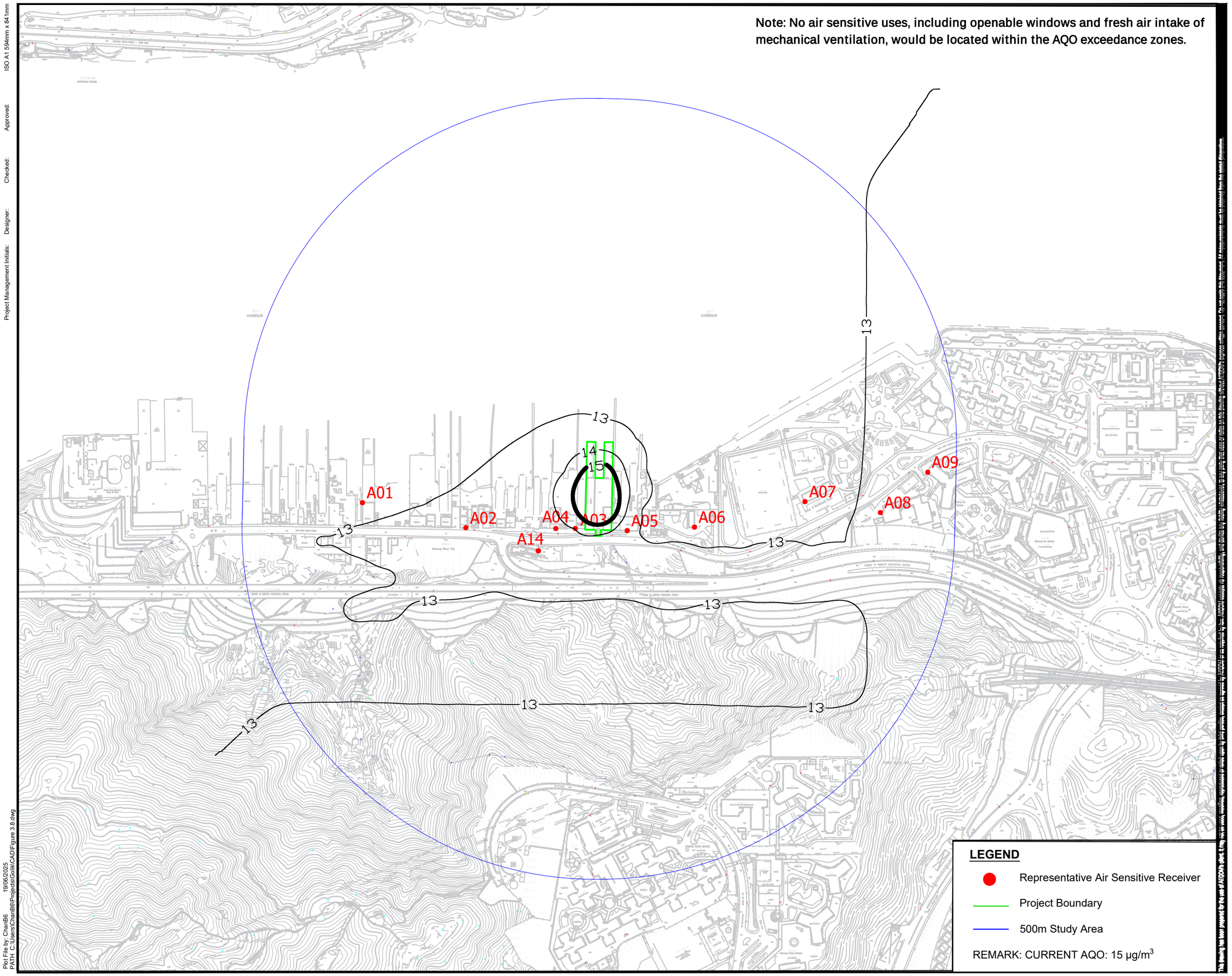
SHEET TITLE

19th Highest Cumulative Daily FSP Concentration (µg/m3) at 5m Above Ground

SHEET NUMBER

60739290/EA/FIGURE 3.7

Note: No air sensitive uses, including openable windows and fresh air intake of mechanical ventilation, would be located within the AQO exceedance zones.



LEGEND

- Representative Air Sensitive Receiver
- Project Boundary
- 500m Study Area

REMARK: CURRENT AQO: 15 μg/m^3

ISO A1 594mm x 841mm

Approved:

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Designer:

Project Management Initials:

Plot File by: ChanB6 19/06/2025
PATH: C:\Users\ChanB6\Projects\GolfkCAD\Figure 3.8.dwg

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SCALE **DIMENSION UNIT**

A3 1 : 5000

KEY PLAN

PROJECT NO. **CONTRACT NO.**

60739290 N/A

SHEET TITLE

Cumulative Annual FSP Concentration (μg/m3) at 1.5m Above Ground

SHEET NUMBER

60739290/EA/FIGURE 3.8

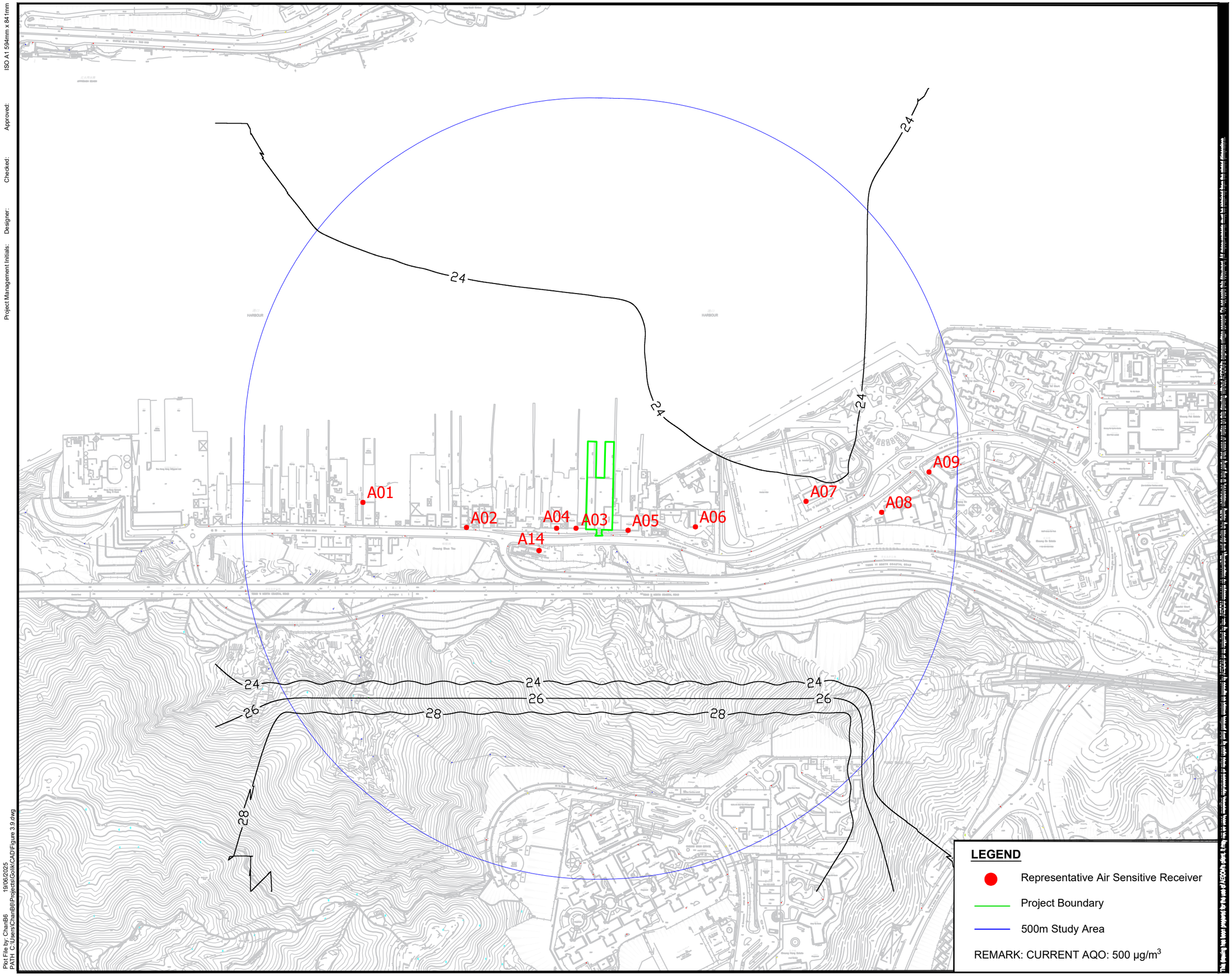
ISO A1 594mm x 841mm

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Designer:

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SCALE | **DIMENSION UNIT**

A3 1 : 5000

KEY PLAN

PROJECT NO. | **CONTRACT NO.**

60739290 | N/A

SHEET TITLE

4th Highest Cumulative 10-Min SO2 Concentration (μg/m3) at 1.5m Above Ground

SHEET NUMBER

60739290/EA/FIGURE 3.9

Plot File by: ChanB6 19/06/2025
PATH: C:\Users\ChanB6\Projects\Gollk\CAD\Figure 3.9.dwg

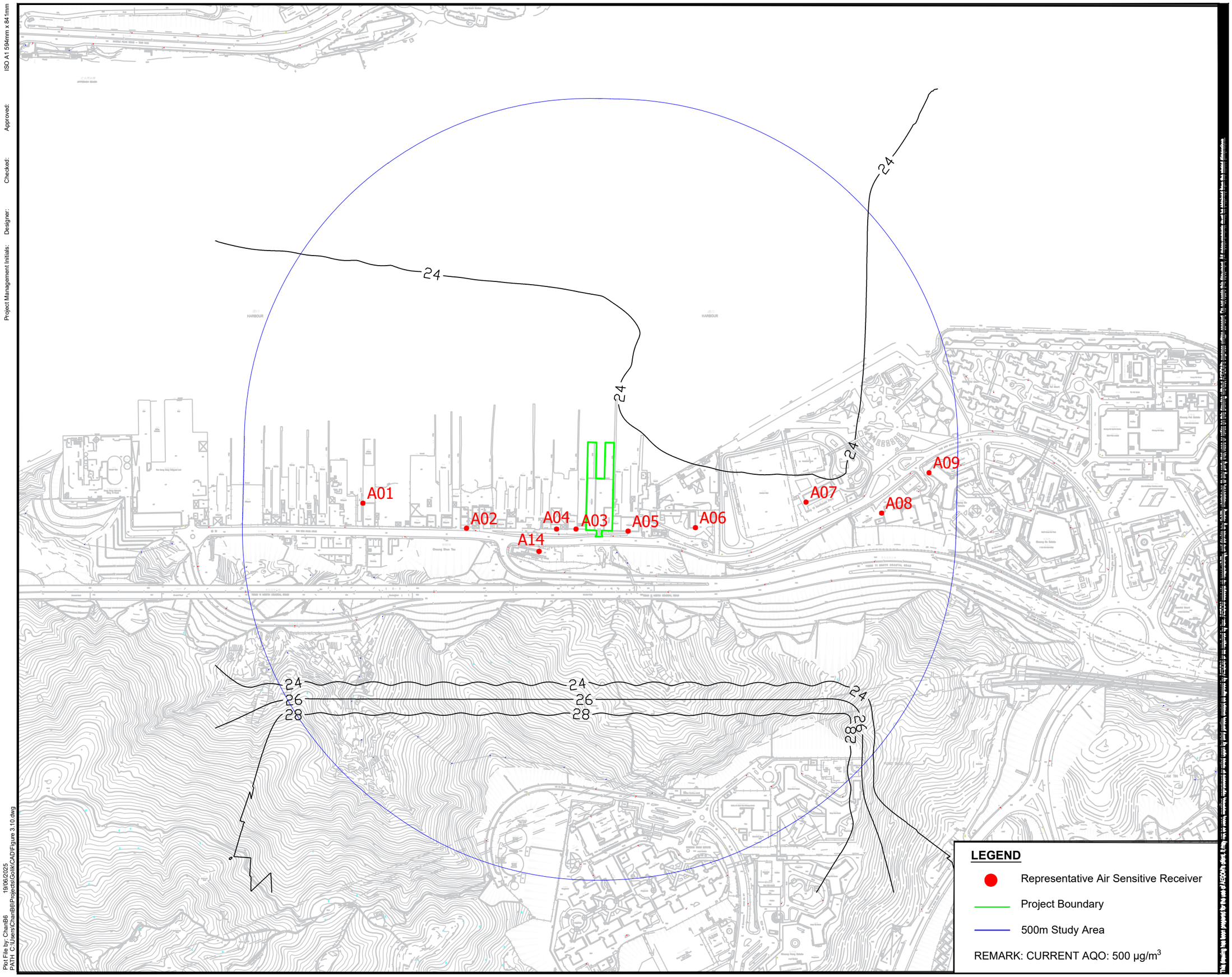
ISO A1 594mm x 841mm

Approved:

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Designer:

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Plot File by: ChanB6
PATH: C:\Users\ChanB6\Projects\Golik\CAD\Figure 3.10.dwg
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STATUS

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A3 1 : 5000

KEY PLAN

PROJECT NO. / **CONTRACT NO.**

60739290 N/A

SHEET TITLE

4th Highest Cumulative 10-Min SO2 Concentration (μg/m3) at 15m Above Ground

SHEET NUMBER

60739290/EA/FIGURE 3.10

ISO A1 594mm x 841mm

Approved:

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Plot File by: ChanB6 19/06/2025
PATH: C:\Users\ChanB6\Projects\Golik\CAD\Figure 3.11.dwg

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STATUS

SCALE / **DIMENSION UNIT**

A3 1 : 5000

KEY PLAN

PROJECT NO. / **CONTRACT NO.**

60739290 N/A

SHEET TITLE

4th Highest Cumulative Daily SO2 Concentration (µg/m3) at 1.5m Above Ground

SHEET NUMBER

60739290/EA/FIGURE 3.11

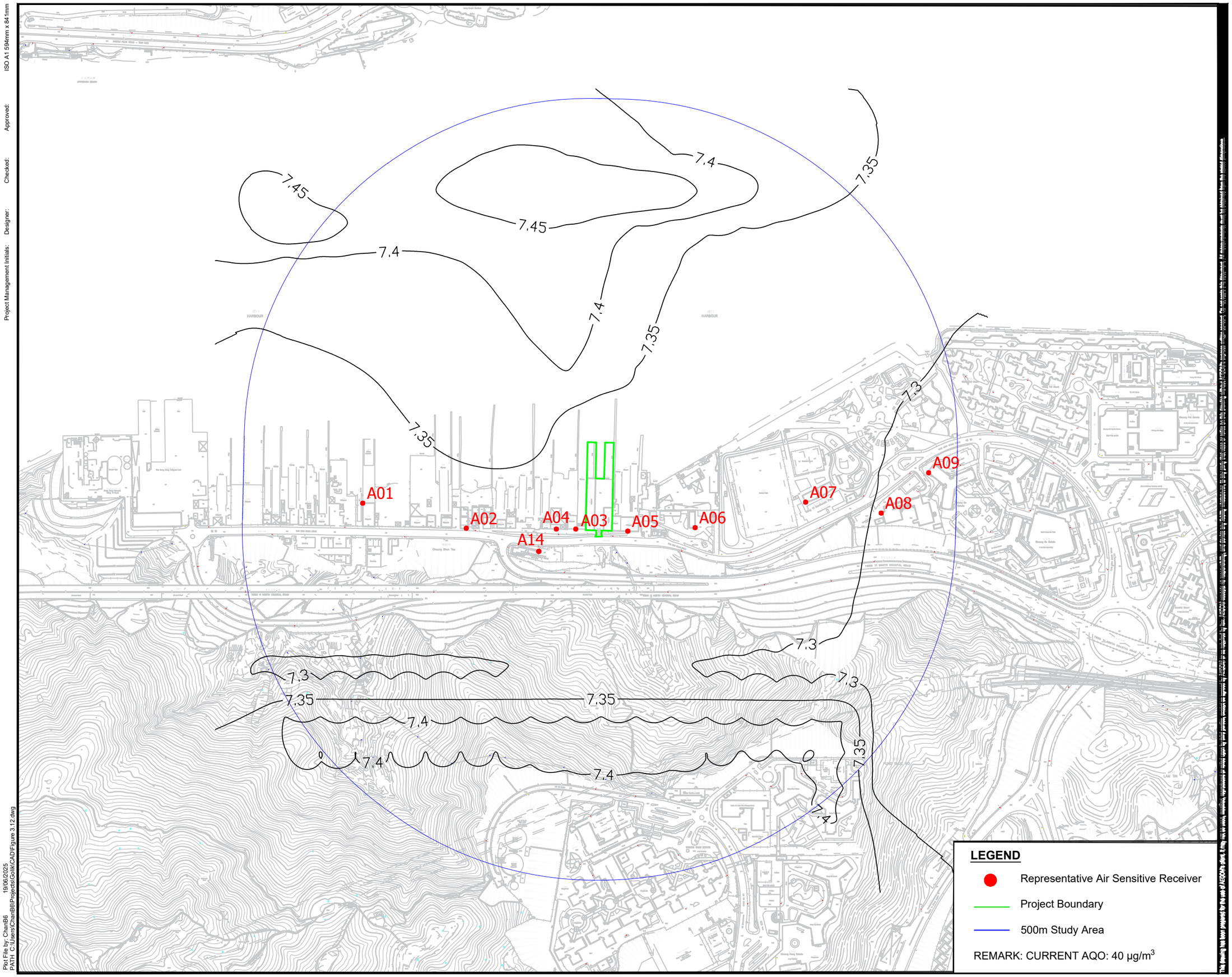
ISO A1 594mm x 841mm

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Designer:

Project Management Initials:



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SCALE / **DIMENSION UNIT**

A3 1 : 5000

KEY PLAN

PROJECT NO. / **CONTRACT NO.**

60739290 N/A

SHEET TITLE

4th Highest Cumulative Daily SO2 Concentration (µg/m3) at 15m Above Ground

SHEET NUMBER

60739290/EA/FIGURE 3.12

Plot File by: ChanB6 19/06/2025
PATH: C:\Users\ChanB6\Projects\GoIlkCAD\Figure 3.12.dwg

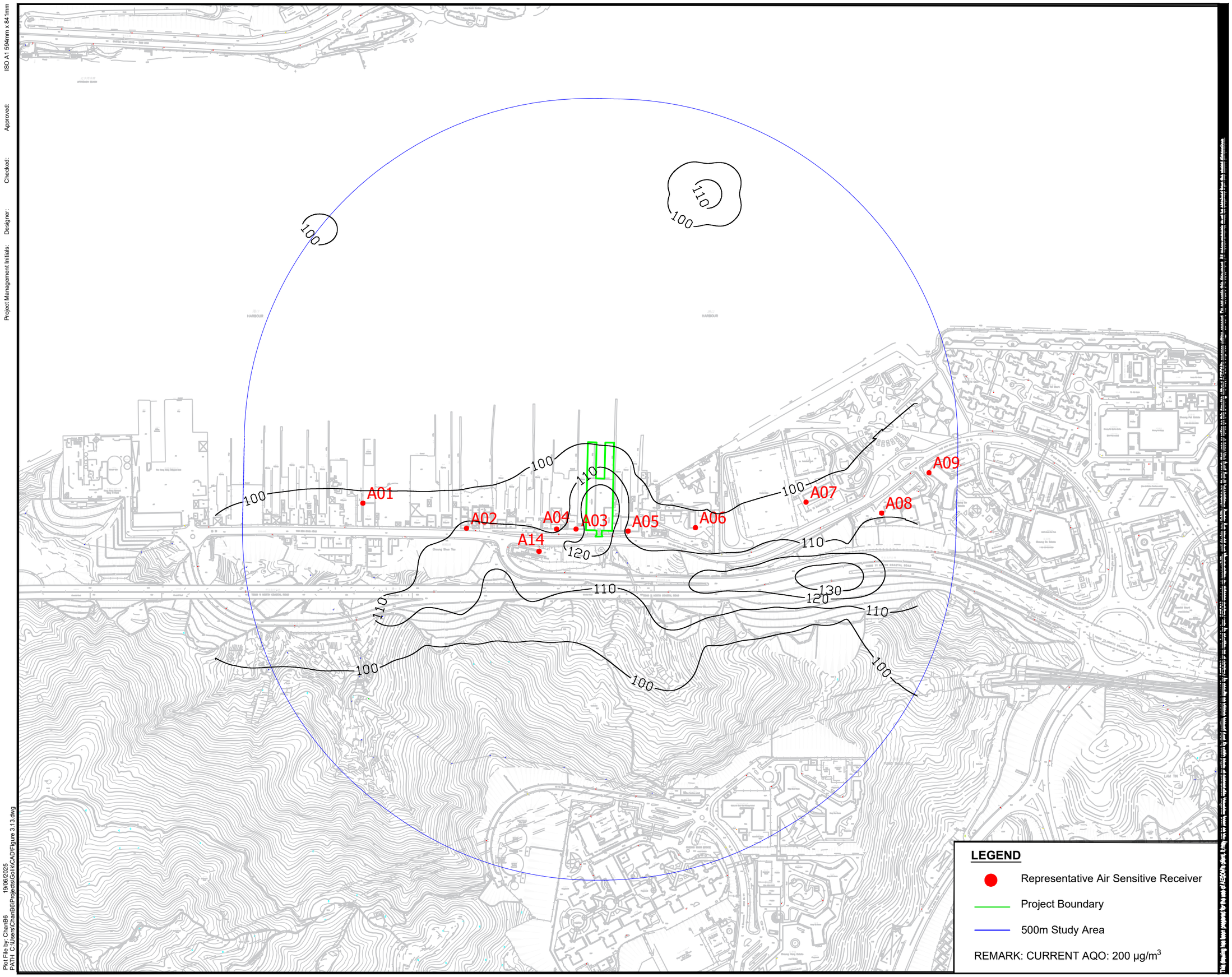
ISO A1 594mm x 841mm

Approved:

Checked:

Designer:

Project Management Initials:



LEGEND

- Representative Air Sensitive Receiver
- Project Boundary
- 500m Study Area

REMARK: CURRENT AQO: 200 μg/m^3

Plot File by: ChanB6
PATH: C:\Users\ChanB6\Projects\Golik\CAD\Figure 3.13.dwg
19/06/2025

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STATUS

SCALE / **DIMENSION UNIT**

A3 1 : 5000

KEY PLAN

PROJECT NO. / **CONTRACT NO.**

60739290 N/A

SHEET TITLE

19th Highest Cumulative Hourly NO2 Concentration (μg/m3) at 1.5m Above Ground

SHEET NUMBER

60739290/EA/FIGURE 3.13

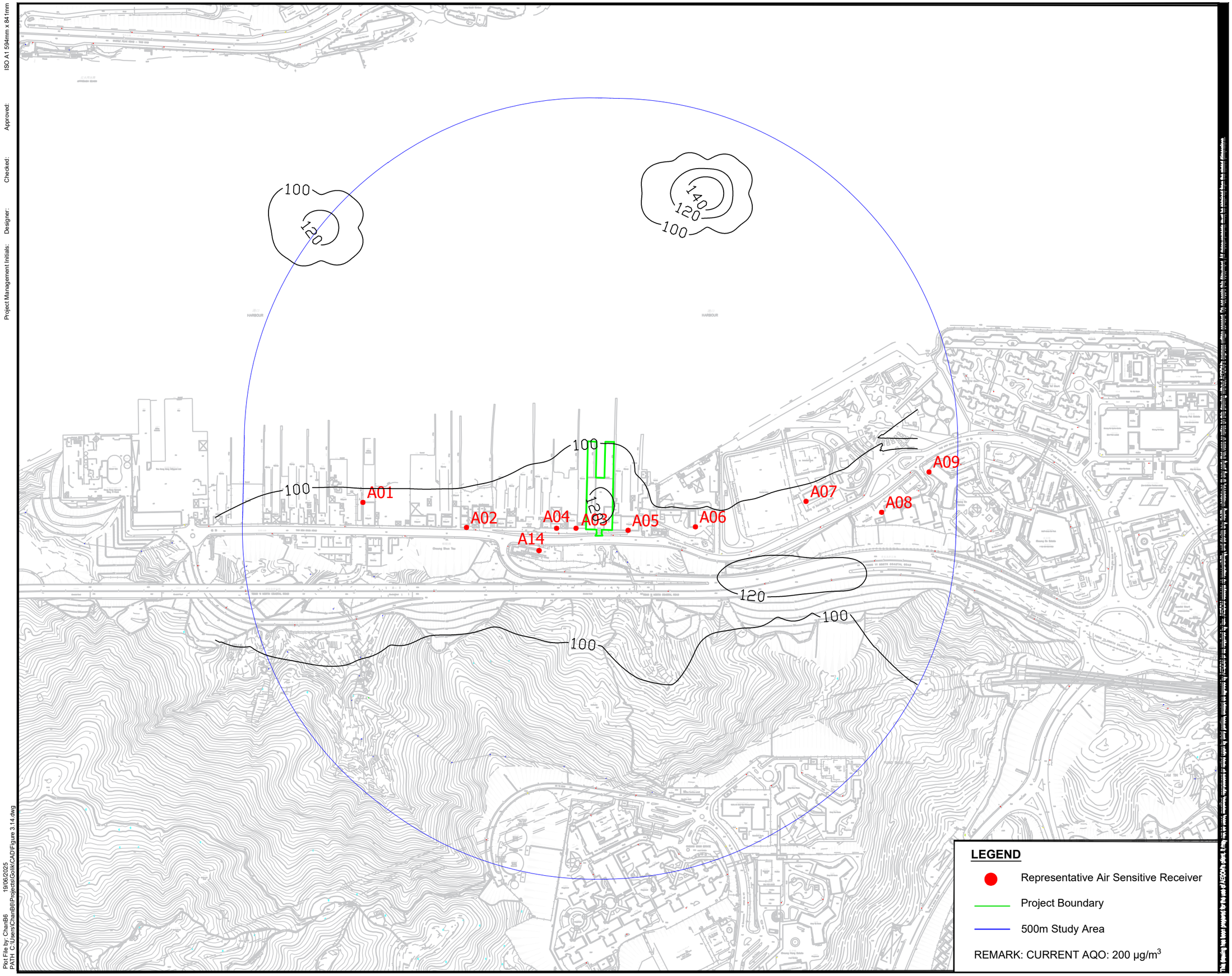
ISO A1 594mm x 841mm

Approved:

Checked:

Designer:

Project Management Initials:



LEGEND

- Representative Air Sensitive Receiver
- Project Boundary
- 500m Study Area

REMARK: CURRENT AQO: 200 μg/m^3

Plot File by: ChanB6 19/06/2025
PATH C:\Users\ChanB6\Projects\Golik\CAD\Figure 3.14.dwg

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STATUS

SCALE **DIMENSION UNIT**

A3 1 : 5000

KEY PLAN

PROJECT NO. **CONTRACT NO.**

60739290 N/A

SHEET TITLE

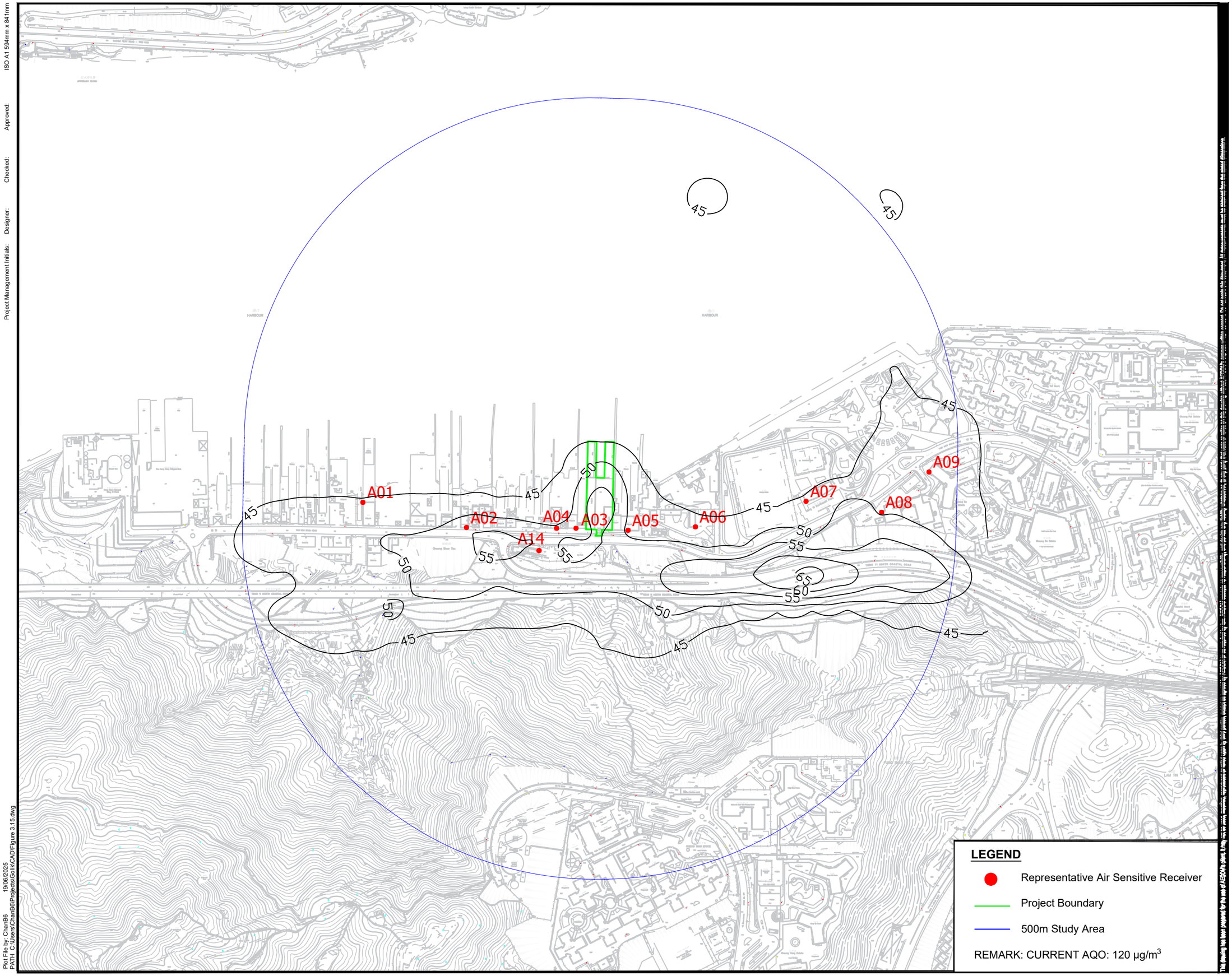
19th Highest Cumulative Hourly NO2 Concentration (μg/m3) at 5m Above Ground

SHEET NUMBER

60739290/EA/FIGURE 3.14

ISO A1 594mm x 841mm

Project Management Initials: Designer: Checked: Approved:



LEGEND

- Representative Air Sensitive Receiver
- Project Boundary
- 500m Study Area

REMARK: CURRENT AQO: 120 μg/m^3

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NO.	DATE	DESCRIPTION	CHK.

STATUS

SCALE A3 1 : 5000

DIMENSION UNIT

KEY PLAN

PROJECT NO. 60739290

CONTRACT NO. N/A

SHEET TITLE

10th Highest Cumulative Daily NO2 Concentration (μg/m3) at 1.5m Above Ground

SHEET NUMBER

60739290/EA/FIGURE 3.15

Plot File by: ChanB6 19/06/2025
PATH: C:\Users\ChanB6\Projects\Gollk\CAD\Figure 3.15.dwg

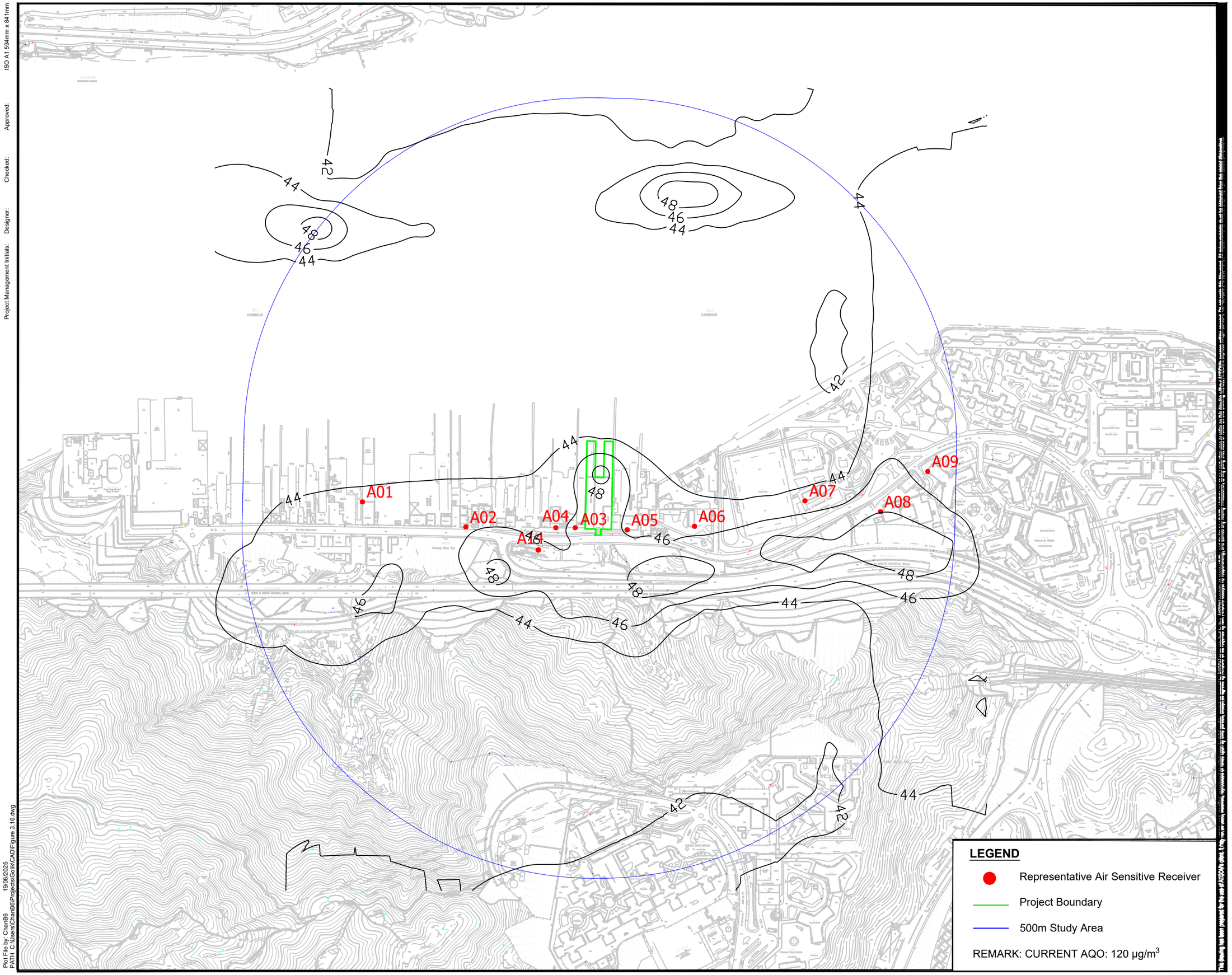
ISO A1 594mm x 841mm

Approved:

Checked:

Designer:

Project Management Initials:



Plot File by: ChanB6 19/06/2025
PATH C:\Users\ChanB6\Projects\Golik\CAD\Figure 3.16.dwg

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NO.	DATE	DESCRIPTION	CHK.

STATUS

SCALE **DIMENSION UNIT**

A3 1 : 5000

KEY PLAN

PROJECT NO. **CONTRACT NO.**

60739290 N/A

SHEET TITLE

10th Highest Cumulative Daily NO2 Concentration (µg/m3) at 10m Above Ground

SHEET NUMBER

60739290/EA/FIGURE 3.16

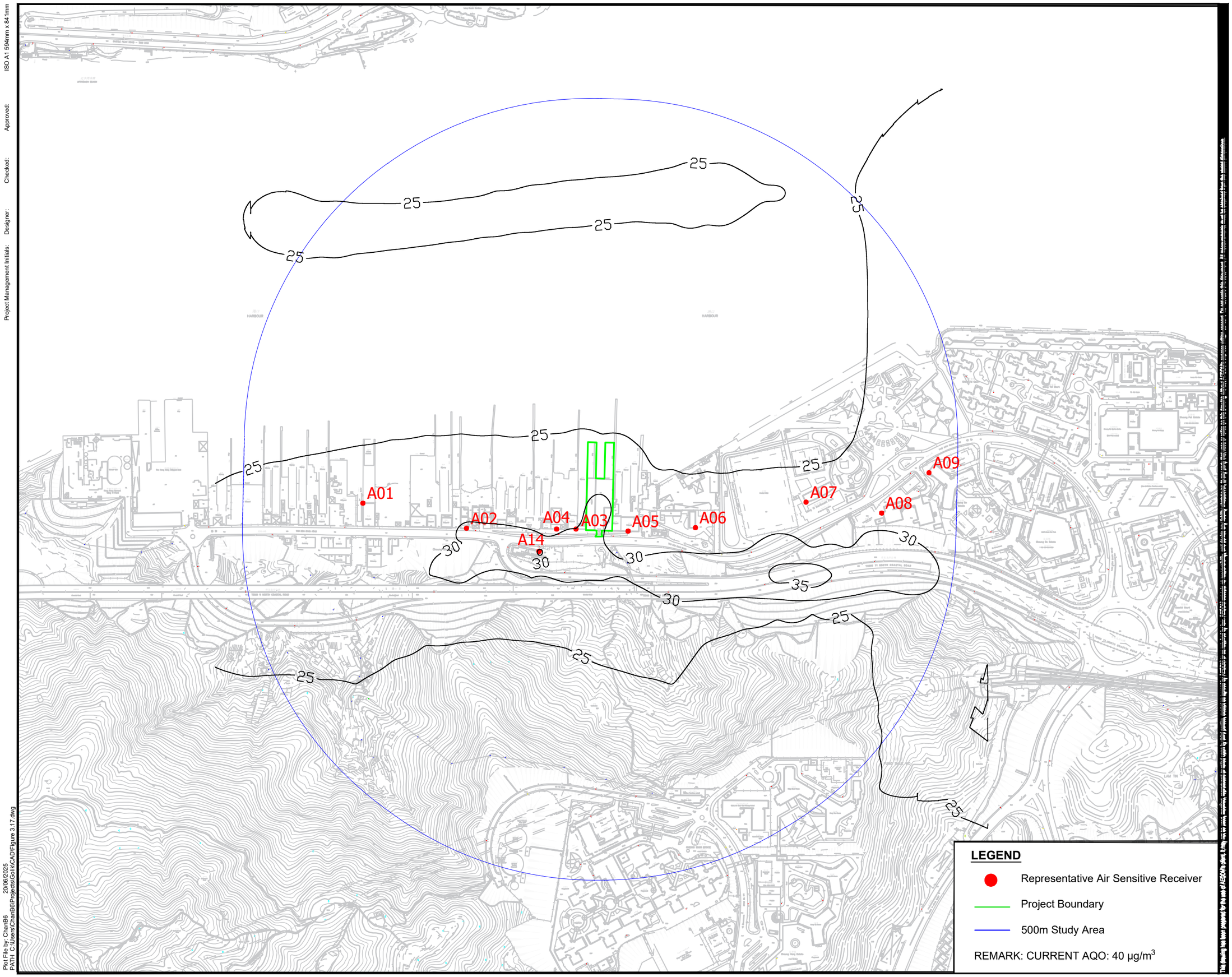
ISO A1 594mm x 841mm

Approved:

Checked:

Designer:

Project Management Initials:



LEGEND

- Representative Air Sensitive Receiver
- Project Boundary
- 500m Study Area

REMARK: CURRENT AQO: 40 μg/m^3

Plot File by: ChanB6 20/06/2025
PATH: C:\Users\ChanB6\Projects\Golik\CAD\Figure 3.17.dwg

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SCALE / **DIMENSION UNIT**

A3 1 : 5000

KEY PLAN

PROJECT NO. / **CONTRACT NO.**

60739290 N/A

SHEET TITLE

Cumulative Annual NO2 Concentration (μg/m3) at 1.5m Above Ground

SHEET NUMBER

60739290/EA/FIGURE 3.17

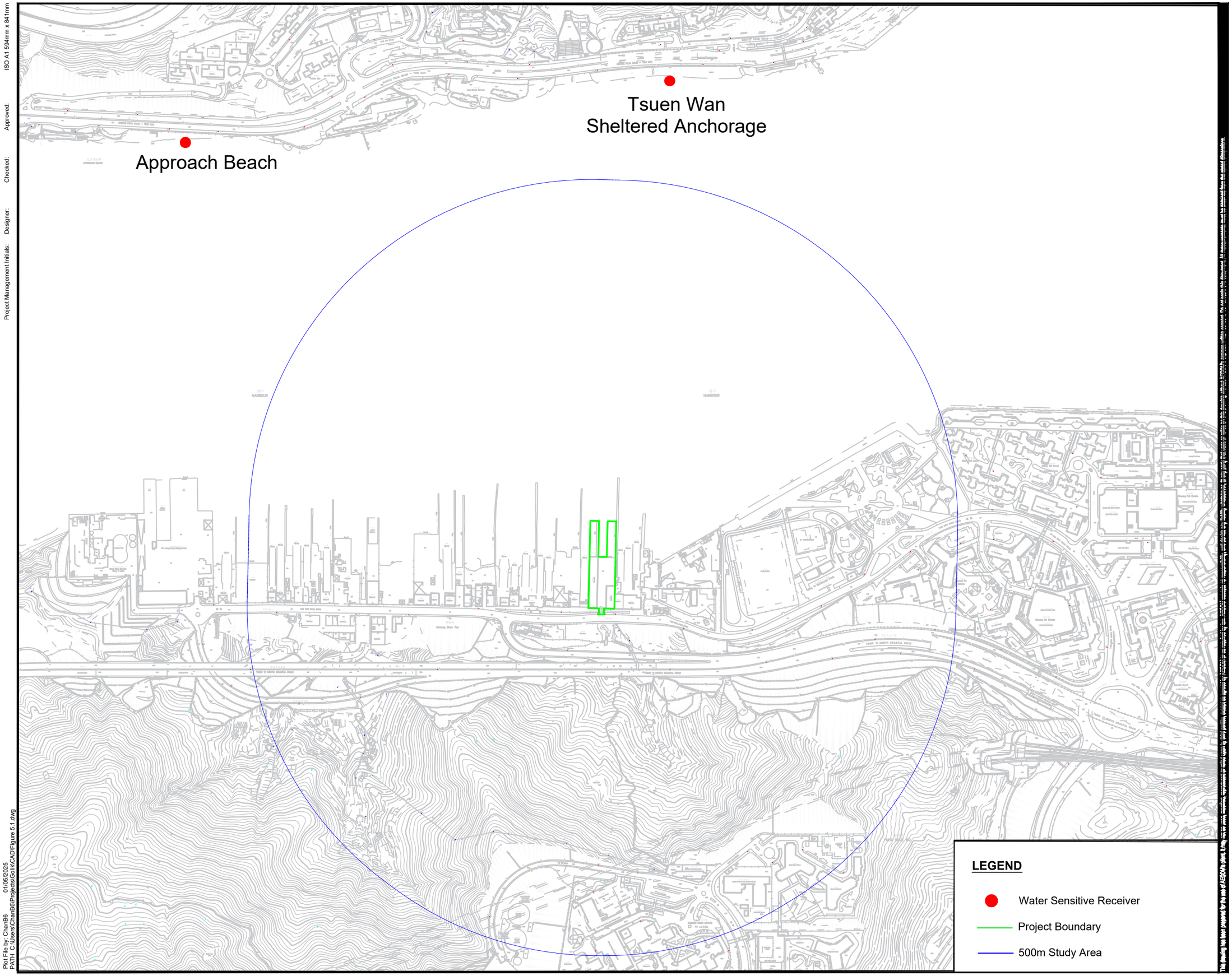
ISO A1 594mm x 841mm

Approved:

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Designer:

Project Management Initials:



Plot File by: ChanB6 01/05/2025
PATH C:\Users\ChanB6\Projects\Golik\CAD\Figure 5.1.dwg

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NO.	DATE	DESCRIPTION	CHK.

STATUS

SCALE **DIMENSION UNIT**

A3 1 : 5000

KEY PLAN

PROJECT NO. **CONTRACT NO.**

60739290 N/A

SHEET TITLE

Location of Water Sensitive Receivers

SHEET NUMBER

60739290/EA/FIGURE 5.1

ISO A1 594mm x 841mm

Approved:

Checked:

Designer:

Project Management Initials:

827800 E

827900 E

828000 E

824800 N

824700 N

824600 N

LEGEND:

SITE BOUNDARY

MAINTENANCE DREDGING EXTENT

N

Jetty 渡頭

Slipway 船排

Seawall 海堤

HWM

Outfall 排水口

Shipyard 船廠

Car Park 停車場

TS

CUL

RCP

ESS

TAM KON SHAN ROAD 担杆山路

TSING YI NORTH COASTAL ROAD 青衣北岸公路

Environmental Protection Department Portable Emission Measurement System Laboratory 環保署便攜式廢氣測量系統實驗室

Nullah 明渠

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PLANNING APPLICATION OF A CONCRETE BATCHING PLANT AT TSING YI TOWN LOT NOS. 14 & 15

CLIENT 業主

CONSULTANT 土木顧問公司

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ISSUE/REVISION 修訂

I/R 修訂	DATE 日期	DESCRIPTION 修訂摘要	CHK. 核核

STATUS 階段

SCALE 比例

A3 1 : 1000

DIMENSION UNIT 尺寸單位

METRES

KEY PLAN 索引圖

PROJECT NO. 項目編號

60739290

AGREEMENT NO. 協議編號

SHEET TITLE 圖紙名稱

MAINTENANCE DREDGING EXTENT

SHEET NUMBER 圖紙編號

60739290/EA/FIGURE 6.1

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ISO A1 594mm x 841mm

Approved:

Checked:

Designer:

Project Management Initials:

825500 N

828000 E

828500 E

829000 E

825000 N

824500 N

LEGEND:

SITE BOUNDARY

MAINTENANCE DREDGING EXTENT

VS10

EPD'S SEDIMENT MONITORING STATION

N

VS10

HARBOUR

RAMBLER CHANNEL

TSING YI NORTH COASTAL ROAD

TSING TSUEN ROAD

LAM TIN

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AECOM

PROJECT
項目

PLANNING APPLICATION
OF A CONCRETE BATCHING
PLANT AT TSING YI TOWN
LOT NOS. 14 & 15

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STATUS
階段

SCALE 比例
A3 1 : 5000

DIMENSION UNIT 尺寸單位
METRES

KEY PLAN
索引圖

PROJECT NO. 項目編號
60739290

AGREEMENT NO. 協議編號

SHEET TITLE
圖紙名稱
LOCATION OF EPD'S SEDIMENT MONITORING STATION VS10

SHEET NUMBER
圖紙編號
60739290/EA/FIGURE 6.2

$DATE$

$PLTDRVL$
Plot File by: $USER$
PATH: $FILE$

ISO A1 594mm x 841mm
Approved:
Checked:
Designer:
Project Management Initials:



PHOTO 8489: PRIVATE PARKING AREA
(DATE TAKEN: 12 DECEMBER 2024)



PHOTO 8482: JETTY
(DATE TAKEN: 12 DECEMBER 2024)

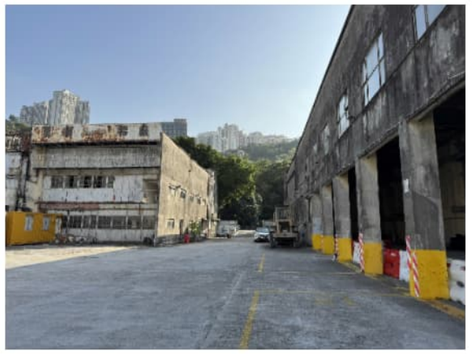
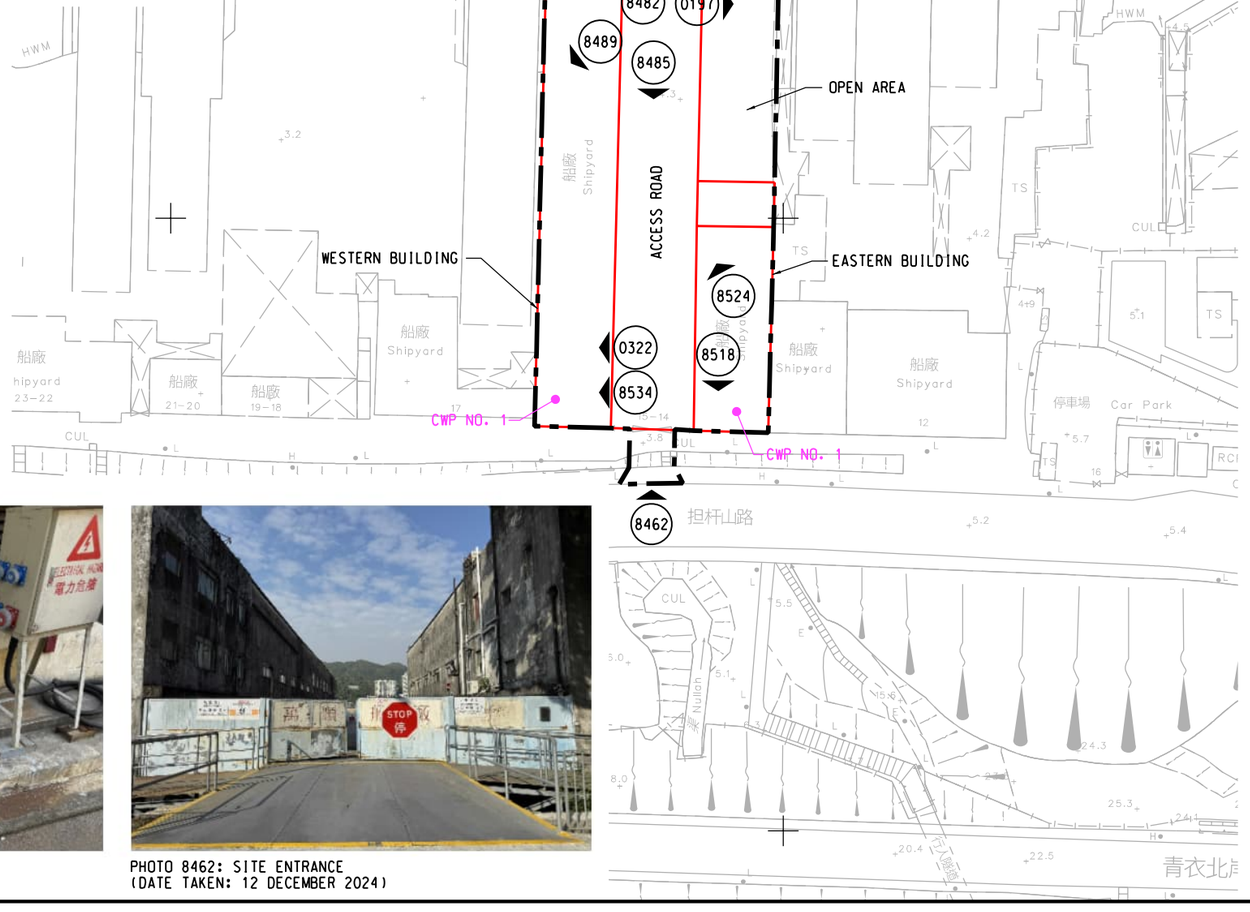


PHOTO 8485: ACCESS ROAD
(DATE TAKEN: 12 DECEMBER 2024)



PHOTO 0322: DISUSED DANGEROUS GOODS STORE / STOREROOM
(DATE TAKEN: 12 DECEMBER 2024)



LEGEND:

- SITE BOUNDARY
- CONCERNED AREA
- 8462 — LOCATION AND DIRECTION OF PHOTOGRAPH TAKEN / PHOTO ID
- CHEMICAL WASTE PRODUCER (CWP)



PHOTO 0197: PRIVATE PARKING AREA
(DATE TAKEN: 12 DECEMBER 2024)



PHOTO 8524: VACANT AREA
(DATE TAKEN: 12 DECEMBER 2024)



PHOTO 8534: CHEMICAL STORAGE AREA
(DATE TAKEN: 12 DECEMBER 2024)

PHOTO 8462: SITE ENTRANCE
(DATE TAKEN: 12 DECEMBER 2024)



PHOTO 8518: CHEMICAL STORAGE AREA
(DATE TAKEN: 12 DECEMBER 2024)

V:\BAK\US95-BAK\CSWP\plotdrv\Create Plt file\new\CSWP-75(color).pltPlot File by: hahuan.zhaoPATH P:\PROJECTS\60739290\DRAWING\REPORT\EA\EA_701.dgn19/2025

AECOM

PROJECT
項目

PLANNING APPLICATION
OF A CONCRETE BATCHING
PLANT AT TSING YI TOWN
LOT NOS. 14 & 15

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I/R 修訂	DATE 日期	DESCRIPTION 內容摘要	CHK. 校核

STATUS
階段

SCALE 比例: A3 1 : 1000
DIMENSION UNIT 尺寸單位: METRES

KEY PLAN
索引圖

PROJECT NO. 項目編號: 60739290
CONTRACT NO. 合約編號:

SHEET TITLE
圖紙名稱

PHOTOGRAPHIC RECORDS
OF SITE WALKOVER

SHEET NUMBER
圖紙編號

60739290/EA/FIGURE 7.1

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ISO A1 594mm x 841mm

Approved:

Checked:

Designer:

Project Management Initials:

827800 E

827900 E

828000 E

824800 N

824700 N

824600 N

LEGEND:

SITE BOUNDARY

CONCERNED AREA

N

FORMER OPEN STORAGE

FORMER MAINTENANCE AREA

WESTERN BUILDING

EASTERN BUILDING

TAM KON SHAN ROAD

TSING YI NORTH COASTAL ROAD

Jetty 渡頭

Slipway 船排

Seawall 海堤

Shipyard 船廠

Car Park 停車場

Outfall 排水口

HWM

TS

CUL

Environmental Protection Department Portable Emission Measurement System (PEMS) Laboratory 環保署便攜式廢氣測量系統實驗室

Nullah 明渠

担杆山路

青衣北岸公路

V:\BAK\US95-BAK\CSWP\plotdrv\Create Pit file\new\CSWP-75(color).pltPlot File by: haiquan.zhaoPATH: P:\PROJECTS\60739290\DRAWING\REPORT\EA\EA_702.dgn19/9/2025

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AECOM

PROJECT 項目

PLANNING APPLICATION OF A CONCRETE BATCHING PLANT AT TSING YI TOWN LOT NOS. 14 & 15

CLIENT 業主

CONSULTANT 土木顧問公司

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ISSUE/REVISION 修訂

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STATUS 階段

SCALE 比例
A3 1 : 1000

DIMENSION UNIT 尺寸單位
METRES

KEY PLAN 索引圖

PROJECT NO. 項目編號
60739290

CONTRACT NO. 合約編號

SHEET TITLE 圖紙名稱
LOCATIONS OF CONCERNED AREAS

SHEET NUMBER 圖紙編號
60739290/EA/FIGURE 7.2

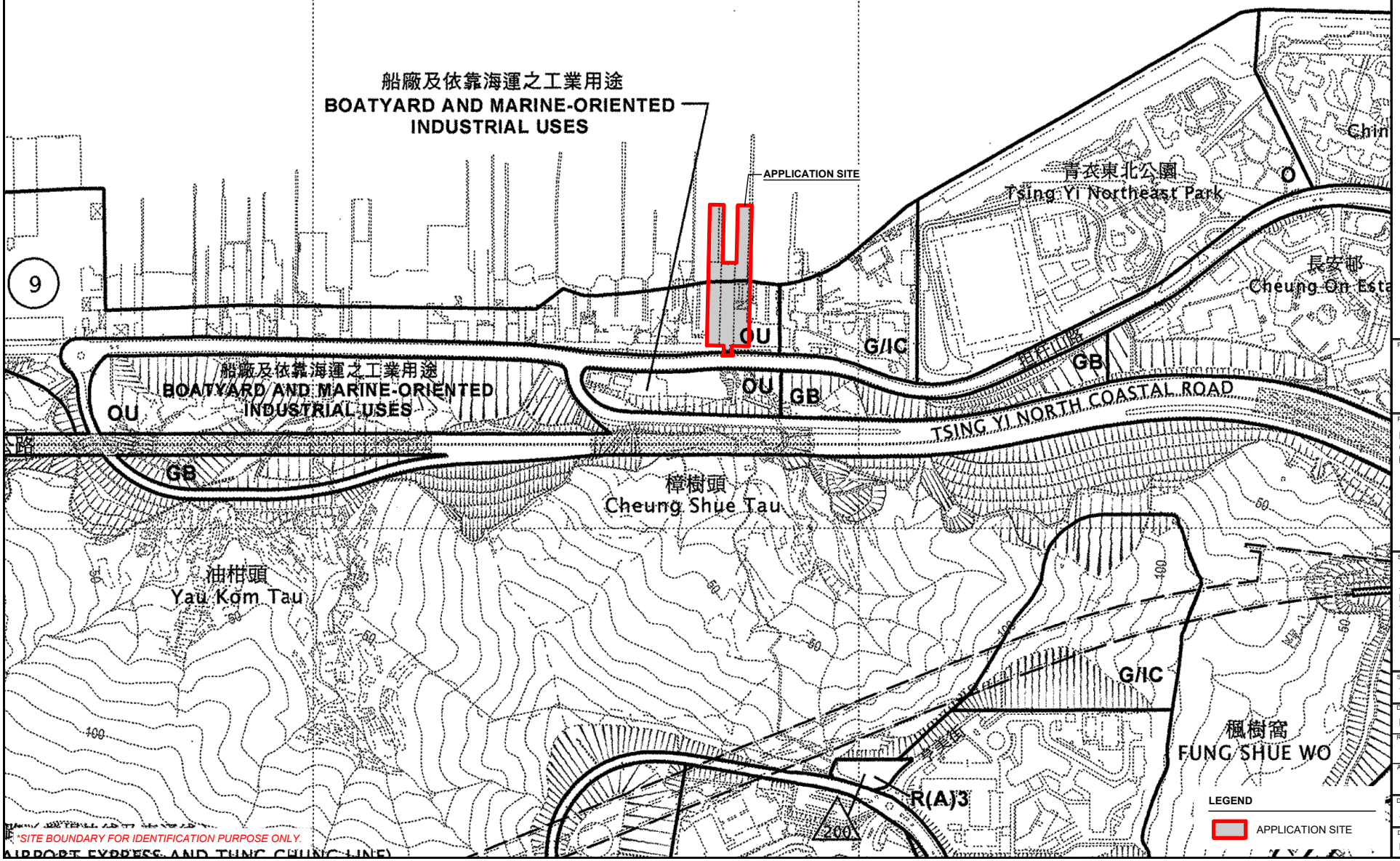
APPENDIX 2.1

Plant Layout

ZONING OF THE APPLICATION SITE

APPLICATION SITE AREA	: 4,335 m² (ABOUT)
OUTLINE ZONING PLAN	: APPROVED TSING YI OZP
PLAN NO.	: S/TY/32
ZONING OF THE SITE	: "OTHER SPECIFIED USES" ANNOTATED "BOATYARD AND MARINE-ORIENTED INDUSTRIAL USES" : 2,213 m² (ABOUT)
	AND AREA SHOWN AS 'ROAD' : 29 m² (ABOUT)

ONLY PORTION OF THE SITE (ABOUT 2,242 m², 52%) FALL WITHIN THE ABOVE OZP COVERAGE, WHILE THE REMAINING AREA (ABOUT 2,093 m², 48%) FALLS OUTSIDE OZP PLANNING SCHEME BOUNDARY.



*SITE BOUNDARY FOR IDENTIFICATION PURPOSE ONLY.

NORTH
W E
S

LEGEND

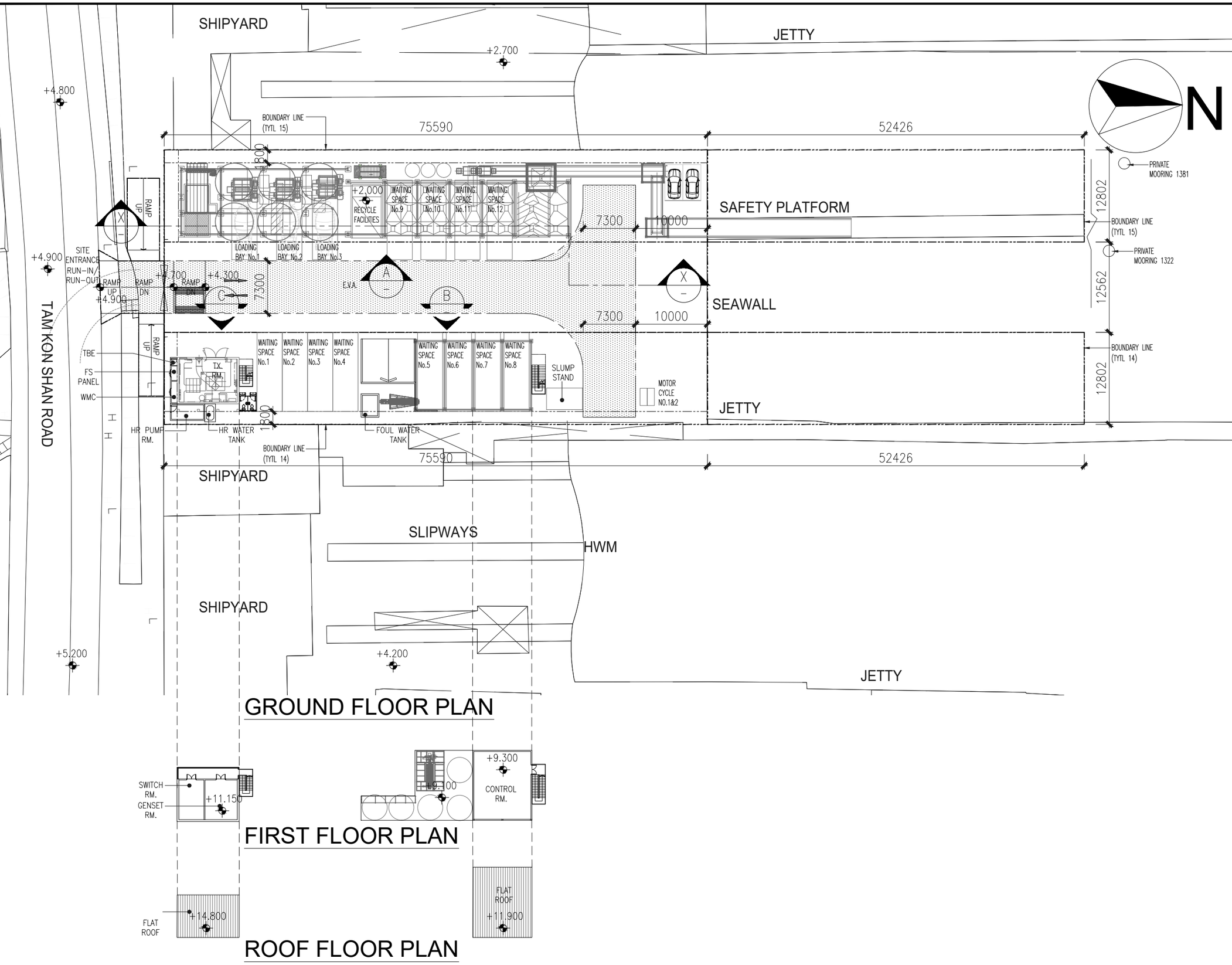
APPLICATION SITE

PLANNING CONSULTANT
R-Riches Property Consultants Ltd.

PROJECT
PROPOSED TEMPORARY CONCRETE BATCHING PLANT FOR A PERIOD OF 5 YEARS

SITE LOCATION
TSING YI TOWN LOTS 14 AND 15 AND ADJOINING, GOVERNMENT LAND, TAM KON SHAN ROAD, TSING YI, NEW TERRITORIES

SCALE	1 : 5000 @ A4
DRAWN BY	MN
DATE	19.11.2024
REVISED BY	
DATE	
APPROVED BY	
DATE	
DWG. TITLE	ZONING PLAN
DWG NO.	PLAN 2
VER.	1.2



GROUND FLOOR PLAN

FIRST FLOOR PLAN

ROOF FLOOR PLAN

REV.	DESCRIPTION	DATE	CHK.
–	–	SEP 2024	CP

CLIENT

CONSULTANT

IVIC 思滙顧問有限公司 CONSULTANCY LIMITED
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TEL: +852 2540 0686 FAX: +852 2547 6579

SIGNATURE FOR SUBMISSION / CONSTRUCTION

DESIGNED:	CP
DRAWN :	–
CHECKED :	CP
APPROVED :	–

PROJECT :

PROPOSED TEMPORARY CONCRETE BATCHING PLANT AT TSING YI TOWN LOTS 14 AND 15 AND ADJOINING GOVERNMENT LAND

DRAWING TITLE :

G/F LAYOUT PLAN
(OPTION 1)

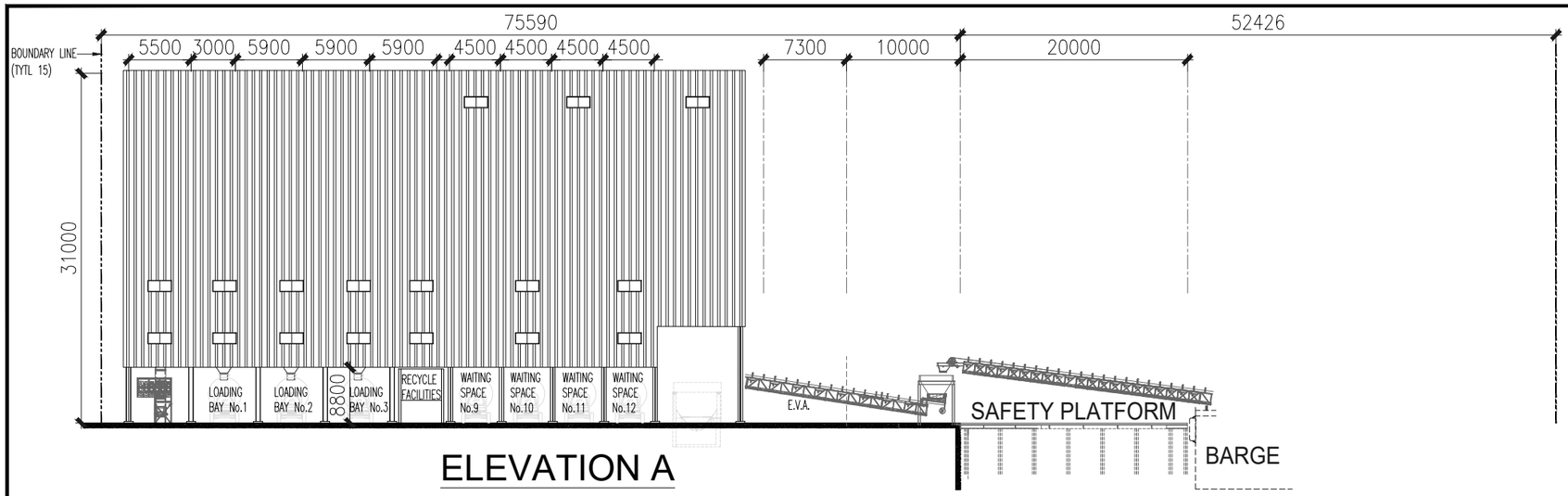
JOB NUMBER :	SHEET NUMBER :
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SCALE: 1:500

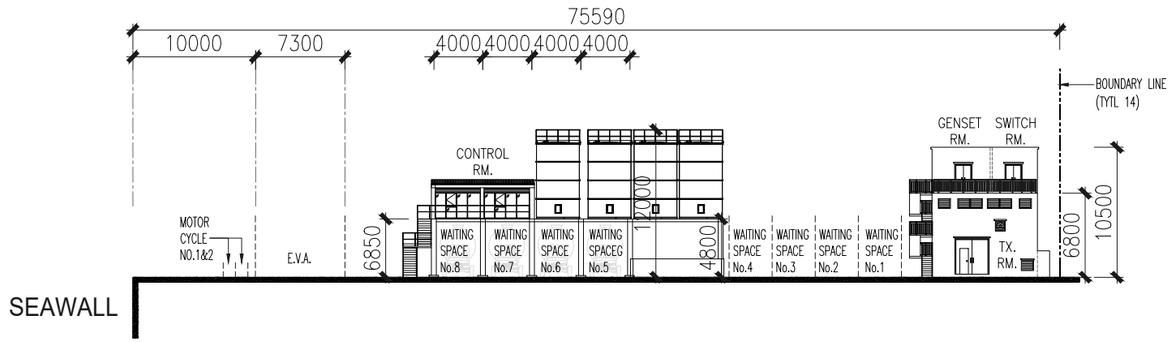
DRAWING No. :	REV.
SK-01	–

INFORMATION CLASSIFICATION: PROPRIETARY

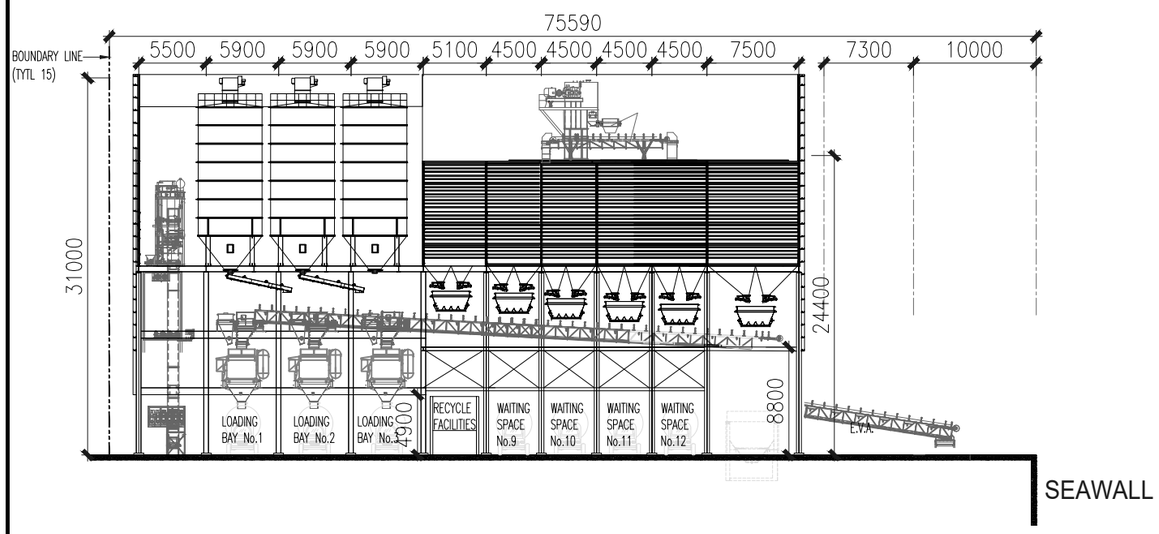
ALL RIGHTS RESERVED AND REPRODUCTION IN ANY FORM MUST BE APPROVED BY CLP POWER



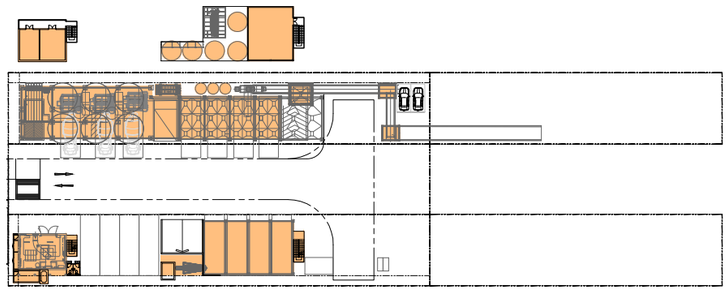
ELEVATION A



ELEVATION B

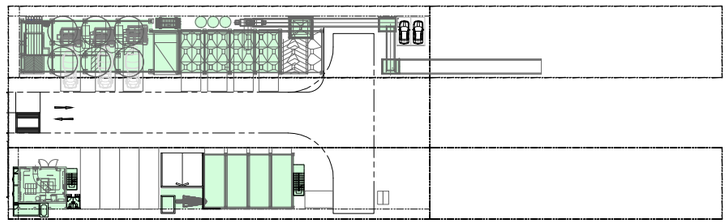


SECTION X-X



G.F.A. CALCULATION

1	GRD FL.	=	93 SQ.M.
2	GRD FL.	=	195 SQ.M.
3	GRD FL.	=	17 SQ.M.
4	GRD FL. x2	=	17 SQ.M.
5	1ST FL.	=	51 SQ.M.
6	1ST FL.	=	80 SQ.M.
7	GRD FL.	=	408 SQ.M.
8	1ST FL. x5	=	48 SQ.M.
9	GRD FL. x3	=	9 SQ.M.
10	1ST FL.	=	408 SQ.M.
11	MEZZ. FL.	=	137 SQ.M.
	TOTAL	=	1463 SQ.M.



SITE COVERAGE CALCULATION

1		=	93 SQ.M.
2		=	194 SQ.M.
3		=	17 SQ.M.
4	x2	=	17 SQ.M.
5		=	408 SQ.M.
6	x3	=	9 SQ.M.
	TOTAL	=	738 SQ.M.

REV.	DESCRIPTION	DATE	CHK.
–	–	SEP 2024	CP

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SIGNATURE FOR SUBMISSION / CONSTRUCTION

DESIGNED:	CP
DRAWN :	–
CHECKED :	CP
APPROVED :	–

PROJECT :

PROPOSED TEMPORARY CONCRETE BATCHING PLANT AT TSING YI TOWN LOTS 14 AND 15 AND ADJOINING GOVERNMENT LAND

DRAWING TITLE :

ELEVATION A,B , SECTION X–X & CALCULATIONS
(OPTION 1)

JOB NUMBER :	SHEET NUMBER :
–	

SCALE: 1:500

DRAWING No. :	REV.
SK–02	–

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APPENDIX 2.2

Schematic Process Flow Diagram

LEGEND:

WATER SPRINKLER

DUST COLLECTOR

ENCLOSED PIPELINE

ENCLOSED PIPELINE (EMERGENCY)

EP EMISSION POINT

Subject to Construction of Barging Point Facilities

BARGE AGGREGATE

ENCLOSED CONVEYOR

EP1

GROUND HOPPER (3 SIDES AND TOP COVER)

FULL ENCLOSURE

CONVEYOR

CONVEYOR

CONVEYOR

EP2

GROUND HOPPER (3 SIDES AND TOP COVER)

AGGREGATE TIPPER TRUCK

EP17

WATER SPRAYING TO THE HAUL ROAD

CONVEYOR

ELEVATOR

CONVEYOR

AGGREGATE OVERHEAD BIN

ICE TANK

WATER&ICE WATER TANK

SLURRY WATER TANK

ADMIXTURE TANKS

SCREW CONVEYOR

LORRIES

EP19

WATER SPRAYING TO THE HAUL ROAD

Subject to Construction of Barging Point Facilities

BARGE CEMENT/PFA/GGBS

CEMENTITIOUS MATERIAL TANKER

EP19

WATER SPRAYING TO THE HAUL ROAD

EP9 CEMENT/ PFA/GGBS SILO

EP10 CEMENT/ PFA/GGBS SILO

EP11 CEMENT/ PFA/GGBS SILO

EP12 CEMENT/ PFA/GGBS SILO

EP13 CEMENT/ PFA/GGBS SILO

EP14 CEMENT/ PFA/GGBS SILO

EP15 SILICA FUME SILO

EP16 SILICA FUME SILO

AGGREGATE WEIGH HOPPERS

ICE/WATER/SLURRY WATER WEIGH HOPPERS

ADMIXTURE WEIGH HOPPERS

CEMENT/ PFA/ GGBS/ WEIGH HOPPER

CEMENT/ PFA/ GGBS/ WEIGH HOPPER

SILICA FUME WEIGH HOPPER

AGGREGATE WEIGH HOPPERS

ICE/WATER/SLURRY WATER WEIGH HOPPERS

ADMIXTURE WEIGH HOPPERS

CEMENT/ PFA/ GGBS/ WEIGH HOPPER

CEMENT/ PFA/ GGBS/ WEIGH HOPPER

SILICA FUME WEIGH HOPPER

AGGREGATE WEIGH HOPPERS

ICE/WATER/SLURRY WATER WEIGH HOPPERS

ADMIXTURE WEIGH HOPPERS

CEMENT/ PFA/ GGBS/ WEIGH HOPPER

CEMENT/ PFA/ GGBS/ WEIGH HOPPER

SILICA FUME WEIGH HOPPER

EP6

DC

DC

EP7

DC

DC

EP8

DC

DC

MIXER A

EP3

MIXER B

EP4

MIXER C

EP5

EP18

WATER SPRAYING TO THE HAUL ROAD

工程编号:

合同编号:

圳通

圳通(香港）钢结构设备有限公
ZhenTong(HONGKONG)Steel structure Equipment Co.LTD

深圳市圳通钢结构设备有限公司
ZhenTong Steelstructure Equipment Co.LTD In ShenZhen

典型平面：
key plan

设计变更说明：
Revision

A 版

备注说明：
Remark

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建设单位：
Client

建设地点：
Site
青衣

工程名称	3*HZS300混凝土生产线		
审定		核对	
审核		设计	
设计负责		绘图	
设计阶段		版本	

名称 Schemathic diagram

比例	日期	图号
1:1	2025-03-19	

APPENDIX 3.1

Technical Details of Control Measures

Appendix 3.1 Technical Details of Control Measures

Estimation of Emission Concentrations at Emission Points

Emission Point	Material	Container	Dust Collector	Dust Collector Exhaust Flow Rate, V (m^3/hr)^	Max Hourly Loading Capacity, M (Mg/hr)^	TSP Emission Factor, E (kg/Mg)*	Dust Removal Efficiency, Ef (%)^	Emission Rate, Q (g/hr)	Emission Concentration, c (mg/m^3)#
EP3	Mixed	Mixer	Fabric Filter	7864	63.0	0.286	99.9	18.02	2.29
EP4	Mixed	Mixer	Fabric Filter	7864	63.0	0.286	99.9	18.02	2.29
EP5	Mixed	Mixer	Fabric Filter	7864	63.0	0.286	99.9	18.02	2.29
EP6	Aggregates	Weigh Hopper	Fabric Filter	6000	170	0.0026	99.9	0.44	3.08
	Cement				35.0	0.286		10.01	
	PFA				12.0	0.286		3.43	
	GGBS				15.0	0.286		4.29	
	Silica fume				1.0	0.286		0.29	
EP7	Aggregates	Weigh Hopper	Fabric Filter	6000	170	0.0026	99.9	0.44	3.08
	Cement				35.0	0.286		10.01	
	PFA				12.0	0.286		3.43	
	GGBS				15.0	0.286		4.29	
	Silica fume				1.0	0.286		0.29	
EP8	Aggregates	Weigh Hopper	Fabric Filter	6000	170	0.0026	99.9	0.44	3.08
	Cement				35.0	0.286		10.01	
	PFA				12.0	0.286		3.43	
	GGBS				15.0	0.286		4.29	
	Silica fume				1.0	0.286		0.29	
EP9	Cement	Silo	Fabric Filter	11196	180.0	0.36	99.9	64.80	5.79
EP10	GGBS	Silo	Fabric Filter	11196	50.0	1.57	99.9	78.50	7.01
EP11	Cement	Silo	Fabric Filter	11196	180.0	0.36	99.9	64.80	5.79
EP12	PFA	Silo	Fabric Filter	11196	50.0	1.57	99.9	78.50	7.01
EP13	Cement	Silo	Fabric Filter	11196	180.0	0.36	99.9	64.80	5.79
EP14	GGBS	Silo	Fabric Filter	11196	50.0	1.57	99.9	78.50	7.01
EP15	Silica fume	Silo	Fabric Filter	11196	25.0	1.57	99.9	39.25	3.51
EP16	Silica fume	Silo	Fabric Filter	11196	25.0	1.57	99.9	39.25	3.51

* - TSP emission rates by various material handling are referenced to Table 11.12-1, Section 11.12-4, AP-42, USEPA, 6/06 edition.
# - Emission concentration is estimated by c = Q / V where Q = E x M x (1-Ef)
^ - From Engineer

APPENDIX 3.2

Calculation of Dust Emission Rates

Appendix 3.2 Calculations of Emission Rates

Estimation of RSP and FSP Emission Rates

Location	Source	Emission Rates	Mitigated Emission Rates	Parameters		*Remarks*
Proposed CBP	**Unloading of aggregates to Aggregate Receiving Hopper**	Spoil handling - Unloading of Aggregates		Emission Factor (kg/Mg) = k*(0.0016)*(U/2.2)^1.3/(M/2)^1.4		from USEPA AP-42 Section 13.2.4, 11/06 ed.
at TYTL14&15	Source ID: EP01	($g/m^2/s$)		TSP Particle size multiplier, k	0.74	from USEPA AP-42 Section 13.2.4, 11/06 ed.
				RSP Particle size multiplier, k	0.35	from USEPA AP-42 Section 13.2.4, 11/06 ed.
	Working Hours: 0700 - 2100			FSP Particle size multiplier, k	0.053	from USEPA AP-42 Section 13.2.4, 11/06 ed.
				Moisture content, M (%)	3.00	provided by design engineer
		RSP	**6.4371E-04**	Average wind speed, U (m/s)	2.01	*from WRF data of PATHv3.0 Grid (32,28)*
				Loading rate of materials (Mg/hr)	610	From Engineer
		FSP	**1.5079E-04**	Area of the storage (m^2)	8.64	From Engineer
				Dust Suppression Efficiency for PM (6 - 10μm)	90	for dust suppression by water sprays
				Dust Suppression Efficiency for PM (2.5 - 6μm)	65	from Table B.2.3, Appendix B.2, USEPA AP-42
				Dust Suppression Efficiency for PM (0 - 2.5μm)	40	
				% of dust suppression from 3-side cladded and roof	70	3.3.6, Technical Background Document on Control of Fugitive Dust at Cement Manufacturing Facilities, USEPA, 1998
				RSP emission factor, E (kg/Mg)	2.82E-04	by formula above
				FSP emission factor, E (kg/Mg)	4.27E-05	by formula above
				Mitigated PM(2.5 - 10μm) emission factor (kg/Mg)	2.51E-05	=(RSP emission factor-FSP emission factor)*(1- Dust Suppression efficiency for PM (2.5-6μm)/100)*(1-% of dust suppression from 3-side cladded and roof/100)
				Mitigated PM(2.5) emission factor (kg/Mg)	7.69E-06	=FSP emission factor*(1- Dust Suppression efficiency for PM (0-2.5μm)/100)*(1-% of dust suppression from 3-side cladded and roof/100)
				Mitigated PM(2.5 - 10μm) emission rate (g/s)	4.26E-03	
				Mitigated PM(2.5) emission rate (g/s)	1.30E-03	
	Dust Collector on Mixer	Exhaust from dust collector (g/s)		Emission Concentration, c (mg/m3)	2.29	by engineer, Emission concentration is estimated by c = Q / V where Q = E x M x (1-Ef)
				Flow Rate (m3/hr)	7864	From Engineer
	Source ID: EP03 -EP05					
	Working Hours: 0700 - 2100					
		RSP	**1.5233E-03**	Ratio RSP to TSP (Controlled)	0.30	Refer to Table "RSP-to-TSP Ratio of Concrete Batching Process (by Emission Factors)" shown on Appendix 3.2
		FSP	**6.9239E-04**	Ratio FSP to RSP (Controlled)	0.45	Refer to Table "FSP-to-RSP and FSP-to-TSP Ratios" shown on Appendix 3.2
	Dust Collector on Weigh Hopper	Exhaust from dust collector (g/s)		Emission Concentration, c (mg/m3)	3.08	by engineer, Emission concentration is estimated by c = Q / V where Q = E x M x (1-Ef)
				Flow Rate (m3/hr)	6000	From Engineer
	Source ID: EP06 - EP08					
	Working Hours: 0700 - 2100					
		RSP	**2.5639E-03**	Ratio RSP to TSP (Uncontrolled)	0.50	Refer to Table "RSP-to-TSP Ratio of Concrete Batching Process (by Emission Factors)" shown on Appendix 3.2
		FSP	**7.5408E-04**	Ratio FSP to RSP (Uncontrolled)	0.29	Refer to Table "FSP-to-RSP and FSP-to-TSP Ratios" shown on Appendix 3.2
	Dust Collector on Cement Silo	Exhaust from dust collector (g/s)		Emission Concentration, c (mg/m3)	5.79	by engineer, Emission concentration is estimated by c = Q / V where Q = E x M x (1-Ef)
				Flow Rate (m3/hr)	11196	From Engineer
	Source ID: EP09, EP11, EP13					
	Working Hours: 0700 - 2100					
		RSP	**6.1200E-03**	Ratio RSP to TSP (Controlled)	0.34	Refer to Table "RSP-to-TSP Ratio of Concrete Batching Process (by Emission Factors)" shown on Appendix 3.2
		FSP	**2.7818E-03**	Ratio FSP to RSP (Controlled)	0.45	Refer to Table "FSP-to-RSP and FSP-to-TSP Ratios" shown on Appendix 3.2
	Dust Collector on PFA Silo	Exhaust from dust collector (g/s)		Emission Concentration, c (mg/m3)	7.01	by engineer, Emission concentration is estimated by c = Q / V where Q = E x M x (1-Ef)
				Flow Rate (m3/hr)	11196	From Engineer
	Source ID: EP12					
	Working Hours: 0700 - 2100					
		RSP	**1.1630E-02**	Ratio RSP to TSP (Controlled)	0.53	Refer to Table "RSP-to-TSP Ratio of Concrete Batching Process (by Emission Factors)" shown on Appendix 3.2
		FSP	**5.2862E-03**	Ratio FSP to RSP (Controlled)	0.45	Refer to Table "FSP-to-RSP and FSP-to-TSP Ratios" shown on Appendix 3.2
	Dust Collector on GGBS Silo	Exhaust from dust collector (g/s)		Emission Concentration, c (mg/m3)	7.01	by engineer, Emission concentration is estimated by c = Q / V where Q = E x M x (1-Ef)
				Flow Rate (m3/hr)	11196	From Engineer
	Source ID: EP10, EP14					
	Working Hours: 0700 - 2100					
		RSP	**1.1630E-02**	Ratio RSP to TSP (Controlled)	0.53	Refer to Table "RSP-to-TSP Ratio of Concrete Batching Process (by Emission Factors)" shown on Appendix 3.2
		FSP	**5.2862E-03**	Ratio FSP to RSP (Controlled)	0.45	Refer to Table "FSP-to-RSP and FSP-to-TSP Ratios" shown on Appendix 3.2
	Dust Collector on Silica Fume Silo	Exhaust from dust collector (g/s)		Emission Concentration, c (mg/m3)	3.51	by engineer, Emission concentration is estimated by c = Q / V where Q = E x M x (1-Ef)
				Flow Rate (m3/hr)	11196	From Engineer
	Source ID: EP15, EP16					
	Working Hours: 0700 - 2100					
		RSP	**5.8148E-03**	Ratio RSP to TSP (Controlled)	0.53	Refer to Table "RSP-to-TSP Ratio of Concrete Batching Process (by Emission Factors)" shown on Appendix 3.2
		FSP	**2.6431E-03**	Ratio FSP to RSP (Controlled)	0.45	Refer to Table "FSP-to-RSP and FSP-to-TSP Ratios" shown on Appendix 3.2

Appendix 3.2 Calculations of Emission Rates

Estimation of RSP and FSP Emission Rates

Location	Source	Emission Rates	Mitigated Emission Rates	Parameters		Remarks
Proposed CBP at TYTL14&15	Paved Haul Road inside the Plant (laden & unladen cementitious materials tankers & mixer trucks) Source ID: HR01 Working Hours: 0700 - 2100	Paved Haul Road inside CBP ($g/s \cdot m^2$)		Emission factor (g/VKT)	$E = k\,(sL)^{0.91} \times (W)^{1.02}$	AP-42, Section 13.2.1, 1/11 ed.
				Particle Size Multiplier for RSP, k	0.62	*from Section 13.2.1, USEPA AP-42*
				Particle Size Multiplier for FSP, k	0.15	*from Section 13.2.1, USEPA AP-42*
				Road surface silt loading, sL (g/m^2)	12	*AP-42 Table 13.2.1-3, 1/11 ed.*
				Road Width (m)	7.3	From Engineer
				% of dust suppression = 100 - (0.8*p*d*t)/i	91.7	Equation (5-4) of USEPA's Control of Open Fugitive Dust Sources (EPA-450/3-98-008), detailed calculations on 'Calculation of Dust Suppression Efficiency from Watering' on Appendix 3.2
				Number of vehicle per hour	90	From Engineer, number of laden & unladen cementitious materials tankers & mixer trucks per hour
				Average weight of the vehicles (US ton)	29.2	From Engineer, total weight of laden & unladen cementitious materials tankers & mixer trucks divided by above number of vehicles per hour
		RSP	**5.2830E-05**	E for RSP (g/vehicle-meter-travelled)	0.186	
		FSP	**1.2781E-05**	E for FSP (g/vehicle-meter-travelled)	0.045	
	Paved Haul Road inside the Plant (laden cementitious materials tankers & unladen mixer trucks) Source ID: HR02 Working Hours: 0700 - 2100	Paved Haul Road inside CBP ($g/s \cdot m^2$)		Emission factor (g/VKT)	$E = k\,(sL)^{0.91} \times (W)^{1.02}$	AP-42, Section 13.2.1, 1/11 ed.
				Particle Size Multiplier for RSP, k	0.62	*from Section 13.2.1, USEPA AP-42*
				Particle Size Multiplier for FSP, k	0.15	*from Section 13.2.1, USEPA AP-42*
				Road surface silt loading, sL (g/m^2)	12	*AP-42 Table 13.2.1-3, 1/11 ed.*
				Road Width (m)	3.65	From Engineer
				% of dust suppression = 100 - (0.8*p*d*t)/i	91.7	Equation (5-4) of USEPA's Control of Open Fugitive Dust Sources (EPA-450/3-98-008), detailed calculations on 'Calculation of Dust Suppression Efficiency from Watering' on Appendix 3.2
				Number of vehicle per hour	45	From Engineer, laden cementitious materials tankers & unladen mixer trucks per hour
				Average weight of the vehicles (US ton)	17.7	From Engineer, total weight of laden cementitious materials tankers & unladen mixer trucks divided by above number of vehicles per hour
		RSP	**3.1711E-05**	E for RSP (g/vehicle-meter-travelled)	0.112	
		FSP	**7.6720E-06**	E for FSP (g/vehicle-meter-travelled)	0.027	
	Paved Haul Road inside the Plant (unladen cementitious materials tankers & laden mixer trucks) Source ID: HR03 Working Hours: 0700 - 2100	Paved Haul Road inside CBP ($g/s \cdot m^2$)		Emission factor (g/VKT)	$E = k\,(sL)^{0.91} \times (W)^{1.02}$	AP-42, Section 13.2.1, 1/11 ed.
				Particle Size Multiplier for RSP, k	0.62	*from Section 13.2.1, USEPA AP-42*
				Particle Size Multiplier for FSP, k	0.15	*from Section 13.2.1, USEPA AP-42*
				Road surface silt loading, sL (g/m^2)	12	*AP-42 Table 13.2.1-3, 1/11 ed.*
				Road Width (m)	3.65	From Engineer
				% of dust suppression = 100 - (0.8*p*d*t)/i	91.7	Equation (5-4) of USEPA's Control of Open Fugitive Dust Sources (EPA-450/3-98-008), detailed calculations on 'Calculation of Dust Suppression Efficiency from Watering' on Appendix 3.2
				Number of vehicle per hour	45	From Engineer, number of unladen cementitious materials tankers & laden mixer trucks per hour
				Average weight of the vehicles (US ton)	40.7	From Engineer, total weight of unladen cementitious materials tankers & laden mixer trucks divided by above number of vehicles per hour
		RSP	**7.4120E-05**	E for RSP (g/vehicle-meter-travelled)	0.261	
		FSP	**1.7932E-05**	E for FSP (g/vehicle-meter-travelled)	0.063	

Remarks

- The number of trips and the average weight of vehicles are estimated from the activities of all concerned vehicles travelled on the road.

Type of Vehicles	No. of Trips per Hour	Full load Weight (US ton)	Unladen Weight (US ton)
Mixer Truck	43	41.9	16.5
Cementitious materials (PFA/GGBS/Silica Fume) Truck	2	43.0	15.4

Appendix 3.2 Calculations of Emission Rates

Calculation of Dust Suppression Efficiency from Watering

Dust suppression efficiency is assumed to be 91.7%.
Assumptions are stated as below. With reference to the Equation (5-4) of USEPA's Control of Open Fugitive Dust Sources (EPA-450/3-98-008), dust suppression efficiency can be estimated by:

$$C = 100 - \frac{0.8 \cdot p \cdot d \cdot t}{i}$$

where
C = average control effiency, in percent
p = potential average hourly daytime evaporation rate, in mm/hr
d = average hourly daytime traffic rate, in vehicles per hour
i = application intensity, in L/m^2
t = time between applications, in hour

The following assumptions are made for assessment purpose:

Assumption 1
Potential average hourly daytime evaporation rate p can be estimated by 0.0049 * e, where e is the mean annual average evaporation rate (inches).
From past measurement data in Hong Kong's Observatory, evaporation recorded at King's Park between 1992 - 2020 is 1204.1 mm[1]. Therefore p = 0.0049 * (1204.1 mm) = 0.0049 * (47.40551 inches) = 0.2323.

Assumption 2
For HR01, estimate average hourly daytime traffic rate in vehicles per hour = 90[2] (d=90)
For HR02-HR03, estimate average hourly daytime traffic rate in vehicles per hour = 45[2] (d=45)

Assumption 3
For HR01, assume watering application intensity as 2.02 L/m^2 [2] (i=2.02)
For HR02-HR03, assume watering application intensity as 1.01 L/m^2 [2] (i=1.01)

Assumption 4
Assume watering frequency as once every hour. [2] (t=1)

With the above assumptions, dust suppression efficiency is calculated as below:
For HR01: C = 100 - 0.8*0.2323*90*1/2.02 = **91.7%**
For HR02-HR03: C = 100 - 0.8*0.2323*45*1/1.01 = **91.7%**

Notes:
[1] The evaporation recorded at King's Park between 1992 - 2020 is taken from https://www.hko.gov.hk/en/cis/normal/1991_2020/normals.htm
[2] Provided by the Engineer

Appendix 3.2 Calculations of Emission Rates

Dust Emission Source Listing in AERMOD

Sources from the proposed Concrete Batching Plant at TYTL14&15

											RSP Emission Rate*		FSP Emission Rate*		
Source ID	Type	X1	Y1	Base Elevation (mPD)	Height (mAG) ^	Exit Temp. (K)	Exit velocity (m/s) ^	Stack Diameter (m) ^	Szinit (m)	Working Hours	Working hours	Non-working hours	Working hours	Non-working hours	Remarks
EP01	Areapoly	827870.97	824758.12	4.20	6.30	-	-	-	0.93023	0700 - 2100	6.4371E-04	0.00E+00	1.5079E-04	0.00E+00	[1]
EP03	Point	827864.30	824675.10	4.20	8.80	0.00	15.60	0.42	-	0700 - 2100	1.5233E-03	0.00E+00	6.9239E-04	0.00E+00	-
EP04	Point	827864.40	824681.80	4.20	8.80	0.00	15.60	0.42	-	0700 - 2100	1.5233E-03	0.00E+00	6.9239E-04	0.00E+00	-
EP05	Point	827864.70	824688.30	4.20	8.80	0.00	15.60	0.42	-	0700 - 2100	1.5233E-03	0.00E+00	6.9239E-04	0.00E+00	-
EP06	Point	827863.90	824675.00	4.20	8.80	0.00	11.90	0.42	-	0700 - 2100	2.5639E-03	0.00E+00	7.5408E-04	0.00E+00	-
EP07	Point	827864.20	824681.80	4.20	8.80	0.00	11.90	0.42	-	0700 - 2100	2.5639E-03	0.00E+00	7.5408E-04	0.00E+00	-
EP08	Point	827864.40	824688.40	4.20	8.80	0.00	11.90	0.42	-	0700 - 2100	2.5639E-03	0.00E+00	7.5408E-04	0.00E+00	-
EP09	Point	827863.20	824688.50	4.20	31.00	0.00	22.21	0.42	-	0700 - 2100	6.1200E-03	0.00E+00	2.7818E-03	0.00E+00	-
EP10	Point	827866.60	824688.40	4.20	31.00	0.00	22.21	0.42	-	0700 - 2100	1.1630E-02	0.00E+00	5.2862E-03	0.00E+00	-
EP11	Point	827862.60	824681.70	4.20	31.00	0.00	22.21	0.42	-	0700 - 2100	6.1200E-03	0.00E+00	2.7818E-03	0.00E+00	-
EP12	Point	827866.50	824681.50	4.20	31.00	0.00	22.21	0.42	-	0700 - 2100	1.1630E-02	0.00E+00	5.2862E-03	0.00E+00	-
EP13	Point	827862.40	824674.80	4.20	31.00	0.00	22.21	0.42	-	0700 - 2100	6.1200E-03	0.00E+00	2.7818E-03	0.00E+00	-
EP14	Point	827866.30	824674.80	4.20	31.00	0.00	22.21	0.42	-	0700 - 2100	1.1630E-02	0.00E+00	5.2862E-03	0.00E+00	-
EP15	Point	827864.60	824685.30	4.20	31.00	0.00	22.21	0.42	-	0700 - 2100	5.8148E-03	0.00E+00	2.6431E-03	0.00E+00	-
EP16	Point	827864.40	824678.40	4.20	31.00	0.00	22.21	0.42	-	0700 - 2100	5.8148E-03	0.00E+00	2.6431E-03	0.00E+00	-
HR01	Areapoly	827867.50	824740.50	4.20	3.3065	-	-	-	3.07581	0700 - 2100	5.2830E-05	0.00E+00	1.2781E-05	0.00E+00	[2]
HR02	Areapoly	827880.20	824733.10	4.20	3.3065	-	-	-	3.07581	0700 - 2100	3.1711E-05	0.00E+00	7.6720E-06	0.00E+00	[2]
HR03	Areapoly	827879.00	824680.10	4.20	3.3065	-	-	-	3.07581	0700 - 2100	7.4120E-05	0.00E+00	1.7932E-05	0.00E+00	[2]

Remarks:

Emission rate for Area source (g/m^2/s) = Emission rate (g/s) / Area

* - Emission rate of point source is in gram per second (g/s) while the one of area source is in gram per square meter per second (g/m^2/s).

^ - From Engineer

[1] release height of EP01= (drop height + height of hopper)/2; initial vertical dimension of EP01 = (drop height -height of hopper)/2.15

[2] release height of HR01-HR03 = weighted average vehicle height *1.7 /2; initial vertical dimention of HR01-HR03 = weighted avergae vehicle height *1.7/2.15

Vertices of Area Sources

Source ID	X1	Y1	X2	Y2	X3	Y3	X4	Y4
EP01	827870.97	824758.12	827871.02	824761.35	827873.70	824761.32	827873.71	824758.12
HR01	827867.50	824740.50	827898.90	824739.60	827898.70	824732.30	827867.30	824733.10
HR02	827880.20	824733.10	827878.90	824675.90	827875.30	824676.00	827876.50	824733.20
HR03	827879.00	824680.10	827880.20	824733.10	827883.90	824733.00	827882.60	824680.00

Appendix 3.2 Calculations of Emission Rates

Dust Emission Source Listing in AERMOD

Hourly Profile for EP01, unloading of aggregate from aggregate barge

Hour	EP01
Hour 1	0.0000
Hour 2	0.0000
Hour 3	0.0000
Hour 4	0.0000
Hour 5	0.0000
Hour 6	0.0000
Hour 7	0.0000
Hour 8	1.0000
Hour 9	1.0000
Hour 10	1.0000
Hour 11	1.0000
Hour 12	0.0000
Hour 13	0.0000
Hour 14	0.0000
Hour 15	0.0000
Hour 16	1.0000
Hour 17	1.0000
Hour 18	1.0000
Hour 19	1.0000
Hour 20	0.0000
Hour 21	0.0000
Hour 22	0.0000
Hour 23	0.0000
Hour 24	0.0000

Hourly Profile for EP03-EP05, DC on Mixer

Hour	EP03-EP05
Hour 1	0.0000
Hour 2	0.0000
Hour 3	0.0000
Hour 4	0.0000
Hour 5	0.0000
Hour 6	0.0000
Hour 7	0.0000
Hour 8	1.0000
Hour 9	1.0000
Hour 10	1.0000
Hour 11	1.0000
Hour 12	1.0000
Hour 13	1.0000
Hour 14	1.0000
Hour 15	1.0000
Hour 16	1.0000
Hour 17	1.0000
Hour 18	1.0000
Hour 19	1.0000
Hour 20	1.0000
Hour 21	1.0000
Hour 22	0.0000
Hour 23	0.0000
Hour 24	0.0000

Hourly Profile for EP06-EP08, DC on Weigh Hopper

Hour	EP06-EP08
Hour 1	0.0000
Hour 2	0.0000
Hour 3	0.0000
Hour 4	0.0000
Hour 5	0.0000
Hour 6	0.0000
Hour 7	0.0000
Hour 8	1.0000
Hour 9	1.0000
Hour 10	1.0000
Hour 11	1.0000
Hour 12	1.0000
Hour 13	1.0000
Hour 14	1.0000
Hour 15	1.0000
Hour 16	1.0000
Hour 17	1.0000
Hour 18	1.0000
Hour 19	1.0000
Hour 20	1.0000
Hour 21	1.0000
Hour 22	0.0000
Hour 23	0.0000
Hour 24	0.0000

Hourly Profile for EP09, EP11&EP13 , DC on Cement Silo

Hour	EP09, EP11&EP13
Hour 1	0.0000
Hour 2	0.0000
Hour 3	0.0000
Hour 4	0.0000
Hour 5	0.0000
Hour 6	0.0000
Hour 7	0.0000
Hour 8	0.0000
Hour 9	0.0000
Hour 10	0.0000
Hour 11	0.0000
Hour 12	1.0000
Hour 13	1.0000
Hour 14	1.0000
Hour 15	1.0000
Hour 16	0.0000
Hour 17	0.0000
Hour 18	0.0000
Hour 19	0.0000
Hour 20	0.0000
Hour 21	0.0000
Hour 22	0.0000
Hour 23	0.0000
Hour 24	0.0000

Hourly Profile for EP12, DC on PFA Silo

Hour	EP12
Hour 1	0.0000
Hour 2	0.0000
Hour 3	0.0000
Hour 4	0.0000
Hour 5	0.0000
Hour 6	0.0000
Hour 7	0.0000
Hour 8	1.0000
Hour 9	0.0000
Hour 10	1.0000
Hour 11	0.0000
Hour 12	1.0000
Hour 13	0.0000
Hour 14	1.0000
Hour 15	0.0000
Hour 16	1.0000
Hour 17	0.0000
Hour 18	1.0000
Hour 19	0.0000
Hour 20	0.0000
Hour 21	0.0000
Hour 22	0.0000
Hour 23	0.0000
Hour 24	0.0000

Hourly Profile for EP10 &EP14 , DC on GGBS Silo

Hour	EP10	EP14
Hour 1	0.0000	0.0000
Hour 2	0.0000	0.0000
Hour 3	0.0000	0.0000
Hour 4	0.0000	0.0000
Hour 5	0.0000	0.0000
Hour 6	0.0000	0.0000
Hour 7	0.0000	0.0000
Hour 8	0.0000	0.0000
Hour 9	1.0000	1.0000
Hour 10	0.0000	0.0000
Hour 11	1.0000	1.0000
Hour 12	0.0000	0.0000
Hour 13	1.0000	1.0000
Hour 14	0.0000	0.0000
Hour 15	1.0000	1.0000
Hour 16	0.0000	0.0000
Hour 17	1.0000	1.0000
Hour 18	0.0000	0.0000
Hour 19	1.0000	1.0000
Hour 20	0.0000	0.0000
Hour 21	0.0000	0.0000
Hour 22	0.0000	0.0000
Hour 23	0.0000	0.0000
Hour 24	0.0000	0.0000

Hourly Profile for EP15-EP16 , DC on Silica Fume Silo

Hour	EP15	EP16
Hour 1	0.0000	0.0000
Hour 2	0.0000	0.0000
Hour 3	0.0000	0.0000
Hour 4	0.0000	0.0000
Hour 5	0.0000	0.0000
Hour 6	0.0000	0.0000
Hour 7	0.0000	0.0000
Hour 8	1.0000	1.0000
Hour 9	1.0000	1.0000
Hour 10	0.0000	0.0000
Hour 11	0.0000	0.0000
Hour 12	0.0000	0.0000
Hour 13	0.0000	0.0000
Hour 14	0.0000	0.0000
Hour 15	0.0000	0.0000
Hour 16	0.0000	0.0000
Hour 17	0.0000	0.0000
Hour 18	1.0000	1.0000
Hour 19	1.0000	1.0000
Hour 20	0.0000	0.0000
Hour 21	0.0000	0.0000
Hour 22	0.0000	0.0000
Hour 23	0.0000	0.0000
Hour 24	0.0000	0.0000

Hourly Profile for HR01-HR03 , Paved Haul Road

Hour	HR01-HR03
Hour 1	0.0000
Hour 2	0.0000
Hour 3	0.0000
Hour 4	0.0000
Hour 5	0.0000
Hour 6	0.0000
Hour 7	0.0000
Hour 8	1.0000
Hour 9	1.0000
Hour 10	1.0000
Hour 11	1.0000
Hour 12	1.0000
Hour 13	1.0000
Hour 14	1.0000
Hour 15	1.0000
Hour 16	1.0000
Hour 17	1.0000
Hour 18	1.0000
Hour 19	1.0000
Hour 20	1.0000
Hour 21	1.0000
Hour 22	0.0000
Hour 23	0.0000
Hour 24	0.0000

Appendix 3.2 Calculations of Emission Rates

Particle Size Distribution of Process

RSP-to-TSP Ratio of Concrete Batching Process (by Emission Factors)

Source	Uncontrolled Emission Factor (kg/Mg)		Controlled Emission Factor (kg/Mg)		Uncontrolled RSP-to-TSP Ratio	Controlled RSP-to-TSP Ratio
	TSP	RSP	TSP	RSP		
Cement unloading to elevated storage silo (pneumatic)	0.36	0.24	0.00050	0.00017	0.6667	**0.3400**
Cement supplement unloading to elevated storage silo (pneumatic)	1.57	0.65	0.0045	0.0024	0.4140	**0.5333**
Weigh hopper loading (Aggregate and Sand)	0.0026	0.0013	-	-	**0.5000**	-
Mixer loading (central mix)	0.286	0.078	0.0092	0.0028	0.2727	**0.3043**

Remark:

(a) Reference from Table 11.12-1 Emission Factors for Concrete Batching, Chapter 11.12 Concrete Batching, AP-42, USEPA (Version 01/12)

Particle Size Distribution of General Concrete Batching Process (Controlled by Fabric Filter)

Perentage of Particle Size Range

Particale Size Range [a]	Average Partical Size [a]	% before Removal [a]	Removal Efficiency % [b]	% after Removal	Normalised Fraction [c]	Normalised Fraction for PM10 [c, d]
≤ 1.0	0.50	4	99.0%	0.04	7%	12%
1.0 - 2.0	1.50	7	99.0%	0.07	12%	21%
2.0 - 2.5	2.25	4	99.0%	0.04	7%	12%
2.5 - 3.0	2.75	3	99.5%	0.015	3%	5%
3.0 - 4.0	3.50	7	99.5%	0.035	6%	11%
4.0 - 5.0	4.50	5	99.5%	0.025	4%	8%
5.0 - 6.0	5.50	4	99.5%	0.02	3%	6%
6.0 - 10	8.00	17	99.5%	0.085	15%	26%
10 - 30	20.00	49	99.5%	0.245	43%	-

Remark:

(a) Derived from Table B.2.2 "Description of Particle Size Categories" for Category 3 “Mechanically Generated Aggregate, Unprocessed Ores”, Page B.2-13 of Appendix B.2 Generalized Particle Size Distributions, AP-42, USEPA (Version 1/95) (see below)

(b) Control efficiency of fabric filter on different size of particle refers to Table B.2-3 Typical Collection Efficiencies of Various Particulate Control Device, Appendix B.2 Generalized Particle Size Distributions, AP-42, USEPA (Version 1/95) (see below)

(c) Normalised Fraction = % after normal of each particale size range / sum of % after removal of all particle size ranges

(d) Sum of normalizsed fraction maintains 100% in air dispersion model by applying percentage in 6 decimal places.

Cumulative Percentage of Particle Size

Particale Size [a]	Cumulative ratio before Removal [a]	Cumulative % after Removal [b]
≤ 1.0	4.000%	7%
≤ 2.0	11.000%	19%
≤ 2.5	15.000%	26%
≤ 3.0	18.000%	29%
≤ 4.0	25.000%	35%
≤ 5.0	30.000%	39%
≤ 6.0	34.000%	43%
≤ 10	51.000%	57%
≤ 30	100.000%	100%

Remarks

(a) Reference from Table B.2.2 "Description of Particle Size Categories" for Category 3 “Mechanically Generated Aggregate, Unprocessed Ores”, Page B.2-13 of Appendix B.2 Generalized Particle Size Distributions, AP-42, USEPA (Version 1/95) (see below)

(b) Deducted from Normalised Fraction of Table "Percentage of Particle Size Range"

FSP-to-RSP and FSP-to-TSP Ratios

FSP-to-RSP ratio (Uncontrolled)	**0.294**
FSP-to-RSP ratio (Controlled)	**0.455**
FSP-to-TSP ratio (Uncontrolled)	**0.150**

Remarks

(a) Deducted from Table "Cumulative Percentage of Particle Size Range"

Appendix 3.2 Calculations of Emission Rates

Particle Size Distribution of Process

Dust collector on Cement Silo / Cement Supplement Silo		for TSP	for RSP	for FSP
Particale Size Range	**Average Partical Size**	**Percentage**	**Percentage**	**Percentage**
≤ 1.0	0.50	N/A	12%	27%
1.0 - 2.0	1.50	N/A	21%	47%
2.0 - 2.5	2.25	N/A	12%	27%
2.5 - 3.0	2.75	N/A	5%	-
3.0 - 4.0	3.50	N/A	11%	-
4.0 - 5.0	4.50	N/A	8%	-
5.0 - 6.0	5.50	N/A	6%	-
6.0 - 10	8.00	N/A	26%	-
10.0 - 30.0	20.00	N/A	-	-

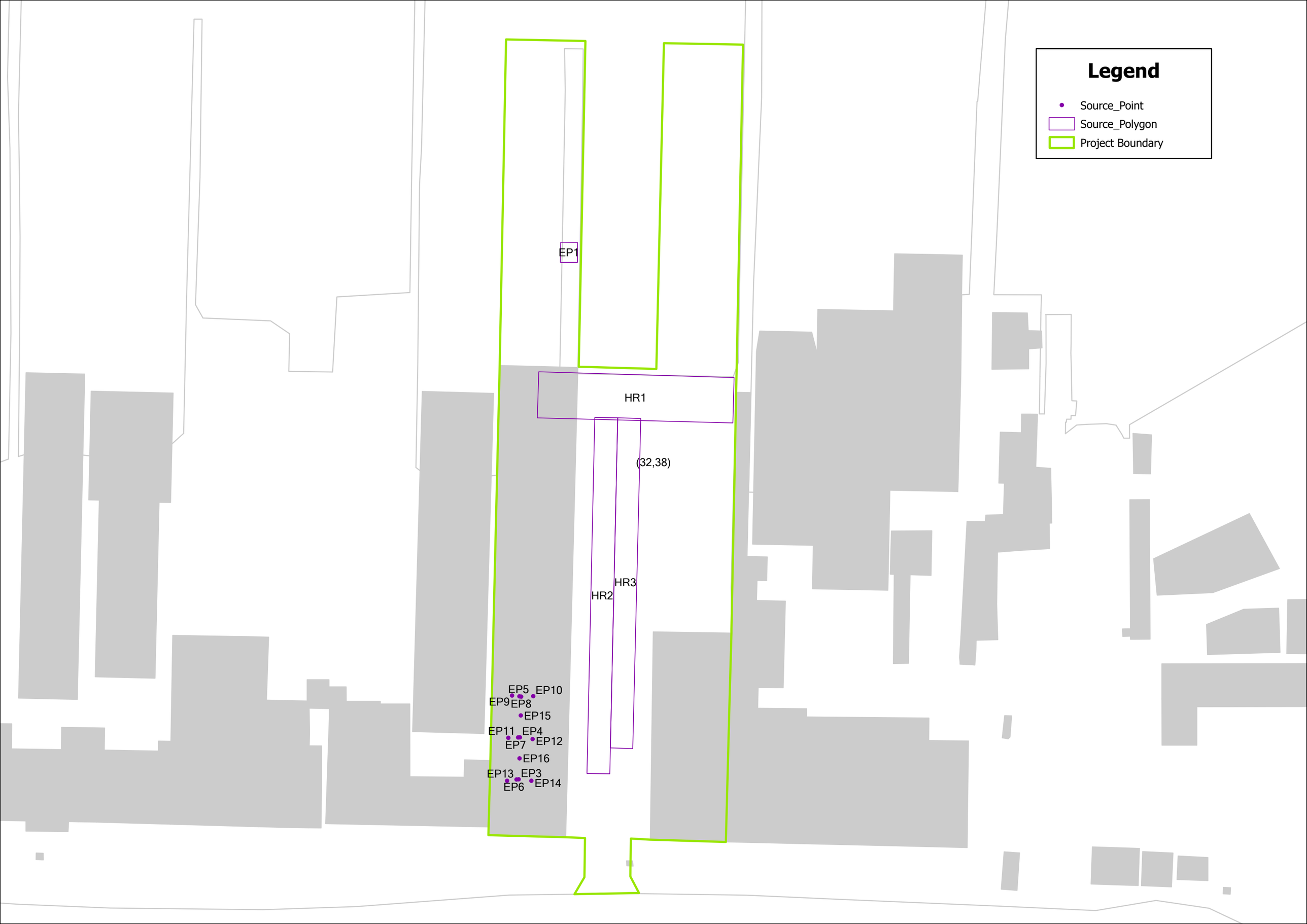
Remark:

(a) Size distribution for RSP refers to Normalised Fraction for PM10 of Table "Particle Size Distribution of General Concrete Batching Process (Controlled by Fabric Filter)"

Dust collector on Mixer & Weigh Hoppers		for TSP	for RSP	for FSP
Particale Size Range	**Average Partical Size**	**Percentage**	**Percentage**	**Percentage**
≤ 1.0	0.50	N/A	12%	27%
1.0 - 2.0	1.50	N/A	21%	47%
2.0 - 2.5	2.25	N/A	12%	27%
2.5 - 3.0	2.75	N/A	5%	-
3.0 - 4.0	3.50	N/A	11%	-
4.0 - 5.0	4.50	N/A	8%	-
5.0 - 6.0	5.50	N/A	6%	-
6.0 - 10	8.00	N/A	26%	-
10.0 - 30.0	20.00	N/A	-	-

Remark:

(a) Size distribution for RSP refers to Normalised Fraction for PM10 of Table "Particle Size Distribution of General Concrete Batching Process (Controlled by Fabric Filter)"


Legend
Source_Point
Source_Polygon
Project Boundary
EP1
HR1
(32,38)
HR3
HR2
EP5
EP10
EP9
EP8
EP15
EP11
EP4
EP7
EP12
EP16
EP13
EP3
EP6
EP14

APPENDIX 3.3

Determination of Surface Characteristics Parameters

Appendix 3.3 Determination of Surface Characteristics Parameters

Summary of Default Albedo, Bowen Ratio and Surface Roughness from AERMET

Code	Color Sampl	Hong Kong Planning Department Classification	Roughness	Albedo	Bowen Rat
1		Private Residential	1	0.18	1.5
2		Public Residential	1	0.18	1.5
3		Rural Settlement	0.375	0.165	0.9
11		Commercial/Business and Office	1	0.18	1.5
21		Industrial Land	0.7	0.18	1.5
22		Industrial Estates/Science and Technology Parks	0.7	0.18	1.5
23		Warehouse and Open Storage	0.7	0.18	1.5
31		Government, Institutional and Community Facilities	0.7	0.18	1.5
32		Open Space and Recreation	0.04	0.15	1
41		Roads and Transport Facilities	0.7	0.18	1.5
42		Railways	0.7	0.18	1.5
43		Airport	0.07	0.18	1.5
44		Port Facilities	0.7	0.18	1.5
51		Cemeteries/Funeral Facilities	0.7	0.18	1.5
52		Utilities	0.7	0.18	1.5
53		Vacant Land/Construction in Progress	0.2	0.18	1
54		Others	0.2	0.18	1
61		Agricultural Land	0.1575	0.18	0.55
62		Fish Ponds/Gei Wais	0.001	0.1	0.1
71		Woodland	1.05	0.1625	0.75
72		Shrubland	0.3	0.18	1.25
73		Grassland	0.065	0.185	0.8
74		Mangrove/Swamp	0.065	0.14	0.225
81		Badland	0.15	0.1625	0.75
83		Rocky Shore	0.05	0.2	4.75
91		Reservoirs	0.001	0.1	0.1
92		Streams and Nullahs	0.001	0.1	0.1
99		SZ Residential *	1	0.18	1.5
0		Open Sea *	0.001	0.1	0.1

* Non-PlanD Land Utilization categories

Remarks

1. Surface roughness length is based on an inverse-distance weighted geometric mean for an upwind distance of 1km relative to the concerned site.
2. Reference to AERMOD Implementation Guide, the determination of the Bowen ratio should be based on a simple unweighted geometric mean (i.e., no direction or distance dependency) for a representative domain, with a default domain defined by a 10km by 10km region centered on the measurement site.
3. Reference to AERMOD Implementation Guide, the determination of the albedo should be based on a simple unweighted arithmetic mean (i.e., no direction or distance dependency) for the same representative domain as defined for Bowen ratio, with a default domain defined by a 10km by 10km region centered on the measurement site.

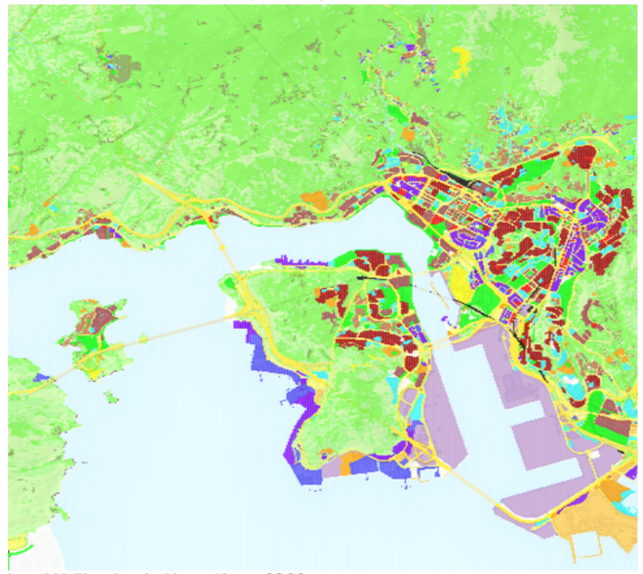
Appendix 3.3 Determination of Surface Characteristics Parameters

(32,37)

Code	Co	Hong Kong Planning Department Classification	Roughness	Albedo	Bowen Ratio	Grid Count	Percent	Albedo x Perce	b^n/Sn
1		Private Residential	1	0.18	1.5	17371	1.74%	0.00312678	1.007068197
2		Public Residential	1	0.18	1.5	21894	2.19%	0.00394092	1.008916773
3		Rural Settlement	0.375	0.165	0.9	8690	0.87%	0.00143385	0.999084836
11		Commercial/Business and Office	1	0.18	1.5	2742	0.27%	0.00049356	1.001112404
21		Industrial Land	0.7	0.18	1.5	13066	1.31%	0.00235188	1.005311865
22		Industrial Estates/Science and Technology Parks	0.7	0.18	1.5	0	0.00%	0	1
23		Warehouse and Open Storage	0.7	0.18	1.5	9463	0.95%	0.00170334	1.003844287
31		Government, Institutional and Community Facilities	0.7	0.18	1.5	15402	1.54%	0.00277236	1.006264514
32		Open Space and Recreation	0.04	0.15	1	21159	2.12%	0.00317385	1
41		Roads and Transport Facilities	0.7	0.18	1.5	56257	5.63%	0.01012626	1.023072394
42		Railways	0.7	0.18	1.5	1626	0.16%	0.00029268	1.000659504
43		Airport	0.07	0.18	1.5	0	0.00%	0	1
44		Port Facilities	0.7	0.18	1.5	36793	3.68%	0.00662274	1.015030111
51		Cemeteries/Funeral Facilities	0.7	0.18	1.5	3432	0.34%	0.00061776	1.001392525
52		Utilities	0.7	0.18	1.5	9042	0.90%	0.00162756	1.003672944
53		Vacant Land/Construction in Progress	0.2	0.18	1	9715	0.97%	0.0017487	1
54		Others	0.2	0.18	1	9843	0.98%	0.00177174	1
61		Agricultural Land	0.1575	0.18	0.55	13144	1.31%	0.00236592	0.992172824
62		Fish Ponds/Gei Wais	0.001	0.1	0.1	0	0.00%	0	1
71		Woodland	1.05	0.1625	0.75	266092	26.61%	0.04323995	0.926306692
72		Shrubland	0.3	0.18	1.25	75431	7.54%	0.01357758	1.016974396
73		Grassland	0.065	0.185	0.8	83212	8.32%	0.01539422	0.981603106
74		Mangrove/Swamp	0.065	0.14	0.225	18	0.00%	0.00000252	0.999973151
81		Badland	0.15	0.1625	0.75	0	0.00%	0	1
83		Rocky Shore	0.05	0.2	4.75	326	0.03%	0.0000652	1.000508084
91		Reservoirs	0.001	0.1	0.1	76	0.01%	0.0000076	0.999825019
92		Streams and Nullahs	0.001	0.1	0.1	1796	0.18%	0.0001796	0.995873096
99		SZ Residential *	1	0.18	1.5	0	0.00%	0	1
0		Open Sea *	0.001	0.1	0.1	323410	32.34%	0.032341	0.474886693
				0.148978	**0.467802**	1000000			

* Non-PlanD Land Utilization categories

Center: X=827855, Y=824285, Z=97.0; Met Year=2019;



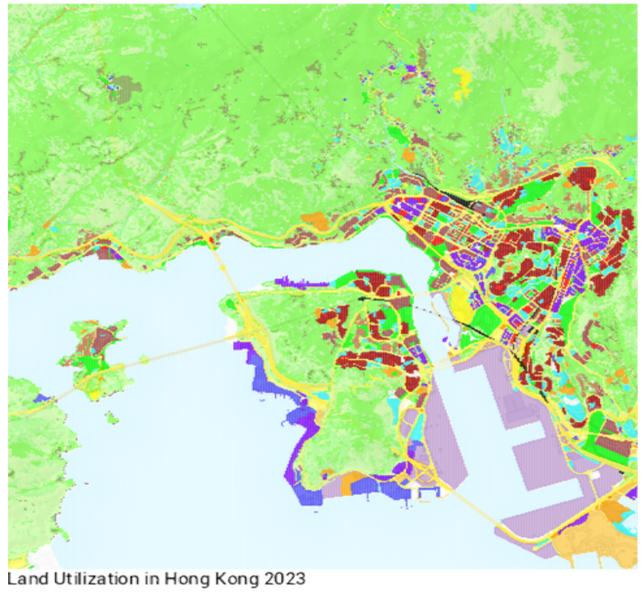
Land Utilization in Hong Kong 2023

(32,38)

Code	Co	Hong Kong Planning Department Classification	Roughness	Albedo	Bowen Ratio	Grid Count	Percent	Albedo x Perce	b^n/Sn
1		Private Residential	1	0.18	1.5	17371	1.74%	0.00312678	1.007068197
2		Public Residential	1	0.18	1.5	21894	2.19%	0.00394092	1.008916773
3		Rural Settlement	0.375	0.165	0.9	8691	0.87%	0.001434015	0.999084731
11		Commercial/Business and Office	1	0.18	1.5	2742	0.27%	0.00049356	1.001112404
21		Industrial Land	0.7	0.18	1.5	13046	1.30%	0.00234828	1.005303713
22		Industrial Estates/Science and Technology Parks	0.7	0.18	1.5	0	0.00%	0	1
23		Warehouse and Open Storage	0.7	0.18	1.5	9461	0.95%	0.00170298	1.003843473
31		Government, Institutional and Community Facilities	0.7	0.18	1.5	15526	1.55%	0.00279468	1.006315108
32		Open Space and Recreation	0.04	0.15	1	21008	2.10%	0.0031512	1
41		Roads and Transport Facilities	0.7	0.18	1.5	56271	5.63%	0.01012878	1.023078201
42		Railways	0.7	0.18	1.5	1618	0.16%	0.00029124	1.000656258
43		Airport	0.07	0.18	1.5	0	0.00%	0	1
44		Port Facilities	0.7	0.18	1.5	36793	3.68%	0.00662274	1.015030111
51		Cemeteries/Funeral Facilities	0.7	0.18	1.5	3436	0.34%	0.00061848	1.001394149
52		Utilities	0.7	0.18	1.5	9110	0.91%	0.0016398	1.003700618
53		Vacant Land/Construction in Progress	0.2	0.18	1	6612	0.66%	0.00119016	1
54		Others	0.2	0.18	1	9529	0.95%	0.00171522	1
61		Agricultural Land	0.1575	0.18	0.55	13211	1.32%	0.00237798	0.992133083
62		Fish Ponds/Gei Wais	0.001	0.1	0.1	0	0.00%	0	1
71		Woodland	1.05	0.1625	0.75	291139	29.11%	0.047310088	0.919656111
72		Shrubland	0.3	0.18	1.25	82562	8.26%	0.01486116	1.018593932
73		Grassland	0.065	0.185	0.8	89093	8.91%	0.016482205	0.980315786
74		Mangrove/Swamp	0.065	0.14	0.225	21	0.00%	0.00000294	0.999968676
81		Badland	0.15	0.1625	0.75	7	0.00%	1.1375E-06	0.999997986
83		Rocky Shore	0.05	0.2	4.75	326	0.03%	0.0000652	1.000508084
91		Reservoirs	0.001	0.1	0.1	437	0.04%	0.0000437	0.998994276
92		Streams and Nullahs	0.001	0.1	0.1	1913	0.19%	0.0001913	0.995604842
99		SZ Residential *	1	0.18	1.5	0	0.00%	0	1
0		Open Sea *	0.001	0.1	0.1	288183	28.82%	0.0288183	0.515011587
				0.151353	**0.503285**	1000000			

* Non-PlanD Land Utilization categories

Center: X=827845, Y=824675, Z=6.0; Met Year=2019;



Land Utilization in Hong Kong 2023

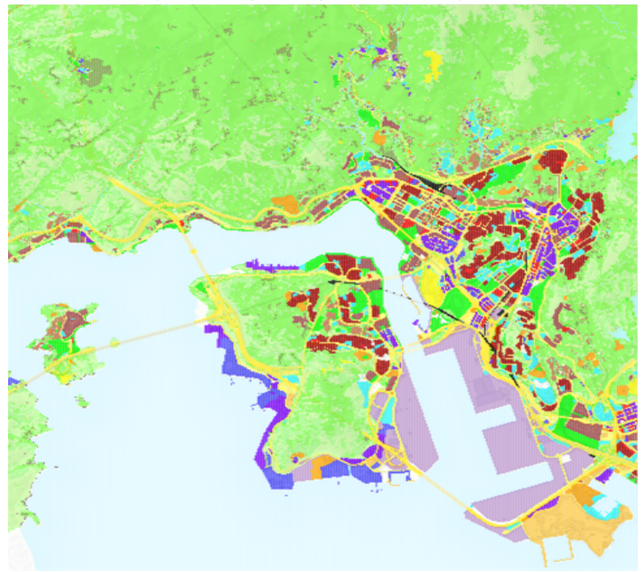
Appendix 3.3 Determination of Surface Characteristics Parameters

(33,37)

Code	Co	Hong Kong Planning Department Classification	Roughness	Albedo	Bowen Ratio	Grid Count	Percent	Albedo x Perce	b^n/Sn
1		Private Residential	1	0.18	1.5	17500	1.75%	0.00315	1.007120873
2		Public Residential	1	0.18	1.5	22351	2.24%	0.00402318	1.00910374
3		Rural Settlement	0.375	0.165	0.9	8634	0.86%	0.00142461	0.999090731
11		Commercial/Business and Office	1	0.18	1.5	3142	0.31%	0.00056556	1.001274783
21		Industrial Land	0.7	0.18	1.5	13757	1.38%	0.00247626	1.005593569
22		Industrial Estates/Science and Technology Parks	0.7	0.18	1.5	0	0.00%	0	1
23		Warehouse and Open Storage	0.7	0.18	1.5	9464	0.95%	0.00170352	1.003844694
31		Government, Institutional and Community Facilities	0.7	0.18	1.5	16541	1.65%	0.00297738	1.006729339
32		Open Space and Recreation	0.04	0.15	1	21126	2.11%	0.0031689	1
41		Roads and Transport Facilities	0.7	0.18	1.5	58158	5.82%	0.01046844	1.023861271
42		Railways	0.7	0.18	1.5	1618	0.16%	0.00029124	1.000656258
43		Airport	0.07	0.18	1.5	0	0.00%	0	1
44		Port Facilities	0.7	0.18	1.5	36793	3.68%	0.00662274	1.015030111
51		Cemeteries/Funeral Facilities	0.7	0.18	1.5	3727	0.37%	0.00067086	1.001512311
52		Utilities	0.7	0.18	1.5	9578	0.96%	0.00172404	1.003891096
53		Vacant Land/Construction in Progress	0.2	0.18	1	7528	0.75%	0.00135504	1
54		Others	0.2	0.18	1	11054	1.11%	0.00198972	1
61		Agricultural Land	0.1575	0.18	0.55	12660	1.27%	0.0022788	0.992459953
62		Fish Ponds/Gei Wais	0.001	0.1	0.1	0	0.00%	0	1
71		Woodland	1.05	0.1625	0.75	273385	27.34%	0.044425063	0.924365278
72		Shrubland	0.3	0.18	1.25	73814	7.38%	0.01328652	1.016607515
73		Grassland	0.065	0.185	0.8	76616	7.66%	0.01417396	0.983048947
74		Mangrove/Swamp	0.065	0.14	0.225	17	0.00%	0.00000238	0.999974642
81		Badland	0.15	0.1625	0.75	0	0.00%	0	1
83		Rocky Shore	0.05	0.2	4.75	326	0.03%	0.0000652	1.000508084
91		Reservoirs	0.001	0.1	0.1	4736	0.47%	0.0004736	0.989154201
92		Streams and Nullahs	0.001	0.1	0.1	1829	0.18%	0.0001829	0.995797427
99		SZ Residential *	1	0.18	1.5	0	0.00%	0	1
0		Open Sea *	0.001	0.1	0.1	315646	31.56%	0.0315646	0.483452711
				0.149065	**0.471855**	1000000			

* Non-PlanD Land Utilization categories

Center: X=828315, Y=824355, Z=74.0; Met Year=2019;



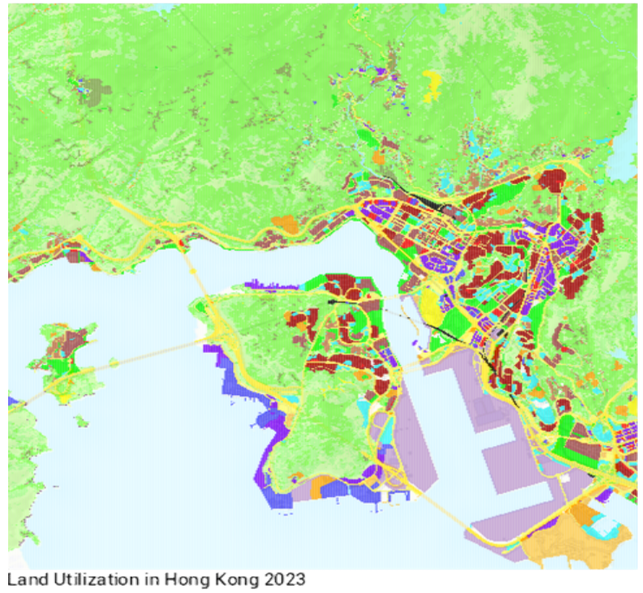
Land Utilization in Hong Kong 2023

(33,38)

Code	Co	Hong Kong Planning Department Classification	Roughness	Albedo	Bowen Ratio	Grid Count	Percent	Albedo x Perce	b^n/Sn
1		Private Residential	1	0.18	1.5	17517	1.75%	0.00315306	1.007127815
2		Public Residential	1	0.18	1.5	22363	2.24%	0.00402534	1.00910865
3		Rural Settlement	0.375	0.165	0.9	8634	0.86%	0.00142461	0.999090731
11		Commercial/Business and Office	1	0.18	1.5	3146	0.31%	0.00056628	1.001276407
21		Industrial Land	0.7	0.18	1.5	13780	1.38%	0.0024804	1.005602947
22		Industrial Estates/Science and Technology Parks	0.7	0.18	1.5	0	0.00%	0	1
23		Warehouse and Open Storage	0.7	0.18	1.5	9457	0.95%	0.00170226	1.003841845
31		Government, Institutional and Community Facilities	0.7	0.18	1.5	16806	1.68%	0.00302508	1.006837516
32		Open Space and Recreation	0.04	0.15	1	21202	2.12%	0.0031803	1
41		Roads and Transport Facilities	0.7	0.18	1.5	58314	5.83%	0.01049652	1.023926035
42		Railways	0.7	0.18	1.5	1618	0.16%	0.00029124	1.000656258
43		Airport	0.07	0.18	1.5	0	0.00%	0	1
44		Port Facilities	0.7	0.18	1.5	36793	3.68%	0.00662274	1.015030111
51		Cemeteries/Funeral Facilities	0.7	0.18	1.5	3763	0.38%	0.00067734	1.00152693
52		Utilities	0.7	0.18	1.5	9643	0.96%	0.00173574	1.003917554
53		Vacant Land/Construction in Progress	0.2	0.18	1	6014	0.60%	0.00108252	1
54		Others	0.2	0.18	1	10659	1.07%	0.00191862	1
61		Agricultural Land	0.1575	0.18	0.55	12696	1.27%	0.00228528	0.992438594
62		Fish Ponds/Gei Wais	0.001	0.1	0.1	0	0.00%	0	1
71		Woodland	1.05	0.1625	0.75	297218	29.72%	0.048297925	0.918049204
72		Shrubland	0.3	0.18	1.25	80994	8.10%	0.01457892	1.018237599
73		Grassland	0.065	0.185	0.8	81178	8.12%	0.01501793	0.982048731
74		Mangrove/Swamp	0.065	0.14	0.225	20	0.00%	0.0000028	0.999970167
81		Badland	0.15	0.1625	0.75	6	0.00%	0.000000975	0.999998274
83		Rocky Shore	0.05	0.2	4.75	326	0.03%	0.0000652	1.000508084
91		Reservoirs	0.001	0.1	0.1	5460	0.55%	0.000546	0.987506584
92		Streams and Nullahs	0.001	0.1	0.1	1929	0.19%	0.0001929	0.995568163
99		SZ Residential *	1	0.18	1.5	0	0.00%	0	1
0		Open Sea *	0.001	0.1	0.1	280464	28.05%	0.0280464	0.524247056
				0.151416	**0.507611**	1000000			

* Non-PlanD Land Utilization categories

Center: X=828325, Y=824725, Z=12.0; Met Year=2019;



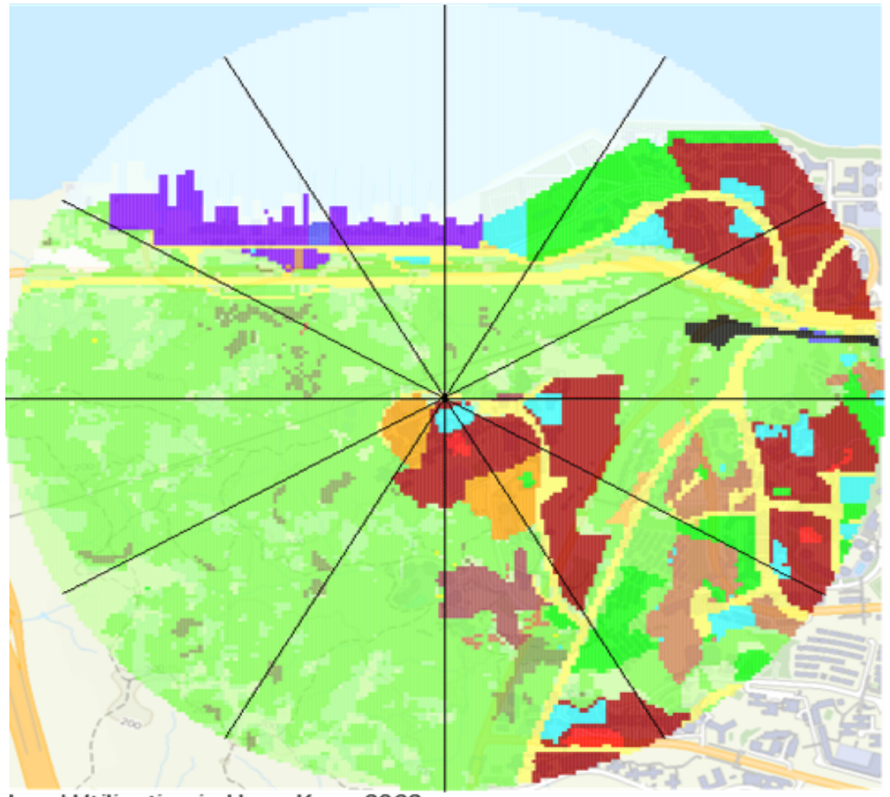
Land Utilization in Hong Kong 2023

Appendix 3.3 Determination of Surface Characteristics Parameters

(32,37)

Angle	Group	Inverse-dis	Roughness
0	0 - 30	5.176453	**0.025219**
30	30 - 60	5.317689	**0.262597**
60	60 - 90	5.176453	**0.632319**
90	90 - 120	5.176453	**0.627891**
120	120 - 150	5.317689	**0.514347**
150	150 - 180	5.176453	**0.725347**
180	180 - 210	5.176453	**0.706511**
210	210 - 240	5.317689	**0.565012**
240	240 - 270	5.176453	**0.670072**
270	270 - 300	5.176453	**0.493658**
300	300 - 330	5.317689	**0.095948**
330	330 - 360	5.176453	**0.020651**

Center: X=827975, Y=824255, Z=88.0; Met Year=2019;

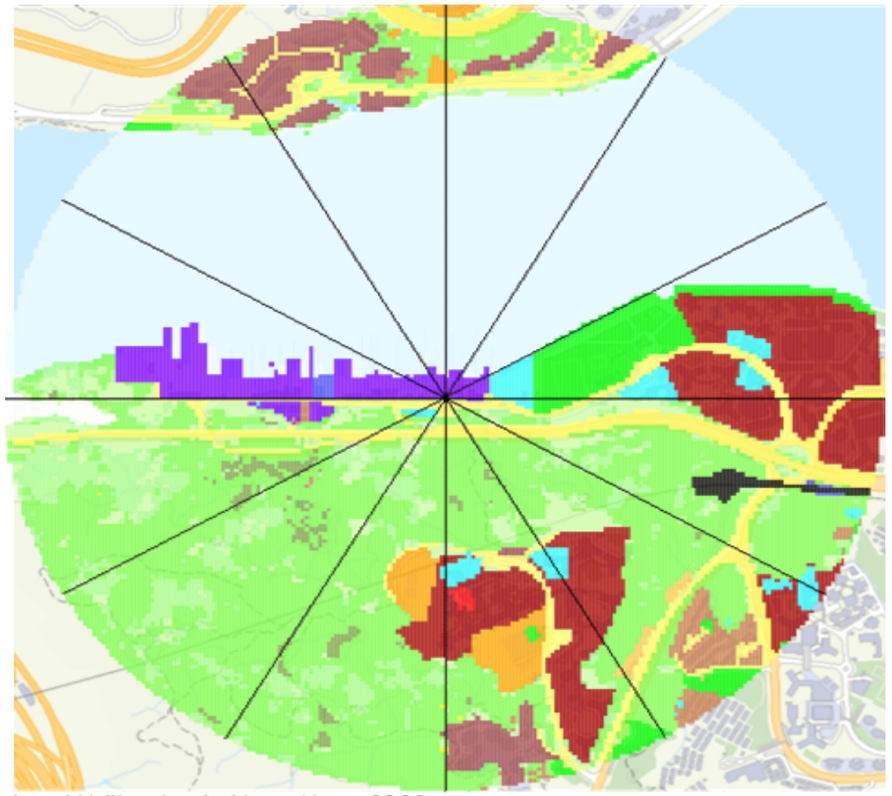


Land Utilization in Hong Kong 2023

(32,38)

Angle	Group	Inverse-dis	Roughness
0	0 - 30	5.176453	**0.004488**
30	30 - 60	5.317689	**0.001898**
60	60 - 90	5.176453	**0.133193**
90	90 - 120	5.176453	**0.569626**
120	120 - 150	5.317689	**0.667292**
150	150 - 180	5.176453	**0.758715**
180	180 - 210	5.176453	**0.699645**
210	210 - 240	5.317689	**0.655760**
240	240 - 270	5.176453	**0.492275**
270	270 - 300	5.176453	**0.017662**
300	300 - 330	5.317689	**0.002955**
330	330 - 360	5.176453	**0.007630**

Center: X=827845, Y=824675, Z=6.0; Met Year=2019;



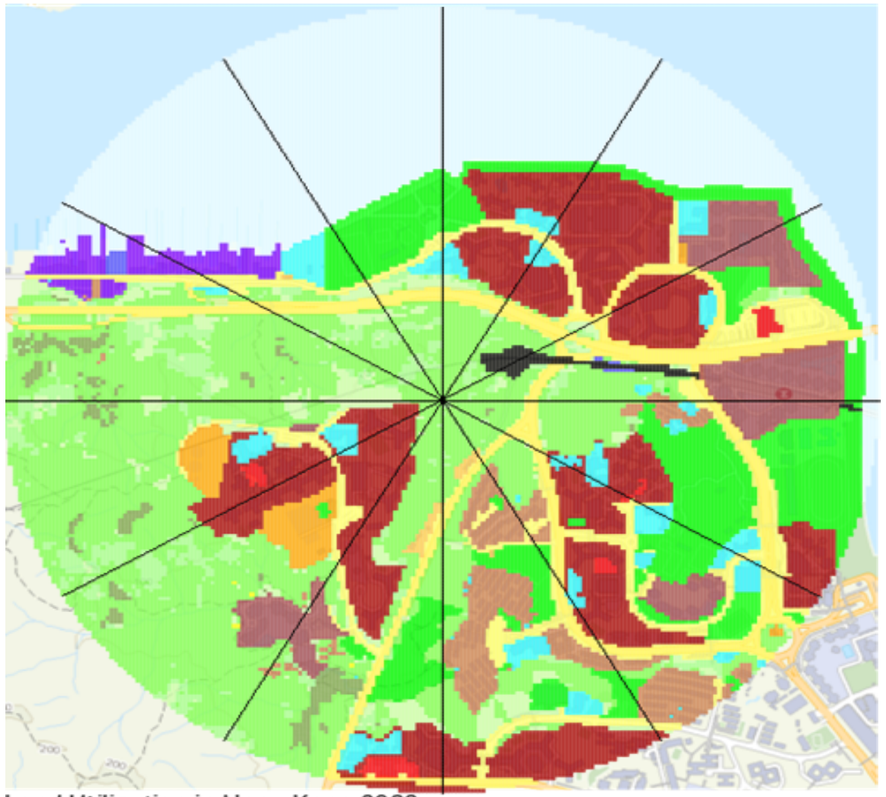
Land Utilization in Hong Kong 2023

Appendix 3.3 Determination of Surface Characteristics Parameters

(33,37)

Angle	Group	Inverse-dis	Roughness
0	0 - 30	5.176453	**0.058366**
30	30 - 60	5.317689	**0.214727**
60	60 - 90	5.176453	**0.482948**
90	90 - 120	5.176453	**0.303801**
120	120 - 150	5.317689	**0.561829**
150	150 - 180	5.176453	**0.461248**
180	180 - 210	5.176453	**0.605824**
210	210 - 240	5.317689	**0.849340**
240	240 - 270	5.176453	**0.705220**
270	270 - 300	5.176453	**0.463543**
300	300 - 330	5.317689	**0.037960**
330	330 - 360	5.176453	**0.019115**

Center: X=828315, Y=824355, Z=74.0; Met Year=2019;

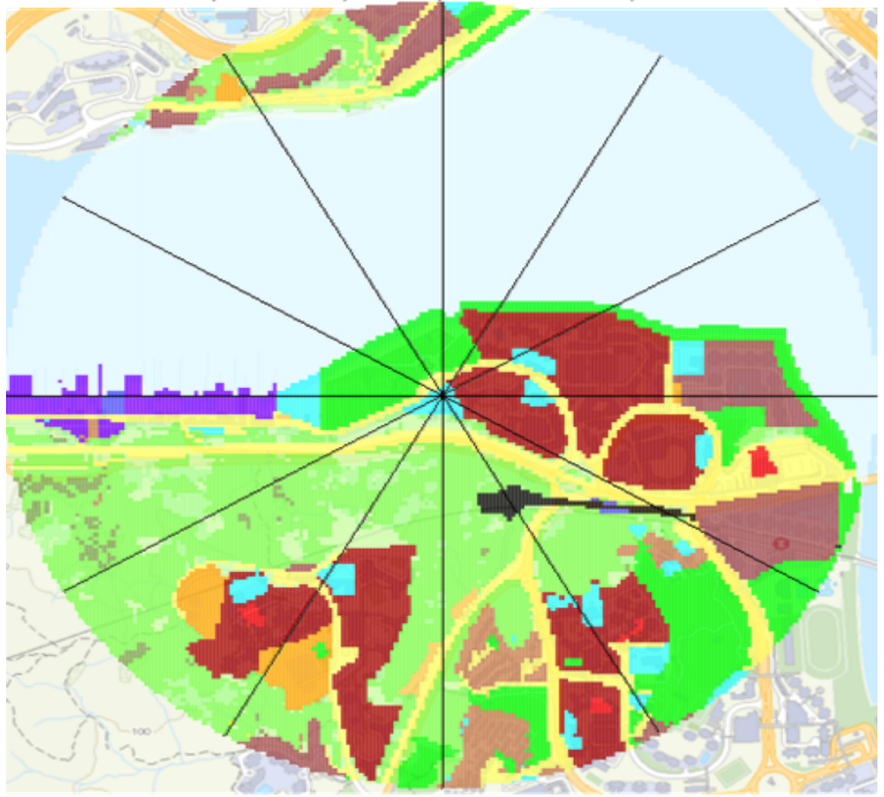


Land Utilization in Hong Kong 2023

(33,38)

Angle	Group	Inverse-dis	Roughness
0	0 - 30	5.176453	**0.003844**
30	30 - 60	5.317689	**0.009490**
60	60 - 90	5.176453	**0.076453**
90	90 - 120	5.176453	**0.548859**
120	120 - 150	5.317689	**0.411079**
150	150 - 180	5.176453	**0.609194**
180	180 - 210	5.176453	**0.641075**
210	210 - 240	5.317689	**0.585318**
240	240 - 270	5.176453	**0.423521**
270	270 - 300	5.176453	**0.004154**
300	300 - 330	5.317689	**0.003984**
330	330 - 360	5.176453	**0.010395**

Center: X=828325, Y=824725, Z=12.0; Met Year=2019;



Land Utilization in Hong Kong 2023

APPENDIX 3.4

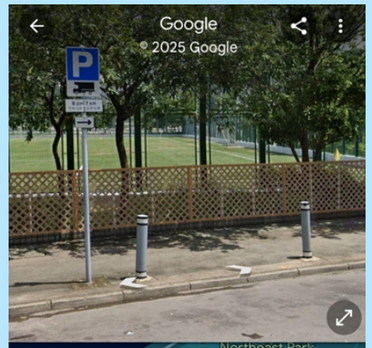
Calculation of Vehicular Emissions

Annex I

N

Remarks:
As stipulated in Transport Department's Road Users' Code "Where Not To Park", 'on a road with street lighting - that is a road where the street lights are spaced not more than 200 metres apart', parking is prohibited.

As measured and indicated below, the lamp posts are spaced not more than 200 metres apart on Tam Kon Shan Road, parking is prohibited on Tam Kon Shan Road, except the overnight parking of Goods Vehicle outside Tsing Yi Northeast Park permitted as per the parking sign.



Overnight parking of Goods Vehicles outside Tsing Yi Northeast Park

Legend

- Lamp Post Location Data in Hong Kong
- Distance between lamp posts (m)

Park Island-Tsuen Wan Pier

Tsing Yi Northeast Park

Cheung On Estate

Queen's College Old Boys' Association Secondary School

GREEN @ KWAI TSING

Tam Kon Shan Road

Tsing Yi North Coastal Road

Cheung Shue Tau

Yau Kom Tau

Airport Express

0 100 200 Meters

Mapwithyou, HKSAR Government CSDI, Esri, TomTom, Garmin, METI/NASA, USGS, Sources: Esri, Maxar, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap, and the GIS user community

Appendix 3.4 Calculation of Vehicular Emisisons

Traffic Data and Road Segments (Year 2028)

Start Profile	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles> 3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles> 24t	18 - Non-franchised Bus >24t
	PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9
Y	1	1	1	1	1	0	0	1	1	1	1	1	1	0	0	1	0	0
N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Remarks:

Y:

The start profile 'Y' is adopted for Tam Kon Shan Road (Road 9, 10 and 11)
- As indicated on Annex I on Appendix 3.4, no parking is allowed on Tam Kon Shan Road.
- There are no bus stops on Tam Kon Shan Road and hence no engine start from FBSD, FBDD and NFB9 is expected
- Most of the HGVs along the local roads in the assessment area are the working vehicles travelling to/from the Project, other industrial buildings and dockyards on Tam Kon Shan Road, which includes concrete mixer trucks and cement tankers. These working vehicles are not supposed to park along these roads, i.e. no engine start is expected.
- To account for parking in Tsing Yi Northeast Park Car Park, vehicle classes that can park inside Tsing Yi Northeast Park Car Park (including PC, TAXI, LGV3, LGV4, LGV6, PLB, PV4, PV5, NFB6, NFB7, NFB8 and MC, i.e. start profile Y) were assumed to have potential start on Tam Kon Shan Road (Road 9,10 and 11)

To account for parking at HGV on-street parking site (for 8PM to 7AM) outside Tsing Yi Northeast Park Car Park:
- emission from HGV9 is modelled under precise approach as detailed in Appendix 3.6, for worst case scenario.

N: No start emission under broad-brush approach.

Appendix 3.4 Calculation of Vehicular Emisisons
Traffic Data and Road Segments (Year 2028)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 1	1	-	70	68.66815	N	0000-0100	179	25.70%	16.76%	5.59%	8.38%	4.47%	2.23%	10.06%	0.00%	0.00%	0.00%	0.56%	3.91%	2.23%	0.00%	4.47%	2.23%	13.41%	0.00%	100%
Road 1	1	-	70	69.18899	N	0100-0200	109	43.12%	11.01%	4.59%	6.42%	3.67%	1.83%	6.42%	0.00%	0.00%	0.00%	0.00%	2.75%	1.83%	0.00%	3.67%	2.75%	11.93%	0.00%	100%
Road 1	1	-	70	69.42708	N	0200-0300	77	32.47%	27.27%	2.60%	2.60%	1.30%	2.60%	9.09%	0.00%	0.00%	0.00%	0.00%	2.60%	1.30%	0.00%	3.90%	3.90%	10.39%	0.00%	100%
Road 1	1	-	70	69.59077	N	0300-0400	55	49.09%	20.00%	1.82%	1.82%	1.82%	1.82%	3.64%	0.00%	0.00%	0.00%	0.00%	3.64%	1.82%	0.00%	3.64%	1.82%	9.09%	0.00%	100%
Road 1	1	-	70	69.36012	N	0400-0500	86	40.70%	16.28%	3.49%	4.65%	3.49%	2.33%	8.14%	0.00%	0.00%	0.00%	1.16%	3.49%	2.33%	0.00%	3.49%	1.16%	9.30%	0.00%	100%
Road 1	1	-	70	68.60119	N	0500-0600	188	46.28%	19.68%	1.60%	2.66%	2.13%	2.13%	8.51%	0.00%	0.00%	0.00%	0.53%	3.19%	1.60%	0.00%	3.19%	2.13%	6.38%	0.00%	100%
Road 1	1	-	70	67.49256	N	0600-0700	337	37.98%	13.06%	3.26%	4.75%	3.26%	2.97%	9.79%	0.00%	0.30%	0.59%	0.59%	4.75%	2.67%	0.00%	2.97%	4.45%	8.31%	0.30%	100%
Road 1	1	-	70	65.81845	N	0700-0800	562	37.19%	17.44%	3.91%	5.69%	3.91%	2.14%	6.58%	0.00%	0.00%	0.00%	0.53%	3.38%	2.31%	0.00%	1.96%	5.87%	8.90%	0.18%	100%
Road 1	1	-	70	64.56349	N	0800-0900	694	41.21%	13.40%	4.32%	6.34%	4.18%	2.16%	7.35%	0.00%	0.14%	0.29%	0.58%	3.46%	2.16%	0.00%	2.02%	2.02%	10.23%	0.14%	100%
Road 1	1	-	70	64.16667	N	0900-1000	714	33.19%	11.62%	7.98%	11.34%	7.14%	2.66%	8.68%	0.00%	0.14%	0.14%	0.28%	2.24%	1.26%	0.00%	2.66%	1.54%	8.96%	0.14%	100%
Road 1	1	-	70	64.54365	N	1000-1100	695	30.22%	10.65%	6.47%	9.06%	5.76%	3.88%	13.81%	0.00%	0.43%	0.58%	0.29%	2.01%	1.15%	0.00%	2.30%	2.30%	10.94%	0.14%	100%
Road 1	1	-	70	64.96032	N	1100-1200	674	30.12%	14.69%	6.53%	9.05%	5.79%	3.26%	11.28%	0.00%	0.30%	0.30%	0.30%	1.63%	0.89%	0.00%	3.12%	2.23%	10.53%	0.00%	100%
Road 1	1	-	70	65.0372	N	1200-1300	667	32.53%	12.44%	5.70%	8.10%	5.25%	3.15%	10.79%	0.00%	0.15%	0.30%	0.30%	2.10%	1.20%	0.00%	3.15%	2.55%	12.14%	0.15%	100%
Road 1	1	-	70	64.26587	N	1300-1400	709	29.20%	13.82%	6.49%	9.31%	5.92%	3.67%	13.12%	0.00%	0.28%	0.42%	0.28%	1.55%	0.99%	0.00%	2.68%	1.13%	11.14%	0.00%	100%
Road 1	1	-	70	63.0754	N	1400-1500	769	34.07%	13.52%	5.59%	7.80%	4.94%	3.12%	11.83%	0.00%	0.52%	0.65%	0.39%	2.60%	1.69%	0.00%	2.47%	1.17%	9.49%	0.13%	100%
Road 1	1	-	70	64.12698	N	1500-1600	716	25.42%	13.41%	7.40%	10.61%	6.56%	3.21%	11.59%	0.00%	0.56%	0.84%	0.42%	2.65%	1.54%	0.00%	2.51%	2.51%	10.61%	0.14%	100%
Road 1	1	-	70	63.35317	N	1600-1700	755	29.27%	17.35%	5.96%	8.21%	5.17%	3.18%	11.39%	0.00%	0.40%	0.66%	0.40%	2.78%	1.59%	0.00%	2.65%	0.40%	10.46%	0.13%	100%
Road 1	1	-	70	63.29365	N	1700-1800	758	41.03%	15.57%	3.96%	5.80%	3.43%	1.98%	6.99%	0.00%	0.26%	0.26%	0.53%	3.43%	2.11%	0.00%	2.51%	3.30%	8.71%	0.13%	100%
Road 1	1	-	70	62.97619	N	1800-1900	774	38.63%	21.45%	3.36%	4.65%	2.84%	1.55%	5.94%	0.00%	0.13%	0.13%	0.52%	3.23%	1.94%	0.00%	2.84%	4.78%	7.88%	0.13%	100%
Road 1	1	-	70	65.5878	N	1900-2000	593	34.40%	21.59%	3.20%	4.72%	3.04%	2.70%	9.95%	0.00%	0.00%	0.17%	0.51%	3.04%	1.69%	0.00%	2.87%	2.53%	9.44%	0.17%	100%
Road 1	1	-	70	66.25744	N	2000-2100	503	39.96%	20.48%	3.18%	4.57%	2.98%	2.39%	9.15%	0.00%	0.00%	0.00%	0.40%	2.19%	1.39%	0.00%	2.78%	0.99%	9.54%	0.00%	100%
Road 1	1	-	70	66.58482	N	2100-2200	459	39.00%	21.13%	2.18%	3.27%	1.96%	2.83%	11.11%	0.00%	0.00%	0.00%	0.44%	2.40%	1.53%	0.00%	3.27%	1.53%	9.37%	0.00%	100%
Road 1	1	-	70	66.76339	N	2200-2300	435	37.24%	22.99%	2.76%	4.14%	2.30%	2.53%	9.66%	0.00%	0.23%	0.46%	0.46%	2.76%	1.61%	0.00%	3.22%	0.92%	8.74%	0.00%	100%
Road 1	1	-	70	67.09821	N	2300-0000	390	35.64%	26.67%	4.10%	5.64%	3.59%	1.54%	6.41%	0.00%	0.00%	0.00%	0.51%	2.82%	1.79%	0.00%	2.82%	1.03%	7.44%	0.00%	100%
Road 2	2	-	50	40.66667	N	0000-0100	52	30.77%	11.54%	5.77%	7.69%	5.77%	5.77%	7.69%	0.00%	0.00%	0.00%	0.00%	9.62%	3.85%	0.00%	1.92%	1.92%	7.69%	0.00%	100%
Road 2	2	-	50	42.16667	N	0100-0200	34	47.06%	8.82%	2.94%	5.88%	2.94%	2.94%	5.88%	0.00%	0.00%	0.00%	0.00%	5.88%	2.94%	0.00%	2.94%	2.94%	8.82%	0.00%	100%
Road 2	2	-	50	43.08333	N	0200-0300	23	34.78%	17.39%	4.35%	4.35%	0.00%	4.35%	8.70%	0.00%	0.00%	0.00%	0.00%	4.35%	0.00%	0.00%	4.35%	4.35%	13.04%	0.00%	100%
Road 2	2	-	50	45	N	0300-0400	15	60.00%	13.33%	0.00%	0.00%	0.00%	6.67%	0.00%	0.00%	0.00%	0.00%	0.00%	6.67%	0.00%	0.00%	0.00%	0.00%	13.33%	0.00%	100%
Road 2	2	-	50	42.75	N	0400-0500	27	40.74%	11.11%	3.70%	3.70%	3.70%	3.70%	7.41%	0.00%	0.00%	0.00%	0.00%	7.41%	3.70%	0.00%	3.70%	0.00%	11.11%	0.00%	100%
Road 2	2	-	50	40.25	N	0500-0600	57	50.88%	14.04%	1.75%	3.51%	1.75%	3.51%	5.26%	0.00%	0.00%	0.00%	0.00%	7.02%	1.75%	0.00%	1.75%	1.75%	7.02%	0.00%	100%
Road 2	2	-	50	38.53333	N	0600-0700	104	41.35%	8.65%	2.88%	4.81%	2.88%	5.77%	6.73%	0.00%	0.00%	0.96%	0.00%	10.58%	3.85%	0.00%	1.92%	3.85%	5.77%	0.00%	100%
Road 2	2	-	50	36.66667	N	0700-0800	160	43.13%	13.13%	3.13%	5.63%	3.75%	3.75%	5.00%	0.00%	0.00%	0.00%	0.00%	8.75%	3.13%	0.00%	1.25%	5.63%	3.75%	0.00%	100%
Road 2	2	-	50	31.86667	N	0800-0900	304	44.41%	9.21%	2.96%	7.24%	4.61%	4.61%	5.59%	0.00%	0.00%	0.99%	0.00%	7.24%	3.62%	0.00%	1.32%	5.26%	2.96%	0.00%	100%
Road 2	2	-	50	33.6	N	0900-1000	252	33.73%	9.13%	5.56%	13.10%	7.14%	6.75%	7.94%	0.00%	0.00%	0.00%	0.00%	5.95%	1.59%	0.00%	1.19%	1.19%	6.75%	0.00%	100%
Road 2	2	-	50	35.76667	N	1000-1100	187	27.81%	10.16%	5.88%	10.70%	8.56%	10.16%	9.63%	0.00%	0.00%	0.00%	0.00%	4.81%	2.67%	0.00%	1.60%	0.53%	7.49%	0.00%	100%
Road 2	2	-	50	35.9	N	1100-1200	183	21.31%	7.65%	3.83%	12.02%	10.93%	12.57%	15.30%	0.00%	0.00%	0.00%	0.00%	4.92%	0.55%	0.00%	2.19%	1.09%	7.65%	0.00%	100%
Road 2	2	-	50	35.66667	N	1200-1300	190	27.37%	12.63%	4.21%	12.11%	8.95%	6.32%	9.47%	0.00%	0.00%	0.53%	0.00%	5.26%	1.58%	0.00%	1.58%	2.11%	7.89%	0.00%	100%
Road 2	2	-	50	34.56667	N	1300-1400	223	31.39%	10.31%	3.59%	7.62%	8.07%	11.21%	10.31%	0.45%	0.00%	0.45%	0.00%	3.59%	1.35%	0.00%	1.35%	1.79%	8.52%	0.00%	100%
Road 2	2	-	50	36.5	N	1400-1500	165	34.55%	8.48%	4.24%	10.91%	7.27%	7.88%	7.88%	0.00%	0.00%	0.61%	0.00%	4.85%	1.82%	0.00%	1.82%	1.82%	7.88%	0.00%	100%
Road 2	2	-	50	35.9	N	1500-1600	183	31.15%	8.20%	5.46%	5.46%	7.10%	9.29%	10.38%	0.00%	0.00%	1.09%	0.55%	8.74%	3.83%	0.00%	1.64%	0.55%	6.56%	0.00%	100%
Road 2	2	-	50	34.63333	N	1600-1700	221	33.48%	10.41%	3.62%	12.67%	3.62%	6.33%	8.14%	0.45%	0.00%	0.90%	0.90%	8.14%	4.07%	0.00%	0.90%	0.90%	5.43%	0.00%	100%
Road 2	2	-	50	34.6	N	1700-1800	222	50.00%	7.66%	6.31%	4.50%	4.50%	7.21%	7.66%	0.45%	0.00%	0.00%	0.00%	5.41%	1.80%	0.00%	0.90%	1.80%	1.80%	0.00%	100%
Road 2	2	-	50	33.66667	N	1800-1900	250	41.60%	14.40%	4.00%	4.80%	4.00%	4.00%	9.60%	0.00%	0.00%	0.00%	0.80%	5.60%	4.40%	0.00%	1.20%	1.20%	4.40%	0.00%	100%
Road 2	2	-	50	36.36667	N	1900-2000	169	47.34%	15.98%	3.55%	3.55%	0.59%	1.78%	9.47%	0.59%	0.00%	0.00%	0.00%	8.88%	2.96%	0.00%	1.78%	0.59%	2.96%	0.00%	100%
Road 2	2	-	50	37.1	N	1900-2000	169	46.94%	16.33%	4.76%	1.36%	4.08%	2.72%	4.76%	0.00%	0.00%	0.00%	0.00%	8.16%	0.68%	0.00%	2.04%	2.72%	5.44%	0.00%	100%
Road 2	2	-	50	36.9	N	2100-2200	153	51.63%	18.95%	2.61%	1.96%	0.65%	3.92%	3.27%	0.00%	0.00%	0.00%	0.00%	5.88%	0.65%	0.00%	1.96%	3.92%	4.58%	0.00%	100%
Road 2	2	-	50	37.83333	N	2200-2300	125	43.20%	16.80%	2.40%	4.00%	2.40%	5.60%	7.20%	0.00%	0.00%	0.80%	0.00%	7.20%	2.40%	0.00%	1.60%	0.80%	5.60%	0.00%	100%
Road 2	2	-	50	38.3	N	2300-0000	111	41.44%	19.82%	3.60%	5.41%	3.60%	3.60%	5.41%	0.00%	0.00%	0.00%	0.00%	7.21%	2.70%	0.00%	1.80%	0.90%	4.50%	0.00%	100%
Road 3	3	-	70	68.28869	N	0000-0100	230	26.52%	15.65%	6.09%	8.26%	4.78%	3.04%	9.57%	0.00%	0.00%	0.00%	0.43%	5.22%	2.61%	0.00%	3.91%	2.17%	11.74%	0.00%	100%
Road 3	3	-	70	68.94345	N	0100-0200	142	43.66%	11.27%	4.23%	6.34%	3.52%	2.11%	6.34%	0.00%	0.00%	0.00%	0.00%	3.52%	2.11%	0.00%	3.52%	2.82%	10.56%	0.00%	100%
Road 3	3	-	70	69.26339	N	0200-0300	99	33.33%	25.25%	3.03%	3.03%	1.01%	3.03%	9.09%	0.00%	0.00%	0.00%	0.00%	3.03%	1.01%	0.00%	4.04%	4.04%	10.10%	0.00%	100%
Road 3	3	-	70	69.47917	N	0300-0400	70	51.43%	20.00%	1.43%	1.43%	1.43%	2.86%	2.86%	0.00%	0.00%	0.00%	0.00%	4.29%	1.43%	0.00%	2.86%	1.43%	8.57%	0.00%	100%
Road 3	3	-	70	69.15923	N	0400-0500	113	41.59%	15.04%	3.54%	4.42%	3.54%	2.65%	7.96%	0.00%	0.00%	0.00%	0.88%	4.42%	2.65%	0.00%	3.54%	0.88%	8.85%	0.00%	100%
Road 3	3	-	70	68.16964	N	0500-0600	246	47.56%	18.70%	1.63%	2.85%	2.03%	2.44%	7.72%	0.00%	0.00%	0.00%	0.41%	4.07%	1.63%	0.00%	2.85%	2.03%	6.10%	0.00%	100%
Road 3	3	-	70	66.69643	N	0600-0700	444	38.51%	11.94%	3.38%	4.73%	3.15%	3.83%	9.23%	0.00%	0.23%	0.68%	0.45%	6.08%	3.15%	0.00%	2.70%	4.28%	7.43%	0.23%	100%
Road 3	3	-	70	63.90873	N	0700-0800	727	38.24%	16.37%	3.71%	5.78%	3.85%	2.61%	6.33%	0.14%	0.00%	0.00%	0.41%	4.40%	2.61%	0.00%	1.93%	5.91%	7.57%	0.14%	100%
Road 3	3	-	70	58.55159	N	0800-0900	997	42.23%	12.14%	4.01%	6.52%	4.31%	3.01%	6.72%	0.00%	0.10%	0.50%	0.40%	4.61%	2.61%	0.00%	1.81%	2.91%	8.02%	0.10%	100%
Road 3	3	-	70	59.18651	N	0900-1000	965	33.47%	10.98%	7.36%	11.81%	7.05%	3.63%	8.50%	0.00%	0.10%	0.10%	0.21%	3.11%	1.45%	0.00%	2.28%	1.55%	8.29%	0.10%	100%
Road 3	3	-	70	60.89286	N	1000-1100	879	29.81%	10.58%	6.37%	9.44%	6.37%	5.23%	12.86%	0.00%	0.34%	0.46%	0.23%	2.62%	1.59%	0.00%	2.16%	1.93%	9.90%	0.11%	100%
Road 3	3	-	70	61.38889	N	1100-1200	854	28.22%	13.11%	5.97%	9.72%	6.91%	5.27%	12.18%	0.00%	0.23%	0.23%	0.23%	2.46%	0.82%	0.00%	2.93%	1.99%	9.72%	0.00%	100%
Road 3	3	-	70	61.38889	N	1200-1300	854	31.50%	12.53%	5.50%	9.02%	6.09%	3.86%	10.42%	0.00%	0.12%	0.35%	0.23%	2.81%	1.29%	0.00%	2.81%	2.46%	10.89%	0.12%	100%
Road 3	3	-	70	59.94048	N	1300-1400	927	29.88%	13.05%	5.83%	8.85%	6.36%	5.50%	12.41%	0.11%	0.22%	0.43%	0.22%	2.16%	1.08%	0.00%	2.37%	1.29%	10.25%	0.00%	100%
Road 3	3	-	70	59.80159	N	1400-1500	934	34.15%	12.63%	5.35%	8.35%	5.46%	3.96%	11.24%	0.00%	0.43%	0.64%	0.32%	3.00%	1.82%	0.00%	2.36%	1.28%	8.89%	0.11%	100%
Road 3	3	-	70	60.5754	N	1500-1600	895	26.70%	12.29%	7.04%	9.61%	6.70%	4.36%	11.40%	0.00%	0.45%	0.89%	0.45%	3.80%	2.12%	0.00%	2.35%	2.12%	9.61%	0.11%	100%
Road 3	3	-	70	58.96825	N	1600-1700	976	30.12%	15.78%	5.43%	9.22%	4.92%	3.89%	10.66%	0.10%	0.31%	0.72%	0.51%	4.00%	2.25%	0.00%	2.25%	0.51%	9.22%	0.10%	100%
Road 3	3	-	70	58.90873	N	1700-1800	979	43.11%	13.69%	4.49%	5.52%	3.68%	3.06%	7.15%	0.10%	0.20%	0.20%	0.41%	3.98%	2.04%	0.00%	2.15%	2.96%	7.15%	0.10%	100%
Road 3	3	-	70	57.95635	N	1800-1900	1027	39.24%	19.77%	3.51%	4.77%	3.12%	2.24%	6.82%	0.00%	0.10%	0.10%	0.58%	3.80%	2.53%	0.00%	2.43%	3.99%	6.91%	0.10%	100%
Road 3	3	-	70	63.25397	N	1900-2000	760	37.37%	20.39%	3.29%	4.47%	2.50%	2.50%	9.87%	0.13%	0.00%	0.13%	0.39%	4.21%	2.11%	0.00%	2.63%	2.11%	7.76%	0.13%	100%
Road 3	3	-	70	65.17113	N	2000-2100	649	41.45%	19.57%	3.54%	3.85%	3.24%	2.62%	8.17%	0.00%	0.00%	0.00%	0.31%	3.70%	1.23%	0.00%	2.62%	1.39%	8.32%	0.00%	100%
Road 3	3	-	70	65.42411	N	2100-2200	615	41.95%	20.49%	2.44%	2.93%	1.63%	3.25%	9.11%	0.00%	0.00%	0.00%	0.33%	3.41%	1.30%	0.00%	2.93%	2.28%	7.97%	0.00%	100%
Road 3	3	-	70	65.81101	N	2200-2300	563	38.37%	21.49%	2.84%	4.09%	2.49%	3.37%	9.06%	0.00%	0.18%	0.53%	0.36%	3.91%	1.78%	0.00%	2.84%	0.89%	7.82%	0.00%	100%
Road 3	3	-	70	66.26488	N	2300-0000	502	36.85%	25.10%	3.98%	5.58%	3.59%	1.99%	6.18%	0.00%	0.00%	0.00%	0.40%	3.98%	1.99%	0.00%	2.79%	1.00%	6.57%	0.00%	100%

Appendix 3.4 Calculation of Vehicular Emisisons
Traffic Data and Road Segments (Year 2028)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 4	4	-	50	42.08333	N	0000-0100	35	5.71%	2.86%	2.86%	2.86%	2.86%	2.86%	25.71%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	54.29%	0.00%	100%
Road 4	4	-	50	45	N	0100-0200	20	10.00%	0.00%	0.00%	5.00%	0.00%	5.00%	20.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	60.00%	0.00%	100%
Road 4	4	-	50	45	N	0200-0300	13	7.69%	0.00%	0.00%	0.00%	0.00%	7.69%	30.77%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	53.85%	0.00%	100%
Road 4	4	-	50	45	N	0300-0400	7	14.29%	0.00%	0.00%	0.00%	0.00%	0.00%	14.29%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	71.43%	0.00%	100%
Road 4	4	-	50	45	N	0400-0500	14	14.29%	0.00%	0.00%	0.00%	0.00%	7.14%	28.57%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	50.00%	0.00%	100%
Road 4	4	-	50	45	N	0500-0600	24	16.67%	4.17%	0.00%	0.00%	4.17%	8.33%	33.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	33.33%	0.00%	100%
Road 4	4	-	50	40.58333	N	0600-0700	53	11.32%	1.89%	1.89%	1.89%	5.66%	7.55%	33.96%	0.00%	0.00%	0.00%	0.00%	0.00%	1.89%	0.00%	0.00%	1.89%	32.08%	0.00%	100%
Road 4	4	-	50	38.93333	N	0700-0800	92	10.87%	2.17%	2.17%	4.35%	4.35%	5.43%	22.83%	1.09%	0.00%	0.00%	0.00%	0.00%	3.26%	0.00%	0.00%	2.17%	41.30%	0.00%	100%
Road 4	4	-	50	36.83333	N	0800-0900	155	14.84%	1.94%	2.58%	3.87%	3.23%	3.87%	29.68%	0.00%	0.00%	0.00%	0.00%	0.00%	1.94%	0.00%	0.00%	0.65%	37.42%	0.00%	100%
Road 4	4	-	50	37.06667	N	0900-1000	148	12.84%	2.03%	2.70%	4.73%	4.73%	8.11%	25.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.03%	37.84%	0.00%	100%
Road 4	4	-	50	37.2	N	1000-1100	144	4.17%	0.69%	2.78%	6.94%	5.56%	8.33%	34.03%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.69%	36.81%	0.00%	100%
Road 4	4	-	50	36.83333	N	1100-1200	155	12.26%	1.29%	3.23%	4.52%	3.87%	7.74%	40.65%	0.00%	0.00%	0.00%	0.00%	0.65%	0.00%	0.00%	0.00%	0.00%	25.81%	0.00%	100%
Road 4	4	-	50	37.06667	N	1200-1300	148	8.11%	0.68%	2.70%	6.08%	4.05%	4.73%	29.73%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.35%	42.57%	0.00%	100%
Road 4	4	-	50	37	N	1300-1400	150	6.67%	0.67%	4.00%	5.33%	4.67%	7.33%	32.67%	0.67%	0.00%	0.00%	0.00%	0.00%	0.67%	0.00%	0.00%	0.00%	37.33%	0.00%	100%
Road 4	4	-	50	37.33333	N	1400-1500	140	10.71%	2.86%	2.14%	6.43%	4.29%	4.29%	33.57%	0.00%	0.00%	0.00%	0.00%	0.00%	1.43%	0.00%	0.00%	1.43%	32.86%	0.00%	100%
Road 4	4	-	50	37.83333	N	1500-1600	125	3.20%	1.60%	1.60%	5.60%	6.40%	6.40%	34.40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	40.80%	0.00%	100%
Road 4	4	-	50	37.86667	N	1600-1700	124	6.45%	0.00%	4.84%	6.45%	5.65%	6.45%	29.84%	0.81%	0.00%	0.00%	0.00%	0.00%	0.81%	0.00%	0.00%	0.00%	38.71%	0.00%	100%
Road 4	4	-	50	37.76667	N	1700-1800	127	8.66%	0.00%	5.51%	5.51%	3.94%	5.51%	28.35%	0.79%	0.00%	0.00%	0.00%	0.00%	0.79%	0.00%	0.00%	1.57%	39.37%	0.00%	100%
Road 4	4	-	50	38.46667	N	1800-1900	106	7.55%	0.94%	1.89%	0.94%	2.83%	3.77%	34.91%	0.00%	0.00%	0.00%	0.00%	0.00%	1.89%	0.00%	0.00%	0.00%	45.28%	0.00%	100%
Road 4	4	-	50	39.53333	N	1900-2000	74	6.76%	2.70%	2.70%	4.05%	5.41%	1.35%	36.49%	0.00%	0.00%	0.00%	0.00%	1.35%	0.00%	0.00%	0.00%	0.00%	39.19%	0.00%	100%
Road 4	4	-	50	45	N	2000-2100	49	10.20%	4.08%	0.00%	2.04%	2.04%	6.12%	14.29%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.08%	57.14%	0.00%	100%
Road 4	4	-	50	45	N	2100-2200	37	16.22%	8.11%	0.00%	10.81%	2.70%	5.41%	10.81%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	45.95%	0.00%	100%
Road 4	4	-	50	39.9	N	2200-2300	63	11.11%	3.17%	1.59%	3.17%	1.59%	6.35%	34.92%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	38.10%	0.00%	100%
Road 4	4	-	50	40.91667	N	2300-0000	49	12.24%	4.08%	2.04%	4.08%	2.04%	4.08%	28.57%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	42.86%	0.00%	100%
Road 5	5	-	70	68.56399	N	0000-0100	193	30.57%	18.13%	6.22%	9.33%	5.18%	3.11%	6.22%	0.00%	0.00%	0.00%	0.52%	6.22%	3.11%	0.00%	4.66%	2.59%	4.15%	0.00%	100%
Road 5	5	-	70	69.09226	N	0100-0200	122	49.18%	13.11%	4.92%	6.56%	4.10%	1.64%	4.10%	0.00%	0.00%	0.00%	0.00%	4.10%	2.46%	0.00%	4.10%	3.28%	2.46%	0.00%	100%
Road 5	5	-	70	69.36012	N	0200-0300	86	37.21%	29.07%	3.49%	3.49%	1.16%	2.33%	5.81%	0.00%	0.00%	0.00%	0.00%	3.49%	1.16%	0.00%	4.65%	4.65%	3.49%	0.00%	100%
Road 5	5	-	70	69.53125	N	0300-0400	63	55.56%	22.22%	1.59%	1.59%	1.59%	3.17%	1.59%	0.00%	0.00%	0.00%	0.00%	4.76%	1.59%	0.00%	3.17%	1.59%	1.59%	0.00%	100%
Road 5	5	-	70	69.26339	N	0400-0500	99	45.45%	17.17%	4.04%	5.05%	4.04%	2.02%	5.05%	0.00%	0.00%	0.00%	1.01%	5.05%	3.03%	0.00%	4.04%	1.01%	3.03%	0.00%	100%
Road 5	5	-	70	68.3631	N	0500-0600	220	50.91%	20.45%	1.82%	3.18%	1.82%	1.82%	4.55%	0.00%	0.00%	0.00%	0.45%	4.55%	1.82%	0.00%	3.18%	2.27%	3.18%	0.00%	100%
Road 5	5	-	70	67.1131	N	0600-0700	388	42.27%	13.40%	3.61%	5.15%	2.84%	3.09%	5.93%	0.00%	0.26%	0.77%	0.52%	6.96%	3.09%	0.00%	3.09%	4.64%	4.12%	0.26%	100%
Road 5	5	-	70	65.29018	N	0700-0800	633	42.18%	18.48%	3.95%	5.85%	3.79%	2.21%	3.95%	0.00%	0.00%	0.00%	0.47%	5.06%	2.53%	0.00%	2.21%	6.48%	2.69%	0.16%	100%
Road 5	5	-	70	61.60714	N	0800-0900	843	47.33%	14.00%	4.15%	7.00%	4.39%	2.85%	2.61%	0.00%	0.12%	0.59%	0.47%	5.46%	2.73%	0.00%	2.14%	3.32%	2.73%	0.12%	100%
Road 5	5	-	70	62.14286	N	0900-1000	816	37.25%	12.62%	8.21%	13.11%	7.48%	2.82%	5.51%	0.00%	0.12%	0.12%	0.25%	3.68%	1.72%	0.00%	2.70%	1.35%	2.94%	0.12%	100%
Road 5	5	-	70	63.76984	N	1000-1100	734	34.88%	12.53%	7.08%	9.95%	6.54%	4.50%	8.72%	0.00%	0.41%	0.54%	0.27%	3.13%	1.91%	0.00%	2.59%	2.18%	4.63%	0.14%	100%
Road 5	5	-	70	64.46429	N	1100-1200	699	31.90%	15.74%	6.58%	10.87%	7.58%	4.58%	5.87%	0.00%	0.29%	0.29%	0.29%	2.86%	1.00%	0.00%	3.58%	2.43%	6.15%	0.00%	100%
Road 5	5	-	70	64.30556	N	1200-1300	707	36.35%	14.99%	6.08%	9.62%	6.51%	3.68%	6.51%	0.00%	0.14%	0.42%	0.28%	3.39%	1.56%	0.00%	3.39%	2.69%	4.24%	0.14%	100%
Road 5	5	-	70	62.91667	N	1300-1400	777	34.23%	15.44%	6.18%	9.52%	6.69%	5.15%	8.62%	0.00%	0.26%	0.51%	0.26%	2.57%	1.16%	0.00%	2.83%	1.54%	5.02%	0.00%	100%
Road 5	5	-	70	62.57937	N	1400-1500	794	38.41%	14.23%	5.92%	8.69%	5.67%	3.90%	7.30%	0.00%	0.50%	0.76%	0.38%	3.53%	1.89%	0.00%	2.77%	1.26%	4.66%	0.13%	100%
Road 5	5	-	70	63.05556	N	1500-1600	770	30.52%	14.03%	7.92%	10.26%	6.75%	4.03%	7.66%	0.00%	0.52%	1.04%	0.52%	4.42%	2.47%	0.00%	2.73%	2.47%	4.55%	0.13%	100%
Road 5	5	-	70	61.40873	N	1600-1700	853	33.53%	18.05%	5.51%	9.61%	4.81%	3.52%	7.85%	0.00%	0.35%	0.82%	0.59%	4.57%	2.46%	0.00%	2.58%	0.59%	5.04%	0.12%	100%
Road 5	5	-	70	61.44841	N	1700-1800	851	48.30%	15.75%	4.23%	5.52%	3.64%	2.70%	3.88%	0.00%	0.24%	0.24%	0.47%	4.58%	2.23%	0.00%	2.47%	3.17%	2.47%	0.12%	100%
Road 5	5	-	70	60.09921	N	1800-1900	919	42.87%	21.98%	3.70%	5.22%	3.16%	2.07%	3.48%	0.00%	0.11%	0.11%	0.65%	4.24%	2.61%	0.00%	2.72%	4.46%	2.50%	0.11%	100%
Road 5	5	-	70	64.72222	N	1900-2000	686	40.67%	22.30%	3.35%	4.52%	2.19%	2.62%	7.00%	0.15%	0.00%	0.15%	0.44%	4.52%	2.33%	0.00%	2.92%	2.33%	4.37%	0.15%	100%
Road 5	5	-	70	65.53571	N	2000-2100	600	44.00%	20.83%	3.83%	4.00%	3.33%	2.33%	7.67%	0.00%	0.00%	0.00%	0.33%	4.00%	1.33%	0.00%	2.83%	1.17%	4.33%	0.00%	100%
Road 5	5	-	70	65.6994	N	2100-2200	578	43.60%	21.28%	2.60%	2.42%	1.56%	3.11%	9.00%	0.00%	0.00%	0.00%	0.35%	3.63%	1.38%	0.00%	3.11%	2.42%	5.54%	0.00%	100%
Road 5	5	-	70	66.2872	N	2200-2300	499	41.88%	23.85%	3.01%	4.21%	2.40%	3.01%	5.81%	0.00%	0.20%	0.60%	0.40%	4.41%	2.00%	0.00%	3.21%	1.00%	4.01%	0.00%	100%
Road 5	5	-	70	66.62946	N	2300-0000	453	39.51%	27.37%	4.19%	5.74%	3.75%	1.77%	3.97%	0.00%	0.00%	0.00%	0.44%	4.42%	2.21%	0.00%	3.09%	1.10%	2.43%	0.00%	100%
Road 6	6	-	70	68.88393	N	0000-0100	150	44.67%	26.00%	3.33%	4.00%	2.00%	2.00%	2.67%	0.00%	0.00%	0.00%	0.67%	4.00%	2.00%	0.00%	4.00%	2.00%	2.67%	0.00%	100%
Road 6	6	-	70	69.15179	N	0100-0200	114	38.60%	20.18%	7.02%	6.14%	3.51%	4.39%	4.39%	0.00%	0.00%	0.00%	0.00%	3.51%	0.88%	0.00%	3.51%	2.63%	5.26%	0.00%	100%
Road 6	6	-	70	69.4122	N	0200-0300	79	41.77%	22.78%	6.33%	5.06%	3.80%	2.53%	2.53%	0.00%	0.00%	0.00%	0.00%	5.06%	1.27%	0.00%	3.80%	1.27%	3.80%	0.00%	100%
Road 6	6	-	70	69.53869	N	0300-0400	62	35.48%	19.35%	9.68%	9.68%	4.84%	3.23%	3.23%	0.00%	0.00%	0.00%	0.00%	3.23%	1.61%	0.00%	4.84%	1.61%	3.23%	0.00%	100%
Road 6	6	-	70	69.33036	N	0400-0500	90	37.78%	20.00%	5.56%	6.67%	3.33%	3.33%	4.44%	0.00%	0.00%	1.11%	0.00%	4.44%	1.11%	0.00%	4.44%	3.33%	4.44%	0.00%	100%
Road 6	6	-	70	68.79464	N	0500-0600	162	37.65%	24.07%	5.56%	6.17%	3.09%	3.09%	3.70%	0.00%	0.00%	0.00%	0.62%	3.70%	1.85%	0.00%	3.70%	3.09%	3.70%	0.00%	100%
Road 6	6	-	70	67.84226	N	0600-0700	290	32.41%	26.55%	6.21%	6.55%	3.79%	3.45%	3.79%	0.00%	0.00%	0.00%	0.34%	3.79%	2.07%	0.00%	4.83%	2.76%	3.45%	0.00%	100%
Road 6	6	-	70	66.5625	N	0700-0800	462	37.45%	24.46%	5.84%	6.06%	3.68%	2.60%	2.60%	0.00%	0.22%	0.22%	0.43%	4.98%	2.16%	0.00%	3.46%	3.46%	2.38%	0.00%	100%
Road 6	6	-	70	65.0744	N	0800-0900	662	42.15%	27.95%	5.29%	3.78%	1.21%	2.27%	0.30%	0.00%	0.15%	0.60%	0.45%	5.89%	3.63%	0.00%	3.17%	2.42%	0.60%	0.15%	100%
Road 6	6	-	70	65.29018	N	0900-1000	633	41.23%	26.07%	5.53%	6.32%	3.16%	4.11%	2.69%	0.00%	0.00%	0.32%	0.00%	3.48%	1.11%	0.00%	2.84%	1.58%	1.58%	0.00%	100%
Road 6	6	-	70	66.01935	N	1000-1100	535	34.95%	23.55%	6.73%	5.61%	5.42%	4.30%	4.11%	0.00%	0.19%	0.19%	0.37%	3.55%	1.68%	0.00%	3.36%	0.56%	5.42%	0.00%	100%
Road 6	6	-	70	66.04167	N	1100-1200	532	29.14%	18.42%	8.65%	10.34%	7.14%	6.39%	7.14%	0.00%	0.19%	0.38%	0.19%	2.26%	1.13%	0.00%	3.01%	0.94%	4.70%	0.00%	100%
Road 6	6	-	70	66.10863	N	1200-1300	523	37.86%	13.58%	8.22%	9.18%	6.88%	5.35%	3.44%	0.00%	0.19%	0.19%	0.19%	4.02%	1.72%	0.00%	3.06%	0.96%	5.16%	0.00%	100%
Road 6	6	-	70	66.12351	N	1300-1400	521	28.21%	17.08%	8.45%	8.64%	5.76%	4.61%	6.72%	0.19%	0.38%	0.58%	0.58%	5.57%	2.69%	0.00%	3.26%	0.96%	6.14%	0.19%	100%
Road 6	6	-	70	65.72917	N	1400-1500	574	30.14%	17.60%	8.01%	8.54%	5.40%	4.88%	6.27%	0.17%	0.52%	0.87%	0.70%	5.75%	3.14%	0.00%	3.14%	1.22%	3.48%	0.17%	100%
Road 6	6	-	70	65.81845	N	1500-1600	562	35.77%	17.26%	6.23%	8.19%	4.45%	3.91%	4.63%	0.18%	0.00%	0.36%	0.36%	5.34%	2.49%	0.00%	3.02%	2.85%	4.80%	0.18%	100%
Road 6	6	-	70	65.71429	N	1600-1700	576	35.59%	14.41%	7.64%	8.85%	4.69%	4.34%	4.34%	0.00%	0.35%	0.69%	0.52%	5.56%	2.60%	0.00%	2.60%	2.60%	5.03%	0.17%	100%
Road 6	6	-	70	65.46131	N	1700-1800	610	47.05%	15.90%	5.08%	7.05%	2.46%	3.11%	2.62%	0.00%	0.16%	0.33%	0.49%	5.25%	2.46%	0.00%	2.30%	2.79%	2.79%	0.16%	100%
Road 6	6	-	70	64.6627	N	1800-1900	689	48.91%	16.26%	4.50%	3.05%	1.89%	1.89%	3.19%	0.00%	0.29%	0.44%	0.44%	6.24%	2.47%	0.00%	2.76%	4.79%	2.76%	0.15%	100%
Road 6	6	-	70	66.10119	N	1900-2000	524	39.50%	20.04%	4.20%	3.44%	2.10%	3.44%	4.01%	0.00%	0.38%	0.38%	0.57%	6.30%	2.10%	0.00%	3.44%	5.73%	4.20%	0.19%	100%
Road 6	6	-	70	66.88988	N	2000-2100	418	46.41%	22.01%	3.59%	3.35%	1.44%	1.91%	4.07%	0.00%	0.00%	0.00%	0.48%	5.74%	1.91%	0.00%	3.83%	3.35%	1.91%	0.00%	100%
Road 6	6	-	70	67.32143	N	2100-2200	360	41.39%	20.56%	2.22%	2.22%	1.11%	2.50%	6.94%	0.00%	0.00%	0.00%	0.56%	7.50%	2.78%	0.00%	3.89%	2.50%	5.56%	0.28%	100%
Road 6	6	-	70	67.16518	N	2200-2300	381	33.33%	33.86%	3.67%	3.67%	1.84%	2.62%	2.62%	0.00%	0.52%	1.05%	0.52%	5.51%	2.36%	0.00%	2.89%	2.89%	2.62%	0.00%	100%
Road 6	6	-	70	67.34375	N	2300-0000	357	49.58%	23.25%	5.04%	5.32%	3.08%	1.40%	1.40%	0.00%	0.00%	0.00%	0.28%	3.08%	1.12%	0.00%	2.52%	2.24%	1.68%	0.00%	100%

Appendix 3.4 Calculation of Vehicular Emisisons
Traffic Data and Road Segments (Year 2028)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 7	7	-	70	68.61607	N	0000-0100	186	38.71%	20.97%	2.69%	3.76%	2.15%	2.15%	6.45%	0.00%	0.00%	0.00%	0.54%	3.23%	1.61%	0.00%	3.23%	2.15%	12.37%	0.00%	100%
Road 7	7	-	70	68.92113	N	0100-0200	145	32.41%	15.86%	5.52%	6.21%	3.45%	4.14%	10.34%	0.00%	0.00%	0.00%	0.00%	2.76%	0.69%	0.00%	2.76%	2.07%	13.79%	0.00%	100%
Road 7	7	-	70	69.3006	N	0200-0300	94	37.23%	19.15%	5.32%	5.32%	3.19%	2.13%	7.45%	0.00%	0.00%	0.00%	0.00%	4.26%	1.06%	0.00%	3.19%	1.06%	10.64%	0.00%	100%
Road 7	7	-	70	69.43452	N	0300-0400	76	31.58%	15.79%	7.89%	10.53%	5.26%	2.63%	6.58%	0.00%	0.00%	0.00%	0.00%	2.63%	1.32%	0.00%	3.95%	1.32%	10.53%	0.00%	100%
Road 7	7	-	70	69.17411	N	0400-0500	111	33.33%	16.22%	4.50%	6.31%	3.60%	3.60%	9.91%	0.00%	0.00%	0.90%	0.00%	3.60%	0.90%	0.00%	3.60%	2.70%	10.81%	0.00%	100%
Road 7	7	-	70	68.52679	N	0500-0600	198	33.84%	19.70%	4.55%	6.06%	3.54%	3.54%	9.60%	0.00%	0.00%	0.00%	0.51%	3.03%	1.52%	0.00%	3.03%	3.03%	8.08%	0.00%	100%
Road 7	7	-	70	67.36607	N	0600-0700	354	28.53%	22.03%	5.37%	6.78%	4.52%	3.95%	9.04%	0.00%	0.00%	0.00%	0.28%	3.11%	1.69%	0.00%	3.95%	2.54%	8.19%	0.00%	100%
Road 7	7	-	70	65.79613	N	0700-0800	565	32.92%	20.18%	4.96%	6.37%	4.25%	3.19%	6.19%	0.00%	0.18%	0.18%	0.35%	4.07%	1.77%	0.00%	2.83%	3.36%	9.20%	0.00%	100%
Road 7	7	-	70	61.36905	N	0800-0900	855	34.50%	21.75%	4.80%	5.61%	2.81%	2.81%	5.96%	0.23%	0.12%	0.47%	0.35%	4.56%	2.81%	0.00%	2.46%	1.87%	8.77%	0.12%	100%
Road 7	7	-	70	62.61905	N	0900-1000	792	34.60%	20.83%	5.18%	6.57%	4.04%	5.18%	7.45%	0.00%	0.00%	0.25%	0.13%	2.78%	1.14%	0.00%	2.27%	1.26%	8.33%	0.00%	100%
Road 7	7	-	70	64.54365	N	1000-1100	695	28.92%	18.13%	5.61%	6.62%	5.47%	4.60%	11.37%	0.29%	0.14%	0.14%	0.29%	3.02%	1.29%	0.00%	2.59%	0.72%	10.79%	0.00%	100%
Road 7	7	-	70	64.56349	N	1100-1200	694	24.93%	14.12%	7.35%	8.93%	6.34%	6.34%	13.26%	0.00%	0.14%	0.29%	0.14%	2.02%	0.86%	0.00%	2.31%	0.86%	12.10%	0.00%	100%
Road 7	7	-	70	64.58333	N	1200-1300	693	31.02%	10.53%	6.64%	8.51%	6.35%	5.34%	10.39%	0.00%	0.14%	0.14%	0.14%	3.03%	1.44%	0.00%	2.31%	0.87%	13.13%	0.00%	100%
Road 7	7	-	70	64.80159	N	1300-1400	682	24.34%	13.34%	6.89%	8.80%	6.01%	4.99%	12.02%	0.15%	0.29%	0.44%	0.44%	4.25%	2.20%	0.00%	2.49%	1.03%	12.17%	0.15%	100%
Road 7	7	-	70	64.16667	N	1400-1500	714	27.17%	14.29%	7.00%	8.26%	5.32%	4.48%	10.36%	0.14%	0.42%	0.70%	0.56%	4.62%	2.80%	0.00%	2.52%	1.12%	10.08%	0.14%	100%
Road 7	7	-	70	64.4246	N	1500-1600	701	31.38%	14.12%	5.42%	7.56%	4.42%	4.14%	9.99%	0.29%	0.00%	0.29%	0.29%	4.28%	2.14%	0.00%	2.43%	2.57%	10.56%	0.14%	100%
Road 7	7	-	70	63.94841	N	1600-1700	725	30.48%	11.45%	6.48%	8.83%	5.24%	4.41%	10.34%	0.00%	0.28%	0.55%	0.41%	4.41%	2.07%	0.00%	2.07%	2.62%	10.21%	0.14%	100%
Road 7	7	-	70	63.11508	N	1700-1800	767	41.98%	12.78%	4.30%	7.17%	2.74%	3.13%	6.91%	0.00%	0.13%	0.26%	0.39%	4.17%	2.22%	0.00%	1.83%	3.65%	8.21%	0.13%	100%
Road 7	7	-	70	62.51984	N	1800-1900	797	45.17%	14.30%	4.02%	4.02%	2.13%	1.88%	5.14%	0.00%	0.25%	0.38%	0.38%	5.40%	2.13%	0.00%	2.38%	4.52%	7.78%	0.13%	100%
Road 7	7	-	70	65.52083	N	1900-2000	602	36.38%	17.61%	3.65%	3.99%	2.16%	3.16%	7.64%	0.00%	0.33%	0.33%	0.50%	5.48%	1.99%	0.00%	2.99%	4.98%	8.64%	0.17%	100%
Road 7	7	-	70	66.30952	N	2000-2100	496	40.73%	18.95%	3.02%	3.02%	2.02%	3.02%	6.85%	0.00%	0.00%	0.00%	0.40%	4.84%	1.61%	0.00%	3.23%	3.43%	8.87%	0.00%	100%
Road 7	7	-	70	66.91964	N	2100-2200	414	37.68%	19.08%	1.93%	2.66%	1.69%	2.42%	9.66%	0.00%	0.00%	0.00%	0.48%	6.52%	2.90%	0.00%	3.38%	2.42%	8.94%	0.24%	100%
Road 7	7	-	70	66.67411	N	2200-2300	447	30.43%	29.31%	3.36%	3.80%	2.01%	2.91%	6.49%	0.00%	0.45%	0.89%	0.45%	4.70%	2.01%	0.00%	2.46%	3.13%	7.61%	0.00%	100%
Road 7	7	-	70	66.94196	N	2300-0000	411	46.23%	20.44%	4.62%	5.84%	3.41%	1.46%	3.65%	0.00%	0.00%	0.00%	0.24%	2.68%	0.97%	0.00%	2.19%	2.19%	6.08%	0.00%	100%
Road 8	8	-	50	45	N	0000-0100	36	13.89%	0.00%	0.00%	2.78%	2.78%	2.78%	22.22%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.78%	52.78%	0.00%	100%
Road 8	8	-	50	45	N	0100-0200	30	10.00%	0.00%	0.00%	6.67%	3.33%	3.33%	30.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	46.67%	0.00%	100%
Road 8	8	-	50	45	N	0200-0300	15	13.33%	0.00%	0.00%	6.67%	0.00%	0.00%	33.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	46.67%	0.00%	100%
Road 8	8	-	50	45	N	0300-0400	14	14.29%	0.00%	0.00%	14.29%	7.14%	0.00%	21.43%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	42.86%	0.00%	100%
Road 8	8	-	50	45	N	0400-0500	21	14.29%	0.00%	0.00%	4.76%	4.76%	4.76%	33.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	38.10%	0.00%	100%
Road 8	8	-	50	45	N	0500-0600	34	14.71%	0.00%	0.00%	5.88%	5.88%	5.88%	35.29%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.94%	29.41%	0.00%	100%
Road 8	8	-	50	39.93333	N	0600-0700	62	11.29%	1.61%	1.61%	8.06%	6.45%	6.45%	33.87%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.61%	29.03%	0.00%	100%
Road 8	8	-	50	38.6	N	0700-0800	102	13.73%	0.98%	0.98%	7.84%	6.86%	4.90%	22.55%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.94%	39.22%	0.00%	100%
Road 8	8	-	50	35.6	N	0800-0900	192	8.85%	0.52%	2.60%	11.98%	7.29%	4.69%	26.04%	1.04%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	36.98%	0.00%	100%
Road 8	8	-	50	36.73333	N	0900-1000	158	7.59%	0.00%	3.16%	6.96%	7.59%	9.49%	27.85%	0.00%	0.00%	0.00%	0.63%	0.00%	1.27%	0.00%	0.00%	0.00%	35.44%	0.00%	100%
Road 8	8	-	50	36.66667	N	1000-1100	160	8.75%	0.00%	1.25%	10.00%	5.63%	5.63%	36.25%	1.25%	0.00%	0.00%	0.00%	1.25%	0.00%	0.00%	0.00%	1.25%	28.75%	0.00%	100%
Road 8	8	-	50	36.7	N	1100-1200	159	11.32%	0.00%	2.52%	4.40%	3.14%	5.66%	34.59%	0.00%	0.00%	0.00%	0.00%	0.63%	0.00%	0.00%	0.00%	0.63%	37.11%	0.00%	100%
Road 8	8	-	50	36.33333	N	1200-1300	170	10.59%	1.18%	1.18%	6.47%	4.12%	5.29%	32.35%	0.00%	0.00%	0.00%	0.00%	0.00%	0.59%	0.00%	0.00%	0.59%	37.65%	0.00%	100%
Road 8	8	-	50	36.6	N	1300-1400	162	12.35%	0.62%	1.23%	9.88%	6.79%	6.17%	29.63%	0.00%	0.00%	0.00%	0.00%	0.00%	0.62%	0.00%	0.00%	1.23%	31.48%	0.00%	100%
Road 8	8	-	50	37.36667	N	1400-1500	139	15.11%	0.72%	2.16%	7.19%	5.04%	2.88%	27.34%	0.00%	0.00%	0.00%	0.00%	0.00%	1.44%	0.00%	0.00%	0.72%	37.41%	0.00%	100%
Road 8	8	-	50	37.36667	N	1500-1600	139	13.67%	1.44%	1.44%	5.04%	4.32%	5.04%	32.37%	0.72%	0.00%	0.00%	0.00%	0.00%	0.72%	0.00%	0.00%	1.44%	33.81%	0.00%	100%
Road 8	8	-	50	37.03333	N	1600-1700	149	10.74%	0.00%	1.34%	8.72%	7.38%	4.70%	34.23%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.68%	30.20%	0.00%	100%
Road 8	8	-	50	36.8	N	1700-1800	156	21.79%	0.64%	0.64%	7.69%	3.85%	3.21%	24.36%	0.00%	0.00%	0.00%	0.00%	0.00%	1.28%	0.00%	0.00%	7.05%	29.49%	0.00%	100%
Road 8	8	-	50	38.43333	N	1800-1900	107	21.50%	1.87%	0.93%	9.35%	2.80%	1.87%	18.69%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.80%	40.19%	0.00%	100%
Road 8	8	-	50	45	N	1900-2000	77	14.29%	1.30%	0.00%	7.79%	2.60%	1.30%	32.47%	0.00%	0.00%	0.00%	0.00%	0.00%	1.30%	0.00%	0.00%	0.00%	38.96%	0.00%	100%
Road 8	8	-	50	45	N	2000-2100	77	10.39%	2.60%	0.00%	1.30%	5.19%	7.79%	23.38%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.90%	45.45%	0.00%	100%
Road 8	8	-	50	45	N	2100-2200	54	12.96%	9.26%	0.00%	5.56%	5.56%	1.85%	27.78%	0.00%	0.00%	0.00%	0.00%	0.00%	3.70%	0.00%	0.00%	1.85%	31.48%	0.00%	100%
Road 8	8	-	50	39.86667	N	2200-2300	64	14.06%	3.13%	1.56%	4.69%	3.13%	4.69%	29.69%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.13%	35.94%	0.00%	100%
Road 8	8	-	50	40.58333	N	2300-0000	53	26.42%	1.89%	1.89%	9.43%	3.77%	1.89%	16.98%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.89%	35.85%	0.00%	100%
Road 9	9	-	50	35	Y	0000-0100	14	28.57%	7.14%	0.00%	21.43%	7.14%	7.14%	21.43%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.14%	0.00%	100%
Road 9	9	-	50	35	Y	0100-0200	11	27.27%	9.09%	0.00%	18.18%	9.09%	9.09%	18.18%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	9.09%	0.00%	100%
Road 9	9	-	50	35	Y	0200-0300	5	40.00%	20.00%	0.00%	20.00%	0.00%	0.00%	20.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%
Road 9	9	-	50	35	Y	0300-0400	4	50.00%	0.00%	0.00%	25.00%	0.00%	0.00%	25.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%
Road 9	9	-	50	35	Y	0400-0500	10	30.00%	10.00%	0.00%	10.00%	10.00%	10.00%	20.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.00%	0.00%	100%
Road 9	9	-	50	35	Y	0500-0600	17	35.29%	11.76%	0.00%	11.76%	5.88%	5.88%	17.65%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.88%	5.88%	0.00%	100%
Road 9	9	-	50	35	Y	0600-0700	32	25.00%	9.38%	0.00%	15.63%	6.25%	6.25%	18.75%	9.38%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.13%	6.25%	0.00%	100%
Road 9	9	-	50	32.95833	Y	0700-0800	49	30.61%	8.16%	2.04%	16.33%	6.12%	4.08%	12.24%	10.20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	6.12%	4.08%	0.00%	100%
Road 9	9	-	50	30.20833	Y	0800-0900	115	16.52%	7.83%	3.48%	18.26%	9.57%	3.48%	28.70%	4.35%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.74%	6.09%	0.00%	100%
Road 9	9	-	50	31.375	Y	0900-1000	87	25.29%	5.75%	4.60%	10.34%	8.05%	6.90%	18.39%	6.90%	0.00%	0.00%	1.15%	1.15%	0.00%	0.00%	0.00%	1.15%	10.34%	0.00%	100%
Road 9	9	-	50	31.95833	Y	1000-1100	73	21.92%	5.48%	1.37%	13.70%	4.11%	12.33%	23.29%	4.11%	0.00%	0.00%	0.00%	1.37%	0.00%	0.00%	0.00%	0.00%	12.33%	0.00%	100%
Road 9	9	-	50	31.83333	Y	1100-1200	76	27.63%	2.63%	1.32%	19.74%	0.00%	9.21%	22.37%	5.26%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.95%	7.89%	0.00%	100%
Road 9	9	-	50	31.91667	Y	1200-1300	74	14.86%	9.46%	1.35%	18.92%	10.81%	9.46%	25.68%	2.70%	0.00%	0.00%	0.00%	0.00%	1.35%	0.00%	0.00%	1.35%	4.05%	0.00%	100%
Road 9	9	-	50	32.45833	Y	1300-1400	61	11.48%	0.00%	3.28%	22.95%	16.39%	16.39%	14.75%	4.92%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	9.84%	0.00%	100%
Road 9	9	-	50	32.16667	Y	1400-1500	68	27.94%	8.82%	1.47%	17.65%	11.76%	0.00%	17.65%	5.88%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.47%	7.35%	0.00%	100%
Road 9	9	-	50	35	Y	1500-1600	57	38.60%	5.26%	0.00%	10.53%	5.26%	3.51%	19.30%	8.77%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.75%	7.02%	0.00%	100%
Road 9	9	-	50	35	Y	1600-1700	80	28.75%	3.75%	0.00%	28.75%	6.25%	1.25%	18.75%	5.00%	0.00%	0.00%	0.00%	0.00%	1.25%	0.00%	0.00%	1.25%	5.00%	0.00%	100%
Road 9	9	-	50	35	Y	1700-1800	69	40.58%	1.45%	0.00%	20.29%	4.35%	2.90%	7.25%	8.70%	0.00%	0.00%	0.00%	0.00%	1.45%	0.00%	0.00%	5.80%	7.25%	0.00%	100%
Road 9	9	-	50	35	Y	1800-1900	44	40.91%	11.36%	0.00%	15.91%	4.55%	4.55%	9.09%	4.55%	0.00%	0.00%	0.00%	0.00%	2.27%	0.00%	0.00%	4.55%	2.27%	0.00%	100%
Road 9	9	-	50	35	Y	1900-2000	43	25.58%	18.60%	0.00%	18.60%	4.65%	2.33%	13.95%	0.00%	0.00%	0.00%	0.00%	2.33%	0.00%	0.00%	0.00%	11.63%	2.33%	0.00%	100%
Road 9	9	-	50	35	Y	2000-2100	29	34.48%	20.69%	0.00%	3.45%	6.90%	13.79%	6.90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	6.90%	6.90%	0.00%	100%
Road 9	9	-	50	35	Y	2100-2200	28	57.14%	14.29%	0.00%	28.57%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%
Road 9	9	-	50	35	Y	2200-2300	33	33.33%	15.15%	0.00%	12.12%	6.06%	6.06%	18.18%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.03%	6.06%	0.00%	100%
Road 9	9	-	50	35	Y	2300-0000	30	40.00%	13.33%	0.00%	16.67%	6.67%	3.33%	13.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.33%	3.33%	0.00%	100%

Appendix 3.4 Calculation of Vehicular Emisisons
Traffic Data and Road Segments (Year 2028)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 10	10	-	50	35	Y	0000-0100	45	13.33%	4.44%	0.00%	6.67%	2.22%	2.22%	24.44%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.22%	44.44%	0.00%	100%
Road 10	10	-	50	35	Y	0100-0200	34	14.71%	2.94%	0.00%	8.82%	2.94%	2.94%	23.53%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.94%	41.18%	0.00%	100%
Road 10	10	-	50	35	Y	0200-0300	19	15.79%	5.26%	0.00%	5.26%	0.00%	5.26%	31.58%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	36.84%	0.00%	100%
Road 10	10	-	50	35	Y	0300-0400	12	16.67%	8.33%	0.00%	8.33%	0.00%	0.00%	16.67%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	50.00%	0.00%	100%
Road 10	10	-	50	35	Y	0400-0500	23	13.04%	4.35%	0.00%	8.70%	4.35%	4.35%	30.43%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	34.78%	0.00%	100%
Road 10	10	-	50	35	Y	0500-0600	41	19.51%	4.88%	0.00%	7.32%	4.88%	4.88%	31.71%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.44%	24.39%	0.00%	100%
Road 10	10	-	50	31.58333	Y	0600-0700	82	13.41%	3.66%	1.22%	7.32%	4.88%	6.10%	31.71%	3.66%	0.00%	0.00%	0.00%	0.00%	1.22%	0.00%	0.00%	2.44%	24.39%	0.00%	100%
Road 10	10	-	50	29.85	Y	0700-0800	129	15.50%	3.88%	0.78%	8.53%	4.65%	4.65%	22.48%	3.88%	0.00%	0.00%	0.00%	0.00%	0.78%	0.00%	0.00%	3.10%	31.78%	0.00%	100%
Road 10	10	-	50	27.86667	Y	0800-0900	248	11.29%	3.23%	2.42%	9.68%	2.02%	4.44%	31.45%	2.82%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.81%	31.85%	0.00%	100%
Road 10	10	-	50	28.7	Y	0900-1000	198	8.59%	3.03%	2.53%	8.59%	4.55%	5.56%	28.79%	3.03%	0.00%	0.00%	0.00%	0.51%	1.01%	0.00%	0.00%	1.01%	32.83%	0.00%	100%
Road 10	10	-	50	28.41667	Y	1000-1100	215	11.63%	1.86%	1.40%	8.37%	5.58%	7.44%	33.49%	2.33%	0.00%	0.00%	0.00%	0.47%	0.00%	0.00%	0.00%	0.93%	26.51%	0.00%	100%
Road 10	10	-	50	28.41667	Y	1100-1200	215	12.56%	0.93%	1.40%	8.84%	2.33%	6.51%	34.42%	1.86%	0.00%	0.00%	0.00%	0.47%	0.00%	0.00%	0.00%	0.93%	29.77%	0.00%	100%
Road 10	10	-	50	28.3	Y	1200-1300	222	10.81%	3.15%	0.90%	8.56%	4.95%	5.86%	33.78%	0.90%	0.00%	0.00%	0.00%	0.00%	0.90%	0.00%	0.00%	0.90%	29.28%	0.00%	100%
Road 10	10	-	50	28.8	Y	1300-1400	192	10.42%	0.52%	1.04%	11.46%	6.77%	6.77%	29.69%	1.56%	0.00%	0.00%	0.00%	0.00%	0.52%	0.00%	0.00%	1.04%	30.21%	0.00%	100%
Road 10	10	-	50	28.98333	Y	1400-1500	181	12.71%	3.87%	1.10%	11.60%	6.08%	2.21%	27.62%	2.21%	0.00%	0.00%	0.00%	0.00%	1.10%	0.00%	0.00%	1.10%	30.39%	0.00%	100%
Road 10	10	-	50	28.91667	Y	1500-1600	185	15.14%	2.70%	1.08%	8.65%	3.78%	5.41%	31.35%	1.62%	0.00%	0.00%	0.00%	0.00%	0.54%	0.00%	0.00%	0.54%	29.19%	0.00%	100%
Road 10	10	-	50	28.56667	Y	1600-1700	206	14.08%	0.97%	0.97%	15.05%	6.31%	2.91%	32.52%	1.94%	0.00%	0.00%	0.00%	0.00%	0.49%	0.00%	0.00%	1.46%	23.30%	0.00%	100%
Road 10	10	-	50	28.75	Y	1700-1800	195	23.59%	1.03%	0.51%	11.79%	3.59%	3.59%	23.08%	2.56%	0.00%	0.00%	0.00%	0.00%	1.54%	0.00%	0.00%	2.56%	26.15%	0.00%	100%
Road 10	10	-	50	29.98333	Y	1800-1900	121	19.83%	2.48%	0.83%	9.09%	4.13%	3.31%	19.01%	1.65%	0.00%	0.00%	0.00%	0.00%	0.83%	0.00%	0.00%	2.48%	36.36%	0.00%	100%
Road 10	10	-	50	35	Y	1900-2000	109	16.51%	9.17%	0.00%	5.50%	1.83%	1.83%	28.44%	0.92%	0.00%	0.00%	0.00%	0.92%	0.92%	0.00%	0.00%	4.59%	29.36%	0.00%	100%
Road 10	10	-	50	35	Y	2000-2100	72	11.11%	5.56%	0.00%	0.00%	2.78%	5.56%	27.78%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.39%	45.83%	0.00%	100%
Road 10	10	-	50	35	Y	2100-2200	74	21.62%	10.81%	0.00%	10.81%	4.05%	1.35%	24.32%	0.00%	0.00%	0.00%	0.00%	0.00%	2.70%	0.00%	0.00%	1.35%	22.97%	0.00%	100%
Road 10	10	-	50	35	Y	2200-2300	77	20.78%	6.49%	0.00%	6.49%	2.60%	5.19%	20.78%	0.00%	0.00%	0.00%	0.00%	0.00%	1.30%	0.00%	0.00%	1.30%	35.06%	0.00%	100%
Road 10	10	-	50	32	Y	2300-0000	72	23.61%	5.56%	1.39%	9.72%	2.78%	2.78%	22.22%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.39%	30.56%	0.00%	100%
Road 11	11	-	50	35	Y	0000-0100	44	9.09%	2.27%	0.00%	6.82%	2.27%	2.27%	6.82%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	70.45%	0.00%	100%
Road 11	11	-	50	35	Y	0100-0200	31	9.68%	3.23%	0.00%	6.45%	3.23%	3.23%	6.45%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	67.74%	0.00%	100%
Road 11	11	-	50	35	Y	0200-0300	15	13.33%	6.67%	0.00%	6.67%	0.00%	0.00%	6.67%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	66.67%	0.00%	100%
Road 11	11	-	50	35	Y	0300-0400	14	14.29%	0.00%	0.00%	7.14%	0.00%	0.00%	7.14%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	71.43%	0.00%	100%
Road 11	11	-	50	35	Y	0400-0500	20	15.00%	5.00%	0.00%	5.00%	5.00%	5.00%	10.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	55.00%	0.00%	100%
Road 11	11	-	50	35	Y	0500-0600	27	22.22%	7.41%	0.00%	7.41%	3.70%	3.70%	11.11%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.70%	40.74%	0.00%	100%
Road 11	11	-	50	35	Y	0600-0700	52	15.38%	5.77%	0.00%	9.62%	3.85%	3.85%	11.54%	5.77%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.92%	42.31%	0.00%	100%
Road 11	11	-	50	30.45833	Y	0700-0800	109	13.76%	3.67%	0.92%	7.34%	2.75%	1.83%	5.50%	4.59%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.75%	56.88%	0.00%	100%
Road 11	11	-	50	28.58333	Y	0800-0900	205	11.22%	4.39%	1.95%	10.24%	5.37%	1.95%	16.10%	2.44%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.98%	45.37%	0.00%	100%
Road 11	11	-	50	29.55	Y	0900-1000	147	14.97%	3.40%	2.72%	6.12%	4.76%	4.08%	10.88%	4.08%	0.00%	0.00%	0.68%	0.68%	0.00%	0.00%	0.00%	0.68%	46.94%	0.00%	100%
Road 11	11	-	50	29.98333	Y	1000-1100	121	13.22%	3.31%	0.83%	8.26%	2.48%	7.44%	14.05%	2.48%	0.00%	0.00%	0.00%	0.83%	0.00%	0.00%	0.00%	0.00%	47.11%	0.00%	100%
Road 11	11	-	50	29.73333	Y	1100-1200	136	15.44%	1.47%	0.74%	11.03%	0.00%	5.15%	12.50%	2.94%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.21%	48.53%	0.00%	100%
Road 11	11	-	50	29.26667	Y	1200-1300	164	9.15%	4.27%	0.61%	8.54%	4.88%	4.27%	11.59%	1.22%	0.00%	0.00%	0.00%	0.00%	0.61%	0.00%	0.00%	0.61%	54.27%	0.00%	100%
Road 11	11	-	50	29.98333	Y	1300-1400	121	5.79%	0.00%	1.65%	11.57%	8.26%	8.26%	7.44%	2.48%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	54.55%	0.00%	100%
Road 11	11	-	50	30.16667	Y	1400-1500	116	16.38%	5.17%	0.86%	10.34%	6.90%	0.00%	10.34%	3.45%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.86%	45.69%	0.00%	100%
Road 11	11	-	50	35	Y	1500-1600	117	18.80%	2.56%	0.00%	5.13%	2.56%	1.71%	9.40%	4.27%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.85%	54.70%	0.00%	100%
Road 11	11	-	50	35	Y	1600-1700	140	16.43%	2.14%	0.00%	16.43%	3.57%	0.71%	10.71%	2.86%	0.00%	0.00%	0.00%	0.00%	0.71%	0.00%	0.00%	0.71%	45.71%	0.00%	100%
Road 11	11	-	50	35	Y	1700-1800	143	20.98%	0.70%	0.00%	9.79%	2.10%	1.40%	3.50%	4.20%	0.00%	0.00%	0.00%	0.00%	0.70%	0.00%	0.00%	2.80%	53.85%	0.00%	100%
Road 11	11	-	50	35	Y	1800-1900	118	16.95%	4.24%	0.00%	5.93%	1.69%	1.69%	3.39%	1.69%	0.00%	0.00%	0.00%	0.00%	0.85%	0.00%	0.00%	1.69%	61.86%	0.00%	100%
Road 11	11	-	50	35	Y	1900-2000	91	12.09%	8.79%	0.00%	8.79%	2.20%	1.10%	6.59%	0.00%	0.00%	0.00%	0.00%	1.10%	0.00%	0.00%	0.00%	5.49%	53.85%	0.00%	100%
Road 11	11	-	50	35	Y	2000-2100	81	17.28%	7.41%	0.00%	1.23%	2.47%	4.94%	2.47%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.47%	61.73%	0.00%	100%
Road 11	11	-	50	35	Y	2100-2200	58	27.59%	6.90%	0.00%	13.79%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	51.72%	0.00%	100%
Road 11	11	-	50	35	Y	2200-2300	63	17.46%	7.94%	0.00%	6.35%	3.17%	3.17%	9.52%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.59%	50.79%	0.00%	100%
Road 11	11	-	50	35	Y	2300-0000	60	20.00%	6.67%	0.00%	8.33%	3.33%	1.67%	6.67%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.67%	51.67%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	0000-0100	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	0100-0200	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	0200-0300	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	0300-0400	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	0400-0500	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	0500-0600	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	0600-0700	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	0700-0800	90	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	0800-0900	90	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	0900-1000	90	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	1000-1100	90	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	1100-1200	90	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	1200-1300	90	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	1300-1400	90	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	1400-1500	90	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	1500-1600	90	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	1600-1700	90	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	1700-1800	90	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	1800-1900	90	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	1900-2000	90	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	2000-2100	90	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	2100-2200	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	2200-2300	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	2300-0000	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%

Appendix 3.4 Calculation of Vehicular Emisisons
Traffic Data and Road Segments (Year 2028)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Haul Road 2	HR2	-	8	8	N	0000-0100	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	0100-0200	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	0200-0300	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	0300-0400	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	0400-0500	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	0500-0600	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	0600-0700	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	0700-0800	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	0800-0900	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	0900-1000	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	1000-1100	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	1100-1200	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	1200-1300	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	1300-1400	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	1400-1500	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	1500-1600	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	1600-1700	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	1700-1800	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	1800-1900	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	1900-2000	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	2000-2100	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	2100-2200	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	2200-2300	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	2300-0000	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	0000-0100	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	0100-0200	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	0200-0300	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	0300-0400	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	0400-0500	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	0500-0600	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	0600-0700	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	0700-0800	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	0800-0900	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	0900-1000	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	1000-1100	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	1100-1200	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	1200-1300	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	1300-1400	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	1400-1500	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	1500-1600	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	1600-1700	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	1700-1800	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	1800-1900	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	1900-2000	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	2000-2100	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	2100-2200	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	2200-2300	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	2300-0000	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%

Appendix 3.4 Calculation of Vehicular Emisisons

Traffic Data and Road Segments (Year 2028)

Road ID	Segment ID	X coordinate of endpoint 1	Y coordinate of endpoint 1	X coordinate of endpoint 2	Y coordinate of endpoint 2	Road height (mAG)	Physical Road width (m)	Road elevation (m)	Barrier 1 width (m)	Barrier 1 height (m)	Barrier 1 DCL (m)	Barrier 2 width (m)	Barrier 2 height (m)	Barrier 2 DCL (m)
1	101	828242.3	824610.5	828289.6	824616.5	0	8.8							
1	102	828289.6	824616.5	828345.2	824613.2	0	8.8							
1	103	828345.2	824613.2	828393.7	824604.3	0	8.8							
2	201	828243.6	824599.7	828289.2	824602.8	0	6							
2	202	828289.2	824602.8	828319.6	824603.4	0	6							
2	203	828319.6	824603.4	828361.2	824598.3	0	6							
2	204	828361.2	824598.3	828391.9	824591.4	0	6							
3	301	827622.1	824564.9	827684.2	824567.6	0	14.5							
3	302	827684.2	824567.6	827744.3	824569.4	0	9.5							
3	303	827744.3	824569.4	827964.2	824571.3	15	8.8	20						
3	304	827964.2	824571.3	828081.5	824573.3	0	10.7							
3	305	828081.5	824573.3	828242.6	824603.5	0	14.6							
4	401	827377.9	824531.6	827454.6	824530.9	0	6							
4	402	827454.6	824530.9	827480.4	824531.6	0	6							
4	403	827480.4	824531.6	827514.3	824536.6	0	6							
4	404	827514.3	824536.6	827566.9	824551.5	0	6							
4	405	827566.9	824551.5	827622.4	824561.6	0	6							
5	501	827368.6	824570.9	827455.4	824571.3	12	8.8	25						
5	502	827455.4	824571.3	827555.4	824571.4	25	8.8	20						
5	503	827555.4	824571.4	827622.4	824570.1	10	8.8	25						
6	601	827366.9	824580.9	827460.9	824580.1	10	8.8	25						
6	602	827460.9	824580.1	827610.6	824580.7	30	8.8	22						
6	603	827610.6	824580.7	827733.2	824581.3	0	8.8							
6	604	827733.2	824581.3	828037.8	824582.2	15	8.8	20						
7	701	828037.6	824586.5	828080.8	824587.4	0	17.7							
7	702	828080.8	824587.4	828201.9	824614.1	0	14.9		1	5	7.5			
7	703	828201.9	824614.1	828267.3	824626.1	0	14.9		1	5	7.5			
7	704	828267.3	824626.1	828346.3	824627.8	0	15.5		1	5	7.75			
7	705	828346.3	824627.8	828395.2	824618.9	0	17.7		1	5	8.85			
8	801	827738.6	824652.6	827741.8	824624.8	0	7.75							
8	802	827741.8	824624.8	827761.8	824604.4	0	7.75							
8	803	827761.8	824604.4	827791.9	824599.8	0	7.75							
8	804	827791.9	824599.8	827913.9	824595.7	0	7.75							
8	805	827913.9	824595.7	828037.8	824592.1	0	7.75							
9	901	827882.4	824651.4	827956.1	824648.4	0	10.5							
9	902	827956.1	824648.4	827974.8	824648.9	0	12.4							
9	903	827974.8	824648.9	828037.8	824627.1	0	8							
9	904	828037.8	824627.1	828058.9	824623.6	0	7.9							
9	905	828058.9	824623.6	828088	824624.9	0	7.9							
9	906	828088	824624.9	828155.8	824654.4	0	7.9							
9	907	828155.8	824654.4	828269.5	824708.4	0	10.15							
9	908	828269.5	824708.4	828357.8	824774.9	0	5.5							
9	909	828357.8	824774.9	828400.6	824792.5	0	10.5							
10	1001	827359.4	824666.1	827665.9	824660.6	0	10.2							
10	1002	827665.9	824660.6	827700.1	824659.6	0	10.5							
10	1003	827700.1	824659.6	827738.6	824652.6	0	10.5							
11	1101	827738.6	824652.6	827818.3	824648.1	0	10							
11	1102	827818.3	824648.1	827882.4	824651.4	0	10							
HR1	HR1	827867.4	824736.8	827898.8	824735.9	0	7.3							
HR2	HR2	827878.3	824733.2	827876.4	824656.6	0	3.65							
HR3	HR3	827882	824733.1	827880.4	824656.6	0	3.65							

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (Summary) Year 2028

Road Name	Road ID	Hour	NO2 Emission			NO Emission			NOX Emission			PM25 Emission			PM10 Emission		
			AnnualHourMin			AnnualHourMin			AnnualHourMin			AnnualHourMin			AnnualHourMin		
			g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year
Road 1	1	0000-0100	0.101331508	3.40434E-07	0.001010861	0.604914749	2.03228E-06	0.0060345	0.706246257	2.37271E-06	0.007045362	0.029061453	9.76351E-08	0.000289911	0.031578268	1.06091E-07	0.000315018
Road 1	1	0100-0200	0.078726147	1.61058E-07	0.000478233	0.479193211	9.80331E-07	0.002910927	0.557919358	1.14139E-06	0.00338916	0.023159725	4.73801E-08	0.000140687	0.025161835	5.1476E-08	0.000152849
Road 1	1	0200-0300	0.076392987	1.10403E-07	0.000327822	0.496621039	7.17714E-07	0.00213113	0.573014026	8.28117E-07	0.002458952	0.022881039	3.30676E-08	9.81885E-05	0.024866104	3.59364E-08	0.000106707
Road 1	1	0300-0400	0.064440545	6.65208E-08	0.000197522	0.402483636	4.15477E-07	0.001233687	0.466924182	4.81998E-07	0.001431209	0.018418909	1.90135E-08	5.64574E-05	0.020009636	2.06556E-08	6.13333E-05
Road 1	1	0400-0500	0.083398953	1.34615E-07	0.000399718	0.484238721	7.81617E-07	0.002320877	0.567637674	9.16232E-07	0.002720594	0.022962674	3.70644E-08	0.000110056	0.024948372	4.02695E-08	0.000119573
Road 1	1	0500-0600	0.068870266	2.43011E-07	0.000721579	0.414597713	1.46292E-06	0.00434389	0.483467979	1.70593E-06	0.005065469	0.019296011	6.80865E-08	0.000202171	0.020965798	7.39784E-08	0.000219666
Road 1	1	0600-0700	0.092274392	5.83642E-07	0.001733026	0.497897181	3.14924E-06	0.009351121	0.590171573	3.73288E-06	0.011084148	0.023371128	1.47824E-07	0.000438939	0.025431068	1.60853E-07	0.000477627
Road 1	1	0700-0800	0.077299466	8.15358E-07	0.002421068	0.433546655	4.57307E-06	0.013578952	0.510846121	5.38843E-06	0.01600002	0.019362616	2.04238E-07	0.000606449	0.021047758	2.22013E-07	0.000659229
Road 1	1	0800-0900	0.08288598	1.07963E-06	0.003205787	0.449685764	5.85739E-06	0.017392528	0.532571744	6.93703E-06	0.020598315	0.021000821	2.73547E-07	0.00081225	0.022812939	2.97151E-07	0.000882338
Road 1	1	0900-1000	0.087897997	1.17791E-06	0.003497609	0.491172871	6.58216E-06	0.019544596	0.579070868	7.76007E-06	0.023042205	0.022414048	3.00368E-07	0.000891893	0.024364874	3.26511E-07	0.000969519
Road 1	1	1000-1100	0.101848187	1.32854E-06	0.003944866	0.548463597	7.15432E-06	0.021243532	0.650311784	8.48286E-06	0.025188398	0.026393381	3.44283E-07	0.00102229	0.028678158	3.74086E-07	0.001110785
Road 1	1	1100-1200	0.091999228	1.1638E-06	0.003455717	0.531163027	6.71929E-06	0.019951789	0.623162255	7.8831E-06	0.023407506	0.025052047	3.16912E-07	0.000941016	0.027219807	3.44335E-07	0.001022443
Road 1	1	1200-1300	0.095157076	1.19125E-06	0.003537212	0.541955517	6.78462E-06	0.020145757	0.637112594	7.97587E-06	0.023682968	0.025994558	3.2542E-07	0.000966279	0.028243733	3.53577E-07	0.001049886
Road 1	1	1300-1400	0.099402341	1.32275E-06	0.003927688	0.554626135	7.38044E-06	0.02191496	0.654028477	8.70319E-06	0.025842648	0.026341382	3.50526E-07	0.001040828	0.028635867	3.81059E-07	0.00113149
Road 1	1	1400-1500	0.094287945	1.36088E-06	0.004040886	0.514735176	7.42927E-06	0.022059939	0.609023121	8.79014E-06	0.026100825	0.024361001	3.51607E-07	0.001044036	0.026485488	3.8227E-07	0.001135085
Road 1	1	1500-1600	0.101530251	1.36441E-06	0.004051376	0.55229486	7.42198E-06	0.022038302	0.653825112	8.78639E-06	0.026089679	0.025715307	3.45574E-07	0.001026122	0.027956578	3.75693E-07	0.001115555
Road 1	1	1600-1700	0.097171417	1.37696E-06	0.004088647	0.53625947	7.59902E-06	0.022563997	0.633430887	8.97598E-06	0.026652644	0.025039272	3.54817E-07	0.001053568	0.027222464	3.85754E-07	0.00114543
Road 1	1	1700-1800	0.077476478	1.10224E-06	0.003272903	0.438163325	6.23363E-06	0.018509698	0.515639802	7.33587E-06	0.021782602	0.020100778	2.85968E-07	0.000849134	0.021854222	3.10914E-07	0.000923206
Road 1	1	1800-1900	0.069086512	1.00362E-06	0.002980083	0.418953127	6.08614E-06	0.018071762	0.488039638	7.08977E-06	0.021051845	0.018688953	2.71495E-07	0.000806158	0.020320517	2.95197E-07	0.000876536
Road 1	1	1900-2000	0.083350624	9.27682E-07	0.002754594	0.483580034	5.38219E-06	0.015981486	0.566930658	6.30987E-06	0.018736081	0.022596054	2.51491E-07	0.000746761	0.024556981	2.73316E-07	0.000811566
Road 1	1	2000-2100	0.075660338	7.14286E-07	0.00212095	0.452489125	4.27181E-06	0.012684409	0.528149463	4.9861E-06	0.014805359	0.021362803	2.0168E-07	0.000598853	0.023212704	2.19144E-07	0.000650711
Road 1	1	2100-2200	0.079596841	6.85716E-07	0.002036117	0.480805251	4.14207E-06	0.012299175	0.560402092	4.82779E-06	0.014335292	0.023158867	1.99511E-07	0.000592412	0.025194139	2.17044E-07	0.000644475
Road 1	1	2200-2300	0.077524736	6.32944E-07	0.001879419	0.468442161	3.82456E-06	0.011356365	0.545966897	4.4575E-06	0.013235784	0.021963908	1.79322E-07	0.000532467	0.023893609	1.95077E-07	0.000579249
Road 1	1	2300-0000	0.067946154	4.97354E-07	0.001476807	0.424642692	3.10831E-06	0.009229589	0.492588846	3.60566E-06	0.010706396	0.018573718	1.35956E-07	0.000403699	0.020208974	1.47926E-07	0.000439241
Road 2	2	0000-0100	0.167772115	2.01948E-07	0.000476018	0.714830192	8.60444E-07	0.002028182	0.882602308	1.06239E-06	0.0025042	0.02753	3.3138E-08	7.81106E-05	0.029925192	3.60211E-08	8.49065E-05
Road 2	2	0100-0200	0.118771765	9.34778E-08	0.00022034	0.59121	4.65304E-07	0.001096784	0.709981765	5.58782E-07	0.001317124	0.024328235	1.91472E-08	4.51326E-05	0.026453235	2.08197E-08	4.90748E-05
Road 2	2	0200-0300	0.123898261	6.59644E-08	0.000155487	0.683987826	3.6416E-07	0.000858374	0.807886087	4.30125E-07	0.001013861	0.027973478	1.48933E-08	3.51055E-05	0.030403043	1.61868E-08	3.81545E-05
Road 2	2	0300-0400	0.107362	3.72785E-08	8.78704E-05	0.396989333	1.37844E-07	0.000324916	0.504351333	1.75122E-07	0.000412786	0.014837333	5.15185E-09	1.21436E-05	0.016128	5.6E-09	1.32E-05
Road 2	2	0400-0500	0.145105185	9.06907E-08	0.00021377	0.704312222	4.40195E-07	0.001037599	0.849417407	5.30886E-07	0.001251369	0.029534815	1.84593E-08	4.3511E-05	0.032092222	2.00576E-08	4.72785E-05
Road 2	2	0500-0600	0.115097895	1.51865E-07	0.000357967	0.516823509	6.8192E-07	0.001607377	0.631921404	8.33785E-07	0.001965344	0.019796667	2.61206E-08	6.15698E-05	0.021522281	2.83975E-08	6.69366E-05
Road 2	2	0600-0700	0.161577212	3.88982E-07	0.000916883	0.659473077	1.58762E-06	0.003742235	0.821050288	1.9766E-06	0.004659118	0.025222212	6.07201E-08	0.000143126	0.027416923	6.60037E-08	0.00015558
Road 2	2	0700-0800	0.132126625	4.89358E-07	0.001153482	0.55729775	2.06407E-06	0.00486528	0.689424375	2.55342E-06	0.006018763	0.01990725	7.37306E-08	0.000173793	0.021648125	8.01782E-08	0.000188991
Road 2	2	0800-0900	0.148749375	1.04675E-06	0.002467342	0.6311525	4.44144E-06	0.010469079	0.779901875	5.4882E-06	0.012936421	0.022734079	1.59981E-07	0.000377096	0.024745493	1.74135E-07	0.000410459
Road 2	2	0900-1000	0.173418016	1.01161E-06	0.002384489	0.74237754	4.33054E-06	0.010207654	0.915795556	5.34214E-06	0.012592144	0.026635198	1.55372E-07	0.000366233	0.028972262	1.69005E-07	0.000398367
Road 2	2	1000-1100	0.193055668	8.35681E-07	0.001969812	0.81732984	3.53798E-06	0.008339491	1.010385508	4.37366E-06	0.010309303	0.03064631	1.32659E-07	0.000312695	0.033308984	1.44185E-07	0.000339863
Road 2	2	1100-1200	0.22839459	9.67505E-07	0.002280539	0.934890929	3.9603E-06	0.009334964	1.163285519	4.92781E-06	0.011615503	0.036251639	1.53566E-07	0.000361976	0.039400546	1.66905E-07	0.000393418
Road 2	2	1200-1300	0.176527895	7.76396E-07	0.001830069	0.776653	3.41583E-06	0.008051582	0.953180895	4.19223E-06	0.009881651	0.028837421	1.26831E-07	0.000298958	0.031347158	1.37869E-07	0.000324977
Road 2	2	1300-1400	0.195013677	1.00667E-06	0.002372851	0.80077417	4.13363E-06	0.009743512	0.995787848	5.14029E-06	0.012116363	0.030425426	1.57057E-07	0.000370205	0.03306565	1.70686E-07	0.00040233
Road 2	2	1400-1500	0.167439455	6.39526E-07	0.001507448	0.726255455	2.77389E-06	0.006538437	0.893694909	3.41342E-06	0.008045885	0.027471879	1.04927E-07	0.000247328	0.02985897	1.14045E-07	0.000268819
Road 2	2	1500-1600	0.209629016	8.88012E-07	0.002093163	0.828109617	3.50796E-06	0.008268743	1.037738634	4.39598E-06	0.010361906	0.03210918	1.36018E-07	0.000320613	0.034895191	1.4782E-07	0.000348431
Road 2	2	1600-1700	0.17597819	9.00259E-07	0.002122031	0.74367638	3.80446E-06	0.008967613	0.91965457	4.70471E-06	0.011089644	0.026893077	1.37578E-07	0.00032429	0.029220769	1.49486E-07	0.000352358
Road 2	2	1700-1800	0.135665135	6.97168E-07	0.001643319	0.541628514	2.78337E-06	0.006560774	0.677293649	3.48054E-06	0.008204093	0.019805631	1.01779E-07	0.000239907	0.021516982	1.10573E-07	0.000260636
Road 2	2	1800-1900	0.14959932	8.65737E-07	0.002040658	0.67767364	3.92172E-06	0.009244027	0.82727296	4.78746E-06	0.011284685	0.02604136	1.50702E-07	0.000355226	0.02832264	1.63904E-07	0.000386344
Road 2	2	1900-2000	0.127866391	5.00218E-07	0.001179081	0.585764083	2.29153E-06	0.005401446	0.713630473	2.79175E-06	0.006580527	0.022251006	8.70468E-08	0.000205181	0.024179408	9.45907E-08	0.000222963
Road 2	2	2000-2100	0.12156068	4.13644E-07	0.000975014	0.524665782	1.78532E-06	0.004208242	0.646226463	2.19897E-06	0.005183256	0.019367959	6.59049E-08	0.000155347	0.021051701	7.16343E-08	0.000168852
Road 2	2	2100-2200	0.094595621	3.35026E-07	0.000789702	0.442540588	1.56733E-06	0.00369441	0.537136209	1.90236E-06	0.004484112	0.015661373	5.54674E-08	0.000130744	0.017022092	6.02866E-08	0.000142104
Road 2	2	2200-2300	0.13717136	3.96908E-07	0.000935565	0.59125688	1.71081E-06	0.004032615	0.72842824	2.10772E-06	0.004968181	0.02236192	6.47046E-08	0.000152518	0.02430048	7.03139E-08	0.000165739
Road 2	2	2300-0000	0.122605135	3.15027E-07	0.000742561	0.56238036	1.44501E-06	0.003406071	0.684985495	1.76003E-06	0.004148632	0.020350541	5.22896E-08	0.000123254	0.022114595	5.68222E-08	0.000133938
Road 3	3	0000-0100	0.105944	3.90838E-07	0.000544671	0.589696696	2.17545E-06	0.030862287	0.695640696	2.56629E-06	0.036406958	0.027639609	1.01965E-07	0.001446543	0.030030565	1.10786E-07	0.001571676
Road 3	3	0100-0200	0.079634789	1.81377E-07	0.002573136	0.468523592	1.06712E-06	0.015138798	0.54815838	1.24849E-06	0.017711934	0.022343944	5.08909E-08	0.000721971	0.024275423	5.52901E-08	0.00078438
Road 3	3	0200-0300	0.078477273	1.24615E-07	0.001767871	0.498187879	7.9108E-07	0.011222766	0.576665152	9.15696E-07	0.012990638	0.022849394	3.62829E-08	0.000514732	0.02483202	3.94312E-08	0.000559395
Road 3	3	0300-0400	0.065676	7.3739E-08	0.001046107	0.369914	4.15328E-07	0.005892104	0.43559	4.89067E-07	0.006938211	0.016289	1.82888E-08	0.000259456	0.017692	1.9864E-08	0.000281804
Road 3	3	0400-0500	0.087251681	1.58141E-07	0.002243488	0.488535133	8.85455E-07	0.012561625	0.575786814	1.0436E-06	0.014805113	0.023123451	4.19105E-08	0.00059457	0.025122212	4.55332E-08	0.000645963
Road 3	3	0500-0600	0.070762967	2.79212E-07	0.003961072	0.401203821	1.58304E-06	0.022458034	0.471966789	1.86225E-06	0.026419106	0.018306057	7.22308E-08	0.001024711	0.019887927	7.84724E-08	0.001113259
Road 3	3	0600-0700	0.097958604	6.97618E-07	0.009896853	0.49523723	3.52686E-06	0.0500343	0.593195833	4.22448E-06	0.059931153	0.022843356	1.6268E-07	0.002307887	0.024857027	1.77021E-07	0.00251133
Road 3	3	0700-0800	0.080471032	9.38353E-07	0.013312069	0.429446176	5.00767E-06	0.071041926	0.509917208	5.94602E-06	0.084353994	0.018831884	2.19594E-07	0.003115299	0.020474856	2.38752E-07	0.003387091
Road 3	3	0800-0900	0.08892344	1.42201E-06	0.020173581	0.445269348	7.12049E-06	0.101015852	0.534192788	8.54251E-06	0.121189433	0.019833601	3.17168E-07	0.004499542	0.021551535	3.4464E-07	0.00488928
Road 3	3	0900-1000	0.09595314	1.48518E-06	0.021069687	0.49838085	7.71402E-06	0.109436006	0.59433399	9.1992E-06	0.130505692	0.02199914	3.40506E-07	0.004830639	0.023905534	3.70014E-07	0.005249251
Road 3	3	1000-1100	0.109030205	1.53719E-06	0.02180757	0.553280796	7.80058E-06	0.110663919	0.662311001	9.33777E-06	0.132471489	0.025930557	3.65589E-07	0.005186475	0.02820934	3.97717E-07	0.005642264
Road 3	3	1100-1200	0.107536897	1.47302E-06	0.020897144	0.561667541	7.6936E-06	0.109146238	0.669204438	9.16661E-06	0.130043382	0.025939496	3.55313E-07	0.005040702	0.028219941	3.8655E-07	0.00548385
Road 3	3	1200-1300	0.101379637	1.38868E-06	0.019700633	0.541265211	7.41413E-06	0.105181548	0.642644848	8.80281E-06	0.124882181	0.025189824	3.45045E-07	0.004895021	0.027406206	3.75404E-07	0.00532572
Road 3	3	1300-1400	0.108106224	1.6074E-06	0.022803526	0.554160054	8.23962E-06	0.116892467	0.662266278	9.84701E-06	0.139695993	0.025689752	3.81972E-07	0.005418901	0.02791972	4.15129E-07	0.005889282

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (Summary) Year 2028

Road Name	Road ID	Hour	NO2 Emission			NO Emission			NOX Emission			PM25 Emission			PM10 Emission		
			AnnualHourMin			AnnualHourMin			AnnualHourMin			AnnualHourMin			AnnualHourMin		
			g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year
Road 3	3	1400-1500	0.099236103	1.48665E-06	0.021090562	0.51652349	7.73801E-06	0.109776284	0.615759593	9.22466E-06	0.130866846	0.024070246	3.60595E-07	0.005115628	0.026156221	3.91845E-07	0.005558959
Road 3	3	1500-1600	0.110129587	1.58095E-06	0.022428417	0.558030547	8.01075E-06	0.113645589	0.668160134	9.59171E-06	0.136074005	0.025750536	3.69659E-07	0.00524422	0.028012369	4.02129E-07	0.005704853
Road 3	3	1600-1700	0.104127039	1.63007E-06	0.023125169	0.537188986	8.40948E-06	0.11930221	0.641316025	1.00395E-05	0.142427379	0.024283945	3.80155E-07	0.005393127	0.026388617	4.13103E-07	0.005860545
Road 3	3	1700-1800	0.082797497	1.30015E-06	0.018444695	0.430150306	6.75453E-06	0.095824045	0.512947804	8.05468E-06	0.11426874	0.01916714	3.00976E-07	0.00426984	0.020825781	3.27021E-07	0.004639333
Road 3	3	1800-1900	0.078362639	1.29084E-06	0.018312645	0.43769518	7.20999E-06	0.102285431	0.516057819	8.50082E-06	0.120598076	0.019075433	3.14222E-07	0.004457757	0.020751821	3.41837E-07	0.004849514
Road 3	3	1900-2000	0.083479526	1.01762E-06	0.014436607	0.46584775	5.67871E-06	0.080561801	0.549327276	6.69633E-06	0.094998408	0.021457092	2.61563E-07	0.003710702	0.023327329	2.84362E-07	0.004034133
Road 3	3	2000-2100	0.077909476	8.11012E-07	0.011505528	0.432734407	4.50462E-06	0.063905421	0.510643883	5.31563E-06	0.075410949	0.019943267	2.07603E-07	0.002945185	0.02166641	2.2554E-07	0.003199656
Road 3	3	2100-2200	0.076598618	7.55594E-07	0.01071933	0.439127106	4.33169E-06	0.061452129	0.515725724	5.08729E-06	0.072171459	0.02036865	2.00923E-07	0.002850421	0.022134163	2.18339E-07	0.003097489
Road 3	3	2200-2300	0.082554423	7.45489E-07	0.010575973	0.459738739	4.15156E-06	0.058896714	0.542293162	4.89705E-06	0.069472687	0.02104595	1.90051E-07	0.002696178	0.022868366	2.06507E-07	0.002929646
Road 3	3	2300-0000	0.072037829	5.80038E-07	0.008228789	0.422534163	3.40218E-06	0.048265534	0.494571992	3.98222E-06	0.056494323	0.018316713	1.47484E-07	0.002092295	0.019900817	1.60238E-07	0.002273245
Road 4	4	0000-0100	0.283915143	2.30024E-07	0.000898994	1.403126	1.13679E-06	0.004442885	1.687041143	1.36682E-06	0.005341879	0.065353429	5.29484E-08	0.000206936	0.071049714	5.75634E-08	0.000224973
Road 4	4	0100-0200	0.268011	1.24079E-07	0.000484934	1.3262955	6.14026E-07	0.002399776	1.5943065	7.38105E-07	0.00288471	0.062396	2.8887E-08	0.000112898	0.067833	3.14042E-08	0.000122736
Road 4	4	0200-0300	0.290278462	8.73523E-08	0.000341396	1.388837692	4.17937E-07	0.00163341	1.679116154	5.0529E-07	0.001974806	0.066256923	1.99384E-08	7.79247E-05	0.072022308	2.16734E-08	8.47053E-05
Road 4	4	0300-0400	0.263768571	4.27403E-08	0.00016704	1.354341429	2.19453E-07	0.000857683	1.61811	2.62194E-07	0.001024723	0.064771429	1.04954E-08	4.10187E-05	0.070427143	1.14118E-08	4.46004E-05
Road 4	4	0400-0500	0.270545714	8.76769E-08	0.000342664	1.295015714	4.19681E-07	0.001640225	1.565561429	5.07358E-07	0.00198289	0.06161	1.99662E-08	7.80332E-05	0.066970714	2.17035E-08	8.48229E-05
Road 4	4	0500-0600	0.249702917	1.38724E-07	0.00054217	1.151735833	6.39853E-07	0.002500717	1.40143875	7.78577E-07	0.003042886	0.054404167	3.02245E-08	0.000118126	0.059127917	3.28488E-08	0.000128382
Road 4	4	0600-0700	0.278279434	3.41408E-07	0.001334312	1.289990943	1.58263E-06	0.00618533	1.568270377	1.92404E-06	0.007519642	0.059383208	7.28544E-08	0.000284734	0.064556604	7.92014E-08	0.00030954
Road 4	4	0700-0800	0.278380326	5.92847E-07	0.002317004	1.338858152	2.85127E-06	0.011143529	1.617238478	3.44412E-06	0.013460533	0.060218043	1.28242E-07	0.000501204	0.06547837	1.39445E-07	0.000544987
Road 4	4	0800-0900	0.285260323	1.0235E-06	0.004000124	1.375829935	4.93643E-06	0.019292869	1.661090258	5.95993E-06	0.023292993	0.062363677	2.23759E-07	0.000874508	0.067778452	2.43187E-07	0.000950438
Road 4	4	0900-1000	0.289781959	9.92772E-07	0.003880015	1.326713649	4.54522E-06	0.017763939	1.616495608	5.53799E-06	0.021643955	0.05895	2.01958E-07	0.000789307	0.064073108	2.1951E-07	0.000857902
Road 4	4	1000-1100	0.323084722	1.07695E-06	0.004209003	1.482325	4.94108E-06	0.019311068	1.805409722	6.01803E-06	0.023520071	0.066186458	2.20622E-07	0.000862248	0.071936875	2.3979E-07	0.000937161
Road 4	4	1100-1200	0.300374452	1.07773E-06	0.004212065	1.369479935	4.91364E-06	0.019203825	1.669854387	5.99138E-06	0.02341589	0.061772194	2.21636E-07	0.000866214	0.06713329	2.40872E-07	0.000941391
Road 4	4	1200-1300	0.307891419	1.05481E-06	0.004122491	1.465089392	5.01929E-06	0.019616712	1.772980811	6.0741E-06	0.023739202	0.065637568	2.24869E-07	0.00087885	0.071341824	2.44412E-07	0.000955226
Road 4	4	1300-1400	0.316702133	1.09966E-06	0.004297765	1.472107467	5.11148E-06	0.01997704	1.7888096	6.21114E-06	0.024274805	0.065523933	2.27514E-07	0.000889184	0.071213733	2.4727E-07	0.000966397
Road 4	4	1400-1500	0.287179	9.30673E-07	0.003637316	1.378125286	4.46615E-06	0.01745489	1.665304286	5.39682E-06	0.021092206	0.062004286	2.0094E-07	0.000785326	0.067392	2.184E-07	0.000853565
Road 4	4	1500-1600	0.32230184	9.32586E-07	0.003644796	1.49802144	4.33455E-06	0.016940585	1.82032328	5.26714E-06	0.020585381	0.06813688	1.97155E-07	0.000770535	0.07406856	2.14319E-07	0.000837615
Road 4	4	1600-1700	0.302124032	8.67208E-07	0.003389279	1.418381613	4.07128E-06	0.015911647	1.720505645	4.93849E-06	0.019300926	0.063601452	1.8256E-07	0.000713492	0.069138226	1.98452E-07	0.000775604
Road 4	4	1700-1800	0.290498976	8.54013E-07	0.003337711	1.386684724	4.0766E-06	0.015932423	1.677183701	4.93061E-06	0.019270133	0.062012362	1.82305E-07	0.000712496	0.067415039	1.98188E-07	0.00077457
Road 4	4	1800-1900	0.32093717	7.87485E-07	0.0030777	1.545416415	3.79199E-06	0.014820121	1.866353585	4.57948E-06	0.017897821	0.07162434	1.75745E-07	0.000686858	0.07785783	1.9104E-07	0.000746635
Road 4	4	1900-2000	0.289001216	4.95048E-07	0.001934781	1.39541	2.39029E-06	0.009341872	1.684411216	2.88533E-06	0.011276653	0.064756622	1.10926E-07	0.000433527	0.070419595	1.20626E-07	0.000471439
Road 4	4	2000-2100	0.252343061	2.86222E-07	0.001118633	1.224503878	1.3889E-06	0.00542821	1.476846939	1.67513E-06	0.006546843	0.056802653	6.44289E-08	0.000251805	0.061768776	7.00618E-08	0.00027382
Road 4	4	2100-2200	0.21090973	1.8064E-07	0.00070599	1.046270811	8.96112E-07	0.003502242	1.257180541	1.07675E-06	0.004208233	0.046458649	3.9791E-08	0.000155514	0.050506486	4.32579E-08	0.000169063
Road 4	4	2200-2300	0.284256349	4.14541E-07	0.001620135	1.352735079	1.97274E-06	0.007709987	1.636991429	2.38728E-06	0.009330122	0.062423651	9.10345E-08	0.000355787	0.067882698	9.89956E-08	0.000386901
Road 4	4	2300-0000	0.264182857	2.99652E-07	0.001171119	1.291926327	1.46538E-06	0.005727092	1.556109184	1.76503E-06	0.006898212	0.059772245	6.77972E-08	0.00026497	0.064977959	7.37019E-08	0.000288046
Road 5	5	0000-0100	0.089717979	3.24992E-07	0.001604148	0.507908964	1.83984E-06	0.00908136	0.597626943	2.16483E-06	0.010685509	0.022048446	7.98677E-08	0.000394224	0.023959119	8.67889E-08	0.000428387
Road 5	5	0100-0200	0.060465328	1.38453E-07	0.000683398	0.37637418	8.61818E-07	0.004253901	0.436839508	1.00027E-06	0.004937299	0.016575738	3.7955E-08	0.000187344	0.018009918	4.12389E-08	0.000203554
Road 5	5	0200-0300	0.058036279	9.36772E-08	0.000462387	0.409981047	6.61756E-07	0.003266404	0.468017326	7.55433E-07	0.003728792	0.017064767	2.75445E-08	0.000135959	0.018547674	2.99381E-08	0.000147773
Road 5	5	0300-0400	0.051708571	6.11419E-08	0.000301794	0.29395381	3.47581E-07	0.001715645	0.345662381	4.08722E-07	0.002017439	0.011434127	1.35201E-08	6.67346E-05	0.012420794	1.46867E-08	7.24933E-05
Road 5	5	0400-0500	0.071424141	1.32714E-07	0.00065507	0.414981212	7.7108E-07	0.003806023	0.486405354	9.03794E-07	0.004461093	0.018360101	3.41151E-08	0.000168391	0.019946566	3.70629E-08	0.000182941
Road 5	5	0500-0600	0.057954636	2.39302E-07	0.001181187	0.345353773	1.42601E-06	0.007038735	0.403308409	1.66531E-06	0.008219922	0.014679227	6.06124E-08	0.000299181	0.015945682	6.58418E-08	0.000324993
Road 5	5	0600-0700	0.084906082	6.1831E-07	0.003051956	0.433652088	3.15798E-06	0.015587659	0.51855817	3.77629E-06	0.018639615	0.018808892	1.36972E-07	0.000676087	0.02047482	1.49103E-07	0.000735969
Road 5	5	0700-0800	0.065844376	7.82273E-07	0.00386127	0.356237441	4.23233E-06	0.020890604	0.422081817	5.0146E-06	0.024751873	0.014195766	1.68655E-07	0.000832473	0.015430142	1.8332E-07	0.00090486
Road 5	5	0800-0900	0.070389348	1.11371E-06	0.005497209	0.350433345	5.54458E-06	0.027367853	0.420822693	6.65829E-06	0.032865061	0.014042337	2.22179E-07	0.001096667	0.015289146	2.41906E-07	0.001194039
Road 5	5	0900-1000	0.077422868	1.18576E-06	0.005852847	0.416673309	6.38148E-06	0.031498768	0.494096176	7.56724E-06	0.037351614	0.017117426	2.62159E-07	0.001294006	0.018623027	2.85218E-07	0.001407823
Road 5	5	1000-1100	0.088338052	1.21697E-06	0.006006917	0.461164169	6.35313E-06	0.031358793	0.549502221	7.57009E-06	0.03736571	0.020298283	2.79635E-07	0.001380267	0.022065995	3.03987E-07	0.00150047
Road 5	5	1100-1200	0.087190172	1.14388E-06	0.00564615	0.476172346	6.24708E-06	0.030835363	0.563362518	7.39096E-06	0.036481514	0.020369256	2.67232E-07	0.001319046	0.022143104	2.90504E-07	0.001433915
Road 5	5	1200-1300	0.081043607	1.07541E-06	0.005308183	0.445634809	5.91336E-06	0.029188128	0.526678416	6.98877E-06	0.034496311	0.019191061	2.54656E-07	0.001256973	0.020861301	2.76819E-07	0.001366371
Road 5	5	1300-1400	0.088847825	1.2957E-06	0.006395515	0.466348494	6.80092E-06	0.033569071	0.555196319	8.09661E-06	0.039964586	0.020244389	2.95231E-07	0.001457248	0.022009897	3.20978E-07	0.001584334
Road 5	5	1400-1500	0.083405894	1.24295E-06	0.006135147	0.439541121	6.55022E-06	0.03233164	0.522947015	7.79317E-06	0.038466787	0.01922267	2.86464E-07	0.001413976	0.020898161	3.11433E-07	0.001537221
Road 5	5	1500-1600	0.093109117	1.34561E-06	0.006641874	0.478442571	6.91443E-06	0.034129369	0.571551688	8.26004E-06	0.040771244	0.020631688	2.98168E-07	0.001471747	0.022433455	3.24207E-07	0.001600275
Road 5	5	1600-1700	0.088663705	1.41948E-06	0.007006524	0.46570789	7.45587E-06	0.036801909	0.554371594	8.87536E-06	0.043808433	0.020049308	3.20985E-07	0.001584368	0.021812802	3.49218E-07	0.001723726
Road 5	5	1700-1800	0.065498425	1.04616E-06	0.005163785	0.345867603	5.52427E-06	0.027267616	0.411366028	6.57043E-06	0.032431401	0.014233866	2.27346E-07	0.001122174	0.015501598	2.47595E-07	0.00122212
Road 5	5	1800-1900	0.061306627	1.05745E-06	0.005219521	0.355615919	6.13384E-06	0.030276414	0.416922546	7.19129E-06	0.035495935	0.014269053	2.4612E-07	0.001214838	0.0155037	2.67416E-07	0.001319953
Road 5	5	1900-2000	0.0711157	9.15641E-07	0.004519572	0.407215612	5.24305E-06	0.025879523	0.478331312	6.1587E-06	0.030399095	0.01771102	2.28036E-07	0.001125578	0.019244402	2.47779E-07	0.001223028
Road 5	5	2000-2100	0.06896805	7.76667E-07	0.003833601	0.3894741	4.38597E-06	0.021648986	0.45844215	5.16264E-06	0.025482587	0.01728705	1.94674E-07	0.000960904	0.018784467	2.11537E-07	0.001044138
Road 5	5	2100-2200	0.071429758	7.74895E-07	0.003824853	0.414653201	4.4983E-06	0.022203456	0.486082958	5.2732E-06	0.026028309	0.01893526	2.05416E-07	0.001013927	0.020580052	2.2326E-07	0.001102001
Road 5	5	2200-2300	0.069087956	6.47051E-07	0.003193821	0.397029078	3.71842E-06	0.018353994	0.466117034	4.36547E-06	0.021547815	0.01692998	1.5856E-07	0.000782645	0.018395431	1.72285E-07	0.00085039
Road 5	5	2300-0000	0.060544768	5.14767E-07	0.002540871	0.366817196	3.11877E-06	0.015394146	0.427361965	3.63354E-06	0.017935017	0.014645254	1.24518E-07	0.000614615	0.015942605	1.35548E-07	0.00066906
Road 6	6	0000-0100	0.0538884	1.51713E-07	0.001979438	0.356982067	1.00502E-06	0.01311273	0.410870467	1.15673E-06	0.015092168	0.0144748	4.07511E-08	0.000531691	0.015725933	4.42735E-08	0.000577648
Road 6	6	0100-0200	0.071313246	1.52585E-07	0.001990813	0.410162982	8.77601E-07	0.011450297	0.481476228	1.03019E-06	0.01344111	0.01691614	3.61944E-08	0.000472239	0.018382456	3.93318E-08	0.000513173
Road 6	6	0200-0300	0.065112152	9.65439E-08	0.001259635	0.381336456	5.6542E-07	0.007377188	0.446448608	6.61964E-07	0.008636823	0.015256582	2.26214E-08	0.000295148	0.016573797	2.45745E-08	0.00032063
Road 6	6	0300-0400	0.066753871	7.76791E-08	0.0010135	0.435249839	5.06484E-07	0.006608239	0.50200371	5.84163E-07	0.007621739	0.017635323	2.05216E-08	0.000267751	0.01917371	2.23117E-08	0.000291107

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (Summary) Year 2028

Road Name	Road ID	Hour	NO2 Emission			NO Emission			NOX Emission			PM25 Emission			PM10 Emission		
			AnnualHourMin			AnnualHourMin			AnnualHourMin			AnnualHourMin			AnnualHourMin		
			g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year
Road 6	6	0400-0500	0.072254	1.22051E-07	0.001592428	0.433598778	7.3243E-07	0.009556217	0.505852778	8.54481E-07	0.011148645	0.018071333	3.05259E-08	0.00039828	0.019637444	3.31714E-08	0.000432796
Road 6	6	0500-0600	0.064723148	1.96793E-07	0.002567616	0.401009506	1.21929E-06	0.01590835	0.465732654	1.41608E-06	0.018475966	0.016091235	4.89261E-08	0.000638351	0.017485988	5.31669E-08	0.000693682
Road 6	6	0600-0700	0.069400552	3.77743E-07	0.004928518	0.449846	2.44849E-06	0.031946061	0.519246552	2.82623E-06	0.036874579	0.018143034	9.87515E-08	0.001288438	0.019715621	1.07311E-07	0.001400116
Road 6	6	0700-0800	0.064702035	5.61042E-07	0.007320072	0.382443874	3.31624E-06	0.043267832	0.447145909	3.87728E-06	0.050587904	0.014680584	1.27298E-07	0.00166089	0.015987208	1.38628E-07	0.001808715
Road 6	6	0800-0900	0.054826631	6.81217E-07	0.00888802	0.334418157	4.15512E-06	0.054212981	0.389244789	4.83634E-06	0.063101001	0.011901767	1.47879E-07	0.001929412	0.012929985	1.60654E-07	0.002096097
Road 6	6	0900-1000	0.057619384	6.84555E-07	0.008931569	0.334528863	3.97441E-06	0.051855252	0.392148246	4.65897E-06	0.060786822	0.012182291	1.44733E-07	0.001888374	0.013234455	1.57234E-07	0.00205147
Road 6	6	1000-1100	0.077215327	7.75342E-07	0.010116091	0.429421533	4.31195E-06	0.056259135	0.50663686	5.08729E-06	0.066375226	0.017896187	1.79701E-07	0.002344605	0.01944628	1.95266E-07	0.002547685
Road 6	6	1100-1200	0.088969361	8.88358E-07	0.011590644	0.470997782	4.70291E-06	0.061360084	0.559967143	5.59126E-06	0.072950727	0.019611748	1.95823E-07	0.002554956	0.021314774	2.12828E-07	0.002776821
Road 6	6	1200-1300	0.085496119	8.39236E-07	0.010949733	0.433019598	4.25055E-06	0.055458062	0.518515717	5.08978E-06	0.066407795	0.017943652	1.76136E-07	0.002298095	0.019497189	1.91386E-07	0.002497061
Road 6	6	1300-1400	0.099391593	9.71904E-07	0.012680688	0.512250038	5.00905E-06	0.065354451	0.611641631	5.98096E-06	0.078035139	0.021953225	2.1467E-07	0.002800861	0.023853973	2.33257E-07	0.003043364
Road 6	6	1400-1500	0.094144756	1.01425E-06	0.013233157	0.47789324	5.14847E-06	0.067173539	0.572037997	6.16272E-06	0.080406696	0.020028885	2.15777E-07	0.002815296	0.021764181	2.34471E-07	0.003059213
Road 6	6	1500-1600	0.082752473	8.72877E-07	0.011388663	0.435406317	4.59269E-06	0.059922026	0.51815879	5.46556E-06	0.071310689	0.018249146	1.92493E-07	0.002511507	0.019831566	2.09184E-07	0.002729284
Road 6	6	1600-1700	0.086761997	9.37968E-07	0.012237916	0.436053264	4.71409E-06	0.061505999	0.52281526	5.65206E-06	0.073743915	0.018092222	1.95592E-07	0.002551936	0.019659288	2.12533E-07	0.002772974
Road 6	6	1700-1800	0.065195885	7.46424E-07	0.009738801	0.34113718	3.90566E-06	0.050958231	0.406333066	4.65209E-06	0.060697031	0.013440623	1.53881E-07	0.002007727	0.014600361	1.67159E-07	0.002180966
Road 6	6	1800-1900	0.063759666	8.2452E-07	0.010757732	0.340830319	4.40751E-06	0.057505965	0.404589985	5.23203E-06	0.068263696	0.014061597	1.8184E-07	0.002372517	0.015281263	1.97612E-07	0.002578303
Road 6	6	1900-2000	0.075746469	7.44954E-07	0.009719617	0.405224466	3.98532E-06	0.051997492	0.480970935	4.73027E-06	0.061717108	0.016820057	1.65422E-07	0.002158312	0.01828563	1.79836E-07	0.002346371
Road 6	6	2000-2100	0.059964665	4.70444E-07	0.006138004	0.358041722	2.80896E-06	0.036649273	0.418006388	3.2794E-06	0.042787277	0.014799976	1.16111E-07	0.001514931	0.016116531	1.2644E-07	0.001649694
Road 6	6	2100-2200	0.083896556	5.66869E-07	0.007396088	0.454818861	3.0731E-06	0.040095572	0.538715417	3.63997E-06	0.04749166	0.020486972	1.38425E-07	0.001806075	0.022288833	1.506E-07	0.001964922
Road 6	6	2200-2300	0.063172047	4.51737E-07	0.005893935	0.369536089	2.64252E-06	0.03447762	0.432708136	3.09425E-06	0.040371556	0.01360084	9.72583E-08	0.001268955	0.014806509	1.0588E-07	0.001381443
Road 6	6	2300-0000	0.042405378	2.84135E-07	0.003707188	0.274848599	1.84161E-06	0.024027976	0.317253978	2.12574E-06	0.027735164	0.010031092	6.72128E-08	0.000876944	0.01093521	7.32708E-08	0.000955984
Road 7	7	0000-0100	0.07864442	2.12376E-07	0.001935082	0.47281771	1.27682E-06	0.011633896	0.551462131	1.4892E-06	0.013568978	0.022183978	5.99069E-08	0.000545847	0.024101129	6.50841E-08	0.000593019
Road 7	7	0100-0200	0.096619793	2.03404E-07	0.001853329	0.535001931	1.12628E-06	0.010262233	0.631621724	1.32969E-06	0.012115562	0.025355172	5.33776E-08	0.000486355	0.027550897	5.8E-08	0.000528472
Road 7	7	0200-0300	0.08296617	1.13228E-07	0.001031686	0.477380319	6.51503E-07	0.005936232	0.560346489	7.64731E-07	0.006967918	0.02182	2.97788E-08	0.000271332	0.023704681	3.23509E-08	0.000294768
Road 7	7	0300-0400	0.084522237	9.32629E-08	0.000849773	0.5170225	5.70489E-07	0.005198063	0.601544737	6.63752E-07	0.006047836	0.023260921	2.56664E-08	0.000233862	0.025273421	2.7887E-08	0.000254095
Road 7	7	0400-0500	0.093701441	1.51006E-07	0.001375903	0.529459009	8.53257E-07	0.007774524	0.62316045	1.00426E-06	0.009150427	0.024682703	3.97777E-08	0.000362438	0.026821171	4.3224E-08	0.000393839
Road 7	7	0500-0600	0.084486414	2.42871E-07	0.002212945	0.485126111	1.39458E-06	0.012706863	0.569612525	1.63745E-06	0.014919808	0.021951667	6.3104E-08	0.000574978	0.023855657	6.85774E-08	0.000624849
Road 7	7	0600-0700	0.089517881	4.60084E-07	0.004192099	0.529404944	2.72092E-06	0.024791897	0.618922825	3.181E-06	0.028983996	0.023607006	1.2133E-07	0.00110551	0.025684915	1.3201E-07	0.001202818
Road 7	7	0700-0800	0.085186	6.98781E-07	0.006367005	0.473668336	3.8855E-06	0.035403101	0.558854336	4.58428E-06	0.041770106	0.020724071	1.7E-07	0.001548966	0.022522265	1.8475E-07	0.001683368
Road 7	7	0800-0900	0.084324444	1.04675E-06	0.009537578	0.466847623	5.79516E-06	0.052803143	0.551172067	6.84191E-06	0.062340721	0.020242959	2.51284E-07	0.002289595	0.022024947	2.73404E-07	0.002491148
Road 7	7	0900-1000	0.085592354	9.84203E-07	0.00896765	0.455190982	5.23411E-06	0.0476911	0.540783336	6.21832E-06	0.05665875	0.019767109	2.27296E-07	0.002071032	0.021491376	2.47123E-07	0.002251686
Road 7	7	1000-1100	0.101655205	1.02574E-06	0.009346154	0.540001799	5.44884E-06	0.04964763	0.641657004	6.47459E-06	0.058993784	0.025171554	2.53991E-07	0.002314266	0.027347468	2.75947E-07	0.002514319
Road 7	7	1100-1200	0.112745347	1.13601E-06	0.010350864	0.581636488	5.86051E-06	0.053398569	0.694381835	6.99652E-06	0.063749433	0.027253876	2.74607E-07	0.002502109	0.029611282	2.9836E-07	0.002718537
Road 7	7	1200-1300	0.110157504	1.10834E-06	0.010098708	0.559429336	5.62863E-06	0.051285782	0.66958684	6.73697E-06	0.06138449	0.026401371	2.65634E-07	0.00242035	0.028680693	2.88567E-07	0.002629307
Road 7	7	1300-1400	0.117709003	1.16552E-06	0.010619708	0.599364765	5.93472E-06	0.054074696	0.717073768	7.10023E-06	0.064694404	0.028007258	2.77319E-07	0.002526815	0.03042717	3.0128E-07	0.00274514
Road 7	7	1400-1500	0.109402502	1.1341E-06	0.010333417	0.56015374	5.80671E-06	0.052908318	0.669556242	6.9408E-06	0.063241736	0.025775042	2.67191E-07	0.002434535	0.028020196	2.90465E-07	0.002646597
Road 7	7	1500-1600	0.101576085	1.03379E-06	0.009419503	0.528054118	5.37429E-06	0.048968292	0.629630203	6.40808E-06	0.058387795	0.024513381	2.49486E-07	0.002273211	0.026649586	2.71227E-07	0.002471309
Road 7	7	1600-1700	0.105720587	1.11281E-06	0.010139489	0.53051834	5.58422E-06	0.05088115	0.636238927	6.69704E-06	0.061020639	0.024463186	2.57499E-07	0.002346224	0.026595697	2.79946E-07	0.00255075
Road 7	7	1700-1800	0.081673038	9.09491E-07	0.008286909	0.427194785	4.75714E-06	0.04334508	0.508867823	5.66663E-06	0.05163199	0.019097536	2.12665E-07	0.001937721	0.020765619	2.31241E-07	0.002106972
Road 7	7	1800-1900	0.0756044	8.74842E-07	0.007971203	0.402904165	4.66213E-06	0.042479421	0.478508564	5.53697E-06	0.050450624	0.017985345	2.08114E-07	0.00189625	0.019555094	2.26278E-07	0.002061753
Road 7	7	1900-2000	0.087779917	7.67213E-07	0.006990531	0.471438621	4.12046E-06	0.037543967	0.559218538	4.88768E-06	0.044534498	0.021380864	1.86873E-07	0.001702708	0.023239502	2.03118E-07	0.001850725
Road 7	7	2000-2100	0.081183334	5.84619E-07	0.005326808	0.450218228	3.24212E-06	0.029540868	0.531401562	3.82674E-06	0.034867677	0.020609919	1.48417E-07	0.001352311	0.022398569	1.61297E-07	0.001469672
Road 7	7	2100-2200	0.093323599	5.6094E-07	0.005111052	0.505837198	3.04043E-06	0.027703179	0.599160797	3.60137E-06	0.032814231	0.023952657	1.43972E-07	0.001311815	0.026053043	1.56597E-07	0.001426847
Road 7	7	2200-2300	0.078549826	5.09773E-07	0.004644845	0.442661244	2.87279E-06	0.026175653	0.52121107	3.38256E-06	0.030820499	0.018704049	1.21386E-07	0.001106017	0.020350895	1.32073E-07	0.001203399
Road 7	7	2300-0000	0.05535159	3.30291E-07	0.003009473	0.336557484	2.00829E-06	0.018298672	0.391909074	2.33858E-06	0.021308145	0.014049878	8.38376E-08	0.000763894	0.015299611	9.12949E-08	0.000831842
Road 8	8	0000-0100	0.249021111	1.81106E-07	0.001089696	1.2342025	8.97602E-07	0.005400769	1.483223611	1.07871E-06	0.006490466	0.0587825	4.27509E-08	0.000257227	0.063909167	4.64794E-08	0.000279661
Road 8	8	0100-0200	0.258222	1.56498E-07	0.000941632	1.275670333	7.73134E-07	0.004651858	1.533892333	9.29632E-07	0.00559349	0.060614	3.67358E-08	0.000221035	0.065882333	3.99287E-08	0.000240246
Road 8	8	0200-0300	0.244548667	7.41057E-08	0.000445885	1.270458	3.84987E-07	0.002316425	1.515006667	4.59093E-07	0.002762311	0.061048667	1.84996E-08	0.00011131	0.066351333	2.01065E-08	0.000120978
Road 8	8	0300-0400	0.222701429	6.29863E-08	0.000378981	1.133204286	3.20502E-07	0.001928426	1.355905714	3.83488E-07	0.002307407	0.052202143	1.47642E-08	8.88348E-05	0.056739286	1.60475E-08	9.65559E-05
Road 8	8	0400-0500	0.252276667	1.07026E-07	0.000643966	1.210332381	5.13474E-07	0.003089518	1.462609048	6.20501E-07	0.003733484	0.05746619	2.43796E-08	0.000146689	0.062455714	2.64964E-08	0.000159426
Road 8	8	0500-0600	0.239966176	1.64825E-07	0.000991735	1.132133529	7.77627E-07	0.004678895	1.372099706	9.42452E-07	0.00567063	0.053295882	3.66073E-08	0.000220262	0.057924412	3.97865E-08	0.000239391
Road 8	8	0600-0700	0.268897742	3.36801E-07	0.002026495	1.253930806	1.57058E-06	0.009450004	1.522828548	1.90738E-06	0.011476499	0.056429194	7.0679E-08	0.000425268	0.061365645	7.6862E-08	0.00046247
Road 8	8	0700-0800	0.266068725	5.48263E-07	0.003298836	1.253116667	2.58218E-06	0.015536686	1.519185392	3.13044E-06	0.018835522	0.056004412	1.15403E-07	0.000694367	0.060898137	1.25487E-07	0.000755042
Road 8	8	0800-0900	0.294566094	1.14256E-06	0.006874652	1.392158021	5.39989E-06	0.032490506	1.686724115	6.54245E-06	0.039365158	0.060607708	2.35084E-07	0.001414477	0.06585625	2.55442E-07	0.001536968
Road 8	8	0900-1000	0.313183734	9.99657E-07	0.006014825	1.40647462	4.48935E-06	0.027011935	1.719658354	5.48901E-06	0.03302676	0.062361646	1.99053E-07	0.001197682	0.067777152	2.16339E-07	0.001301689
Road 8	8	1000-1100	0.296703688	9.59042E-07	0.005770449	1.373206875	4.43865E-06	0.02670685	1.669910563	5.39769E-06	0.032477299	0.06119575	1.97804E-07	0.001190167	0.066515938	2.15001E-07	0.001293637
Road 8	8	1100-1200	0.308358931	9.90486E-07	0.005959645	1.440195975	4.62608E-06	0.027834629	1.748554906	5.61657E-06	0.033794273	0.065189182	2.09396E-07	0.00125991	0.070850503	2.2758E-07	0.001369326
Road 8	8	1200-1300	0.310975882	1.068E-06	0.006426024	1.464866294	5.03085E-06	0.030270084	1.775842176	6.09885E-06	0.036696108	0.065540529	2.25089E-07	0.001354333	0.071213353	2.44571E-07	0.001471557
Road 8	8	1300-1400	0.285341975	9.33846E-07	0.005618849	1.32616358	4.34017E-06	0.026114326	1.611505556	5.27402E-06	0.031733176	0.058504136	1.91468E-07	0.001152042	0.063588148	2.08107E-07	0.001252154
Road 8	8	1400-1500	0.277849496	7.80224E-07	0.004694519	1.344303669	3.77491E-06	0.02271323	1.622153165	4.55514E-06	0.027407749	0.060468561	1.69801E-07	0.001021671	0.065720647	1.84549E-07	0.00111041
Road 8	8	1500-1600	0.286540216	8.04628E-07	0.004841357	1.352258777	3.79725E-06	0.022847639	1.638798993	4.60188E-06	0.027688996	0.061339424	1.72246E-07	0.001036385	0.066668993	1.87212E-07	0.001126433
Road 8	8	1600-1700	0.286724966	8.63071E-07	0.005193002	1.340587315	4.0353E-06	0.024279967	1.627312282	4.89837E-06	0.029472969	0.060337181	1.81621E-07	0.001092793	0.065585772	1.9742E-07	0.001187853
Road 8	8	1700-1800	0.235300705	7.41554E-07	0.004461846	1.144606923	3.60725E-06	0.021704395	1.379907628	4.3488E-06	0.026166241	0.050976923	1.60655E-07	0.00096664	0.055421474	1.74662E-07	0.001050919

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (Summary) Year 2028

Road Name	Road ID	Hour	NO2 Emission			NO Emission			NOX Emission			PM25 Emission			PM10 Emission		
			AnnualHourMin			AnnualHourMin			AnnualHourMin			AnnualHourMin			AnnualHourMin		
			g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year
Road 8	8	1800-1900	0.236285981	5.1076E-07	0.003073183	1.177952897	2.54628E-06	0.015320693	1.414238879	3.05704E-06	0.018393876	0.052339346	1.13138E-07	0.000680736	0.056900654	1.22997E-07	0.000740061
Road 8	8	1900-2000	0.234546364	3.6485E-07	0.002195261	1.197120519	1.86219E-06	0.011204573	1.431666883	2.22704E-06	0.013399834	0.057075195	8.87836E-08	0.000534201	0.062028961	9.64895E-08	0.000580566
Road 8	8	2000-2100	0.258020909	4.01366E-07	0.002414973	1.202383247	1.87037E-06	0.01125383	1.460404156	2.27174E-06	0.013668804	0.056335584	8.76331E-08	0.000527279	0.06124987	9.52776E-08	0.000573274
Road 8	8	2100-2200	0.213654444	2.33078E-07	0.001402402	1.088684259	1.18766E-06	0.00714599	1.302338704	1.42073E-06	0.008548392	0.050966296	5.55996E-08	0.000334537	0.055395	6.04309E-08	0.000363606
Road 8	8	2200-2300	0.257474219	3.32896E-07	0.002002998	1.239769531	1.60293E-06	0.009644676	1.49724375	1.93583E-06	0.011647674	0.056676719	7.3279E-08	0.000440911	0.061639375	7.96954E-08	0.000479518
Road 8	8	2300-0000	0.201486038	2.15733E-07	0.001298038	1.009959057	1.08137E-06	0.006506484	1.211445094	1.2971E-06	0.007804522	0.045511509	4.87295E-08	0.0002932	0.049482264	5.2981E-08	0.000318781
Road 9	9	0000-0100	0.214429475	5.69474E-08	0.000620492	0.971471733	2.58E-07	0.002811135	1.185901208	3.14947E-07	0.003431627	0.035406028	9.403E-09	0.000102454	0.038465224	1.02155E-08	0.000111306
Road 9	9	0100-0200	0.233054732	4.86309E-08	0.000529876	1.000629176	2.08798E-07	0.002275042	1.233683908	2.57429E-07	0.002804918	0.035178244	7.34054E-09	7.99817E-05	0.038218841	7.97502E-09	8.68948E-05
Road 9	9	0200-0300	0.092816104	8.80349E-09	9.59217E-05	0.666777671	6.3243E-08	0.000689088	0.759593775	7.20465E-08	0.00078501	0.023685396	2.24653E-09	2.44779E-05	0.025722272	2.43972E-09	2.65829E-05
Road 9	9	0300-0400	0.112061466	8.50311E-09	9.26488E-05	0.680548081	5.16393E-08	0.000562655	0.792609547	6.01424E-08	0.000655304	0.029606746	2.24653E-09	2.44779E-05	0.03215284	2.43972E-09	2.65829E-05
Road 9	9	0400-0500	0.251499443	4.77088E-08	0.000519829	1.037362226	1.96785E-07	0.002144144	1.288861669	2.44494E-07	0.002663973	0.037618026	7.13604E-09	7.77534E-05	0.040873683	7.75363E-09	8.44826E-05
Road 9	9	0500-0600	0.180903484	5.83388E-08	0.000635652	0.913265153	2.94515E-07	0.003208997	1.094168637	3.52854E-07	0.003844649	0.036759626	1.18544E-08	0.000129165	0.040531658	1.30709E-08	0.000142419
Road 9	9	0600-0700	0.213033808	1.29318E-07	0.001409036	1.110919187	6.74363E-07	0.007347778	1.323952995	8.03681E-07	0.008756814	0.035977858	2.18397E-08	0.000237963	0.039406887	2.39212E-08	0.000260643
Road 9	9	0700-0800	0.17936983	1.66727E-07	0.001816641	1.027270935	9.54866E-07	0.010404103	1.206640765	1.12159E-06	0.012220744	0.03293523	3.06139E-08	0.000333565	0.036399511	3.3834E-08	0.000368651
Road 9	9	0800-0900	0.279093789	6.08849E-07	0.006633941	1.341939381	2.92747E-06	0.031897328	1.62103317	3.53632E-06	0.038531269	0.045959781	1.00262E-07	0.001092444	0.050135738	1.09372E-07	0.001191705
Road 9	9	0900-1000	0.286672638	4.73115E-07	0.005155005	1.249362048	2.06191E-06	0.022466278	1.536034686	2.53502E-06	0.027621283	0.04070789	6.7183E-08	0.000732017	0.044363985	7.32169E-08	0.000797762
Road 9	9	1000-1100	0.296060196	4.09981E-07	0.004467108	1.259349596	1.74394E-06	0.019001712	1.555409792	2.15392E-06	0.02346882	0.044561932	6.1709E-08	0.000672373	0.048460942	6.71083E-08	0.000731204
Road 9	9	1100-1200	0.209161939	3.01549E-07	0.003285639	1.099027187	1.58447E-06	0.017264166	1.308189127	1.88602E-06	0.020549805	0.042605117	6.14238E-08	0.000669266	0.046726997	6.73663E-08	0.000734015
Road 9	9	1200-1300	0.306040141	4.29607E-07	0.004680947	1.375129584	1.93035E-06	0.021032888	1.681169726	2.35996E-06	0.025713835	0.042686885	5.99222E-08	0.000652905	0.046553617	6.53501E-08	0.000712047
Road 9	9	1300-1400	0.349554476	4.04488E-07	0.004407256	1.341453397	1.55227E-06	0.016913325	1.691007874	1.95676E-06	0.021320581	0.040222091	4.65432E-08	0.000507129	0.043735709	5.0609E-08	0.000551429
Road 9	9	1400-1500	0.225001584	2.90239E-07	0.003162409	1.099058629	1.41772E-06	0.015447327	1.324060213	1.70796E-06	0.018609736	0.035403748	4.56688E-08	0.000497602	0.038648243	4.9854E-08	0.000543203
Road 9	9	1500-1600	0.188686558	2.04022E-07	0.002223	0.972823141	1.05189E-06	0.011461259	1.161509699	1.25591E-06	0.013684258	0.034812067	3.76414E-08	0.000410136	0.037999778	4.10882E-08	0.000447692
Road 9	9	1600-1700	0.197802352	3.00181E-07	0.003270732	1.080282284	1.63941E-06	0.017862852	1.278084636	1.93959E-06	0.021133585	0.033122354	5.02658E-08	0.00054769	0.03610725	5.47956E-08	0.000597046
Road 9	9	1700-1800	0.169834321	2.22298E-07	0.002422134	1.010148898	1.3222E-06	0.014406486	1.179983219	1.54449E-06	0.01682862	0.031412032	4.11156E-08	0.00044799	0.034704742	4.54255E-08	0.00049495
Road 9	9	1800-1900	0.169469023	1.4145E-07	0.001541227	0.980347675	8.18265E-07	0.008915719	1.149816698	9.59716E-07	0.010456946	0.027514505	2.29655E-08	0.000250229	0.030341147	2.53248E-08	0.000275936
Road 9	9	1900-2000	0.176828834	1.44239E-07	0.001571611	0.953854685	7.78058E-07	0.008477626	1.130683519	9.22297E-07	0.010049237	0.036161745	2.94971E-08	0.000321397	0.040462238	3.3005E-08	0.000359618
Road 9	9	2000-2100	0.189262659	1.04118E-07	0.001134453	0.845814387	4.65301E-07	0.005069868	1.035077046	5.69419E-07	0.006204321	0.031637223	1.74043E-08	0.000189636	0.035065317	1.92902E-08	0.000210184
Road 9	9	2100-2200	0.0229898	1.22111E-08	0.000133051	0.339911157	1.80545E-07	0.001967193	0.362900958	1.92756E-07	0.002100244	0.008624852	4.58111E-09	4.99153E-05	0.009337531	4.95965E-09	5.40398E-05
Road 9	9	2200-2300	0.182845553	1.14462E-07	0.001247159	0.894503043	5.5996E-07	0.006101257	1.077348596	6.74422E-07	0.007348416	0.033924875	2.1237E-08	0.000231396	0.037163224	2.32642E-08	0.000253484
Road 9	9	2300-0000	0.147109161	8.37187E-08	0.000912188	0.763949072	4.34757E-07	0.004737064	0.911058233	5.18476E-07	0.005649252	0.027973486	1.59195E-08	0.000173457	0.030719409	1.74822E-08	0.000190484
Road 10	10	0000-0100	0.303718045	2.33515E-07	0.001895133	1.508611084	1.1599E-06	0.009413398	1.812329128	1.39342E-06	0.011308531	0.067028313	5.15351E-08	0.000418242	0.073091303	5.61967E-08	0.000456073
Road 10	10	0100-0200	0.29815082	1.732E-07	0.001405632	1.469413471	8.53602E-07	0.006927548	1.76756429	1.0268E-06	0.00833318	0.065088553	3.78108E-08	0.00030686	0.071052151	4.12751E-08	0.000334975
Road 10	10	0200-0300	0.297718258	9.66477E-08	0.00078436	1.446660461	4.69627E-07	0.003811332	1.744378719	5.66274E-07	0.004595693	0.064341593	2.08871E-08	0.000169513	0.069943517	2.27056E-08	0.000184271
Road 10	10	0300-0400	0.270443862	5.54486E-08	0.000450003	1.420353309	2.91213E-07	0.002363384	1.690797171	3.46661E-07	0.002813386	0.061292249	1.25666E-08	0.000101987	0.06663178	1.36614E-08	0.000110871
Road 10	10	0400-0500	0.315598019	1.24021E-07	0.001006511	1.478819107	5.81133E-07	0.004716279	1.794417125	7.05154E-07	0.005722791	0.062832204	2.46912E-08	0.000200386	0.06830162	2.68405E-08	0.000217829
Road 10	10	0500-0600	0.287198299	2.01186E-07	0.00163276	1.354157193	9.48605E-07	0.007698561	1.641355492	1.14979E-06	0.009331321	0.058595869	4.10472E-08	0.000333125	0.063937306	4.47889E-08	0.000363492
Road 10	10	0600-0700	0.349301985	4.89381E-07	0.003971655	1.677215382	2.34982E-06	0.019070378	2.026517367	2.8392E-06	0.023042033	0.063662673	8.91931E-08	0.000723861	0.069486936	9.7353E-08	0.000790085
Road 10	10	0700-0800	0.345429214	7.61345E-07	0.006178818	1.679690404	3.70213E-06	0.030045232	2.025119618	4.46347E-06	0.03622405	0.064369047	1.41873E-07	0.001151393	0.070294257	1.54932E-07	0.001257379
Road 10	10	0800-0900	0.368110162	1.55978E-06	0.012658612	1.767274265	7.48838E-06	0.06077322	2.135384428	9.04816E-06	0.073431832	0.07106163	3.01106E-07	0.002443675	0.077368566	3.2783E-07	0.002660559
Road 10	10	0900-1000	0.402251167	1.3608E-06	0.011043815	1.870110207	6.32652E-06	0.051343918	2.272361374	7.68732E-06	0.062387733	0.070537883	2.38627E-07	0.001936619	0.07681785	2.59872E-07	0.002109036
Road 10	10	1000-1100	0.402915942	1.48008E-06	0.01201184	1.774023686	6.51674E-06	0.052887676	2.176939628	7.99682E-06	0.064899516	0.070351297	2.5843E-07	0.002097332	0.076604718	2.81402E-07	0.002283761
Road 10	10	1100-1200	0.392253897	1.44091E-06	0.01169398	1.786850931	6.56386E-06	0.053270086	2.179104828	8.00477E-06	0.064964066	0.073003051	2.68171E-07	0.002176387	0.07949012	2.92001E-07	0.002369781
Road 10	10	1200-1300	0.409355315	1.55269E-06	0.012601145	1.876617527	7.11805E-06	0.057767737	2.285972842	8.67075E-06	0.070368883	0.072994422	2.7687E-07	0.00224698	0.079475461	3.01452E-07	0.002446485
Road 10	10	1300-1400	0.399953922	1.31203E-06	0.010647994	1.79744407	5.89643E-06	0.047853447	2.197397993	7.20846E-06	0.058501441	0.06957901	2.28251E-07	0.001852406	0.075772457	2.48568E-07	0.002017294
Road 10	10	1400-1500	0.370623444	1.14616E-06	0.009301823	1.778790857	5.50093E-06	0.044643689	2.149414301	6.64708E-06	0.053945512	0.06669193	2.06245E-07	0.001673819	0.072642419	2.24647E-07	0.001823163
Road 10	10	1500-1600	0.366740565	1.15921E-06	0.009407783	1.705365131	5.39041E-06	0.043746743	2.072105697	6.54962E-06	0.053154526	0.068075408	2.15176E-07	0.001746299	0.074085938	2.34175E-07	0.001900484
Road 10	10	1600-1700	0.353926836	1.2457E-06	0.010109678	1.672919434	5.88809E-06	0.0477858	2.02684627	7.13379E-06	0.057895478	0.065124157	2.29214E-07	0.001860227	0.070972036	2.49797E-07	0.002027268
Road 10	10	1700-1800	0.328453795	1.09431E-06	0.008881074	1.624273977	5.41161E-06	0.043918805	1.952727773	6.50592E-06	0.052799879	0.06098908	2.03198E-07	0.001649086	0.06657939	2.21823E-07	0.001800243
Road 10	10	1800-1900	0.334489521	6.91513E-07	0.005612088	1.622621149	3.35456E-06	0.02722445	1.95711067	4.04607E-06	0.032836538	0.064101546	1.32522E-07	0.0010755	0.069941046	1.44594E-07	0.001173476
Road 10	10	1900-2000	0.291512876	5.42896E-07	0.004405963	1.483883521	2.7635E-06	0.022427606	1.775396397	3.30639E-06	0.026833569	0.06141291	1.14372E-07	0.000928203	0.067220859	1.25188E-07	0.001015985
Road 10	10	2000-2100	0.338010138	4.1581E-07	0.003374573	1.586251743	1.95136E-06	0.015836574	1.924261881	2.36717E-06	0.019211147	0.07065763	8.69209E-08	0.000705421	0.076955671	9.46685E-08	0.000768298
Road 10	10	2100-2200	0.278172269	3.51705E-07	0.002854317	1.461829375	1.84825E-06	0.014999784	1.740001644	2.19996E-06	0.017854101	0.051275527	6.48298E-08	0.000526137	0.05586737	7.06354E-08	0.000573253
Road 10	10	2200-2300	0.294013585	3.86804E-07	0.003139169	1.44524255	1.90136E-06	0.015430787	1.739256135	2.28816E-06	0.018569956	0.057643477	7.58356E-08	0.000615457	0.062788495	8.26044E-08	0.00067039
Road 10	10	2300-0000	0.270403843	3.32643E-07	0.002699616	1.33142109	1.63787E-06	0.013292435	1.601824933	1.97052E-06	0.015992051	0.056580086	6.96031E-08	0.000564875	0.061681215	7.58784E-08	0.000615803
Road 11	11	0000-0100	0.339728601	2.59515E-07	0.000785734	1.649596785	1.26011E-06	0.003815237	1.989325385	1.51962E-06	0.004600971	0.071361009	5.45119E-08	0.000165046	0.07758439	5.92659E-08	0.000179439
Road 11	11	0100-0200	0.339561356	1.8275E-07	0.000553313	1.62319745	8.73596E-07	0.00264499	1.962758806	1.05635E-06	0.003198303	0.069347119	3.73222E-08	0.000113001	0.075393782	4.05765E-08	0.000122854
Road 11	11	0200-0300	0.297098701	7.73695E-08	0.000234252	1.53646589	4.00121E-07	0.001211449	1.833564592	4.77491E-07	0.001445701	0.066655132	1.73581E-08	5.25552E-05	0.072467424	1.88717E-08	5.7138E-05
Road 11	11	0300-0400	0.31818899	7.73376E-08	0.000234155	1.607299452	3.90663E-07	0.001182812	1.925488442	4.68001E-07	0.001416968	0.071416213	1.73581E-08	5.25552E-05	0.077643668	1.88717E-08	5.7138E-05
Road 11	11	0400-0500	0.326069722	1.13219E-07	0.000342793	1.507681113	5.235E-07	0.001585005	1.833750835	6.36719E-07	0.001927797	0.062879013	2.1833E-08	6.61038E-05	0.068356841	2.3735E-08	7.18626E-05
Road 11	11	0500-0600	0.262287379	1.22947E-07	0.000372248	1.307611393	6.12943E-07	0.00185581	1.569898772	7.3589E-07	0.002228058	0.055789394	2.61513E-08	7.91783E-05	0.061016229	2.86014E-08	8.65965E-05
Road 11	11	0600-0700	0.285459266	2.57706E-07	0.000780259	1.445834884	1.30527E-06	0.003951965	1.731294151	1.56297E-06	0.004732223	0.056040221	5.05919E-08	0.000153177	0.061111931	5.51705E-08	0.00016704
Road 11	11	0700-0800	0.342957997	6.49E-07	0.001964981	1.726904916	3.26793E-06	0.00989432	2.069862913	3.91693E-06	0.011859301	0.068937856	1.30455E-07	0.00039498	0.075228404	1.42359E-07	0.000431022

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (Summary) Year 2028

Road Name	Road ID	Hour	NO2 Emission			NO Emission			NOX Emission			PM25 Emission			PM10 Emission		
			AnnualHourMin			AnnualHourMin			AnnualHourMin			AnnualHourMin			AnnualHourMin		
			g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year
Road 11	11	0800-0900	0.362913923	1.29162E-06	0.003910646	1.742030146	6.19993E-06	0.018771568	2.104944069	7.49155E-06	0.022682214	0.06812238	2.42449E-07	0.000734065	0.074189179	2.64041E-07	0.000799439
Road 11	11	0900-1000	0.363589899	9.27912E-07	0.002809443	1.671651553	4.26619E-06	0.012916776	2.035241452	5.19411E-06	0.015726218	0.064206234	1.6386E-07	0.000496119	0.069877461	1.78333E-07	0.00053994
Road 11	11	1000-1100	0.373045829	7.83655E-07	0.002372677	1.689157594	3.5484E-06	0.010743519	2.062203422	4.33206E-06	0.013116196	0.066514967	1.39728E-07	0.000423054	0.072316932	1.51916E-07	0.000459956
Road 11	11	1100-1200	0.330080123	7.79356E-07	0.002359659	1.641146748	3.87493E-06	0.011732143	1.971226871	4.65429E-06	0.014091802	0.067538742	1.59466E-07	0.000482817	0.073650896	1.73898E-07	0.000526512
Road 11	11	1200-1300	0.401900229	1.1443E-06	0.0034646	1.881947903	5.35832E-06	0.016223422	2.283848132	6.50262E-06	0.019688022	0.072699406	2.06991E-07	0.000626709	0.079123046	2.25281E-07	0.000682084
Road 11	11	1300-1400	0.417118786	8.76239E-07	0.002652993	1.831316175	3.84704E-06	0.011647688	2.248434961	4.72327E-06	0.014300681	0.069261385	1.45497E-07	0.000440522	0.075303952	1.58191E-07	0.000478954
Road 11	11	1400-1500	0.331071657	6.66742E-07	0.002018696	1.605255075	3.23281E-06	0.00978798	1.936326733	3.89955E-06	0.011806676	0.06171668	1.24291E-07	0.000376315	0.067182246	1.35298E-07	0.000409641
Road 11	11	1500-1600	0.295803234	6.0085E-07	0.001819197	1.48051786	3.0073E-06	0.009105222	1.776321093	3.60815E-06	0.010924419	0.062159725	1.26262E-07	0.000382284	0.067661431	1.37437E-07	0.000416119
Road 11	11	1600-1700	0.28349161	6.89042E-07	0.002086216	1.458927766	3.546E-06	0.010736256	1.742419376	4.23505E-06	0.012822472	0.056701345	1.37816E-07	0.000417265	0.061707	1.49982E-07	0.000454102
Road 11	11	1700-1800	0.283031061	7.02664E-07	0.002127459	1.48122194	3.67734E-06	0.011133897	1.764253	4.38E-06	0.013261356	0.059670747	1.48141E-07	0.000448527	0.065147679	1.61738E-07	0.000489695
Road 11	11	1800-1900	0.306915618	6.28751E-07	0.001903672	1.57040974	3.21716E-06	0.009740607	1.877325359	3.84591E-06	0.011644278	0.064204447	1.3153E-07	0.000398234	0.069970351	1.43342E-07	0.000433997
Road 11	11	1900-2000	0.293775383	4.64124E-07	0.001405231	1.488688258	2.35192E-06	0.007120921	1.782463641	2.81604E-06	0.008526153	0.063578847	1.00446E-07	0.00030412	0.069672486	1.10073E-07	0.000333268
Road 11	11	2000-2100	0.303728363	4.27118E-07	0.001293187	1.471189147	2.06886E-06	0.006263896	1.77491751	2.49598E-06	0.007557083	0.064037192	9.00523E-08	0.000272652	0.069867112	9.82506E-08	0.000297474
Road 11	11	2100-2200	0.217033007	2.1854E-07	0.000661675	1.180738145	1.18894E-06	0.003599752	1.397771152	1.40748E-06	0.004261427	0.049753377	5.00989E-08	0.000151685	0.054080187	5.44557E-08	0.000164876
Road 11	11	2200-2300	0.285526708	3.12295E-07	0.000945537	1.405902971	1.53771E-06	0.004655721	1.691429679	1.85E-06	0.005601257	0.059741601	6.53424E-08	0.000197837	0.065104546	7.12081E-08	0.000215597
Road 11	11	2300-0000	0.272100119	2.83438E-07	0.000858165	1.362254519	1.41902E-06	0.004296359	1.634354638	1.70245E-06	0.005154524	0.058056743	6.04758E-08	0.000183103	0.063279704	6.59164E-08	0.000199575
Haul Road 1	HR1	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0700-0800	1.45365	2.73242E-06	0.001500041	6.36873	1.19713E-05	0.006571979	7.82238	1.47037E-05	0.00807202	0.22195	4.17199E-07	0.000229033	0.24124	4.53459E-07	0.000248939
Haul Road 1	HR1	0800-0900	1.45165	2.72867E-06	0.001497977	6.36013	1.19551E-05	0.006563105	7.81178	1.46838E-05	0.008061082	0.22195	4.17199E-07	0.000229033	0.24124	4.53459E-07	0.000248939
Haul Road 1	HR1	0900-1000	1.44485	2.71588E-06	0.00149096	6.33046	1.18994E-05	0.006532488	7.77531	1.46152E-05	0.008023448	0.22195	4.17199E-07	0.000229033	0.24124	4.53459E-07	0.000248939
Haul Road 1	HR1	1000-1100	1.44835	2.72246E-06	0.001494572	6.34575	1.19281E-05	0.006548266	7.7941	1.46506E-05	0.008042838	0.22195	4.17199E-07	0.000229033	0.24124	4.53459E-07	0.000248939
Haul Road 1	HR1	1100-1200	1.45315	2.73148E-06	0.001499525	6.36673	1.19675E-05	0.006569915	7.81988	1.4699E-05	0.008069441	0.22195	4.17199E-07	0.000229033	0.24124	4.53459E-07	0.000248939
Haul Road 1	HR1	1200-1300	1.45515	2.73524E-06	0.001501589	6.37552	1.19841E-05	0.006578986	7.83067	1.47193E-05	0.008080575	0.22195	4.17199E-07	0.000229033	0.24124	4.53459E-07	0.000248939
Haul Road 1	HR1	1300-1400	1.45775	2.74013E-06	0.001504272	6.38671	1.20051E-05	0.006590533	7.84446	1.47452E-05	0.008094805	0.22195	4.17199E-07	0.000229033	0.24124	4.53459E-07	0.000248939
Haul Road 1	HR1	1400-1500	1.45215	2.72961E-06	0.001498493	6.36233	1.19593E-05	0.006565375	7.81448	1.46889E-05	0.008063868	0.22195	4.17199E-07	0.000229033	0.24124	4.53459E-07	0.000248939
Haul Road 1	HR1	1500-1600	1.44665	2.71927E-06	0.001492818	6.33825	1.1914E-05	0.006540526	7.7849	1.46333E-05	0.008033344	0.22195	4.17199E-07	0.000229033	0.24124	4.53459E-07	0.000248939
Haul Road 1	HR1	1600-1700	1.44745	2.72077E-06	0.001493643	6.34165	1.19204E-05	0.006544035	7.7891	1.46412E-05	0.008037678	0.22195	4.17199E-07	0.000229033	0.24124	4.53459E-07	0.000248939
Haul Road 1	HR1	1700-1800	1.45255	2.73036E-06	0.001498906	6.36423	1.19628E-05	0.006567336	7.81678	1.46932E-05	0.008066242	0.22195	4.17199E-07	0.000229033	0.24124	4.53459E-07	0.000248939
Haul Road 1	HR1	1800-1900	1.45255	2.73036E-06	0.001498906	6.36423	1.19628E-05	0.006567336	7.81678	1.46932E-05	0.008066242	0.22195	4.17199E-07	0.000229033	0.24124	4.53459E-07	0.000248939
Haul Road 1	HR1	1900-2000	1.45005	2.72566E-06	0.001496326	6.35294	1.19416E-05	0.006555685	7.80299	1.46673E-05	0.008052012	0.22195	4.17199E-07	0.000229033	0.24124	4.53459E-07	0.000248939
Haul Road 1	HR1	2000-2100	1.44745	2.72077E-06	0.001493643	6.34165	1.19204E-05	0.006544035	7.7891	1.46412E-05	0.008037678	0.22195	4.17199E-07	0.000229033	0.24124	4.53459E-07	0.000248939
Haul Road 1	HR1	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0700-0800	1.45365	1.88297E-06	0.00182948	6.36873	8.24965E-06	0.008015314	7.82238	1.01326E-05	0.009844794	0.22195	2.875E-07	0.000279333	0.24124	3.12487E-07	0.000303611
Haul Road 2	HR2	0800-0900	1.45165	1.88038E-06	0.001826962	6.36013	8.23851E-06	0.008004491	7.81178	1.01189E-05	0.009831453	0.22195	2.875E-07	0.000279333	0.24124	3.12487E-07	0.000303611
Haul Road 2	HR2	0900-1000	1.44485	1.87157E-06	0.001818404	6.33046	8.20008E-06	0.00796715	7.77531	1.00716E-05	0.009785554	0.22195	2.875E-07	0.000279333	0.24124	3.12487E-07	0.000303611
Haul Road 2	HR2	1000-1100	1.44835	1.8761E-06	0.001822809	6.34575	8.21988E-06	0.007986393	7.7941	1.0096E-05	0.009809202	0.22195	2.875E-07	0.000279333	0.24124	3.12487E-07	0.000303611
Haul Road 2	HR2	1100-1200	1.45315	1.88232E-06	0.00182885	6.36673	8.24706E-06	0.008012797	7.81988	1.01294E-05	0.009841647	0.22195	2.875E-07	0.000279333	0.24124	3.12487E-07	0.000303611
Haul Road 2	HR2	1200-1300	1.45515	1.88491E-06	0.001831367	6.37552	8.25845E-06	0.00802386	7.83067	1.01434E-05	0.009855227	0.22195	2.875E-07	0.000279333	0.24124	3.12487E-07	0.000303611
Haul Road 2	HR2	1300-1400	1.45775	1.88828E-06	0.00183464	6.38671	8.27294E-06	0.008037943	7.84446	1.01612E-05	0.009872582	0.22195	2.875E-07	0.000279333	0.24124	3.12487E-07	0.000303611
Haul Road 2	HR2	1400-1500	1.45215	1.88102E-06	0.001827592	6.36233	8.24136E-06	0.008007259	7.81448	1.01224E-05	0.009834851	0.22195	2.875E-07	0.000279333	0.24124	3.12487E-07	0.000303611
Haul Road 2	HR2	1500-1600	1.44665	1.8739E-06	0.00182067	6.33825	8.21017E-06	0.007976954	7.7849	1.00841E-05	0.009797623	0.22195	2.875E-07	0.000279333	0.24124	3.12487E-07	0.000303611
Haul Road 2	HR2	1600-1700	1.44745	1.87494E-06	0.001821677	6.34165	8.21457E-06	0.007981233	7.7891	1.00895E-05	0.009802909	0.22195	2.875E-07	0.000279333	0.24124	3.12487E-07	0.000303611
Haul Road 2	HR2	1700-1800	1.45255	1.88154E-06	0.001828095	6.36423	8.24382E-06	0.008009651	7.81678	1.01254E-05	0.009837746	0.22195	2.875E-07	0.000279333	0.24124	3.12487E-07	0.000303611
Haul Road 2	HR2	1800-1900	1.45255	1.88154E-06	0.001828095	6.36423	8.24382E-06	0.008009651	7.81678	1.01254E-05	0.009837746	0.22195	2.875E-07	0.000279333	0.24124	3.12487E-07	0.000303611
Haul Road 2	HR2	1900-2000	1.45005	1.8783E-06	0.001824949	6.35294	8.2292E-06	0.007995442	7.80299	1.01075E-05	0.00982039	0.22195	2.875E-07	0.000279333	0.24124	3.12487E-07	0.000303611
Haul Road 2	HR2	2000-2100	1.44745	1.87494E-06	0.001821677	6.34165	8.21457E-06	0.007981233	7.7891	1.00895E-05	0.009802909	0.22195	2.875E-07	0.000279333	0.24124	3.12487E-07	0.000303611
Haul Road 2	HR2	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (Summary) Year 2028

Road Name	Road ID	Hour	NO2 Emission			NO Emission			NOX Emission			PM25 Emission			PM10 Emission		
			AnnualHourMin			AnnualHourMin			AnnualHourMin			AnnualHourMin			AnnualHourMin		
			g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year
Haul Road 2	HR2	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0700-0800	1.45365	1.88297E-06	0.001826929	6.36873	8.24965E-06	0.008004139	7.82238	1.01326E-05	0.009831068	0.22195	2.875E-07	0.000278944	0.24124	3.12487E-07	0.000303187
Haul Road 3	HR3	0800-0900	1.45165	1.88038E-06	0.001824415	6.36013	8.23851E-06	0.007993331	7.81178	1.01189E-05	0.009817746	0.22195	2.875E-07	0.000278944	0.24124	3.12487E-07	0.000303187
Haul Road 3	HR3	0900-1000	1.44485	1.87157E-06	0.001815869	6.33046	8.20008E-06	0.007956042	7.77531	1.00716E-05	0.009771911	0.22195	2.875E-07	0.000278944	0.24124	3.12487E-07	0.000303187
Haul Road 3	HR3	1000-1100	1.44835	1.8761E-06	0.001820268	6.34575	8.21988E-06	0.007975258	7.7941	1.0096E-05	0.009795526	0.22195	2.875E-07	0.000278944	0.24124	3.12487E-07	0.000303187
Haul Road 3	HR3	1100-1200	1.45315	1.88232E-06	0.0018263	6.36673	8.24706E-06	0.008001625	7.81988	1.01294E-05	0.009827926	0.22195	2.875E-07	0.000278944	0.24124	3.12487E-07	0.000303187
Haul Road 3	HR3	1200-1300	1.45515	1.88491E-06	0.001828814	6.37552	8.25845E-06	0.008012673	7.83067	1.01434E-05	0.009841487	0.22195	2.875E-07	0.000278944	0.24124	3.12487E-07	0.000303187
Haul Road 3	HR3	1300-1400	1.45775	1.88828E-06	0.001832082	6.38671	8.27294E-06	0.008026736	7.84446	1.01612E-05	0.009858818	0.22195	2.875E-07	0.000278944	0.24124	3.12487E-07	0.000303187
Haul Road 3	HR3	1400-1500	1.45215	1.88102E-06	0.001825044	6.36233	8.24136E-06	0.007996096	7.81448	1.01224E-05	0.009821139	0.22195	2.875E-07	0.000278944	0.24124	3.12487E-07	0.000303187
Haul Road 3	HR3	1500-1600	1.44665	1.8739E-06	0.001818131	6.33825	8.21017E-06	0.007965832	7.7849	1.00841E-05	0.009783963	0.22195	2.875E-07	0.000278944	0.24124	3.12487E-07	0.000303187
Haul Road 3	HR3	1600-1700	1.44745	1.87494E-06	0.001819137	6.34165	8.21457E-06	0.007970105	7.7891	1.00895E-05	0.009789242	0.22195	2.875E-07	0.000278944	0.24124	3.12487E-07	0.000303187
Haul Road 3	HR3	1700-1800	1.45255	1.88154E-06	0.001825546	6.36423	8.24382E-06	0.007998483	7.81678	1.01254E-05	0.00982403	0.22195	2.875E-07	0.000278944	0.24124	3.12487E-07	0.000303187
Haul Road 3	HR3	1800-1900	1.45255	1.88154E-06	0.001825546	6.36423	8.24382E-06	0.007998483	7.81678	1.01254E-05	0.00982403	0.22195	2.875E-07	0.000278944	0.24124	3.12487E-07	0.000303187
Haul Road 3	HR3	1900-2000	1.45005	1.8783E-06	0.001822404	6.35294	8.2292E-06	0.007984294	7.80299	1.01075E-05	0.009806699	0.22195	2.875E-07	0.000278944	0.24124	3.12487E-07	0.000303187
Haul Road 3	HR3	2000-2100	1.44745	1.87494E-06	0.001819137	6.34165	8.21457E-06	0.007970105	7.7891	1.00895E-05	0.009789242	0.22195	2.875E-07	0.000278944	0.24124	3.12487E-07	0.000303187
Haul Road 3	HR3	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (January) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 1	1	0000-0100	0.099355866	3.33797E-07	2.71549E-06	0.08905257	2.99182E-07	2.43389E-06	0.592254078	1.98974E-06	1.61868E-05	0.526676983	1.76943E-06	1.43946E-05	0.615729553	2.06861E-06	1.68285E-05
Road 1	1	0100-0200	0.077171651	1.57877E-07	1.28436E-06	0.06883633	1.40825E-07	1.14563E-06	0.469047798	9.59576E-07	7.80629E-06	0.414786789	8.48569E-07	6.90324E-06	0.483623119	9.89394E-07	8.04887E-06
Road 1	1	0200-0300	0.074258312	1.07318E-07	8.73046E-07	0.067170779	9.70749E-08	7.89719E-07	0.48107987	6.95254E-07	5.656E-06	0.429173377	6.20239E-07	5.04574E-06	0.496344156	7.17314E-07	5.83546E-06
Road 1	1	0300-0400	0.062911091	6.4942E-08	5.28313E-07	0.056470909	5.82939E-08	4.7423E-07	0.391095636	4.03721E-07	3.28433E-06	0.346363636	3.57545E-07	2.90868E-06	0.402834545	4.15839E-07	3.38291E-06
Road 1	1	0400-0500	0.081531628	1.31601E-07	1.0706E-06	0.073242442	1.18222E-07	9.61751E-07	0.472334419	7.62402E-07	6.20225E-06	0.419899651	6.77766E-07	5.51373E-06	0.493142093	7.95988E-07	6.47548E-06
Road 1	1	0500-0600	0.066996011	2.36397E-07	1.92313E-06	0.060377021	2.13042E-07	1.73313E-06	0.402022287	1.41855E-06	1.15401E-05	0.357120426	1.26011E-06	1.02512E-05	0.417497447	1.47315E-06	1.19843E-05
Road 1	1	0600-0700	0.088953947	5.6264E-07	4.57716E-06	0.080876884	5.11552E-07	4.16155E-06	0.478224065	3.0248E-06	2.46072E-05	0.430803205	2.72486E-06	2.21672E-05	0.511680089	3.23641E-06	2.63287E-05
Road 1	1	0700-0800	0.07440032	7.84778E-07	6.38429E-06	0.068338167	7.20834E-07	5.86409E-06	0.414920961	4.37661E-06	3.56043E-05	0.376904306	3.9756E-06	3.23421E-05	0.445242473	4.69644E-06	3.82062E-05
Road 1	1	0800-0900	0.079589813	1.0367E-06	8.4337E-06	0.073411282	9.56221E-07	7.779E-06	0.429608559	5.59588E-06	4.55233E-05	0.393717349	5.12838E-06	4.17201E-05	0.467128631	6.0846E-06	4.94991E-05
Road 1	1	0900-1000	0.085115168	1.14062E-06	9.27911E-06	0.077448277	1.03788E-06	8.44328E-06	0.474235868	6.35519E-06	5.17004E-05	0.428604748	5.74369E-06	4.67258E-05	0.506053025	6.78157E-06	5.5169E-05
Road 1	1	1000-1100	0.098085827	1.27946E-06	1.04086E-05	0.090466417	1.18007E-06	9.60005E-06	0.526896504	6.87299E-06	5.59128E-05	0.48369882	6.30951E-06	5.13288E-05	0.574165237	7.48958E-06	6.09288E-05
Road 1	1	1100-1200	0.088997789	1.12584E-06	9.15884E-06	0.081345059	1.02903E-06	8.37129E-06	0.512710964	6.48587E-06	5.27635E-05	0.465638234	5.89039E-06	4.79192E-05	0.546983294	6.91942E-06	5.62905E-05
Road 1	1	1200-1300	0.091678096	1.1477E-06	9.33668E-06	0.083171349	1.0412E-06	8.47034E-06	0.520613328	6.51744E-06	5.30203E-05	0.469957976	5.8833E-06	4.78615E-05	0.553129325	6.9245E-06	5.63318E-05
Road 1	1	1300-1400	0.096037094	1.27797E-06	1.03965E-05	0.087045994	1.15833E-06	9.42315E-06	0.534746446	7.1159E-06	5.78889E-05	0.481742468	6.41057E-06	5.2151E-05	0.568788463	7.5689E-06	6.15741E-05
Road 1	1	1400-1500	0.091438518	1.31975E-06	1.07364E-05	0.082715501	1.19385E-06	9.71213E-06	0.498144317	7.18981E-06	5.84902E-05	0.448067191	6.46704E-06	5.26103E-05	0.530782692	7.66088E-06	6.23224E-05
Road 1	1	1500-1600	0.098622891	1.32534E-06	1.07818E-05	0.089135335	1.19784E-06	9.7446E-06	0.535542193	7.19685E-06	5.85474E-05	0.48135852	6.46871E-06	5.26239E-05	0.570493855	7.66655E-06	6.23685E-05
Road 1	1	1600-1700	0.094128053	1.33383E-06	1.08509E-05	0.085406305	1.21024E-06	9.84551E-06	0.51778106	7.33718E-06	5.9689E-05	0.466835748	6.61526E-06	5.38161E-05	0.552242053	7.8255E-06	6.36616E-05
Road 1	1	1700-1800	0.075231293	1.0703E-06	8.70701E-06	0.06729277	9.57356E-07	7.78823E-06	0.424330145	6.03683E-06	4.91105E-05	0.375938668	5.34838E-06	4.35098E-05	0.443231438	6.30573E-06	5.12981E-05
Road 1	1	1800-1900	0.067223398	9.76556E-07	7.94443E-06	0.060252842	8.75295E-07	7.12065E-06	0.406977674	5.91218E-06	4.80964E-05	0.360192351	5.23252E-06	4.25674E-05	0.420445194	6.10782E-06	4.9688E-05
Road 1	1	1900-2000	0.080372327	8.94534E-07	7.27717E-06	0.072982901	8.12291E-07	6.60811E-06	0.464057825	5.16491E-06	4.20173E-05	0.417923153	4.65143E-06	3.78401E-05	0.490906054	5.46373E-06	4.44482E-05
Road 1	1	2000-2100	0.07330833	6.92081E-07	5.63018E-06	0.065904394	6.22183E-07	5.06155E-06	0.437041889	4.12598E-06	3.35654E-05	0.388997674	3.67241E-06	2.98756E-05	0.454902068	4.29459E-06	3.49371E-05
Road 1	1	2100-2200	0.075979346	6.54552E-07	5.32488E-06	0.06900305	5.94452E-07	4.83595E-06	0.456456623	3.93231E-06	3.19899E-05	0.410905773	3.5399E-06	2.87976E-05	0.479908824	4.13435E-06	3.36335E-05
Road 1	1	2200-2300	0.075640161	6.17558E-07	5.02392E-06	0.068300552	5.57634E-07	4.53644E-06	0.455689471	3.72044E-06	3.02663E-05	0.407263425	3.32507E-06	2.70499E-05	0.475563977	3.8827E-06	3.15864E-05
Road 1	1	2300-0000	0.066214795	4.8468E-07	3.94295E-06	0.059510949	4.35609E-07	3.54375E-06	0.411383026	3.01125E-06	2.4497E-05	0.364579615	2.66866E-06	2.17099E-05	0.424090564	3.10427E-06	2.52537E-05
Road 2	2	0000-0100	0.164530192	1.98046E-07	1.27896E-06	0.147472692	1.77513E-07	1.14636E-06	0.700139231	8.4276E-07	5.44246E-06	0.623733077	7.5079E-07	4.84853E-06	0.771205769	9.28303E-07	5.99489E-06
Road 2	2	0100-0200	0.116430294	9.1635E-08	5.9177E-07	0.103832647	8.17201E-08	5.27741E-07	0.578770294	4.55514E-07	2.94166E-06	0.512346176	4.03235E-07	2.60405E-06	0.616178824	4.84956E-07	3.1318E-06
Road 2	2	0200-0300	0.120502609	6.41565E-08	4.14316E-07	0.109171739	5.81238E-08	3.75358E-07	0.66373087	3.53375E-07	2.28206E-06	0.595907391	3.17266E-07	2.04887E-06	0.70507913	3.75389E-07	2.42423E-06
Road 2	2	0300-0400	0.104881333	3.64171E-08	2.35178E-07	0.094192	3.27056E-08	2.11209E-07	0.386032667	1.34039E-07	8.65612E-07	0.342581333	1.18952E-07	7.68179E-07	0.436773333	1.51657E-07	9.79389E-07
Road 2	2	0400-0500	0.141868519	8.86678E-08	5.72608E-07	0.127530741	7.97067E-08	5.14738E-07	0.687696296	4.2981E-07	2.77567E-06	0.614234444	3.83897E-07	2.47917E-06	0.741765185	4.63603E-07	2.9939E-06
Road 2	2	0500-0600	0.112011404	1.47793E-07	9.54432E-07	0.101030351	1.33304E-07	8.60864E-07	0.501564561	6.61787E-07	4.27375E-06	0.447192632	5.90046E-07	3.81046E-06	0.548222982	7.2335E-07	4.67132E-06
Road 2	2	0600-0700	0.155807692	3.75093E-07	2.42231E-06	0.14171625	3.41169E-07	2.20323E-06	0.634185	1.52674E-06	9.85955E-06	0.572967308	1.37937E-06	8.90781E-06	0.714683558	1.72053E-06	1.1111E-05
Road 2	2	0700-0800	0.12718125	4.71042E-07	3.04194E-06	0.116878313	4.32883E-07	2.79551E-06	0.53389475	1.97739E-06	1.27698E-05	0.48598175	1.79993E-06	1.16238E-05	0.602860063	2.23282E-06	1.44193E-05
Road 2	2	0800-0900	0.142827993	1.00509E-06	6.49075E-06	0.131765855	9.27241E-07	5.98803E-06	0.603411941	4.24623E-06	2.74218E-05	0.553319803	3.89373E-06	2.51453E-05	0.685085658	4.82097E-06	3.11334E-05
Road 2	2	0900-1000	0.167926111	9.79569E-07	6.32596E-06	0.152795714	8.91308E-07	5.75598E-06	0.717345873	4.18452E-06	2.70232E-05	0.649454325	3.78848E-06	2.44657E-05	0.80225004	4.67979E-06	3.02216E-05
Road 2	2	1000-1100	0.185953743	8.04939E-07	5.19822E-06	0.171518556	7.42453E-07	4.79469E-06	0.785603797	3.40065E-06	2.1961E-05	0.722020802	3.12541E-06	2.01836E-05	0.893539358	3.86787E-06	2.49783E-05
Road 2	2	1100-1200	0.220973989	9.3607E-07	6.04505E-06	0.202026284	8.55806E-07	5.52671E-06	0.903710383	3.82822E-06	2.47223E-05	0.824107869	3.49101E-06	2.25446E-05	1.026134153	4.34682E-06	2.80713E-05
Road 2	2	1200-1300	0.170070158	7.47994E-07	4.83047E-06	0.154349368	6.78851E-07	4.38396E-06	0.746329	3.28247E-06	2.11978E-05	0.674053789	2.96459E-06	1.9145E-05	0.828403158	3.64344E-06	2.3529E-05
Road 2	2	1300-1400	0.188397937	9.72517E-07	6.28042E-06	0.170681525	8.81064E-07	5.68983E-06	0.772324664	3.98677E-06	2.57462E-05	0.696363004	3.59465E-06	2.32139E-05	0.867044529	4.47572E-06	2.89037E-05
Road 2	2	1400-1500	0.162387818	6.20231E-07	4.00539E-06	0.146926	5.61176E-07	3.62402E-06	0.703412485	2.68664E-06	1.73501E-05	0.634024242	2.42162E-06	1.56386E-05	0.780950242	2.9828E-06	1.92626E-05
Road 2	2	1500-1600	0.203632842	8.62611E-07	5.57066E-06	0.183981421	7.79366E-07	5.03307E-06	0.803554645	3.40395E-06	2.19824E-05	0.723769454	3.06597E-06	1.97997E-05	0.907750874	3.84533E-06	2.48328E-05
Road 2	2	1600-1700	0.170527828	8.72376E-07	5.63372E-06	0.154761584	7.9172E-07	5.11285E-06	0.718917738	3.6778E-06	2.37509E-05	0.649634525	3.32336E-06	2.14619E-05	0.804396109	4.11508E-06	2.65748E-05
Road 2	2	1700-1800	0.131770946	6.77156E-07	4.37301E-06	0.117950901	6.06137E-07	3.91437E-06	0.525130315	2.69859E-06	1.74272E-05	0.467044685	2.40009E-06	1.54996E-05	0.584995586	3.00623E-06	1.94139E-05
Road 2	2	1800-1900	0.14563452	8.42792E-07	5.44267E-06	0.1306954	7.56339E-07	4.88436E-06	0.6589642	3.81345E-06	2.46269E-05	0.58711864	3.39768E-06	2.19419E-05	0.71781404	4.15402E-06	2.68262E-05
Road 2	2	1900-2000	0.123298639	4.82349E-07	3.11496E-06	0.1306954	7.56339E-07	2.82947E-06	0.562533254	2.20065E-06	1.42116E-05	0.507117751	1.98386E-06	1.28116E-05	0.61911574	2.422E-06	1.56411E-05
Road 2	2	2000-2100	0.117771769	4.00751E-07	2.58801E-06	0.105876803	3.60275E-07	2.32662E-06	0.506650136	1.72402E-06	1.11335E-05	0.450672041	1.53354E-06	9.90343E-06	0.556548844	1.89381E-06	1.22301E-05
Road 2	2	2100-2200	0.090272026	3.19713E-07	2.06468E-06	0.081943399	2.90216E-07	1.87419E-06	0.418907386	1.48363E-06	9.58114E-06	0.375167712	1.32872E-06	8.58074E-06	0.457111111	1.61894E-06	1.04549E-05
Road 2	2	2200-2300	0.13386392	3.87338E-07	2.50139E-06	0.12097336	3.50039E-07	2.26052E-06	0.57554448	1.66535E-06	1.07547E-05	0.51546488	1.49151E-06	9.63201E-06	0.63643824	1.84155E-06	1.18925E-05
Road 2	2	2300-0000	0.119517658	3.07094E-07	1.98318E-06	0.107486667	2.76181E-07	1.78355E-06	0.545674865	1.40208E-06	9.0545E-06	0.485253784	1.24683E-06	8.05192E-06	0.59274045	1.52301E-06	9.83547E-06
Road 3	3	0000-0100	0.10346413	3.81689E-07	1.48353E-05	0.092663304	3.41844E-07	1.32866E-05	0.574287478	2.1186E-06	8.23447E-05	0.510419348	1.88299E-06	7.3187E-05	0.603082652	2.22483E-06	8.64736E-05
Road 3	3	0100-0200	0.077952676	1.77546E-07	6.90078E-06	0.070437042	1.60429E-07	6.23546E-06	0.457794718	1.04268E-06	4.05264E-05	0.410623592	9.35243E-07	3.63505E-05	0.481060634	1.09567E-06	4.2586E-05
Road 3	3	0200-0300	0.076169394	1.20951E-07	4.70104E-06	0.069033939	1.0962E-07	4.26066E-06	0.48189596	7.6521E-07	2.97418E-05	0.431138687	6.84612E-07	2.66091E-05	0.500172626	7.94232E-07	3.08698E-05
Road 3	3	0300-0400	0.064292286	7.21854E-08	2.80566E-06	0.057551429	6.46169E-08	2.5115E-06	0.360767286	4.05058E-07	1.57436E-05	0.317729143	3.56736E-07	1.38654E-05	0.375280571	4.21353E-07	1.63769E-05
Road 3	3	0400-0500	0.085301416	1.54606E-07	6.00915E-06	0.076640796	1.38909E-07	5.39905E-06	0.476623628	8.63866E-07	3.35763E-05	0.424120531	7.68705E-07	2.98777E-05	0.500761327	9.07615E-07	3.52767E-05
Road 3	3	0500-0600	0.068738943	2.71225E-07	1.05418E-05	0.062051138	2.44837E-07	9.5162E-06	0.388435041	1.53266E-06	5.95706E-05	0.34565935	1.36388E-06	5.30105E-05	0.407710488	1.60872E-06	6.25267E-05
Road 3	3	0600-0700	0.09431027	6.71636E-07	2.61048E-05	0.085879752	6.11598E-07	2.37713E-05	0.475029707	3.38295E-06	0.000131487	0.428900653	3.05444E-06	0.000118718	0.514780405	3.66604E-06	0.00014249
Road 3	3	0700-0800	0.077318735	9.01595E-07	3.50427E-05	0.070983177	8.27717E-07	3.21713E-05	0.410368212	4.7852E-06	0.000185989	0.372596561	4.34476E-06	0.00016887	0.443579739	5.17247E-06	0.000201041
Road 3	3	0800-0900	0.0855968	1.36882E-06	5.32024E-05	0.078491956	1.2552E-06	4.87864E-05	0.426408385	6.81888E-06	0.000265033	0.388000221	6.20468E-06	0.00024116	0.466492177	7.45988E-06	0.000289947
Road 3	3	0900-1000	0.092712104	1.43501E-06	5.57754E-05	0.085399834	1.32183E-06	5.13763E-05	0.480212591	7.43281E-06	0.000288895	0.439573326	6.80379E-06	0.000264446	0.524973161	8.12562E-06	0.000315823
Road 3	3	1000-1100	0.105486166	1.48722E-06	5.78047E-05	0.096757622	1.36416E-06	5.30216E-05	0.534391809	7.53426E-06	0.000292838	0.487442901	6.87234E-06	0.000267111	0.584200523	8.23651E-06	0.000320132
Road 3	3	1100-1200	0.104075656	1.42561E-06	5.54097E-05	0.094616288	1.29603E-06	5.03735E-05	0.542497201	7.43101E-06	0.000288825	0.489914356	6.71074E-06	0.00026083	0.584530644	8.00677E-06	0.000311203
Road 3	3	1200-1300	0.097921475	1.34131E-06	5.21332E-05	0.089336101	1.22371E-06	4.75624E-05	0.5217274	7.14651E-06	0.000277767	0.473199052	6.48178E-06	0.00025193	0.562535152	7.70548E-06	0.000299493

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (January) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 3	3	1300-1400	0.104424013	1.55265E-06	6.03474E-05	0.094334358	1.40263E-06	5.45165E-05	0.534321694	7.94465E-06	0.000308789	0.479792859	7.13388E-06	0.000277276	0.574127217	8.5365E-06	0.000331793
Road 3	3	1400-1500	0.096205128	1.44124E-06	5.60175E-05	0.086668073	1.29837E-06	5.04644E-05	0.499848822	7.48821E-06	0.000291048	0.447754315	6.70778E-06	0.000260715	0.534422388	8.00615E-06	0.000311179
Road 3	3	1500-1600	0.106960693	1.53546E-06	5.96796E-05	0.097370045	1.39779E-06	5.43284E-05	0.541077721	7.76739E-06	0.000301899	0.490067665	7.03512E-06	0.000273437	0.587437709	8.4329E-06	0.000327766
Road 3	3	1600-1700	0.101289621	1.58565E-06	6.16302E-05	0.091425133	1.43122E-06	5.56281E-05	0.521549795	8.16465E-06	0.00031734	0.46731915	7.3157E-06	0.000284343	0.558744283	8.74692E-06	0.000339971
Road 3	3	1700-1800	0.080230776	1.25984E-06	4.89669E-05	0.072560368	1.1394E-06	4.42854E-05	0.415818509	6.52948E-06	0.000253785	0.372815975	5.85423E-06	0.000227539	0.445376343	6.99362E-06	0.000271824
Road 3	3	1800-1900	0.075943194	1.25098E-06	4.86226E-05	0.068031032	1.12065E-06	4.35568E-05	0.42261777	6.96162E-06	0.000270581	0.374230925	6.16456E-06	0.000239601	0.442261957	7.28521E-06	0.000283158
Road 3	3	1900-2000	0.080888171	9.86032E-07	3.83246E-05	0.073089474	8.90965E-07	3.46296E-05	0.449911579	5.48445E-06	0.000213167	0.402595724	4.90767E-06	0.000190749	0.475685197	5.79863E-06	0.000225378
Road 3	3	2000-2100	0.075618706	7.87166E-07	3.05952E-05	0.067803344	7.0581E-07	2.74331E-05	0.418712219	4.35866E-06	0.00016941	0.371550401	3.86772E-06	0.000150328	0.439353744	4.57353E-06	0.000177762
Road 3	3	2100-2200	0.073249675	7.22559E-07	2.8084E-05	0.066202081	6.53039E-07	2.5382E-05	0.417554878	4.1189E-06	0.000160091	0.373601984	3.68533E-06	0.00014324	0.439804065	4.33837E-06	0.000168622
Road 3	3	2200-2300	0.080334565	7.25443E-07	2.81961E-05	0.072393073	6.53729E-07	2.54088E-05	0.44535698	4.02169E-06	0.000156313	0.397104352	3.58596E-06	0.000139377	0.469497425	4.23969E-06	0.000164786
Road 3	3	2300-0000	0.070180319	5.65082E-07	2.19633E-05	0.063202052	5.08894E-07	1.97794E-05	0.409370259	3.29619E-06	0.000128115	0.363778526	2.92909E-06	0.000113846	0.426980578	3.43799E-06	0.000133626
Road 4	4	0000-0100	0.277322571	2.24683E-07	2.40581E-06	0.248405143	2.01254E-07	2.15494E-06	1.370132571	1.11006E-06	1.18861E-05	1.226346286	9.93568E-07	1.06387E-05	1.474751429	1.19482E-06	1.27936E-05
Road 4	4	0100-0200	0.2623785	1.21472E-07	1.30067E-06	0.237284	1.09854E-07	1.17627E-06	1.298471	6.01144E-07	6.4368E-06	1.1738095	5.4343E-07	5.81882E-06	1.4110935	6.53284E-07	6.99509E-06
Road 4	4	0200-0300	0.282035385	8.48718E-08	9.08771E-07	0.256176923	7.70903E-08	8.2545E-07	1.349129231	4.05988E-07	4.34715E-06	1.225297692	3.68724E-07	3.94814E-06	1.481474615	4.45814E-07	4.77359E-06
Road 4	4	0300-0400	0.258332857	4.18595E-08	4.48214E-07	0.23197	3.75877E-08	4.02474E-07	1.326211429	2.14895E-07	2.30101E-06	1.19066	1.92931E-07	2.06582E-06	1.42263	2.30519E-07	2.4683E-06
Road 4	4	0400-0500	0.264553571	8.5735E-08	9.18014E-07	0.237919286	7.71035E-08	8.25591E-07	1.266232143	4.10353E-07	4.39389E-06	1.138498571	3.68958E-07	3.95065E-06	1.376417857	4.46061E-07	4.77624E-06
Road 4	4	0500-0600	0.242717917	1.34843E-07	1.44385E-06	0.219530833	1.21962E-07	1.30591E-06	1.119122917	6.21735E-07	6.65728E-06	1.010783333	5.61546E-07	6.0128E-06	1.230314167	6.83508E-07	7.31871E-06
Road 4	4	0600-0700	0.268013396	3.28813E-07	3.52079E-06	0.244238113	2.99644E-07	3.20846E-06	1.241892075	1.52362E-06	1.63143E-05	1.130841698	1.38738E-06	1.48554E-05	1.375079811	1.68702E-06	1.80639E-05
Road 4	4	0700-0800	0.267622609	5.69937E-07	6.10265E-06	0.24604837	5.23992E-07	5.61068E-06	1.28665837	2.74011E-06	2.93399E-05	1.181387826	2.51592E-06	2.69394E-05	1.427436196	3.03991E-06	3.25501E-05
Road 4	4	0800-0900	0.274760516	9.85831E-07	1.05559E-05	0.252115032	9.04579E-07	9.68585E-06	1.324324452	4.75163E-06	5.08784E-05	1.214529161	4.35769E-06	4.66603E-05	1.466644194	5.26227E-06	5.63461E-05
Road 4	4	0900-1000	0.279998649	9.59255E-07	1.02713E-05	0.25768	8.82793E-07	9.45257E-06	1.281443986	4.39013E-06	4.70077E-05	1.178526014	4.03754E-06	4.32323E-05	1.436206014	4.92034E-06	5.26849E-05
Road 4	4	1000-1100	0.312619653	1.04207E-06	1.1158E-05	0.28669625	9.55654E-07	1.02327E-05	1.434033611	4.78011E-06	5.11834E-05	1.314830764	4.38277E-06	4.69288E-05	1.601527014	5.33842E-06	5.71616E-05
Road 4	4	1100-1200	0.290734387	1.04314E-06	1.11695E-05	0.264286258	9.48249E-07	1.01535E-05	1.325231484	4.75488E-06	5.09133E-05	1.204072839	4.32017E-06	4.62585E-05	1.468359097	5.26842E-06	5.6412E-05
Road 4	4	1200-1300	0.297367838	1.01876E-06	1.09085E-05	0.271306689	9.29477E-07	9.95244E-06	1.415047635	4.84785E-06	5.19087E-05	1.29042277	4.42089E-06	4.73371E-05	1.561729459	5.35037E-06	5.72895E-05
Road 4	4	1300-1400	0.306021467	1.06257E-06	1.13776E-05	0.276392933	9.59698E-07	1.0276E-05	1.422006733	4.93752E-06	5.28689E-05	1.283988067	4.45829E-06	4.77375E-05	1.560381	5.41799E-06	5.80135E-05
Road 4	4	1400-1500	0.278439857	9.02351E-07	9.662E-06	0.250741	8.12587E-07	8.70083E-06	1.335823143	4.32906E-06	4.63537E-05	1.202044714	3.89552E-06	4.17115E-05	1.452785714	4.7081E-06	5.04124E-05
Road 4	4	1500-1600	0.31304352	9.05797E-07	9.69889E-06	0.28483232	8.24168E-07	8.82484E-06	1.45477816	4.20943E-06	4.50728E-05	1.32331632	3.82904E-06	4.09997E-05	1.60814864	4.65321E-06	4.98246E-05
Road 4	4	1600-1700	0.293984839	8.43845E-07	9.03554E-06	0.265344839	7.61638E-07	8.1553E-06	1.379952581	3.96098E-06	4.24124E-05	1.245045403	3.57374E-06	3.82661E-05	1.510390242	4.33538E-06	4.64214E-05
Road 4	4	1700-1800	0.281675906	8.28075E-07	8.86668E-06	0.254921575	7.49422E-07	8.0245E-06	1.344238268	3.95181E-06	4.23143E-05	1.215903543	3.57453E-06	3.82746E-05	1.470825118	4.32395E-06	4.62991E-05
Road 4	4	1800-1900	0.311157642	7.63489E-07	8.17511E-06	0.279155377	6.84965E-07	7.33481E-06	1.498109717	3.67592E-06	3.93602E-05	1.343674906	3.29698E-06	3.53027E-05	1.622830283	3.98194E-06	4.2637E-05
Road 4	4	1900-2000	0.280145676	4.79879E-07	5.13834E-06	0.253456622	4.34162E-07	4.64882E-06	1.352344865	2.31652E-06	2.48043E-05	1.222877027	2.09474E-06	2.24296E-05	1.476333649	2.5289E-06	2.70784E-05
Road 4	4	2000-2100	0.245033265	2.77931E-07	2.97597E-06	0.219862857	2.49381E-07	2.67027E-06	1.188390816	1.34794E-06	1.44332E-05	1.064879592	1.20785E-06	1.29331E-05	1.284742449	1.45723E-06	1.56034E-05
Road 4	4	2100-2200	0.201909459	1.72932E-07	1.85168E-06	0.18281	1.56573E-07	1.67652E-06	1.000331081	8.56765E-07	9.17388E-06	0.903933243	7.74202E-07	8.28983E-06	1.086743243	9.30775E-07	9.96635E-06
Road 4	4	2200-2300	0.276829365	4.03709E-07	4.32275E-06	0.249744921	3.64211E-07	3.89982E-06	1.316922222	1.92051E-06	2.0564E-05	1.187186349	1.73131E-06	1.85382E-05	1.43693127	2.09552E-06	2.2438E-05
Road 4	4	2300-0000	0.25761898	2.92207E-07	3.12883E-06	0.232249388	2.63431E-07	2.82071E-06	1.259201837	1.42826E-06	1.52932E-05	1.134255102	1.28654E-06	1.37757E-05	1.36650449	1.54997E-06	1.65964E-05
Road 5	5	0000-0100	0.08759487	3.17301E-07	4.29092E-06	0.078449793	2.84174E-07	3.84294E-06	0.49415399	1.79001E-06	2.42066E-05	0.437997306	1.58659E-06	2.14557E-05	0.516447098	1.87076E-06	2.52987E-05
Road 5	5	0100-0200	0.059179262	1.35508E-07	1.8325E-06	0.05345377	1.22398E-07	1.65521E-06	0.36744123	8.41363E-07	1.13779E-05	0.328400738	7.51969E-07	1.0169E-05	0.381854508	8.74367E-07	1.18242E-05
Road 5	5	0200-0300	0.056302442	9.08786E-08	1.22897E-06	0.050961395	8.22575E-08	1.11238E-06	0.395896163	6.39022E-07	8.64161E-06	0.352049767	5.68248E-07	7.68453E-06	0.403011163	6.50506E-07	8.79691E-06
Road 5	5	0300-0400	0.050569365	5.97949E-08	8.08617E-07	0.04524381	5.34977E-08	7.2346E-07	0.286285714	3.38514E-07	4.57778E-06	0.250138095	2.95771E-07	3.99977E-06	0.295381905	3.49269E-07	4.72323E-06
Road 5	5	0400-0500	0.069824646	1.29742E-07	1.75452E-06	0.062709697	1.16521E-07	1.57574E-06	0.404553636	7.51704E-07	1.01654E-05	0.35869697	6.66498E-07	9.01317E-06	0.421406667	7.83019E-07	1.05889E-05
Road 5	5	0500-0600	0.056287455	2.32418E-07	3.14303E-06	0.050771818	2.09643E-07	2.83505E-06	0.333995273	1.37911E-06	1.865E-05	0.295888091	1.22176E-06	1.65221E-05	0.346659909	1.4314E-06	1.93571E-05
Road 5	5	0600-0700	0.081731031	5.95188E-07	8.04884E-06	0.074403402	5.41827E-07	7.32722E-06	0.415500232	3.02579E-06	4.09183E-05	0.374182423	2.7249E-06	3.68494E-05	0.448585825	3.26673E-06	4.41766E-05
Road 5	5	0700-0800	0.063246445	7.51408E-07	1.01614E-05	0.058024044	6.89362E-07	9.32237E-06	0.339688673	4.03572E-06	5.45757E-05	0.307134013	3.64895E-06	4.93454E-05	0.365158057	4.33831E-06	5.86678E-05
Road 5	5	0800-0900	0.067709348	1.0713E-06	1.44874E-05	0.062079122	9.8222E-07	1.32828E-05	0.334780308	5.29692E-06	7.16312E-05	0.303488754	4.80182E-06	6.49359E-05	0.365567877	5.78404E-06	7.82187E-05
Road 5	5	0900-1000	0.074818248	1.14587E-06	1.54957E-05	0.068919877	1.05553E-06	1.42741E-05	0.401114326	6.14319E-06	8.30755E-05	0.3665719	5.61416E-06	7.59214E-05	0.435491777	6.66969E-06	9.01955E-05
Road 5	5	1000-1100	0.085476035	1.17754E-06	1.59241E-05	0.07838985	1.07992E-06	1.4604E-05	0.44510406	6.13188E-06	8.29225E-05	0.405153215	5.5815E-06	7.54797E-05	0.483543065	6.66142E-06	9.00837E-05
Road 5	5	1100-1200	0.084395722	1.10722E-06	1.49731E-05	0.076722961	1.00656E-06	1.36119E-05	0.45958166	6.02942E-06	8.1537E-05	0.413943019	5.43067E-06	7.344E-05	0.49066598	6.43723E-06	8.70518E-05
Road 5	5	1200-1300	0.078286832	1.03883E-06	1.40483E-05	0.071402801	9.47481E-07	1.2813E-05	0.42915239	5.69465E-06	7.70098E-05	0.388312786	5.15272E-06	6.96813E-05	0.459715587	6.1002E-06	8.24942E-05
Road 5	5	1300-1400	0.085829755	1.25168E-06	1.69268E-05	0.077540335	1.1308E-06	1.5292E-05	0.449309434	6.55243E-06	8.86097E-05	0.402583925	5.87102E-06	7.93948E-05	0.48012426	7.00181E-06	9.46868E-05
Road 5	5	1400-1500	0.080869887	1.20516E-06	1.62975E-05	0.072836839	1.08544E-06	1.46787E-05	0.425087065	6.33482E-06	8.56669E-05	0.380230869	5.66635E-06	7.66272E-05	0.453067708	6.7518E-06	9.13058E-05
Road 5	5	1500-1600	0.090438247	1.30701E-06	1.76749E-05	0.082314208	1.1896E-06	1.60872E-05	0.463631351	6.70038E-06	9.06105E-05	0.419351013	6.06044E-06	8.19565E-05	0.501665221	7.25004E-06	9.80437E-05
Road 5	5	1600-1700	0.086260023	1.381E-06	1.86756E-05	0.077849672	1.24635E-06	1.68547E-05	0.4518583	7.23414E-06	9.78287E-05	0.404052732	6.46879E-06	8.74786E-05	0.481902403	7.71514E-06	0.000104333
Road 5	5	1700-1800	0.06346611	1.01369E-06	1.37084E-05	0.057370024	9.16327E-07	1.23917E-05	0.333968954	5.33423E-06	7.21357E-05	0.298344266	4.76522E-06	6.4441E-05	0.355714289	5.68155E-06	7.68326E-05
Road 5	5	1800-1900	0.059397388	1.02452E-06	1.38547E-05	0.053194657	9.17528E-07	1.24079E-05	0.342865974	5.91392E-06	7.99751E-05	0.302242437	5.21323E-06	7.04995E-05	0.355437095	6.13076E-06	8.29074E-05
Road 5	5	1900-2000	0.068884023	8.86908E-07	1.19938E-05	0.062223397	8.0115E-07	1.08341E-05	0.392959082	5.0595E-06	6.84205E-05	0.350697187	4.51536E-06	6.1062E-05	0.412920583	5.31651E-06	7.18961E-05
Road 5	5	2000-2100	0.06693775	7.53803E-07	1.01938E-05	0.059998617	6.7566E-07	9.13708E-06	0.3766258	4.24128E-06	5.73556E-05	0.333577517	3.7565E-06	5.07999E-05	0.393576133	4.43216E-06	5.9937E-05
Road 5	5	2100-2200	0.068297007	7.4091E-07	1.00195E-05	0.061723806	6.69601E-07	9.05514E-06	0.393996765	4.27421E-06	5.7801E-05	0.352088564	3.81958E-06	5.16529E-05	0.41381237	4.48918E-06	6.0708E-05
Road 5	5	2200-2300	0.067207435	6.29439E-07	8.51202E-06	0.060538337	5.66979E-07	7.66736E-06	0.384030561	3.59668E-06	4.86386E-05	0.341262325	3.19613E-06	4.32219E-05	0.401800661	3.76311E-06	5.08893E-05
Road 5	5	2300-0000	0.058963841	5.01325E-07	6.77952E-06	0.053084172	4.51335E-07	6.10349E-06	0.354823775	3.0168E-06	4.07968E-05	0.314113267	2.67067E-06	3.6116E-05	0.367197439	3.12201E-06	4.22195E-05
Road 6	6	0000-0100	0.052557467	1.47966E-07	5.28918E-06	0.046935733	1.32139E-07	4.72343E-06	0.3458766	9.73752E-07	3.48077E-05	0.303005	8.53055E-07	3.04932E-05	0.349940733	9.85194E-07	3.52167E-05
Road 6	6	0100-0200	0.069799825	1.49346E-07	5.33853E-06	0.063025877	1.34853E-07	4.82044E-06	0.400124211	8.56122E-07	3.06029E-05	0.35652114	7.62827E-07	2.7268E-05	0.419547018	8.97679E-07	3.20884E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (January) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 6	6	0200-0300	0.063211013	9.3725E-08	3.35029E-06	0.05733519	8.50128E-08	3.03886E-06	0.368700253	5.46684E-07	1.95417E-05	0.329347595	4.88334E-07	1.7456E-05	0.386682785	5.73347E-07	2.04948E-05
Road 6	6	0300-0400	0.065345968	7.60407E-08	2.71815E-06	0.058685806	6.82905E-08	2.44111E-06	0.424968548	4.9452E-07	1.76771E-05	0.376151613	4.37714E-07	1.56465E-05	0.434837419	5.06005E-07	1.80876E-05
Road 6	6	0400-0500	0.070631889	1.19311E-07	4.26487E-06	0.063428111	1.07142E-07	3.8299E-06	0.422497667	7.13678E-07	2.55111E-05	0.373739222	6.31316E-07	2.2567E-05	0.437167333	7.38458E-07	2.63969E-05
Road 6	6	0500-0600	0.062882654	1.91197E-07	6.83453E-06	0.056766049	1.72599E-07	6.16973E-06	0.387900864	1.17943E-06	4.21598E-05	0.343883272	1.04559E-06	3.73756E-05	0.400649321	1.21819E-06	4.35454E-05
Road 6	6	0600-0700	0.066771966	3.63436E-07	1.29914E-05	0.060729172	3.30545E-07	1.18157E-05	0.42979969	2.33938E-06	8.36232E-05	0.384435966	2.09246E-06	7.47971E-05	0.445165138	2.42301E-06	8.66127E-05
Road 6	6	0700-0800	0.062148939	5.38904E-07	1.92636E-05	0.057015216	4.94389E-07	1.76724E-05	0.364418442	3.15993E-06	0.000112955	0.329099307	2.85368E-06	0.000102007	0.386114524	3.34807E-06	0.00011968
Road 6	6	0800-0900	0.052677689	6.54516E-07	2.33963E-05	0.048189909	5.98756E-07	2.14031E-05	0.31734645	3.94301E-06	0.000140946	0.284653625	3.5368E-06	0.000126426	0.332843535	4.13556E-06	0.000147829
Road 6	6	0900-1000	0.055596145	6.60517E-07	2.36108E-05	0.051071374	6.0676E-07	2.16892E-05	0.320178878	3.80393E-06	0.000135975	0.289048515	3.43408E-06	0.000122754	0.340119889	4.04084E-06	0.000144444
Road 6	6	1000-1100	0.074696654	7.50051E-07	2.68113E-05	0.068400318	6.86828E-07	2.45513E-05	0.413619664	4.15328E-06	0.000148463	0.374113009	3.75658E-06	0.000134282	0.442513327	4.44341E-06	0.000158834
Road 6	6	1100-1200	0.086124492	8.59952E-07	3.07398E-05	0.078271335	7.81538E-07	2.79368E-05	0.454474211	4.53792E-06	0.000162212	0.409074417	4.0846E-06	0.000146008	0.487345752	4.86614E-06	0.000173945
Road 6	6	1200-1300	0.08258304	8.10641E-07	2.89771E-05	0.075373346	7.3987E-07	2.64473E-05	0.417215966	4.09542E-06	0.000146395	0.377970249	3.71018E-06	0.000132624	0.453343595	4.45005E-06	0.000159071
Road 6	6	1300-1400	0.096023512	9.38969E-07	3.35643E-05	0.086742303	8.48212E-07	3.03201E-05	0.493573109	4.82642E-06	0.000172525	0.442381382	4.32584E-06	0.000154631	0.529123685	5.17405E-06	0.000184951
Road 6	6	1400-1500	0.091292369	9.83518E-07	3.51568E-05	0.082241986	8.86015E-07	3.16715E-05	0.462060557	4.9779E-06	0.00017794	0.412983606	4.44919E-06	0.00015904	0.495225592	5.3352E-06	0.000190712
Road 6	6	1500-1600	0.080372456	8.47773E-07	3.03044E-05	0.073104004	7.71105E-07	2.75639E-05	0.421567331	4.44671E-06	0.000158952	0.380382473	4.01229E-06	0.000143423	0.453486477	4.7834E-06	0.000170987
Road 6	6	1600-1700	0.084411701	9.12559E-07	3.26203E-05	0.076179549	8.23563E-07	2.9439E-05	0.423165017	4.57476E-06	0.000163529	0.378628906	4.09329E-06	0.000146318	0.454808455	4.91685E-06	0.000175757
Road 6	6	1700-1800	0.063181951	7.23367E-07	2.58574E-05	0.057135852	6.54145E-07	2.3383E-05	0.329438541	3.77173E-06	0.000134824	0.294413443	3.37072E-06	0.00012049	0.351549295	4.02487E-06	0.000143873
Road 6	6	1800-1900	0.061769405	7.98782E-07	2.85532E-05	0.05533328	7.15552E-07	2.55781E-05	0.328951872	4.2539E-06	0.00015206	0.290755559	3.75996E-06	0.000134403	0.346088839	4.47551E-06	0.000159981
Road 6	6	1900-2000	0.073376221	7.21643E-07	2.57958E-05	0.066278149	6.51835E-07	2.33004E-05	0.391004771	3.84547E-06	0.00013746	0.348883664	3.43121E-06	0.000122652	0.415161813	4.08305E-06	0.000145952
Road 6	6	2000-2100	0.058210526	4.56682E-07	1.63245E-05	0.052131124	4.08987E-07	1.46196E-05	0.345904019	2.71374E-06	9.70051E-05	0.305409761	2.39605E-06	8.56489E-05	0.357540885	2.80503E-06	0.000100269
Road 6	6	2100-2200	0.080228361	5.42084E-07	1.93773E-05	0.072523944	4.90027E-07	1.75165E-05	0.432536472	2.92254E-06	0.000104469	0.387104667	2.61557E-06	9.34961E-05	0.459628611	3.1056E-06	0.000111013
Road 6	6	2200-2300	0.061432598	4.39298E-07	1.57031E-05	0.055260551	3.95163E-07	1.41255E-05	0.356155249	2.54683E-06	9.10389E-05	0.313892415	2.24461E-06	8.02358E-05	0.369152966	2.63978E-06	9.43613E-05
Road 6	6	2300-0000	0.041279384	2.7659E-07	9.88699E-06	0.037150196	2.48923E-07	8.89799E-06	0.265445098	1.7786E-06	6.35778E-05	0.234103557	1.5686E-06	5.60711E-05	0.271253754	1.81752E-06	6.49691E-05
Road 7	7	0000-0100	0.076868651	2.0758E-07	5.18189E-06	0.06875572	1.85672E-07	4.63498E-06	0.460541323	1.24367E-06	3.10461E-05	0.407028208	1.09916E-06	2.74387E-05	0.475783928	1.28483E-06	3.20736E-05
Road 7	7	0100-0200	0.094633431	1.99222E-07	4.97323E-06	0.085108988	1.79171E-07	4.47269E-06	0.522954591	1.10092E-06	2.74826E-05	0.466257601	9.81563E-07	2.4503E-05	0.55136659	1.16073E-06	2.89757E-05
Road 7	7	0200-0300	0.08061143	1.10014E-07	2.74631E-06	0.073125106	9.97973E-08	2.49127E-06	0.462570067	6.31291E-07	1.57591E-05	0.415254255	5.66717E-07	1.41471E-05	0.488379362	6.66514E-07	1.66384E-05
Road 7	7	0300-0400	0.082709048	9.12622E-08	2.2782E-06	0.074357632	8.20471E-08	2.04816E-06	0.50469481	5.56887E-07	1.39017E-05	0.449359079	4.95828E-07	1.23775E-05	0.523716711	5.77876E-07	1.44257E-05
Road 7	7	0400-0500	0.091606216	1.47629E-07	3.68531E-06	0.082321532	1.32666E-07	3.31178E-06	0.516516216	8.32398E-07	2.07794E-05	0.459469099	7.40463E-07	1.84844E-05	0.541790631	8.7313E-07	2.17962E-05
Road 7	7	0500-0600	0.082137898	2.3612E-07	5.89433E-06	0.074179646	2.13243E-07	5.32323E-06	0.470260434	1.35185E-06	3.37465E-05	0.419342374	1.20548E-06	3.00926E-05	0.49352202	1.41872E-06	3.54158E-05
Road 7	7	0600-0700	0.086211948	4.43093E-07	1.10611E-05	0.078441893	4.03158E-07	1.00641E-05	0.507263396	2.60712E-06	6.50822E-05	0.455983333	2.34356E-06	5.8503E-05	0.534425226	2.74672E-06	6.85671E-05
Road 7	7	0700-0800	0.081906012	6.71875E-07	1.67722E-05	0.075232283	6.17131E-07	1.54056E-05	0.452948399	3.71554E-06	9.27519E-05	0.411529799	3.37578E-06	8.42705E-05	0.486762081	3.99291E-06	9.96761E-05
Road 7	7	0800-0900	0.081037479	1.00595E-06	2.51118E-05	0.074441024	9.24066E-07	2.30677E-05	0.445470904	5.5298E-06	0.000138042	0.404728799	5.02406E-06	0.000125417	0.479169823	5.94812E-06	0.000148485
Road 7	7	0900-1000	0.08272809	9.51267E-07	2.37467E-05	0.075746648	8.7099E-07	2.17427E-05	0.437704222	5.03304E-06	0.000125641	0.396493298	4.55917E-06	0.000113812	0.472239945	5.43016E-06	0.000135554
Road 7	7	1000-1100	0.098173599	9.90613E-07	2.47289E-05	0.090151769	9.09669E-07	2.27083E-05	0.519928551	5.2463E-06	0.000130965	0.473873215	4.78158E-06	0.000119364	0.564024984	5.69125E-06	0.000142072
Road 7	7	1100-1200	0.109113696	1.09942E-06	2.74451E-05	0.09938627	1.00141E-06	2.49984E-05	0.561793623	5.66058E-06	0.000141306	0.508684564	5.12545E-06	0.000127948	0.608070834	6.12686E-06	0.000152946
Road 7	7	1200-1300	0.106322145	1.06975E-06	2.67044E-05	0.096829074	9.74234E-07	2.43201E-05	0.538913708	5.42222E-06	0.000135356	0.488715307	4.91715E-06	0.000122748	0.585544381	5.89138E-06	0.000147068
Road 7	7	1300-1400	0.113727346	1.12609E-06	2.81109E-05	0.102853734	1.01842E-06	2.54232E-05	0.578018959	5.72336E-06	0.000142874	0.519970899	5.14858E-06	0.000128525	0.622824633	6.16701E-06	0.000153949
Road 7	7	1400-1500	0.106074109	1.09959E-06	2.74494E-05	0.09568853	9.91933E-07	2.47619E-05	0.542118138	5.61974E-06	0.000140287	0.486404023	5.0422E-06	0.00012587	0.582092553	6.03413E-06	0.000150632
Road 7	7	1500-1600	0.098639968	1.00391E-06	2.50609E-05	0.089518063	9.11073E-07	2.27433E-05	0.511796622	5.20882E-06	0.000130029	0.461734618	4.69932E-06	0.00011731	0.551252681	5.61039E-06	0.000140054
Road 7	7	1600-1700	0.102698742	1.081E-06	2.69854E-05	0.092872167	9.7757E-07	2.44033E-05	0.514363455	5.41418E-06	0.000135156	0.462536442	4.86865E-06	0.000121537	0.55540861	5.84622E-06	0.000145941
Road 7	7	1700-1800	0.079218318	8.82156E-07	2.20215E-05	0.071379525	7.94865E-07	1.98424E-05	0.413332462	4.60277E-06	0.0001149	0.369347248	4.11296E-06	0.000102673	0.440726773	4.90783E-06	0.000122515
Road 7	7	1800-1900	0.073374598	8.4904E-07	2.11948E-05	0.065779262	7.61152E-07	1.90008E-05	0.390099701	4.51397E-06	0.000112683	0.34623251	4.00636E-06	0.000100012	0.412011772	4.76752E-06	0.000119013
Road 7	7	1900-2000	0.08490456	7.42082E-07	1.85248E-05	0.076861196	6.71781E-07	1.67699E-05	0.454402649	3.97156E-06	9.91432E-05	0.407761395	3.56391E-06	8.89669E-05	0.484622591	4.23569E-06	0.000105737
Road 7	7	2000-2100	0.078741633	5.67036E-07	1.41551E-05	0.070640599	5.08698E-07	1.26988E-05	0.43533252	3.13492E-06	7.82579E-05	0.386639969	2.78428E-06	6.95047E-05	0.457280568	3.29298E-06	8.22035E-05
Road 7	7	2100-2200	0.089199332	5.3615E-07	1.33841E-05	0.080785612	4.85578E-07	1.21216E-05	0.481205776	2.89238E-06	7.22033E-05	0.4322466	2.5981E-06	6.48571E-05	0.513032212	3.08368E-06	7.69787E-05
Road 7	7	2200-2300	0.076496174	4.96445E-07	1.23929E-05	0.068927497	4.47326E-07	1.11667E-05	0.428610895	2.7816E-06	6.94379E-05	0.380545985	2.46967E-06	6.1651E-05	0.449473482	2.917E-06	7.28177E-05
Road 7	7	2300-0000	0.053922933	3.21766E-07	8.03232E-06	0.048534574	2.89613E-07	7.22967E-06	0.325933619	1.94489E-06	4.85508E-05	0.289062068	1.72487E-06	4.30585E-05	0.337596642	2.01449E-06	5.02881E-05
Road 8	8	0000-0100	0.243280833	1.76932E-07	2.91665E-06	0.217834722	1.58425E-07	2.61158E-06	1.205282778	8.76569E-07	1.44499E-05	1.078891389	7.84648E-07	1.29346E-05	1.296726111	9.43074E-07	1.55462E-05
Road 8	8	0100-0200	0.252797333	1.53211E-07	2.52562E-06	0.228633667	1.38566E-07	2.28421E-06	1.248924667	7.56924E-07	1.24776E-05	1.129111333	6.8431E-07	1.12806E-05	1.357745	8.22876E-07	1.35648E-05
Road 8	8	0200-0300	0.237639333	7.20119E-08	1.18709E-06	0.215919333	6.54301E-08	1.07859E-06	1.234190667	3.73997E-07	6.1652E-06	1.121142667	3.3974E-07	5.60049E-06	1.337062	4.0517E-07	6.67908E-06
Road 8	8	0300-0400	0.218142143	6.16968E-08	1.01705E-06	0.196060714	5.54515E-08	9.14097E-07	1.109811429	3.13886E-07	5.17429E-06	0.997083571	2.82003E-07	4.64872E-06	1.193144286	3.37455E-07	5.56282E-06
Road 8	8	0400-0500	0.246701429	1.04661E-07	1.7253E-06	0.221920952	9.41483E-08	1.552E-06	1.183478571	5.02082E-07	8.27663E-06	1.064325238	4.51532E-07	7.44333E-06	1.28624619	5.4568E-07	8.99533E-06
Road 8	8	0500-0600	0.233273824	1.60228E-07	2.64131E-06	0.21107	1.44977E-07	2.3899E-06	1.100382353	7.55818E-07	1.24594E-05	0.99494	6.83393E-07	1.12655E-05	1.20601	8.28371E-07	1.36554E-05
Road 8	8	0600-0700	0.259014677	3.24422E-07	5.34798E-06	0.236125323	2.95753E-07	4.87538E-06	1.207318065	1.5122E-06	2.4928E-05	1.099738226	1.37745E-06	2.27067E-05	1.335863548	1.6732E-06	2.75821E-05
Road 8	8	0700-0800	0.255800294	5.27104E-07	8.68911E-06	0.235215784	4.84687E-07	7.98988E-06	1.204559804	2.48212E-06	4.09169E-05	1.106566961	2.2802E-06	3.75882E-05	1.341782745	2.76489E-06	4.55781E-05
Road 8	8	0800-0900	0.283704635	1.10043E-06	1.81402E-05	0.260477552	1.01034E-06	1.6655E-05	1.340460313	5.19936E-06	8.57095E-05	1.229941979	4.77068E-06	7.86429E-05	1.490419531	5.78102E-06	9.5298E-05
Road 8	8	0900-1000	0.302642595	9.66011E-07	1.59243E-05	0.278581899	8.89211E-07	1.46583E-05	1.359052911	4.33799E-06	7.15101E-05	1.251004304	3.9931E-06	6.58248E-05	1.529586203	4.88232E-06	8.04831E-05
Road 8	8	1000-1100	0.287107875	9.28025E-07	1.52982E-05	0.263324875	8.51151E-07	1.40309E-05	1.328390188	4.29379E-06	7.07815E-05	1.217706438	3.93602E-06	6.48838E-05	1.481031313	4.78717E-06	7.89147E-05
Road 8	8	1100-1200	0.298470755	9.58724E-07	1.58042E-05	0.271308491	8.71476E-07	1.4366E-05	1.393746541	4.47688E-06	7.37997E-05	1.266592327	4.06845E-06	6.70668E-05	1.537900818	4.93992E-06	8.14328E-05
Road 8	8	1200-1300	0.300390176	1.03164E-06	1.70062E-05	0.274037294	9.41138E-07	1.55143E-05	1.414768412	4.8588E-06	8.00955E-05	1.290143235	4.43079E-06	7.304E-05	1.564180529	5.37193E-06	8.85543E-05
Road 8	8	1300-1400	0.275728395	9.02384E-07	1.48755E-05	0.24906858	8.15134E-07	1.34372E-05	1.281072716	4.1926E-06	6.91135E-05	1.156839568	3.78602E-06	6.24111E-05	1.405908148	4.60115E-06	7.58483E-05
Road 8	8	1400-1500	0.269407266	7.56517E-07	1.24709E-05	0.242639928	6.81353E-07	1.12318E-05	1.303269137	3.65969E-06	6.03285E-05	1.173363525	3.2949E-06	5.43152E-05	1.416003453	3.97625E-06	6.5547E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (January) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 8	8	1500-1600	0.278293741	7.81471E-07	1.28823E-05	0.253202878	7.11014E-07	1.17208E-05	1.313009209	3.68704E-06	6.07794E-05	1.193746187	3.35214E-06	5.52587E-05	1.446949065	4.06315E-06	6.69795E-05
Road 8	8	1600-1700	0.278993624	8.39799E-07	1.38438E-05	0.251755436	7.57809E-07	1.24922E-05	1.304175503	3.9257E-06	6.47137E-05	1.176479195	3.54132E-06	5.83773E-05	1.428234631	4.29913E-06	7.08696E-05
Road 8	8	1700-1800	0.228134936	7.18971E-07	1.1852E-05	0.206377564	6.50402E-07	1.07216E-05	1.109180577	3.4956E-06	5.76236E-05	1.00223609	3.15856E-06	5.20677E-05	1.208613654	3.80896E-06	6.27893E-05
Road 8	8	1800-1900	0.229115421	4.9526E-07	8.16417E-06	0.205616822	4.44465E-07	7.32683E-06	1.141695981	2.46791E-06	4.06825E-05	1.023453458	2.21231E-06	3.64692E-05	1.22907028	2.65678E-06	4.3796E-05
Road 8	8	1900-2000	0.227359481	3.5367E-07	5.83012E-06	0.205728961	3.20023E-07	5.27546E-06	1.160276104	1.80487E-06	2.97527E-05	1.049517532	1.63258E-06	2.69125E-05	1.255246494	1.95261E-06	3.2188E-05
Road 8	8	2000-2100	0.250536364	3.89723E-07	6.42444E-06	0.224804416	3.49696E-07	5.7646E-06	1.167047922	1.81541E-06	2.99263E-05	1.046065844	1.62721E-06	2.6824E-05	1.27087026	1.97691E-06	3.25886E-05
Road 8	8	2100-2200	0.204482037	2.23071E-07	3.67725E-06	0.185061296	2.01885E-07	3.328E-06	1.040523333	1.13512E-06	1.8712E-05	0.939548519	1.02496E-06	1.68961E-05	1.124609815	1.22685E-06	2.02241E-05
Road 8	8	2200-2300	0.2507425	3.24192E-07	5.34419E-06	0.226202813	2.92464E-07	4.82116E-06	1.206712188	1.56019E-06	2.57192E-05	1.087314063	1.40582E-06	2.31744E-05	1.313516875	1.69828E-06	2.79956E-05
Road 8	8	2300-0000	0.196495472	2.10389E-07	3.46819E-06	0.177204151	1.89734E-07	3.12769E-06	0.98441283	1.05402E-06	1.73751E-05	0.886886415	9.49596E-07	1.56537E-05	1.064090566	1.13933E-06	1.87814E-05
Road 9	9	0000-0100	0.67199903	1.75729E-07	5.32768E-06	0.653494969	1.7089E-07	5.18098E-06	3.674944839	9.61003E-07	2.91354E-05	3.583520695	9.37096E-07	2.84105E-05	4.237015665	1.10799E-06	3.35915E-05
Road 9	9	0100-0200	0.699075458	1.43636E-07	4.3547E-06	0.680332287	1.39785E-07	4.23794E-06	3.649293027	7.49803E-07	2.27323E-05	3.559764202	7.31408E-07	2.21746E-05	4.240096489	8.71193E-07	2.64125E-05
Road 9	9	0200-0300	0.348846352	3.25799E-08	9.87747E-07	0.340658873	3.18153E-08	9.64564E-07	2.406427876	2.24744E-07	6.81372E-06	2.341835062	2.18712E-07	6.63083E-06	2.682493935	2.50527E-07	7.59539E-06
Road 9	9	0300-0400	0.43297304	3.23494E-08	9.80759E-07	0.422204813	3.15449E-08	9.56367E-07	2.86538045	2.14086E-07	6.49058E-06	2.798638193	2.09099E-07	6.3394E-06	3.220843006	2.40644E-07	7.29577E-06
Road 9	9	0400-0500	0.763859433	1.42679E-07	4.32568E-06	0.743299365	1.38838E-07	4.20925E-06	3.950735467	7.37945E-07	2.23727E-05	3.855613575	7.20177E-07	2.18341E-05	4.59891294	8.59016E-07	2.60433E-05
Road 9	9	0500-0600	0.556854194	1.76822E-07	5.36083E-06	0.542458723	1.72251E-07	5.22224E-06	3.133986059	9.95158E-07	3.01708E-05	3.052098869	9.69156E-07	2.93825E-05	3.594557592	1.14141E-06	3.46048E-05
Road 9	9	0600-0700	0.610642407	3.64992E-07	1.10657E-05	0.595921506	3.56193E-07	1.07989E-05	3.456602951	2.06607E-06	6.26384E-05	3.366940485	2.01248E-06	6.10136E-05	3.962861991	2.36867E-06	7.18125E-05
Road 9	9	0700-0800	0.437948682	4.00835E-07	1.21524E-05	0.427399019	3.91179E-07	1.18596E-05	2.54811256	2.33217E-06	7.0706E-05	2.476318023	2.26646E-06	6.87138E-05	2.903717042	2.65764E-06	8.05734E-05
Road 9	9	0800-0900	0.765116515	1.64351E-06	4.98272E-05	0.747216824	1.60506E-06	4.86615E-05	4.455664546	9.57098E-06	0.000290169	4.360064376	9.36562E-06	0.000283944	5.1072812	1.09707E-05	0.000332605
Road 9	9	0900-1000	0.740121412	1.20273E-06	3.64639E-05	0.7225231	1.17413E-06	3.55969E-05	3.943992319	6.40916E-06	0.000194311	3.855605327	6.26553E-06	0.000189956	4.578128427	7.43966E-06	0.000225553
Road 9	9	1000-1100	0.907167409	1.23696E-06	3.75018E-05	0.887063389	1.20955E-06	3.66707E-05	4.717678843	6.43276E-06	0.000195026	4.623817942	6.30478E-06	0.000191146	5.510881331	7.51432E-06	0.000227817
Road 9	9	1100-1200	0.712927032	1.01206E-06	3.06832E-05	0.695629195	9.87501E-07	2.99387E-05	4.000172657	5.67856E-06	0.000172161	3.90508808	5.54358E-06	0.000168068	4.600717275	6.53108E-06	0.000198007
Road 9	9	1200-1300	0.80408843	1.11143E-06	3.36959E-05	0.783872465	1.08349E-06	3.28487E-05	4.229920759	5.84669E-06	0.000177258	4.130918761	5.70985E-06	0.000173109	4.914791226	6.79333E-06	0.000205958
Road 9	9	1300-1400	0.869635737	9.90862E-07	3.00406E-05	0.844559704	9.62291E-07	2.91744E-05	3.950319184	4.50099E-06	0.000136459	3.844161875	4.38003E-06	0.000132792	4.688721578	5.34232E-06	0.000161967
Road 9	9	1400-1500	0.543671722	6.90545E-07	2.09357E-05	0.527957051	6.70585E-07	2.03305E-05	3.27121116	4.15493E-06	0.000125968	3.180055421	4.03915E-06	0.000122457	3.708012472	4.70973E-06	0.000142788
Road 9	9	1500-1600	0.570089047	6.06965E-07	1.84017E-05	0.556456831	5.92451E-07	1.79617E-05	3.36755152	3.58538E-06	0.0001087	3.289386852	3.50216E-06	0.000106177	3.845843683	4.09461E-06	0.000124139
Road 9	9	1600-1700	0.517227056	7.72889E-07	2.34322E-05	0.503909498	7.52989E-07	2.28288E-05	3.182473973	4.75555E-06	0.000144177	3.100696172	4.63335E-06	0.000140472	3.60460567	5.38634E-06	0.000163301
Road 9	9	1700-1800	0.391491166	5.04565E-07	1.52972E-05	0.380657442	4.90602E-07	1.48739E-05	2.349407787	3.02798E-06	9.18013E-05	2.277242077	2.93497E-06	8.89815E-05	2.657899519	3.42558E-06	0.000103855
Road 9	9	1800-1900	0.371813663	3.05579E-07	9.26445E-06	0.361058765	2.9674E-07	8.99647E-06	2.094572199	1.72145E-06	5.21903E-05	2.025414731	1.66461E-06	5.04671E-05	2.386473495	1.96135E-06	5.94635E-05
Road 9	9	1900-2000	0.413348278	3.31994E-07	1.00653E-05	0.402188338	3.23031E-07	9.79353E-06	2.428126221	1.95023E-06	5.91264E-05	2.357897169	1.89382E-06	5.74162E-05	2.760085507	2.21685E-06	6.72098E-05
Road 9	9	2000-2100	0.540603347	2.92835E-07	8.87806E-06	0.524973204	2.84368E-07	8.62137E-06	2.442890253	1.32327E-06	4.01184E-05	2.369529069	1.28353E-06	3.89136E-05	2.894502273	1.5679E-06	4.7535E-05
Road 9	9	2100-2200	0.022087974	1.15521E-08	3.50232E-07	0.020396961	1.06677E-08	3.23419E-07	0.32322911	1.6905E-07	5.12519E-06	0.293068419	1.53276E-07	4.64695E-06	0.31346538	1.63943E-07	4.97037E-06
Road 9	9	2200-2300	0.570517713	3.51665E-07	1.06617E-05	0.555823807	3.42608E-07	1.03871E-05	3.182486897	1.96167E-06	5.94733E-05	3.104814738	1.9138E-06	5.80218E-05	3.660638545	2.2564E-06	6.84088E-05
Road 9	9	2300-0000	0.402643876	2.25626E-07	6.84044E-06	0.391494232	2.19378E-07	6.65102E-06	2.308271554	1.29346E-06	3.92148E-05	2.243525647	1.25718E-06	3.81148E-05	2.635019879	1.47656E-06	4.47658E-05
Road 10	10	0000-0100	1.218683261	9.38552E-07	2.08336E-05	1.188819713	9.15553E-07	2.03231E-05	7.60560748	5.85735E-06	0.000130019	7.454931083	5.74131E-06	0.000127443	8.643750796	6.65686E-06	0.000147767
Road 10	10	0100-0200	1.168978372	6.80206E-07	1.5099E-05	1.142310088	6.64688E-07	1.47545E-05	7.224559172	4.20383E-06	9.33151E-05	7.090467914	4.1258E-06	9.15831E-05	8.232778002	4.79049E-06	0.000106338
Road 10	10	0200-0300	1.243674433	4.04404E-07	8.97681E-06	1.217196784	3.95794E-07	8.78569E-06	7.584972506	2.46639E-06	5.47481E-05	7.454702347	2.42403E-06	5.38078E-05	8.671899131	2.81983E-06	6.25935E-05
Road 10	10	0300-0400	1.129723379	2.32011E-07	5.15009E-06	1.102723268	2.26466E-07	5.027E-06	7.263006741	1.4916E-06	3.311E-05	7.118244349	1.46187E-06	3.24501E-05	8.220967618	1.68834E-06	3.74771E-05
Road 10	10	0400-0500	1.210147022	4.76344E-07	1.05737E-05	1.180970906	4.6486E-07	1.03188E-05	7.317571082	2.88038E-06	6.39376E-05	7.175229372	2.82435E-06	6.26939E-05	8.356200277	3.28921E-06	7.30127E-05
Road 10	10	0500-0600	1.069228146	7.50255E-07	1.66539E-05	1.044596198	7.32972E-07	1.62702E-05	6.400405502	4.49103E-06	9.96903E-05	6.278623349	4.40558E-06	9.77935E-05	7.323219548	5.13855E-06	0.000114064
Road 10	10	0600-0700	1.143099967	1.60418E-06	3.5609E-05	1.11713054	1.56773E-06	3.48E-05	6.739431424	9.45784E-06	0.000209942	6.609865794	9.27601E-06	0.000205906	7.726996334	1.08437E-05	0.000240706
Road 10	10	0700-0800	1.096795916	2.42142E-06	5.37498E-05	1.0728993	2.36866E-06	5.25787E-05	6.535195482	1.44279E-05	0.000320265	6.414798594	1.41621E-05	0.000314365	7.487697894	1.65308E-05	0.000366944
Road 10	10	0800-0900	1.232353031	5.23048E-06	0.000116104	1.204237979	5.11115E-06	0.000113455	7.405906584	3.14329E-05	0.000697736	7.268004811	3.08476E-05	0.000684744	8.472242791	3.59588E-05	0.0007982
Road 10	10	0900-1000	1.260173807	4.27022E-06	9.47888E-05	1.232724086	4.17721E-06	9.27241E-05	7.400824151	2.50784E-05	0.000556681	7.268914511	2.46314E-05	0.000546759	8.501638598	2.88086E-05	0.000639483
Road 10	10	1000-1100	1.263894924	4.65055E-06	0.000103231	1.234190431	4.54125E-06	0.000100805	7.220770722	2.65691E-05	0.000589771	7.083828239	2.60652E-05	0.000578586	8.31801867	3.06065E-05	0.000679391
Road 10	10	1100-1200	1.295586009	4.76716E-06	0.00010582	1.262673784	4.64606E-06	0.000103131	7.574063939	2.78691E-05	0.000618627	7.419569618	2.73006E-05	0.000606008	8.682243402	3.19466E-05	0.00070914
Road 10	10	1200-1300	1.288977566	4.89726E-06	0.000108708	1.257289293	4.77687E-06	0.000106035	7.542159707	2.86552E-05	0.000636078	7.39368032	2.80911E-05	0.000623556	8.650969613	3.28679E-05	0.000729591
Road 10	10	1300-1400	1.250955596	4.11053E-06	9.12441E-05	1.217231063	3.99972E-06	8.87842E-05	7.214391847	2.37059E-05	0.000526214	7.057772654	2.31912E-05	0.00051479	8.275003717	2.71909E-05	0.000603575
Road 10	10	1400-1500	1.140963515	3.53431E-06	7.84534E-05	1.109684898	3.43742E-06	7.63027E-05	6.90337861	2.13843E-05	0.000474681	6.748073701	2.09032E-05	0.000464002	7.857758599	2.43406E-05	0.000540305
Road 10	10	1500-1600	1.210926408	3.83393E-06	8.51042E-05	1.181175415	3.73974E-06	8.30133E-05	7.148537455	2.26331E-05	0.000502401	7.007553506	2.21867E-05	0.000492493	8.188728921	2.59265E-05	0.000575506
Road 10	10	1600-1700	1.105959409	3.89907E-06	8.65502E-05	1.07601004	3.79349E-06	8.42064E-05	6.631781264	2.33804E-05	0.00051899	6.484648066	2.28617E-05	0.000507476	7.560658106	2.66552E-05	0.000591682
Road 10	10	1700-1800	1.003944825	3.35042E-06	7.43714E-05	0.977618185	3.26256E-06	7.24211E-05	6.021783231	2.00962E-05	0.000446089	5.890390459	1.96577E-05	0.000436355	6.868008645	2.29203E-05	0.000508776
Road 10	10	1800-1900	1.085848234	2.24859E-06	4.99133E-05	1.055843876	2.18645E-06	4.85341E-05	6.551616734	1.35672E-05	0.000301159	6.403759018	1.3261E-05	0.000294362	7.459602894	1.54474E-05	0.000342896
Road 10	10	1900-2000	1.056256157	1.97038E-06	4.37378E-05	1.03259655	1.92625E-06	4.27581E-05	6.585946768	1.22857E-05	0.000272713	6.462712843	1.20558E-05	0.00026761	7.495309393	1.39821E-05	0.000310368
Road 10	10	2000-2100	1.3544113	1.66893E-06	3.70463E-05	1.321929377	1.6289E-06	3.61578E-05	8.187344895	1.00886E-05	0.000223943	8.032878597	9.89825E-06	0.000219718	9.354807974	1.15272E-05	0.000255876
Road 10	10	2100-2200	0.898926932	1.13844E-06	2.52707E-05	0.878946127	1.11314E-06	2.4709E-05	5.614041058	7.10988E-06	0.000157822	5.506882093	6.97417E-06	0.00015481	6.385828221	8.0873E-06	0.000179519
Road 10	10	2200-2300	1.077963012	1.42053E-06	3.15323E-05	1.052892131	1.38749E-06	3.0799E-05	6.480603461	8.54006E-06	0.000189569	6.356899059	8.37705E-06	0.000185951	7.40979119	9.76453E-06	0.00021675
Road 10	10	2300-0000	0.983819818	1.21228E-06	2.69097E-05	0.959194394	1.18194E-06	2.62362E-05	6.027099696	7.4267E-06	0.000164855	5.903141834	7.27395E-06	0.000161465	6.862336228	8.45589E-06	0.000187701
Road 11	11	0000-0100	1.364455672	1.04229E-06	8.6459E-06	1.33089096	1.01665E-06	8.43322E-06	8.487078241	6.48318E-06	5.37785E-05	8.321207538	6.35648E-06	5.27275E-05	9.652098498	7.37313E-06	6.11607E-05
Road 11	11	0100-0200	1.337404878	7.19784E-07	5.97067E-06	1.306808254	7.03317E-07	5.83407E-06	8.222019572	4.42505E-06	3.67061E-05	8.072147203	4.34438E-06	3.6037E-05	9.378955457	5.0477E-06	4.18711E-05
Road 11	11	0200-0300	1.240695089	3.23098E-07	2.68012E-06	1.214260699	3.16214E-07	2.62302E-06	7.954143385	2.07139E-06	1.71824E-05	7.815574046	2.03531E-06	1.6883E-05	9.029834745	2.35152E-06	1.9506E-05
Road 11	11	0300-0400	1.331676718	3.23671E-07	2.68488E-06	1.299959669	3.15962E-07	2.62093E-06	8.497427074	2.06535E-06	1.71322E-05	8.337070583	2.02637E-06	1.68089E-05	9.637030252	2.34233E-06	1.94298E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (January) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 11	11	0400-0500	1.227195522	4.2611E-07	3.53461E-06	1.197180488	4.15688E-07	3.44816E-06	7.348979503	2.55173E-06	2.11668E-05	7.204028557	2.5014E-06	2.07493E-05	8.401209045	2.91709E-06	2.41975E-05
Road 11	11	0500-0600	0.975845022	4.57427E-07	3.7944E-06	0.953052386	4.46743E-07	3.70577E-06	5.949267168	2.78872E-06	2.31327E-05	5.830004302	2.73281E-06	2.26689E-05	6.783056688	3.17956E-06	2.63747E-05
Road 11	11	0600-0700	1.023948954	9.24398E-07	7.66796E-06	1.001744624	9.04353E-07	7.50168E-06	6.250594274	5.6429E-06	4.68083E-05	6.130595505	5.53457E-06	4.59097E-05	7.132340129	6.43892E-06	5.34113E-05
Road 11	11	0700-0800	1.163989314	2.20269E-06	1.82715E-05	1.138845352	2.15511E-06	1.78768E-05	7.212847338	1.36493E-05	0.000113222	7.08208233	1.34019E-05	0.000111169	8.220927682	1.5557E-05	0.000129046
Road 11	11	0800-0900	1.172836579	4.17416E-06	3.4625E-05	1.146224014	4.07944E-06	3.38393E-05	7.149577453	2.54455E-05	0.000211073	7.01613383	2.49706E-05	0.000207133	8.162357844	2.90501E-05	0.000240973
Road 11	11	0900-1000	1.155454945	2.94882E-06	2.44607E-05	1.130502421	2.88514E-06	2.39324E-05	6.831711177	1.74351E-05	0.000144626	6.709601789	1.71235E-05	0.000142041	7.840104211	2.00086E-05	0.000165973
Road 11	11	1000-1100	1.250827195	2.62761E-06	2.17962E-05	1.222787227	2.5687E-06	2.13076E-05	7.242438272	1.52141E-05	0.000126203	7.109773329	1.49355E-05	0.000123891	8.332560556	1.75042E-05	0.000145198
Road 11	11	1100-1200	1.177769748	2.78085E-06	2.30673E-05	1.149120177	2.7132E-06	2.25062E-05	7.117390683	1.6805E-05	0.000139398	6.972461412	1.64628E-05	0.00013656	8.121581589	1.9176E-05	0.000159066
Road 11	11	1200-1300	1.298774361	3.6979E-06	3.06744E-05	1.26741744	3.60862E-06	2.99338E-05	7.748996422	2.20631E-05	0.000183015	7.597519048	2.16318E-05	0.000179438	8.864936488	2.52404E-05	0.000209372
Road 11	11	1300-1400	1.315153774	2.76274E-06	2.29171E-05	1.279827359	2.68853E-06	2.23015E-05	7.477392253	1.57077E-05	0.000130297	7.315171754	1.53669E-05	0.00012747	8.594999113	1.80555E-05	0.000149772
Road 11	11	1400-1500	1.049246761	2.11307E-06	1.75281E-05	1.020668604	2.05551E-06	1.70506E-05	6.495975252	1.30822E-05	0.000108518	6.34905697	1.27863E-05	0.000106063	7.369725575	1.48418E-05	0.000123114
Road 11	11	1500-1600	1.141766608	2.31921E-06	1.92381E-05	1.117378967	2.26968E-06	1.88271E-05	7.13764294	1.44983E-05	0.000120265	7.012198072	1.42435E-05	0.000118151	8.129577039	1.65132E-05	0.000136978
Road 11	11	1600-1700	1.018118633	2.47459E-06	2.0527E-05	0.994159334	2.41636E-06	2.00439E-05	6.415194184	1.55925E-05	0.000129341	6.287422525	1.52819E-05	0.000126765	7.281581859	1.76983E-05	0.000146809
Road 11	11	1700-1800	1.037755062	2.57637E-06	2.13712E-05	1.014093806	2.51763E-06	2.08839E-05	6.534261945	1.62222E-05	0.000134565	6.408720243	1.59105E-05	0.000131979	7.422814049	1.84282E-05	0.000152863
Road 11	11	1800-1900	1.167351147	2.39145E-06	1.98373E-05	1.138993941	2.33336E-06	1.93554E-05	7.32593832	1.5008E-05	0.000124493	7.179979053	1.4709E-05	0.000122012	8.318972994	1.70423E-05	0.000141368
Road 11	11	1900-2000	1.084279049	1.71301E-06	1.42096E-05	1.059457757	1.6738E-06	1.38843E-05	6.802986785	1.07478E-05	8.91537E-05	6.672863166	1.05422E-05	8.74484E-05	7.732320923	1.2216E-05	0.000101333
Road 11	11	2000-2100	1.192382247	1.67679E-06	1.39091E-05	1.163216334	1.63577E-06	1.35689E-05	7.231725986	1.01696E-05	8.43578E-05	7.089088679	9.96903E-06	8.26939E-05	8.252305013	1.16048E-05	9.62628E-05
Road 11	11	2100-2200	0.879550572	8.85659E-07	7.34661E-06	0.860012788	8.65985E-07	7.18342E-06	5.68762027	5.72712E-06	4.75069E-05	5.580545254	5.6193E-06	4.66125E-05	6.440558042	6.48528E-06	5.3796E-05
Road 11	11	2200-2300	1.102052903	1.20537E-06	9.99865E-06	1.076223436	1.17712E-06	9.7643E-06	6.775837679	7.41107E-06	6.14754E-05	6.645602976	7.26863E-06	6.02939E-05	7.721826412	8.44575E-06	7.00582E-05
Road 11	11	2300-0000	1.044312467	1.08783E-06	9.0236E-06	1.019677922	1.06216E-06	8.81074E-06	6.51650341	6.78802E-06	5.63072E-05	6.390089593	6.65634E-06	5.52149E-05	7.409767515	7.71851E-06	6.40256E-05
Haul Road 1	HR1	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0700-0800	2.696471612	5.06856E-06	7.62336E-06	2.583451612	4.85611E-06	7.30383E-06	14.93658354	2.80763E-05	4.22281E-05	14.44149354	2.71457E-05	4.08284E-05	17.02494515	3.20018E-05	4.81323E-05
Haul Road 1	HR1	0800-0900	2.696671612	5.06893E-06	7.62392E-06	2.581451612	4.85235E-06	7.29818E-06	14.93747354	2.8078E-05	4.22306E-05	14.43260354	2.7129E-05	4.08033E-05	17.01405515	3.19813E-05	4.81015E-05
Haul Road 1	HR1	0900-1000	2.694881612	5.06557E-06	7.61886E-06	2.583551612	4.8563E-06	7.30412E-06	14.92947354	2.80629E-05	4.2208E-05	14.44189354	2.71464E-05	4.08296E-05	17.02544515	3.20027E-05	4.81337E-05
Haul Road 1	HR1	1000-1100	2.699971612	5.07513E-06	7.63325E-06	2.583451612	4.85611E-06	7.30383E-06	14.95206354	2.81054E-05	4.22719E-05	14.44159354	2.71459E-05	4.08287E-05	17.02504515	3.2002E-05	4.81325E-05
Haul Road 1	HR1	1100-1200	2.705171612	5.08491E-06	7.64795E-06	2.576851612	4.84371E-06	7.28517E-06	14.97444354	2.81475E-05	4.23352E-05	14.41252354	2.70912E-05	4.07465E-05	16.98937515	3.19349E-05	4.80317E-05
Haul Road 1	HR1	1200-1300	2.704271612	5.08322E-06	7.64541E-06	2.580651612	4.85085E-06	7.29592E-06	14.97075354	2.81405E-05	4.23247E-05	14.42920354	2.71226E-05	4.07937E-05	17.00985515	3.19734E-05	4.80896E-05
Haul Road 1	HR1	1300-1400	2.706971612	5.08829E-06	7.65304E-06	2.570361612	4.83151E-06	7.26683E-06	14.98284354	2.81632E-05	4.23589E-05	14.38423354	2.7038E-05	4.06665E-05	16.95459515	3.18695E-05	4.79334E-05
Haul Road 1	HR1	1400-1500	2.706671612	5.08773E-06	7.6522E-06	2.566361612	4.82399E-06	7.25552E-06	14.98134354	2.81604E-05	4.23547E-05	14.36634354	2.70044E-05	4.0616E-05	16.93270515	3.18284E-05	4.78715E-05
Haul Road 1	HR1	1500-1600	2.703771612	5.08228E-06	7.644E-06	2.576851612	4.84371E-06	7.28517E-06	14.96845354	2.81362E-05	4.23182E-05	14.41252354	2.70912E-05	4.07465E-05	16.98937515	3.19349E-05	4.80317E-05
Haul Road 1	HR1	1600-1700	2.706971612	5.08829E-06	7.65304E-06	2.569261612	4.82944E-06	7.26372E-06	14.98284354	2.81632E-05	4.23589E-05	14.37913354	2.70284E-05	4.06521E-05	16.94839515	3.18579E-05	4.79158E-05
Haul Road 1	HR1	1700-1800	2.706971612	5.08829E-06	7.65304E-06	2.572761612	4.83602E-06	7.27361E-06	14.98284354	2.81632E-05	4.23589E-05	14.39462354	2.70576E-05	4.06959E-05	16.96738515	3.18936E-05	4.79695E-05
Haul Road 1	HR1	1800-1900	2.706971612	5.08829E-06	7.65304E-06	2.562061612	4.81591E-06	7.24336E-06	14.98284354	2.81632E-05	4.23589E-05	14.34776354	2.69695E-05	4.05634E-05	16.90982515	3.17854E-05	4.78068E-05
Haul Road 1	HR1	1900-2000	2.704271612	5.08322E-06	7.64541E-06	2.570161612	4.83113E-06	7.26626E-06	14.97075354	2.81405E-05	4.23247E-05	14.38333354	2.70363E-05	4.0664E-05	16.95349515	3.18675E-05	4.79303E-05
Haul Road 1	HR1	2000-2100	2.704271612	5.08322E-06	7.64541E-06	2.560161612	4.81233E-06	7.23799E-06	14.97075354	2.81405E-05	4.23247E-05	14.33937354	2.69537E-05	4.05397E-05	16.89953515	3.1766E-05	4.77777E-05
Haul Road 1	HR1	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0700-0800	2.696471612	3.49284E-06	6.95438E-06	2.583451612	3.34644E-06	6.66289E-06	14.93658354	1.93479E-05	3.85224E-05	14.44149354	1.87066E-05	3.72456E-05	17.02494515	2.2053E-05	4.39084E-05
Haul Road 2	HR2	0800-0900	2.696671612	3.4931E-06	6.95489E-06	2.581451612	3.34385E-06	6.65773E-06	14.93747354	1.93491E-05	3.85247E-05	14.43260354	1.86951E-05	3.72226E-05	17.01405515	2.20389E-05	4.38804E-05
Haul Road 2	HR2	0900-1000	2.694881612	3.49078E-06	6.95028E-06	2.583551612	3.34657E-06	6.66315E-06	14.92947354	1.93387E-05	3.85041E-05	14.44189354	1.87071E-05	3.72466E-05	17.02544515	2.20537E-05	4.39097E-05
Haul Road 2	HR2	1000-1100	2.699971612	3.49737E-06	6.9634E-06	2.583451612	3.34644E-06	6.66289E-06	14.95206354	1.9368E-05	3.85623E-05	14.44159354	1.87067E-05	3.72458E-05	17.02504515	2.20532E-05	4.39087E-05
Haul Road 2	HR2	1100-1200	2.705171612	3.50411E-06	6.97681E-06	2.576851612	3.33789E-06	6.64587E-06	14.97444354	1.93969E-05	3.86201E-05	14.41252354	1.86691E-05	3.71708E-05	16.98937515	2.2007E-05	4.38167E-05
Haul Road 2	HR2	1200-1300	2.704271612	3.50294E-06	6.97449E-06	2.580651612	3.34281E-06	6.65567E-06	14.97075354	1.93922E-05	3.86106E-05	14.42920354	1.86907E-05	3.72139E-05	17.00985515	2.20335E-05	4.38695E-05
Haul Road 2	HR2	1300-1400	2.706971612	3.50644E-06	6.98146E-06	2.570361612	3.32948E-06	6.62913E-06	14.98284354	1.94078E-05	3.86417E-05	14.38423354	1.86324E-05	3.70979E-05	16.95459515	2.19619E-05	4.3727E-05
Haul Road 2	HR2	1400-1500	2.706671612	3.50605E-06	6.98068E-06	2.566361612	3.3243E-06	6.61881E-06	14.98134354	1.94059E-05	3.86379E-05	14.36634354	1.86093E-05	3.70517E-05	16.93270515	2.19336E-05	4.36706E-05
Haul Road 2	HR2	1500-1600	2.703771612	3.50229E-06	6.9732E-06	2.576851612	3.33789E-06	6.64587E-06	14.96845354	1.93892E-05	3.86046E-05	14.41252354	1.86691E-05	3.71708E-05	16.98937515	2.2007E-05	4.38167E-05
Haul Road 2	HR2	1600-1700	2.706971612	3.50644E-06	6.98146E-06	2.569261612	3.32806E-06	6.62629E-06	14.98284354	1.94078E-05	3.86417E-05	14.37913354	1.86258E-05	3.70847E-05	16.94839515	2.19539E-05	4.3711E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (January) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Haul Road 2	HR2	1700-1800	2.706971612	3.50644E-06	6.98146E-06	2.572761612	3.33259E-06	6.63532E-06	14.98284354	1.94078E-05	3.86417E-05	14.39462354	1.86459E-05	3.71247E-05	16.96738515	2.19785E-05	4.376E-05
Haul Road 2	HR2	1800-1900	2.706971612	3.50644E-06	6.98146E-06	2.562061612	3.31873E-06	6.60772E-06	14.98284354	1.94078E-05	3.86417E-05	14.34776354	1.85852E-05	3.70038E-05	16.90982515	2.19039E-05	4.36115E-05
Haul Road 2	HR2	1900-2000	2.704271612	3.50294E-06	6.97449E-06	2.570161612	3.32922E-06	6.62861E-06	14.97075354	1.93922E-05	3.86106E-05	14.38333354	1.86313E-05	3.70956E-05	16.95349515	2.19605E-05	4.37242E-05
Haul Road 2	HR2	2000-2100	2.704271612	3.50294E-06	6.97449E-06	2.560161612	3.31627E-06	6.60282E-06	14.97075354	1.93922E-05	3.86106E-05	14.33937354	1.85743E-05	3.69822E-05	16.89953515	2.18906E-05	4.3585E-05
Haul Road 2	HR2	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0700-0800	2.696471612	3.49284E-06	6.43273E-06	2.583451612	3.34644E-06	6.16311E-06	14.93658354	1.93479E-05	3.56329E-05	14.44149354	1.87066E-05	3.44518E-05	17.02494515	2.2053E-05	4.06149E-05
Haul Road 3	HR3	0800-0900	2.696671612	3.4931E-06	6.43321E-06	2.581451612	3.34385E-06	6.15834E-06	14.93747354	1.93491E-05	3.5635E-05	14.43260354	1.86951E-05	3.44306E-05	17.01405515	2.20389E-05	4.05889E-05
Haul Road 3	HR3	0900-1000	2.694881612	3.49078E-06	6.42894E-06	2.583551612	3.34657E-06	6.16335E-06	14.92947354	1.93387E-05	3.56159E-05	14.44189354	1.87071E-05	3.44527E-05	17.02544515	2.20537E-05	4.06161E-05
Haul Road 3	HR3	1000-1100	2.699971612	3.49737E-06	6.44108E-06	2.583451612	3.34644E-06	6.16311E-06	14.95206354	1.9368E-05	3.56698E-05	14.44159354	1.87067E-05	3.4452E-05	17.02504515	2.20532E-05	4.06151E-05
Haul Road 3	HR3	1100-1200	2.705171612	3.50411E-06	6.45349E-06	2.576851612	3.33789E-06	6.14737E-06	14.97444354	1.93969E-05	3.57232E-05	14.41252354	1.86691E-05	3.43827E-05	16.98937515	2.2007E-05	4.053E-05
Haul Road 3	HR3	1200-1300	2.704271612	3.50294E-06	6.45134E-06	2.580651612	3.34281E-06	6.15643E-06	14.97075354	1.93922E-05	3.57144E-05	14.42920354	1.86907E-05	3.44225E-05	17.00985515	2.20335E-05	4.05789E-05
Haul Road 3	HR3	1300-1400	2.706971612	3.50644E-06	6.45778E-06	2.570361612	3.32948E-06	6.13188E-06	14.98284354	1.94078E-05	3.57432E-05	14.38423354	1.86324E-05	3.43152E-05	16.95459515	2.19619E-05	4.04471E-05
Haul Road 3	HR3	1400-1500	2.706671612	3.50605E-06	6.45707E-06	2.566361612	3.3243E-06	6.12234E-06	14.98134354	1.94059E-05	3.57397E-05	14.36634354	1.86093E-05	3.42725E-05	16.93270515	2.19336E-05	4.03949E-05
Haul Road 3	HR3	1500-1600	2.703771612	3.50229E-06	6.45015E-06	2.576851612	3.33789E-06	6.14737E-06	14.96845354	1.93892E-05	3.57089E-05	14.41252354	1.86691E-05	3.43827E-05	16.98937515	2.2007E-05	4.053E-05
Haul Road 3	HR3	1600-1700	2.706971612	3.50644E-06	6.45778E-06	2.569261612	3.32806E-06	6.12926E-06	14.98284354	1.94078E-05	3.57432E-05	14.37913354	1.86258E-05	3.4303E-05	16.94839515	2.19539E-05	4.04323E-05
Haul Road 3	HR3	1700-1800	2.706971612	3.50644E-06	6.45778E-06	2.572761612	3.33259E-06	6.13761E-06	14.98284354	1.94078E-05	3.57432E-05	14.39462354	1.86459E-05	3.434E-05	16.96738515	2.19785E-05	4.04776E-05
Haul Road 3	HR3	1800-1900	2.706971612	3.50644E-06	6.45778E-06	2.562061612	3.31873E-06	6.11208E-06	14.98284354	1.94078E-05	3.57432E-05	14.34776354	1.85852E-05	3.42282E-05	16.90982515	2.19039E-05	4.03403E-05
Haul Road 3	HR3	1900-2000	2.704271612	3.50294E-06	6.45134E-06	2.570161612	3.32922E-06	6.13141E-06	14.97075354	1.93922E-05	3.57144E-05	14.38333354	1.86313E-05	3.4313E-05	16.95349515	2.19605E-05	4.04444E-05
Haul Road 3	HR3	2000-2100	2.704271612	3.50294E-06	6.45134E-06	2.560161612	3.31627E-06	6.10755E-06	14.97075354	1.93922E-05	3.57144E-05	14.33937354	1.85743E-05	3.42082E-05	16.89953515	2.18906E-05	4.03157E-05
Haul Road 3	HR3	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (February) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 1	1	0000-0100	0.092324581	3.10175E-07	2.52332E-06	0.084590279	2.8419E-07	2.31193E-06	0.546881173	1.83731E-06	1.49468E-05	0.49905352	1.67663E-06	1.36396E-05	0.583643799	1.96082E-06	1.59515E-05
Road 1	1	0100-0200	0.07218	1.47666E-07	1.20128E-06	0.065536422	1.34074E-07	1.09071E-06	0.436117523	8.92207E-07	7.25824E-06	0.394068532	8.06184E-07	6.55842E-06	0.459604954	9.40258E-07	7.64914E-06
Road 1	1	0200-0300	0.069815195	1.00897E-07	8.20809E-07	0.063126104	9.12295E-08	7.42166E-07	0.447380649	6.46552E-07	5.2598E-06	0.400761818	5.79179E-07	4.71171E-06	0.463887922	6.70409E-07	5.45387E-06
Road 1	1	0300-0400	0.058831455	6.07307E-08	4.94053E-07	0.052923455	5.46319E-08	4.44439E-07	0.361789455	3.73469E-07	3.03822E-06	0.322614182	3.33029E-07	2.70924E-06	0.375537636	3.87661E-07	3.15368E-06
Road 1	1	0400-0500	0.076590349	1.23626E-07	1.00571E-06	0.068695116	1.10882E-07	9.0204E-07	0.44009686	7.10367E-07	5.77894E-06	0.392185465	6.33032E-07	5.14981E-06	0.460880581	7.43914E-07	6.05185E-06
Road 1	1	0500-0600	0.062889521	2.21907E-07	1.80525E-06	0.056427287	1.99105E-07	1.61975E-06	0.372989521	1.3161E-06	1.07067E-05	0.331706862	1.17044E-06	9.52168E-06	0.388134149	1.36954E-06	1.11414E-05
Road 1	1	0600-0700	0.083845341	5.30328E-07	4.3143E-06	0.075632285	4.7838E-07	3.89169E-06	0.447346053	2.8295E-06	2.30184E-05	0.401135163	2.53721E-06	2.06406E-05	0.476767448	3.01559E-06	2.45323E-05
Road 1	1	0700-0800	0.069750125	7.35728E-07	5.98525E-06	0.064357936	6.78851E-07	5.52255E-06	0.385193861	4.06304E-06	3.30535E-05	0.352862811	3.72201E-06	3.02791E-05	0.417220747	4.40086E-06	3.58017E-05
Road 1	1	0800-0900	0.074720648	9.73276E-07	7.91774E-06	0.069506527	9.05359E-07	7.36523E-06	0.401242133	5.22639E-06	4.25175E-05	0.371550504	4.83964E-06	3.93712E-05	0.441057032	5.745E-06	4.67364E-05
Road 1	1	0900-1000	0.080570476	1.07972E-06	8.78366E-06	0.074144734	9.93606E-07	8.08313E-06	0.447248627	5.99353E-06	4.87583E-05	0.409753221	5.49106E-06	4.46706E-05	0.483897955	6.48467E-06	5.27537E-05
Road 1	1	1000-1100	0.093145971	1.21502E-06	9.8844E-06	0.08556541	1.11614E-06	9.07997E-06	0.498844806	6.50708E-06	5.2936E-05	0.45676246	5.95814E-06	4.84704E-05	0.542327871	7.07428E-06	5.75504E-05
Road 1	1	1100-1200	0.084760089	1.07223E-06	8.72273E-06	0.077055445	9.74763E-07	7.92984E-06	0.486522018	6.15458E-06	5.00684E-05	0.440258813	5.56934E-06	4.53074E-05	0.517314258	6.5441E-06	5.32372E-05
Road 1	1	1200-1300	0.087085397	1.0902E-06	8.86895E-06	0.07970045	9.97752E-07	8.11686E-06	0.49290075	6.17051E-06	5.0198E-05	0.44979045	5.63082E-06	4.58076E-05	0.5294909	6.62857E-06	5.39244E-05
Road 1	1	1300-1400	0.091272116	1.21456E-06	9.88065E-06	0.083484556	1.11093E-06	9.03761E-06	0.506167814	6.7356E-06	5.47951E-05	0.461422496	6.14018E-06	4.99512E-05	0.544907052	7.25111E-06	5.89888E-05
Road 1	1	1400-1500	0.086522952	1.2488E-06	1.01592E-05	0.079321053	1.14486E-06	9.31357E-06	0.469675917	6.77892E-06	5.51475E-05	0.429111482	6.19344E-06	5.03846E-05	0.508432536	7.3383E-06	5.96982E-05
Road 1	1	1500-1600	0.092838282	1.2476E-06	1.01494E-05	0.085102821	1.14365E-06	9.30375E-06	0.502247179	6.74942E-06	5.49075E-05	0.458972221	6.16787E-06	5.01765E-05	0.544075042	7.31152E-06	5.94803E-05
Road 1	1	1600-1700	0.088540715	1.25466E-06	1.02068E-05	0.080438066	1.13984E-06	9.27278E-06	0.484941563	6.87183E-06	5.59033E-05	0.438917404	6.21964E-06	5.05977E-05	0.51935547	7.35949E-06	5.98705E-05
Road 1	1	1700-1800	0.070420277	1.00185E-06	8.1502E-06	0.064427282	9.16589E-07	7.45659E-06	0.394525778	5.61281E-06	4.5661E-05	0.359272507	5.11127E-06	4.1581E-05	0.423699789	6.02786E-06	4.90375E-05
Road 1	1	1800-1900	0.062727713	9.11247E-07	7.41313E-06	0.057372804	8.33456E-07	6.78029E-06	0.376139186	5.46418E-06	4.44519E-05	0.341843928	4.96598E-06	4.03989E-05	0.399216731	5.79943E-06	4.71792E-05
Road 1	1	1900-2000	0.074140742	8.25178E-07	6.71294E-06	0.069636408	7.75045E-07	6.3051E-06	0.424964621	4.72981E-06	3.84777E-05	0.397773895	4.42718E-06	3.60157E-05	0.467410304	5.20222E-06	4.23208E-05
Road 1	1	2000-2100	0.067330378	6.35645E-07	5.17107E-06	0.062621113	5.91187E-07	4.80939E-06	0.398462942	3.76177E-06	3.06025E-05	0.368695507	3.48074E-06	2.83163E-05	0.43131662	4.07193E-06	3.31257E-05
Road 1	1	2100-2200	0.070012048	6.03144E-07	4.90667E-06	0.065481765	5.64117E-07	4.58917E-06	0.417752593	3.59888E-06	2.92774E-05	0.388954488	3.35079E-06	2.72592E-05	0.454436253	3.91491E-06	3.18483E-05
Road 1	1	2200-2300	0.067982322	5.55036E-07	4.5153E-06	0.063679862	5.19909E-07	4.22953E-06	0.405079609	3.30724E-06	2.69049E-05	0.377786322	3.0844E-06	2.50921E-05	0.441466184	3.60431E-06	2.93216E-05
Road 1	1	2300-0000	0.059201718	4.33346E-07	3.52533E-06	0.056496385	4.13543E-07	3.36424E-06	0.362645821	2.6545E-06	2.15948E-05	0.344458897	2.52138E-06	2.05118E-05	0.400955282	2.93492E-06	2.3876E-05
Road 2	2	0000-0100	0.152916346	1.84066E-07	1.18868E-06	0.140093269	1.68631E-07	1.089E-06	0.647445577	7.79333E-07	5.03285E-06	0.591336538	7.11794E-07	4.5967E-06	0.731429808	8.80425E-07	5.6857E-06
Road 2	2	0100-0200	0.108892353	8.57023E-08	5.53457E-07	0.098852059	7.78002E-08	5.02426E-07	0.53852	4.23835E-07	2.73709E-06	0.486805	3.83134E-07	2.47424E-06	0.585657059	4.60934E-07	2.97667E-06
Road 2	2	0200-0300	0.113418696	6.0385E-08	3.8996E-07	0.102695652	5.46759E-08	3.53092E-07	0.620362609	3.30286E-07	2.13295E-06	0.55815	2.97163E-07	1.91905E-06	0.660845652	3.51839E-07	2.27214E-06
Road 2	2	0300-0400	0.098108	3.40653E-08	2.1999E-07	0.08833	3.06701E-08	1.98065E-07	0.357729333	1.24212E-07	8.02146E-07	0.319404	1.10904E-07	7.16208E-07	0.407734	1.41574E-07	9.14273E-07
Road 2	2	0400-0500	0.133358148	8.33488E-08	5.38259E-07	0.119653704	7.47836E-08	4.82945E-07	0.643177407	4.01986E-07	2.59599E-06	0.57482963	3.59269E-07	2.32012E-06	0.694483333	4.34052E-07	2.80307E-06
Road 2	2	0500-0600	0.105234737	1.38851E-07	8.96689E-07	0.094465789	1.24642E-07	8.04928E-07	0.466720351	6.15812E-07	3.97685E-06	0.416045439	5.48949E-07	3.54506E-06	0.510511228	6.73591E-07	4.34999E-06
Road 2	2	0600-0700	0.146905385	3.53661E-07	2.28391E-06	0.132549231	3.191E-07	2.06072E-06	0.594673462	1.43162E-06	9.24527E-06	0.534256346	1.28617E-06	8.30598E-06	0.666805577	1.60527E-06	1.03667E-05
Road 2	2	0700-0800	0.119279875	4.41777E-07	2.85295E-06	0.11010175	4.07784E-07	2.63343E-06	0.49655125	1.83908E-06	1.18766E-05	0.455460875	1.68689E-06	1.08938E-05	0.565562625	2.09468E-06	1.35272E-05
Road 2	2	0800-0900	0.134080559	9.4353E-07	6.09322E-06	0.124736151	8.77773E-07	5.66857E-06	0.563853224	3.96786E-06	2.5624E-05	0.522175099	3.67457E-06	2.373E-05	0.64691125	4.55234E-06	2.93986E-05
Road 2	2	0900-1000	0.158944405	9.27176E-07	5.98761E-06	0.146253492	8.53145E-07	5.50953E-06	0.67716381	3.95012E-06	2.55095E-05	0.62105369	3.62281E-06	2.33958E-05	0.767307183	4.47596E-06	2.89053E-05
Road 2	2	1000-1100	0.176591658	7.64413E-07	4.9365E-06	0.162225561	7.02226E-07	4.53491E-06	0.744302995	3.22187E-06	2.08065E-05	0.682169733	2.95291E-06	1.90696E-05	0.844395294	3.65514E-06	2.36045E-05
Road 2	2	1100-1200	0.210496557	8.91687E-07	5.75843E-06	0.191331585	8.10502E-07	5.23414E-06	0.85957388	3.64125E-06	2.35148E-05	0.779967486	3.30403E-06	2.13371E-05	0.971299071	4.11453E-06	2.65712E-05
Road 2	2	1200-1300	0.161564947	7.10587E-07	4.5889E-06	0.147898316	6.50479E-07	4.20073E-06	0.706825105	3.10872E-06	2.00758E-05	0.645281105	2.83804E-06	1.83278E-05	0.793179421	3.48852E-06	2.25285E-05
Road 2	2	1300-1400	0.179019596	9.24106E-07	5.96778E-06	0.16361	8.44561E-07	5.45409E-06	0.731574888	3.77642E-06	2.43877E-05	0.666996323	3.44306E-06	2.22349E-05	0.830606323	4.28762E-06	2.7689E-05
Road 2	2	1400-1500	0.153700182	5.87049E-07	3.79111E-06	0.140878545	5.38078E-07	3.47485E-06	0.664119636	2.53657E-06	1.63809E-05	0.607432303	2.32005E-06	1.49827E-05	0.748310848	2.85813E-06	1.84575E-05
Road 2	2	1500-1600	0.191663224	8.11907E-07	5.24321E-06	0.175597158	7.43849E-07	4.8037E-06	0.754700055	3.19699E-06	2.06459E-05	0.690362896	2.92445E-06	1.88858E-05	0.865960055	3.6683E-06	2.36895E-05
Road 2	2	1600-1700	0.160463484	8.2089E-07	5.30122E-06	0.145785882	7.45803E-07	4.81632E-06	0.674411403	3.45011E-06	2.22805E-05	0.611109593	3.12628E-06	2.01892E-05	0.756895475	3.87208E-06	2.50055E-05
Road 2	2	1700-1800	0.123420135	6.34242E-07	4.09588E-06	0.112963378	5.80506E-07	3.74885E-06	0.489582432	2.51591E-06	1.62475E-05	0.446691351	2.2955E-06	1.48241E-05	0.55965473	2.876E-06	1.85729E-05
Road 2	2	1800-1900	0.13601476	7.87122E-07	5.08316E-06	0.12450604	7.20521E-07	4.65305E-06	0.61200488	3.54169E-06	2.28719E-05	0.55830176	3.23091E-06	2.08649E-05	0.6828078	3.95143E-06	2.5518E-05
Road 2	2	1900-2000	0.113758047	4.45026E-07	2.87393E-06	0.106878876	4.18114E-07	2.70014E-06	0.51562645	2.01715E-06	1.30266E-05	0.482894497	1.8891E-06	1.21996E-05	0.589773373	2.30722E-06	1.48998E-05
Road 2	2	2000-2100	0.108184762	3.68129E-07	2.37734E-06	0.100601769	3.42325E-07	2.2107E-06	0.461671224	1.57096E-06	1.01451E-05	0.426969184	1.45288E-06	9.38257E-06	0.527570952	1.79521E-06	1.15933E-05
Road 2	2	2100-2200	0.083155882	2.9451E-07	1.90192E-06	0.07776	2.754E-07	1.77851E-06	0.381798105	1.3522E-06	8.73239E-06	0.35447	1.25541E-06	8.10734E-06	0.43223	1.53081E-06	9.88585E-06
Road 2	2	2200-2300	0.12038672	3.48341E-07	2.24955E-06	0.11279136	3.26364E-07	2.10763E-06	0.51278288	1.48375E-06	9.58189E-06	0.4786808	1.38507E-06	8.94466E-06	0.59147216	1.71144E-06	1.10523E-05
Road 2	2	2300-0000	0.106949099	2.748E-07	1.77463E-06	0.102066036	2.62253E-07	1.6936E-06	0.482694775	1.24026E-06	8.00946E-06	0.45896973	1.1793E-06	7.61579E-06	0.561035766	1.44155E-06	9.30939E-06
Road 3	3	0000-0100	0.09694787	3.5765E-07	1.3901E-05	0.08823613	3.25512E-07	1.26518E-05	0.535412478	1.97519E-06	7.67706E-05	0.484945783	1.78901E-06	6.95344E-05	0.573181913	2.11452E-06	8.21862E-05
Road 3	3	0100-0200	0.072844789	1.65912E-07	6.4486E-06	0.066083099	1.50512E-07	5.85002E-06	0.425252254	9.68561E-07	3.76456E-05	0.383861479	8.74289E-07	3.39814E-05	0.449944577	1.0248E-06	3.98314E-05
Road 3	3	0200-0300	0.071593434	1.13684E-07	4.41862E-06	0.064694646	1.0273E-07	3.99284E-06	0.448238485	7.11765E-07	2.76645E-05	0.401520303	6.3758E-07	2.47811E-05	0.466214949	7.4031E-07	2.8774E-05
Road 3	3	0300-0400	0.059825429	6.71701E-08	2.61073E-06	0.053933143	6.05544E-08	2.3536E-06	0.331204714	3.71866E-07	1.44535E-05	0.295750429	3.32059E-07	1.29063E-05	0.349683571	3.92614E-07	1.52599E-05
Road 3	3	0400-0500	0.080436372	1.45788E-07	5.66643E-06	0.071887699	1.30294E-07	5.06421E-06	0.446517965	8.093E-07	3.14555E-05	0.396288053	7.1826E-07	2.7917E-05	0.468175752	8.48554E-07	3.29812E-05
Road 3	3	0500-0600	0.065027967	2.56583E-07	9.97273E-06	0.057997886	2.28844E-07	8.89459E-06	0.363851626	1.43566E-06	5.58005E-05	0.321059065	1.26681E-06	4.92378E-05	0.379056951	1.49566E-06	5.81324E-05
Road 3	3	0600-0700	0.089590968	6.38028E-07	2.47985E-05	0.081574077	5.80935E-07	2.25795E-05	0.44861232	3.19482E-06	0.000124175	0.406101126	2.89207E-06	0.000112408	0.487675203	3.47301E-06	0.000134987
Road 3	3	0700-0800	0.072603439	8.46611E-07	3.29056E-05	0.066799959	7.78938E-07	3.02754E-05	0.381726506	4.45122E-06	0.000173008	0.348660138	4.06564E-06	0.000158021	0.415460096	4.84458E-06	0.000188297
Road 3	3	0800-0900	0.080805737	1.2922E-06	5.02246E-05	0.074254203	1.18743E-06	4.61525E-05	0.400786048	6.40914E-06	0.000249107	0.365862849	5.85067E-06	0.000227401	0.440117051	7.0381E-06	0.000273553
Road 3	3	0900-1000	0.087887202	1.36033E-06	5.28727E-05	0.080824383	1.25101E-06	4.86237E-05	0.453622373	7.02124E-06	0.000272898	0.415152808	6.4258E-06	0.000249755	0.495977192	7.67682E-06	0.000298379
Road 3	3	1000-1100	0.100485961	1.41673E-06	5.50647E-05	0.091460614	1.28948E-06	5.01189E-05	0.507621536	7.15684E-06	0.000278168	0.459978623	6.48513E-06	0.000252061	0.551439238	7.77461E-06	0.00030218
Road 3	3	1100-1200	0.098641733	1.35117E-06	5.25167E-05	0.090535562	1.24014E-06	4.8201E-05	0.51198185	7.01301E-06	0.000272578	0.468018478	6.41081E-06	0.000249172	0.55855404	7.65095E-06	0.000297373
Road 3	3	1200-1300	0.092540351	1.2676E-06	4.92683E-05	0.084618806	1.15909E-06	4.50509E-05	0.490983091	6.72538E-06	0.000261399	0.447455117	6.12914E-06	0.000238224	0.532073923	7.28823E-06	0.000283275
Road 3	3	1300-1400	0.099007778	1.47211E-06	5.72174E-05	0.090072017	1.33925E-06	5.20533E-05	0.504480518	7.50095E-06	0.000291543	0.457477573	6.80208E-06	0.00026438	0.54754959	8.14133E-06	0.000316433

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (February) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 3	3	1400-1500	0.091017206	1.36352E-06	5.29967E-05	0.083312066	1.24809E-06	4.85102E-05	0.47113758	7.05808E-06	0.00027433	0.429980139	6.44151E-06	0.000250365	0.513292206	7.6896E-06	0.000298875
Road 3	3	1500-1600	0.100658782	1.445E-06	5.61634E-05	0.092155173	1.32292E-06	5.14187E-05	0.507312972	7.28268E-06	0.000283059	0.46308657	6.64779E-06	0.000258383	0.555241743	7.97072E-06	0.000309802
Road 3	3	1600-1700	0.094841086	1.4847E-06	5.77065E-05	0.087373156	1.36779E-06	5.31626E-05	0.485619508	7.60218E-06	0.000295478	0.445871076	6.97993E-06	0.000271293	0.533244232	8.34773E-06	0.000324455
Road 3	3	1700-1800	0.075085945	1.17905E-06	4.58269E-05	0.068643902	1.0779E-06	4.18951E-05	0.386526496	6.06952E-06	0.000235907	0.351712942	5.52285E-06	0.000214659	0.420356844	6.60075E-06	0.000256554
Road 3	3	1800-1900	0.070631091	1.16348E-06	4.52215E-05	0.064776407	1.06704E-06	4.14731E-05	0.389679649	6.41904E-06	0.000249492	0.35507628	5.84904E-06	0.000227337	0.419852687	6.91607E-06	0.00026881
Road 3	3	1900-2000	0.074854961	9.12486E-07	3.54661E-05	0.069514763	8.47389E-07	3.29359E-05	0.413282474	5.03794E-06	0.000195812	0.38196075	4.65612E-06	0.000180972	0.451475513	5.50351E-06	0.000213908
Road 3	3	2000-2100	0.069462974	7.23087E-07	2.81046E-05	0.064598182	6.72446E-07	2.61363E-05	0.381639353	3.97274E-06	0.00015441	0.353078906	3.67543E-06	0.000142855	0.417677088	4.34788E-06	0.000168991
Road 3	3	2100-2200	0.067342667	6.6429E-07	2.58193E-05	0.062982813	6.21283E-07	2.41477E-05	0.380973951	3.75805E-06	0.000146066	0.354491057	3.49681E-06	0.000135912	0.41747387	4.1181E-06	0.00016006
Road 3	3	2200-2300	0.072024085	6.50397E-07	2.52793E-05	0.068755329	6.20879E-07	2.4132E-05	0.395019361	3.56713E-06	0.000138645	0.375779751	3.39339E-06	0.000131893	0.44453508	4.01427E-06	0.000156025
Road 3	3	2300-0000	0.062880159	5.06302E-07	1.96787E-05	0.059811614	4.81594E-07	1.87184E-05	0.361857629	2.91363E-06	0.000113245	0.342708486	2.75944E-06	0.000107252	0.4025201	3.24103E-06	0.000125971
Road 4	4	0000-0100	0.259887143	2.10557E-07	2.25455E-06	0.236466571	1.91582E-07	2.05138E-06	1.283497714	1.03987E-06	1.11345E-05	1.167395714	9.45807E-07	1.01273E-05	1.403862286	1.13739E-06	1.21787E-05
Road 4	4	0100-0200	0.245402	1.13612E-07	1.21651E-06	0.2226685	1.03087E-07	1.10381E-06	1.2140405	5.62056E-07	6.01826E-06	1.1014005	5.09908E-07	5.45988E-06	1.324069	6.12995E-07	6.56369E-06
Road 4	4	0200-0300	0.265536154	7.99067E-08	8.55607E-07	0.240351538	7.2328E-08	7.74458E-07	1.270216154	3.82241E-07	4.09288E-06	1.149573846	3.45937E-07	3.70414E-06	1.389925385	4.18265E-07	4.4786E-06
Road 4	4	0300-0400	0.240955714	3.90438E-08	4.18064E-07	0.217642857	3.52662E-08	3.77616E-07	1.237042857	2.00447E-07	2.1463E-06	1.117025714	1.81E-07	1.93807E-06	1.334668571	2.16266E-07	2.31568E-06
Road 4	4	0400-0500	0.249663571	8.09095E-08	8.66345E-07	0.223220714	7.234E-08	7.74587E-07	1.194832857	3.87214E-07	4.14613E-06	1.068097857	3.46143E-07	3.70635E-06	1.291318571	4.18483E-07	4.48094E-06
Road 4	4	0500-0600	0.229896667	1.2772E-07	1.36758E-06	0.20533625	1.14076E-07	1.22147E-06	1.05909875	5.88388E-07	6.30021E-06	0.944949167	5.24972E-07	5.62118E-06	1.150285417	6.39047E-07	6.84265E-06
Road 4	4	0600-0700	0.254770755	3.12566E-07	3.34682E-06	0.232090189	2.8474E-07	3.04888E-06	1.17972566	1.44735E-06	1.54976E-05	1.074084528	1.31774E-06	1.41098E-05	1.306174717	1.60248E-06	1.71587E-05
Road 4	4	0700-0800	0.25162413	5.35866E-07	5.73783E-06	0.2317075	4.93451E-07	5.28367E-06	1.208552391	2.57377E-06	2.75588E-05	1.111862065	2.36785E-06	2.5354E-05	1.343569565	2.86131E-06	3.06377E-05
Road 4	4	0800-0900	0.259524581	9.31165E-07	9.97052E-06	0.238523871	8.55815E-07	9.1637E-06	1.250476065	4.48666E-06	4.80413E-05	1.148693613	4.12147E-06	4.4131E-05	1.387217484	4.97728E-06	5.32947E-05
Road 4	4	0900-1000	0.265317432	9.08958E-07	9.73274E-06	0.243690946	8.34867E-07	8.9394E-06	1.213755338	4.15824E-06	4.45246E-05	1.114106216	3.81685E-06	4.08692E-05	1.357797162	4.65171E-06	4.98086E-05
Road 4	4	1000-1100	0.297782986	9.9261E-07	1.06284E-05	0.270880417	9.02935E-07	9.66824E-06	1.36586875	4.5529E-06	4.87505E-05	1.2420725	4.14024E-06	4.4332E-05	1.512952917	5.04318E-06	5.40002E-05
Road 4	4	1100-1200	0.275553161	9.88675E-07	1.05863E-05	0.252767677	9.06921E-07	9.71093E-06	1.255715871	4.50546E-06	4.82426E-05	1.151456194	4.13138E-06	4.42371E-05	1.404223871	5.0383E-06	5.3948E-05
Road 4	4	1200-1300	0.281115405	9.63081E-07	1.03123E-05	0.256888649	8.80081E-07	9.42354E-06	1.337069324	4.5807E-06	4.90482E-05	1.221539865	4.18491E-06	4.48102E-05	1.478428514	5.06499E-06	5.42337E-05
Road 4	4	1300-1400	0.290112067	1.00733E-06	1.07861E-05	0.263827533	9.16068E-07	9.80887E-06	1.34791	4.68024E-06	5.01141E-05	1.225267067	4.2544E-06	4.55543E-05	1.4890946	5.17047E-06	5.53632E-05
Road 4	4	1400-1500	0.263364214	8.53495E-07	9.13887E-06	0.240994714	7.81001E-07	8.36263E-06	1.262987214	4.09301E-06	4.38263E-05	1.155026071	3.74314E-06	4.008E-05	1.396020786	4.52414E-06	4.84426E-05
Road 4	4	1500-1600	0.294494	8.52124E-07	9.12418E-06	0.26946168	7.79692E-07	8.34862E-06	1.36837816	3.95943E-06	4.23959E-05	1.25172392	3.62189E-06	3.87816E-05	1.5211856	4.40158E-06	4.71302E-05
Road 4	4	1600-1700	0.275269032	7.90124E-07	8.46032E-06	0.253476935	7.27573E-07	7.79054E-06	1.291819758	3.708E-06	3.97037E-05	1.189348468	3.41387E-06	3.65543E-05	1.442825403	4.14144E-06	4.43448E-05
Road 4	4	1700-1800	0.263731339	7.75321E-07	8.30181E-06	0.241165748	7.08983E-07	7.59149E-06	1.258151024	3.69873E-06	3.96045E-05	1.149810945	3.38023E-06	3.61941E-05	1.390976693	4.08921E-06	4.37856E-05
Road 4	4	1800-1900	0.289794434	7.1107E-07	7.61383E-06	0.265738491	6.52044E-07	6.98181E-06	1.395027736	3.42298E-06	3.66519E-05	1.279152358	3.13866E-06	3.36075E-05	1.544890849	3.7907E-06	4.05893E-05
Road 4	4	1900-2000	0.259443108	4.44416E-07	4.75862E-06	0.241148649	4.13079E-07	4.42307E-06	1.251914595	2.14448E-06	2.29622E-05	1.163363919	1.9928E-06	2.13381E-05	1.404512568	2.40588E-06	2.57611E-05
Road 4	4	2000-2100	0.225242041	2.55483E-07	2.7356E-06	0.20949102	2.37617E-07	2.5443E-06	1.091207347	1.23771E-06	1.32529E-05	1.014169592	1.15033E-06	1.23173E-05	1.223660612	1.38795E-06	1.48616E-05
Road 4	4	2100-2200	0.185951622	1.59264E-07	1.70533E-06	0.174075946	1.49093E-07	1.59642E-06	0.919898378	7.87876E-07	8.43624E-06	0.860196757	7.36743E-07	7.88873E-06	1.034272703	8.85835E-07	9.48515E-06
Road 4	4	2200-2300	0.248520952	3.62426E-07	3.88071E-06	0.237319365	3.46091E-07	3.70579E-06	1.181309048	1.72274E-06	1.84464E-05	1.127753333	1.64464E-06	1.76101E-05	1.365072698	1.99073E-06	2.13159E-05
Road 4	4	2300-0000	0.231093673	2.6212E-07	2.80667E-06	0.219946327	2.49476E-07	2.67129E-06	1.128657959	1.28019E-06	1.37077E-05	1.073671633	1.21782E-06	1.30399E-05	1.293617959	1.4673E-06	1.57112E-05
Road 5	5	0000-0100	0.082067306	2.97278E-07	4.02015E-06	0.074699585	2.7059E-07	3.65924E-06	0.45985886	1.66578E-06	2.25267E-05	0.415840622	1.50633E-06	2.03704E-05	0.490540207	1.77692E-06	2.40296E-05
Road 5	5	0100-0200	0.055281721	1.26584E-07	1.71181E-06	0.050147705	1.14828E-07	1.55284E-06	0.340304836	7.79227E-07	1.05376E-05	0.306467213	7.01745E-07	9.48984E-06	0.356614918	8.16573E-07	1.10427E-05
Road 5	5	0200-0300	0.05287	8.53382E-08	1.15404E-06	0.047731628	7.70443E-08	1.04188E-06	0.366442209	5.9148E-07	7.99869E-06	0.326863023	5.27594E-07	7.13476E-06	0.374594651	6.04639E-07	8.17664E-06
Road 5	5	0300-0400	0.047046032	5.56288E-08	7.52278E-07	0.042384921	5.01173E-08	6.77746E-07	0.261068889	3.08696E-07	4.17456E-06	0.232085556	2.74425E-07	3.71111E-06	0.274470476	3.24543E-07	4.38885E-06
Road 5	5	0400-0500	0.065821616	1.22304E-07	1.65394E-06	0.058818586	1.09291E-07	1.47797E-06	0.378055152	7.02467E-07	9.4996E-06	0.334677576	6.21867E-07	8.40963E-06	0.393496162	7.31158E-07	9.88759E-06
Road 5	5	0500-0600	0.053221818	2.1976E-07	2.97185E-06	0.047444182	1.95903E-07	2.64924E-06	0.311896591	1.28786E-06	1.7416E-05	0.274285409	1.13256E-06	1.53158E-05	0.321729591	1.32846E-06	1.79651E-05
Road 5	5	0600-0700	0.077624974	5.65287E-07	7.64448E-06	0.070667242	5.14619E-07	6.95929E-06	0.391689278	2.85239E-06	3.85734E-05	0.353942655	2.57751E-06	3.48562E-05	0.424609897	3.09213E-06	4.18154E-05
Road 5	5	0700-0800	0.059365434	7.05299E-07	9.53789E-06	0.054593049	6.486E-07	8.77114E-06	0.314828278	3.74036E-06	5.05816E-05	0.286752117	3.4068E-06	4.60707E-05	0.341345166	4.0554E-06	5.48419E-05
Road 5	5	0800-0900	0.063936999	1.01162E-06	1.36803E-05	0.058754781	9.29622E-07	1.25715E-05	0.31395841	4.96747E-06	6.71761E-05	0.285741601	4.52102E-06	6.11387E-05	0.344496382	5.45065E-06	7.37101E-05
Road 5	5	0900-1000	0.070948309	1.0866E-06	1.46942E-05	0.065250074	9.99325E-07	1.35141E-05	0.378520662	5.79716E-06	7.83961E-05	0.346090797	5.30049E-06	7.16795E-05	0.41134087	6.29982E-06	8.51936E-05
Road 5	5	1000-1100	0.081421499	1.12169E-06	1.51688E-05	0.074103692	1.02087E-06	1.38055E-05	0.422332698	5.81817E-06	7.86802E-05	0.382154264	5.26466E-06	7.1195E-05	0.456257956	6.28554E-06	8.50005E-05
Road 5	5	1100-1200	0.07999269	1.04945E-06	1.4192E-05	0.073411488	9.63112E-07	1.30244E-05	0.43299	5.68056E-06	7.68192E-05	0.395287296	5.18592E-06	7.01302E-05	0.468698784	6.14903E-06	8.31545E-05
Road 5	5	1200-1300	0.073985021	9.81746E-07	1.32763E-05	0.067629208	8.97407E-07	1.21358E-05	0.403126591	5.3493E-06	7.23395E-05	0.366996676	4.86987E-06	6.58562E-05	0.434625884	5.76728E-06	7.7992E-05
Road 5	5	1300-1400	0.081357902	1.18647E-06	1.60448E-05	0.07403816	1.07972E-06	1.46013E-05	0.423559344	6.17691E-06	8.35315E-05	0.383750927	5.59637E-06	7.56807E-05	0.457789086	6.67609E-06	9.0282E-05
Road 5	5	1400-1500	0.07648796	1.13985E-06	1.54145E-05	0.070041725	1.04379E-06	1.41154E-05	0.400285428	5.96521E-06	8.06687E-05	0.365050516	5.44013E-06	7.35679E-05	0.435092242	6.48392E-06	8.76833E-05
Road 5	5	1500-1600	0.085091519	1.22974E-06	1.663E-05	0.077928377	1.12622E-06	1.523E-05	0.434270896	6.27606E-06	8.48724E-05	0.396116195	5.72465E-06	7.74155E-05	0.474044571	6.85087E-06	9.26456E-05
Road 5	5	1600-1700	0.080763916	1.29301E-06	1.74856E-05	0.074404689	1.1912E-06	1.61088E-05	0.420043681	6.7248E-06	9.09407E-05	0.385357456	6.16948E-06	8.3431E-05	0.459762145	7.36068E-06	9.95399E-05
Road 5	5	1700-1800	0.059384172	9.48497E-07	1.28267E-05	0.054286428	8.67075E-07	1.17256E-05	0.309556322	4.9443E-06	6.68627E-05	0.281147756	4.49055E-06	6.07266E-05	0.335434183	5.35763E-06	7.24522E-05
Road 5	5	1800-1900	0.05523827	9.52777E-07	1.28846E-05	0.050645843	8.73565E-07	1.18134E-05	0.315044157	5.43404E-06	7.34855E-05	0.286432427	4.94053E-06	6.68117E-05	0.33707827	5.81409E-06	7.86251E-05
Road 5	5	1900-2000	0.063704913	8.20225E-07	1.10921E-05	0.059184213	7.62019E-07	1.03049E-05	0.360284825	4.6388E-06	6.27314E-05	0.332460204	4.28055E-06	5.78867E-05	0.391644417	5.04257E-06	6.81916E-05
Road 5	5	2000-2100	0.061465733	6.92182E-07	9.3605E-06	0.057163517	6.43733E-07	8.70533E-06	0.342810283	3.86048E-06	5.22059E-05	0.316851783	3.56815E-06	4.82528E-05	0.3740153	4.21188E-06	5.69581E-05
Road 5	5	2100-2200	0.062793893	6.8121E-07	9.21213E-06	0.058719394	6.37008E-07	8.61438E-06	0.359142128	3.8961E-06	5.26877E-05	0.333981678	3.62315E-06	4.89965E-05	0.392701073	4.26016E-06	5.76109E-05
Road 5	5	2200-2300	0.060227655	5.64069E-07	7.62801E-06	0.057488838	5.38418E-07	7.28113E-06	0.339436112	3.17903E-06	4.29906E-05	0.322544489	3.02083E-06	4.08512E-05	0.380033327	3.55925E-06	4.81324E-05
Road 5	5	2300-0000	0.052807152	4.4898E-07	6.07164E-06	0.050222914	4.27008E-07	5.77451E-06	0.31242181	2.65629E-06	3.59215E-05	0.295530751	2.51268E-06	3.39794E-05	0.345753664	2.93968E-06	3.97539E-05
Road 6	6	0000-0100	0.049151	1.38376E-07	4.94637E-06	0.0446444	1.25688E-07	4.49284E-06	0.319392533	8.99191E-07	3.21424E-05	0.2866962	8.0714E-07	2.8852E-05	0.3313406	9.32828E-07	3.33448E-05
Road 6	6	0100-0200	0.065179737	1.39461E-07	4.98517E-06	0.059121228	1.26498E-07	4.5218E-06	0.369647982	7.90913E-07	2.8272E-05	0.332262281	7.10922E-07	2.54126E-05	0.391383509	8.3742E-07	2.99344E-05
Road 6	6	0200-0300	0.059448228	8.81458E-08	3.15086E-06	0.053771772	7.97292E-08	2.84999E-06	0.342442152	5.0775E-07	1.815E-05	0.306586076	4.54585E-07	1.62496E-05	0.360357848	5.34314E-07	1.90996E-05
Road 6	6	0300-0400	0.060940806	7.09146E-08	2.53491E-06	0.055107742	6.41269E-08	2.29228E-06	0.391615	4.55708E-07	1.62897E-05	0.351006613	4.08454E-07	1.46006E-05	0.406114355	4.72581E-07	1.68928E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (February) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 6	6	0400-0500	0.066575333	1.12458E-07	4.01993E-06	0.059492444	1.00494E-07	3.59225E-06	0.394209667	6.65895E-07	2.3803E-05	0.348312222	5.88365E-07	2.10317E-05	0.407804667	6.88859E-07	2.46239E-05
Road 6	6	0500-0600	0.059460556	1.80792E-07	6.46259E-06	0.053078272	1.61387E-07	5.76892E-06	0.362389321	1.10186E-06	3.9387E-05	0.318953333	9.69791E-07	3.46661E-05	0.372031605	1.13118E-06	4.0435E-05
Road 6	6	0600-0700	0.063362207	3.44877E-07	1.2328E-05	0.057672862	3.1391E-07	1.1221E-05	0.403195517	2.19457E-06	7.8447E-05	0.36278069	1.97459E-06	7.05838E-05	0.420453552	2.2885E-06	8.18048E-05
Road 6	6	0700-0800	0.058344416	5.05914E-07	1.80844E-05	0.05367	4.65382E-07	1.66355E-05	0.337332338	2.92507E-06	0.000104559	0.307159199	2.66343E-06	9.52068E-05	0.360829199	3.12881E-06	0.000111842
Road 6	6	0800-0900	0.049656465	6.16978E-07	2.20545E-05	0.045537387	5.65799E-07	2.0225E-05	0.295751148	3.67469E-06	0.000131355	0.266953142	3.31687E-06	0.000118565	0.312490529	3.88267E-06	0.00013879
Road 6	6	0900-1000	0.052645245	6.25459E-07	2.23576E-05	0.048285829	5.73666E-07	2.05062E-05	0.299972385	3.56386E-06	0.000127394	0.271869779	3.22998E-06	0.000115459	0.320155608	3.80365E-06	0.000135965
Road 6	6	1000-1100	0.071087364	7.13809E-07	2.55158E-05	0.064627888	6.48947E-07	2.31972E-05	0.391132336	3.92747E-06	0.000140391	0.352387888	3.53843E-06	0.000126485	0.417015776	4.18738E-06	0.000149682
Road 6	6	1100-1200	0.08160938	8.14868E-07	2.91282E-05	0.074903759	7.47913E-07	2.67349E-05	0.427957707	4.27315E-06	0.000152748	0.390648195	3.90062E-06	0.000139431	0.465551955	4.64853E-06	0.000166166
Road 6	6	1200-1300	0.078069388	7.66334E-07	2.73933E-05	0.071408489	7.0095E-07	2.50561E-05	0.392211262	3.84997E-06	0.000137621	0.357421893	3.50848E-06	0.000125414	0.428830382	4.20943E-06	0.00015047
Road 6	6	1300-1400	0.09102691	8.90109E-07	3.18178E-05	0.082830173	8.09957E-07	2.89527E-05	0.465387274	4.5508E-06	0.000162673	0.421680307	4.12341E-06	0.000147395	0.50451048	4.93337E-06	0.000176348
Road 6	6	1400-1500	0.086370209	9.3049E-07	3.32612E-05	0.079063031	8.51768E-07	3.04472E-05	0.434892456	4.68522E-06	0.000167477	0.396461289	4.27119E-06	0.000152678	0.475524321	5.12295E-06	0.000183125
Road 6	6	1500-1600	0.075603612	7.97471E-07	2.85063E-05	0.069184324	7.2976E-07	2.60859E-05	0.394174537	4.15777E-06	0.000148623	0.359025302	3.78702E-06	0.00013537	0.428209626	4.51678E-06	0.000161456
Road 6	6	1600-1700	0.079013542	8.542E-07	3.05342E-05	0.072799757	7.87024E-07	2.81329E-05	0.393624444	4.2554E-06	0.000152113	0.361119635	3.904E-06	0.000139552	0.433919392	4.69102E-06	0.000167685
Road 6	6	1700-1800	0.05913	6.76976E-07	2.41992E-05	0.054063344	6.18968E-07	2.21256E-05	0.305439082	3.49696E-06	0.000125002	0.277555607	3.17772E-06	0.000113591	0.331618951	3.79669E-06	0.000135716
Road 6	6	1800-1900	0.057437634	7.42765E-07	2.65508E-05	0.052653324	6.80896E-07	2.43393E-05	0.302943454	3.91757E-06	0.000140037	0.275726792	3.56561E-06	0.000127456	0.328380116	4.24651E-06	0.000151795
Road 6	6	1900-2000	0.067859294	6.67385E-07	2.38563E-05	0.063028531	6.19875E-07	2.2158E-05	0.358428473	3.52508E-06	0.000126007	0.330559027	3.25099E-06	0.00011621	0.393587557	3.87087E-06	0.000138368
Road 6	6	2000-2100	0.053411555	4.19032E-07	1.49787E-05	0.04964823	3.89508E-07	1.39233E-05	0.314111077	2.46431E-06	8.80891E-05	0.289792895	2.27353E-06	8.12693E-05	0.339441124	2.66303E-06	9.51926E-05
Road 6	6	2100-2200	0.073779222	4.98508E-07	1.78196E-05	0.068996	4.66189E-07	1.66644E-05	0.394738278	2.66715E-06	9.53398E-05	0.367328861	2.48195E-06	8.87197E-05	0.436324861	2.94814E-06	0.000105384
Road 6	6	2200-2300	0.054970131	3.93086E-07	1.40512E-05	0.05245315	3.75087E-07	1.34078E-05	0.312144121	2.23211E-06	7.97889E-05	0.295728399	2.11472E-06	7.55928E-05	0.348181549	2.48981E-06	8.90007E-05
Road 6	6	2300-0000	0.03695591	2.47621E-07	8.85146E-06	0.035142829	2.35473E-07	8.4172E-06	0.232821793	1.56001E-06	5.57641E-05	0.219930392	1.47363E-06	5.26764E-05	0.255073221	1.70911E-06	6.10936E-05
Road 7	7	0000-0100	0.07173756	1.93724E-07	4.83599E-06	0.06536871	1.76525E-07	4.40665E-06	0.426150631	1.1508E-06	2.87278E-05	0.385662151	1.04146E-06	2.59983E-05	0.45103086	1.21799E-06	3.0405E-05
Road 7	7	0100-0200	0.088450516	1.86206E-07	4.6483E-06	0.080261083	1.68965E-07	4.21792E-06	0.485578372	1.02224E-06	2.55184E-05	0.438244232	9.2259E-07	2.30308E-05	0.518505315	1.09155E-06	2.72488E-05
Road 7	7	0200-0300	0.07586136	1.03532E-07	2.58449E-06	0.068664236	9.37093E-08	2.33929E-06	0.431686262	5.89143E-07	1.47069E-05	0.388030968	5.29564E-07	1.32196E-05	0.456695204	6.23273E-07	1.55589E-05
Road 7	7	0300-0400	0.077265519	8.52557E-08	2.12826E-06	0.069802237	7.70207E-08	1.92269E-06	0.46787937	5.16264E-07	1.28876E-05	0.420110526	4.63555E-07	1.15719E-05	0.489912763	5.40576E-07	1.34945E-05
Road 7	7	0400-0500	0.086278155	1.39043E-07	3.47096E-06	0.077222523	1.24449E-07	3.10665E-06	0.482981632	7.78355E-07	1.94303E-05	0.429210811	6.917E-07	1.72671E-05	0.506433333	8.16149E-07	2.03737E-05
Road 7	7	0500-0600	0.077526553	2.22864E-07	5.56341E-06	0.069373889	1.99428E-07	4.97837E-06	0.439850925	1.26443E-06	3.15643E-05	0.390006263	1.12114E-06	2.79874E-05	0.459380152	1.32057E-06	3.29658E-05
Road 7	7	0600-0700	0.08164613	4.19627E-07	1.04753E-05	0.07410358	3.80861E-07	9.50754E-06	0.476125234	2.44708E-06	6.10872E-05	0.428687817	2.20328E-06	5.50009E-05	0.502791396	2.58414E-06	6.45085E-05
Road 7	7	0700-0800	0.076894779	6.30768E-07	1.5746E-05	0.070839409	5.81096E-07	1.4506E-05	0.421178088	3.45492E-06	8.62462E-05	0.38533415	3.1609E-06	7.89063E-05	0.456173559	3.74199E-06	9.34123E-05
Road 7	7	0800-0900	0.076329033	9.47502E-07	2.36527E-05	0.070427497	8.74244E-07	2.1824E-05	0.416697372	5.17263E-06	0.000129126	0.381136426	4.7312E-06	0.000118106	0.451563923	5.60544E-06	0.00013993
Road 7	7	0900-1000	0.078311452	9.00481E-07	2.2479E-05	0.071945875	8.27285E-07	2.06517E-05	0.411796166	4.73513E-06	0.000118204	0.375444235	4.31713E-06	0.00010777	0.44739011	5.14441E-06	0.000128421
Road 7	7	1000-1100	0.093382651	9.4227E-07	2.35221E-05	0.085205947	8.59764E-07	2.14625E-05	0.492423186	4.96876E-06	0.000124036	0.446956594	4.50998E-06	0.000112584	0.53216254	5.36974E-06	0.000134046
Road 7	7	1100-1200	0.103598668	1.04385E-06	2.60579E-05	0.094742424	9.54615E-07	2.38303E-05	0.531399298	5.35433E-06	0.000133661	0.484309671	4.87986E-06	0.000121817	0.579052095	5.83447E-06	0.000145647
Road 7	7	1200-1300	0.100681753	1.013E-06	2.52877E-05	0.092097879	9.26632E-07	2.31318E-05	0.508755017	5.11878E-06	0.000127781	0.464334472	4.67185E-06	0.000116625	0.55643235	5.59848E-06	0.000139756
Road 7	7	1300-1400	0.107914422	1.06853E-06	2.66741E-05	0.098357334	9.73902E-07	2.43118E-05	0.546461915	5.41089E-06	0.000135073	0.496629385	4.91746E-06	0.000122756	0.594986719	5.89137E-06	0.000147068
Road 7	7	1400-1500	0.100358648	1.04034E-06	2.59704E-05	0.091919752	9.52865E-07	2.37866E-05	0.511088523	5.29808E-06	0.000132257	0.466639286	4.83731E-06	0.000120755	0.558559039	5.79017E-06	0.000144542
Road 7	7	1500-1600	0.092801659	9.44492E-07	2.35776E-05	0.084963825	8.64722E-07	2.15863E-05	0.479515067	4.88028E-06	0.000121828	0.437519935	4.45287E-06	0.000111158	0.52248376	5.31759E-06	0.000132744
Road 7	7	1600-1700	0.096329901	1.01397E-06	2.53119E-05	0.088302441	9.29469E-07	2.32026E-05	0.480435918	5.05706E-06	0.000126241	0.439074611	4.62169E-06	0.000115372	0.527377053	5.55116E-06	0.000138575
Road 7	7	1700-1800	0.074156183	8.25785E-07	2.06143E-05	0.067815621	7.55178E-07	1.88517E-05	0.384500268	4.2817E-06	0.000106885	0.35010925	3.89873E-06	9.7325E-05	0.417924871	4.65391E-06	0.000116177
Road 7	7	1800-1900	0.068366221	7.91087E-07	1.97481E-05	0.062619301	7.24588E-07	1.80881E-05	0.360673058	4.17346E-06	0.000104183	0.328716139	3.80368E-06	9.49522E-05	0.39133544	4.52826E-06	0.00011304
Road 7	7	1900-2000	0.078469218	6.85836E-07	1.71207E-05	0.073183071	6.39634E-07	1.59673E-05	0.417141572	3.6459E-06	9.10135E-05	0.387217481	3.38435E-06	8.44845E-05	0.460400552	4.02399E-06	0.000100452
Road 7	7	2000-2100	0.072303649	5.20674E-07	1.29977E-05	0.06722498	4.84102E-07	1.20848E-05	0.3967825	2.85732E-06	7.1328E-05	0.366955565	2.64253E-06	6.59661E-05	0.434180544	3.12663E-06	7.80509E-05
Road 7	7	2100-2200	0.08210413	4.93503E-07	1.23194E-05	0.076790628	4.61565E-07	1.15222E-05	0.440155942	2.64564E-06	6.60439E-05	0.409979831	2.46426E-06	6.15161E-05	0.486770459	2.92583E-06	7.30382E-05
Road 7	7	2200-2300	0.068583605	4.45094E-07	1.1111E-05	0.065015573	4.21939E-07	1.0533E-05	0.37847552	2.45623E-06	6.13156E-05	0.356777229	2.31542E-06	5.78003E-05	0.421792802	2.73735E-06	6.83333E-05
Road 7	7	2300-0000	0.04828399	2.88117E-07	7.19235E-06	0.045983219	2.74388E-07	6.84963E-06	0.287528418	1.71572E-06	4.283E-05	0.272487183	1.62597E-06	4.05895E-05	0.318470401	1.90036E-06	4.74391E-05
Road 8	8	0000-0100	0.227961667	1.6579E-07	2.73299E-06	0.207378611	1.50821E-07	2.48622E-06	1.129108056	8.21169E-07	1.35367E-05	1.026901667	7.46838E-07	1.23113E-05	1.234280278	8.97658E-07	1.47976E-05
Road 8	8	0100-0200	0.236444	1.43299E-07	2.36224E-06	0.214562333	1.30038E-07	2.14362E-06	1.167793667	7.07754E-07	1.16671E-05	1.059528	6.42138E-07	1.05854E-05	1.274090333	7.72176E-07	1.2729E-05
Road 8	8	0200-0300	0.223774	6.78103E-08	1.11783E-06	0.202628667	6.14026E-08	1.0122E-06	1.162142	3.52164E-07	5.8053E-06	1.052039333	3.188E-07	5.25529E-06	1.254668	3.80202E-07	6.26749E-06
Road 8	8	0300-0400	0.203592143	5.75816E-08	9.49211E-07	0.184065	5.20588E-08	8.5817E-07	1.035642857	2.92909E-07	4.8285E-06	0.935864286	2.64689E-07	4.3633E-06	1.119929286	3.16748E-07	5.22147E-06
Road 8	8	0400-0500	0.232851905	9.87857E-08	1.62844E-06	0.208247619	8.83475E-08	1.45637E-06	1.116866667	4.73822E-07	7.81078E-06	0.998662857	4.23675E-07	6.98413E-06	1.206910476	5.12023E-07	8.4405E-06
Road 8	8	0500-0600	0.220996765	1.51796E-07	2.5023E-06	0.197467647	1.35634E-07	2.23588E-06	1.042128824	7.15806E-07	1.17998E-05	0.930534412	6.39155E-07	1.05362E-05	1.128002059	7.74789E-07	1.27721E-05
Road 8	8	0600-0700	0.246234839	3.08415E-07	5.08411E-06	0.224420968	2.81093E-07	4.63371E-06	1.14716	1.43685E-06	2.36859E-05	1.044790484	1.30863E-06	2.15722E-05	1.269211452	1.58972E-06	2.62059E-05
Road 8	8	0700-0800	0.240532353	4.95642E-07	8.17048E-06	0.221527157	4.5648E-07	7.5249E-06	1.131908824	2.33242E-06	3.8449E-05	1.041773725	2.14669E-06	3.53873E-05	1.263300882	2.60317E-06	4.29122E-05
Road 8	8	0800-0900	0.268082708	1.03984E-06	1.71413E-05	0.246500885	9.56125E-07	1.57614E-05	1.26615474	4.91115E-06	8.09584E-05	1.163608646	4.51339E-06	7.44016E-05	1.410109531	5.46952E-06	9.01629E-05
Road 8	8	0900-1000	0.286813228	9.15485E-07	1.50914E-05	0.263492089	8.41045E-07	1.38643E-05	1.287941835	4.11101E-06	6.77684E-05	1.183095127	3.77634E-06	6.22516E-05	1.446587215	4.61739E-06	7.61159E-05
Road 8	8	1000-1100	0.27349425	8.84022E-07	1.45728E-05	0.24881475	8.0425E-07	1.32578E-05	1.265129938	4.08931E-06	6.74107E-05	1.150128938	3.71759E-06	6.1283E-05	1.398943688	4.52184E-06	7.45408E-05
Road 8	8	1100-1200	0.282875786	9.08631E-07	1.49784E-05	0.259484151	8.33495E-07	1.37398E-05	1.320851824	4.24274E-06	6.99399E-05	1.211240063	3.89065E-06	6.41359E-05	1.470724214	4.72414E-06	7.78757E-05
Road 8	8	1200-1300	0.283916882	9.75068E-07	1.60736E-05	0.259461706	8.91081E-07	1.46891E-05	1.336856412	4.59122E-06	7.56846E-05	1.221301588	4.19437E-06	6.91426E-05	1.480763294	5.08545E-06	8.38317E-05
Road 8	8	1300-1400	0.261414568	8.55539E-07	1.41032E-05	0.23775679	7.78113E-07	1.28269E-05	1.214366481	3.97429E-06	6.55147E-05	1.104005	3.61311E-06	5.95607E-05	1.34176179	4.39122E-06	7.23876E-05
Road 8	8	1400-1500	0.254837986	7.15606E-07	1.17965E-05	0.233215396	6.54888E-07	1.07956E-05	1.232599424	3.46124E-06	5.70572E-05	1.12759482	3.16638E-06	5.21965E-05	1.360810216	3.82127E-06	6.29921E-05
Road 8	8	1500-1600	0.261809928	7.35183E-07	1.21192E-05	0.239504245	6.72547E-07	1.10867E-05	1.234578705	3.4668E-06	5.71488E-05	1.128912014	3.17008E-06	5.22575E-05	1.368416259	3.84262E-06	6.33442E-05
Road 8	8	1600-1700	0.261202081	7.86245E-07	1.29609E-05	0.240536577	7.24039E-07	1.19355E-05	1.220753624	3.67459E-06	6.05743E-05	1.123719799	3.38251E-06	5.57594E-05	1.364256376	4.10655E-06	6.76949E-05
Road 8	8	1700-1800	0.213539808	6.72974E-07	1.10937E-05	0.195237244	6.15293E-07	1.01429E-05	1.037379551	3.26932E-06	5.38935E-05	0.947202179	2.98512E-06	4.92086E-05	1.142439423	3.60042E-06	5.93515E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (February) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 8	8	1800-1900	0.213427009	4.61347E-07	7.60514E-06	0.195779159	4.23199E-07	6.97628E-06	1.062673738	2.29709E-06	3.78667E-05	0.974170841	2.10578E-06	3.4713E-05	1.16995	2.52898E-06	4.16893E-05
Road 8	8	1900-2000	0.210603506	3.27605E-07	5.40045E-06	0.195771558	3.04534E-07	5.02012E-06	1.074341299	1.6712E-06	2.75491E-05	0.998503506	1.55323E-06	2.56044E-05	1.194275065	1.85776E-06	3.06245E-05
Road 8	8	2000-2100	0.230296883	3.5824E-07	5.90545E-06	0.214203636	3.33206E-07	5.49277E-06	1.071849481	1.66732E-06	2.74852E-05	0.996318831	1.54983E-06	2.55484E-05	1.210522468	1.88303E-06	3.10411E-05
Road 8	8	2100-2200	0.188250926	2.05365E-07	3.38536E-06	0.176177037	1.92193E-07	3.16823E-06	0.956273333	1.04321E-06	1.71969E-05	0.893758333	9.75009E-07	1.60727E-05	1.06993537	1.1672E-06	1.92409E-05
Road 8	8	2200-2300	0.225095	2.91032E-07	4.79755E-06	0.214943281	2.77906E-07	4.58118E-06	1.0819125	1.39884E-06	2.30593E-05	1.032625156	1.33511E-06	2.20088E-05	1.247568438	1.61302E-06	2.659E-05
Road 8	8	2300-0000	0.176332642	1.88801E-07	3.11231E-06	0.167861321	1.7973E-07	2.96279E-06	0.882521698	9.44922E-07	1.55767E-05	0.839566226	8.98929E-07	1.48185E-05	1.007427547	1.07866E-06	1.77813E-05
Road 9	9	0000-0100	0.198786283	5.27929E-08	1.57596E-06	0.184130342	4.89007E-08	1.45977E-06	0.892211378	2.3695E-07	7.07337E-06	0.821149569	2.18078E-07	6.51E-06	1.005279911	2.66979E-07	7.96977E-06
Road 9	9	0100-0200	0.216754196	4.52295E-08	1.35018E-06	0.200474425	4.18324E-08	1.24877E-06	0.921094472	1.92202E-07	5.73756E-06	0.845429949	1.76413E-07	5.26624E-06	1.045904375	2.18246E-07	6.51501E-06
Road 9	9	0200-0300	0.084895684	8.05225E-09	2.40373E-07	0.077123016	7.31502E-09	2.18366E-07	0.601859259	5.70856E-08	1.7041E-06	0.544852885	5.16786E-08	1.54269E-06	0.621975901	5.89936E-08	1.76106E-06
Road 9	9	0300-0400	0.102623326	7.78695E-09	2.32454E-07	0.093035372	7.05943E-09	2.10736E-07	0.621094053	4.7128E-08	1.40685E-06	0.563019132	4.27213E-08	1.2753E-06	0.656054504	4.97807E-08	1.48604E-06
Road 9	9	0400-0500	0.235100765	4.4598E-08	1.33133E-06	0.214968405	4.07789E-08	1.21732E-06	0.959489397	1.82013E-07	5.43339E-06	0.869723118	1.64984E-07	4.92506E-06	1.084691522	2.05763E-07	6.14238E-06
Road 9	9	0500-0600	0.168306087	5.42763E-08	1.62024E-06	0.15350346	4.95027E-08	1.47774E-06	0.838983141	2.7056E-07	8.07668E-06	0.760755572	2.45333E-07	7.3236E-06	0.914259032	2.94835E-07	8.80134E-06
Road 9	9	0600-0700	0.198058011	1.20227E-07	3.589E-06	0.183887133	1.11625E-07	3.33221E-06	1.015617251	6.16512E-07	1.84039E-05	0.936482496	5.68475E-07	1.69699E-05	1.120369629	6.801E-07	2.03021E-05
Road 9	9	0700-0800	0.16615779	1.54447E-07	4.61049E-06	0.156576142	1.4554E-07	4.34463E-06	0.933237317	8.6746E-07	2.58952E-05	0.87233347	8.10849E-07	2.42052E-05	1.028909613	9.56389E-07	2.85499E-05
Road 9	9	0800-0900	0.257782227	5.62357E-07	1.67873E-05	0.241523028	5.26887E-07	1.57285E-05	1.226204456	2.67499E-06	7.9853E-05	1.138503206	2.48367E-06	7.41417E-05	1.380026234	3.01055E-06	8.98702E-05
Road 9	9	0900-1000	0.268139983	4.42529E-07	1.32103E-05	0.251773938	4.15519E-07	1.2404E-05	1.156594651	1.90881E-06	5.69811E-05	1.073918608	1.77236E-06	5.2908E-05	1.325692545	2.18788E-06	6.5312E-05
Road 9	9	1000-1100	0.27561026	3.81663E-07	1.13933E-05	0.254964617	3.53073E-07	1.05398E-05	1.165275288	1.61366E-06	4.81706E-05	1.069543659	1.48109E-06	4.42132E-05	1.324508276	1.83417E-06	5.4753E-05
Road 9	9	1100-1200	0.192975328	2.78213E-07	8.30512E-06	0.177408383	2.5577E-07	7.63517E-06	1.012495724	1.45972E-06	4.3575E-05	0.928608374	1.33877E-06	3.99647E-05	1.106016757	1.59454E-06	4.75999E-05
Road 9	9	1200-1300	0.285729864	4.01096E-07	1.19734E-05	0.267354675	3.75302E-07	1.12034E-05	1.276003956	1.7912E-06	5.34705E-05	1.188350254	1.66816E-06	4.97974E-05	1.455704929	2.04346E-06	6.10008E-05
Road 9	9	1300-1400	0.327023707	3.78417E-07	1.12964E-05	0.30487201	3.52784E-07	1.05312E-05	1.24691593	1.44287E-06	4.30723E-05	1.154574156	1.33602E-06	3.98825E-05	1.459446166	1.6888E-06	5.04137E-05
Road 9	9	1400-1500	0.211390142	2.72681E-07	8.14E-06	0.198630998	2.56223E-07	7.64868E-06	1.021420506	1.31757E-06	3.93318E-05	0.948703031	1.22377E-06	3.65317E-05	1.147334029	1.47999E-06	4.41804E-05
Road 9	9	1500-1600	0.175587181	1.89858E-07	5.66759E-06	0.163783181	1.77095E-07	5.28658E-06	0.899278137	9.72367E-07	2.90268E-05	0.832214289	8.99853E-07	2.68621E-05	0.995997469	1.07695E-06	3.21487E-05
Road 9	9	1600-1700	0.185155726	2.80988E-07	8.38799E-06	0.174434864	2.64719E-07	7.90231E-06	1.002576543	1.52149E-06	4.54191E-05	0.937755897	1.42312E-06	4.24825E-05	1.112190761	1.68784E-06	5.03849E-05
Road 9	9	1700-1800	0.159345826	2.0857E-07	6.22616E-06	0.150501558	1.96993E-07	5.88059E-06	0.940165824	1.23059E-06	3.67354E-05	0.881463788	1.15376E-06	3.44417E-05	1.031965346	1.35075E-06	4.03223E-05
Road 9	9	1800-1900	0.159176556	1.3286E-07	3.96609E-06	0.15114769	1.26158E-07	3.76604E-06	0.913540286	7.62503E-07	2.2762E-05	0.863638789	7.20852E-07	2.15187E-05	1.014786478	8.4701E-07	2.52847E-05
Road 9	9	1900-2000	0.164031311	1.338E-07	3.99416E-06	0.156625966	1.2776E-07	3.81384E-06	0.872000523	7.1129E-07	2.12332E-05	0.823922906	6.72073E-07	2.00625E-05	0.980548872	7.99833E-07	2.38764E-05
Road 9	9	2000-2100	0.17228941	9.47803E-08	2.82935E-06	0.162441865	8.93629E-08	2.66764E-06	0.765879348	4.21327E-07	1.25773E-05	0.718524716	3.95277E-07	1.17997E-05	0.880966581	4.84639E-07	1.44673E-05
Road 9	9	2100-2200	0.020690184	1.09896E-08	3.2806E-07	0.019642201	1.0433E-08	3.11443E-07	0.29881674	1.58717E-07	4.73798E-06	0.279546469	1.48482E-07	4.43244E-06	0.29918867	1.58915E-07	4.74388E-06
Road 9	9	2200-2300	0.163462938	1.02328E-07	3.05467E-06	0.15666272	9.80711E-08	2.92759E-06	0.789778709	4.94403E-07	1.47588E-05	0.753541709	4.71718E-07	1.40816E-05	0.910204429	5.69789E-07	1.70092E-05
Road 9	9	2300-0000	0.132478811	7.53927E-08	2.2506E-06	0.127624572	7.26301E-08	2.16813E-06	0.676216572	3.8483E-07	1.14878E-05	0.648006927	3.68776E-07	1.10086E-05	0.775631499	4.41406E-07	1.31767E-05
Road 10	10	0000-0100	0.278806908	2.14362E-07	4.76628E-06	0.254643085	1.95784E-07	4.3532E-06	1.381416021	1.06211E-06	2.36157E-05	1.260381579	9.69052E-07	2.15466E-05	1.515024664	1.16484E-06	2.58998E-05
Road 10	10	0100-0200	0.274022903	1.59184E-07	3.5394E-06	0.249960041	1.45205E-07	3.22859E-06	1.346998184	7.82489E-07	1.73984E-05	1.227046218	7.12808E-07	1.58491E-05	1.47700626	8.58013E-07	1.90777E-05
Road 10	10	0200-0300	0.272274012	8.83878E-08	1.96528E-06	0.246562573	8.00411E-08	1.77969E-06	1.320970518	4.28824E-07	9.53478E-06	1.19565401	3.88143E-07	8.63024E-06	1.442216583	4.68184E-07	1.04099E-05
Road 10	10	0300-0400	0.246979099	5.06377E-08	1.12591E-06	0.223209013	4.57642E-08	1.01755E-06	1.293045805	2.65111E-07	5.89466E-06	1.167768008	2.39425E-07	5.32355E-06	1.390977021	2.8519E-07	6.34111E-06
Road 10	10	0400-0500	0.292664759	1.15009E-07	2.55718E-06	0.263754089	1.03648E-07	2.30457E-06	1.366351432	5.36936E-07	1.19386E-05	1.226579023	4.8201E-07	1.07173E-05	1.490333112	5.85657E-07	1.30219E-05
Road 10	10	0500-0600	0.266143132	1.86437E-07	4.14537E-06	0.240069889	1.68172E-07	3.73926E-06	1.24902552	8.74959E-07	1.94544E-05	1.122777957	7.86521E-07	1.74881E-05	1.362847847	9.54693E-07	2.12273E-05
Road 10	10	0600-0700	0.323420406	4.53121E-07	1.0075E-05	0.298685174	4.18466E-07	9.30446E-06	1.546745941	2.16703E-06	4.81833E-05	1.426750562	1.99892E-06	4.44453E-05	1.725435736	2.41738E-06	5.37497E-05
Road 10	10	0700-0800	0.315818694	6.96081E-07	1.54772E-05	0.293817648	6.4759E-07	1.4399E-05	1.52852018	3.36894E-06	7.49074E-05	1.419651838	3.12899E-06	6.95721E-05	1.713469486	3.77658E-06	8.39711E-05
Road 10	10	0800-0900	0.336075055	1.42403E-06	3.1663E-05	0.309957398	1.31337E-06	2.92023E-05	1.609034187	6.81788E-06	0.000151594	1.480396974	6.27281E-06	0.000139474	1.790354372	7.58618E-06	0.000168676
Road 10	10	0900-1000	0.372142756	1.25895E-06	2.79923E-05	0.345509234	1.16885E-06	2.59889E-05	1.725473572	5.83722E-06	0.000129789	1.597196989	5.40326E-06	0.00012014	1.942706223	6.57211E-06	0.000146129
Road 10	10	1000-1100	0.373985343	1.37381E-06	3.05462E-05	0.343117203	1.26041E-06	2.80249E-05	1.641624634	6.03038E-06	0.000134084	1.499635021	5.50879E-06	0.000122486	1.842752225	6.76921E-06	0.000150511
Road 10	10	1100-1200	0.361391164	1.32754E-06	2.95175E-05	0.333033623	1.22337E-06	2.72013E-05	1.642798531	6.03469E-06	0.00013418	1.510297098	5.54796E-06	0.000123357	1.843330722	6.77133E-06	0.000150559
Road 10	10	1200-1300	0.376811508	1.42925E-06	3.1779E-05	0.347465031	1.31794E-06	2.93041E-05	1.724534526	6.5412E-06	0.000145442	1.587836653	6.0227E-06	0.000133913	1.935301684	7.34064E-06	0.000163217
Road 10	10	1300-1400	0.369644453	1.2126E-06	2.69618E-05	0.339697026	1.11436E-06	2.47775E-05	1.65729433	5.43668E-06	0.000120883	1.519122728	4.98341E-06	0.000110805	1.858819754	6.09777E-06	0.000135582
Road 10	10	1400-1500	0.343733986	1.063E-06	2.36355E-05	0.318436135	9.84767E-07	2.1896E-05	1.645996847	5.09026E-06	0.00011318	1.52109796	4.70401E-06	0.000104592	1.839534095	5.68878E-06	0.000126488
Road 10	10	1500-1600	0.337458348	1.06666E-06	2.37168E-05	0.310998535	9.8302E-07	2.18572E-05	1.566612732	4.95183E-06	0.000110102	1.441703668	4.55701E-06	0.000101324	1.752702203	5.54003E-06	0.000123181
Road 10	10	1600-1700	0.325803828	1.14672E-06	2.54969E-05	0.30302997	1.06656E-06	2.37146E-05	1.535247316	5.40354E-06	0.000120146	1.423892405	5.01161E-06	0.000111432	1.726922374	6.07817E-06	0.000135146
Road 10	10	1700-1800	0.302089561	1.00647E-06	2.23787E-05	0.279856796	9.32402E-07	2.07317E-05	1.492473732	4.97249E-06	0.000110562	1.381792678	4.60373E-06	0.000102363	1.661649473	5.53613E-06	0.000123094
Road 10	10	1800-1900	0.305283943	6.31134E-07	1.40331E-05	0.282774073	5.84598E-07	1.29984E-05	1.478188213	3.05596E-06	6.79483E-05	1.367848099	2.82785E-06	6.28763E-05	1.650622172	3.41244E-06	7.58747E-05
Road 10	10	1900-2000	0.265313321	4.94104E-07	1.09862E-05	0.249118005	4.63942E-07	1.03156E-05	1.347594127	2.50968E-06	5.58019E-05	1.262483178	2.35117E-06	5.22776E-05	1.511601183	2.81512E-06	6.25932E-05
Road 10	10	2000-2100	0.303056839	3.72811E-07	8.28935E-06	0.28275197	3.47833E-07	7.73396E-06	1.419647731	1.74641E-06	3.88308E-05	1.322760057	1.62722E-06	3.61807E-05	1.605512027	1.97505E-06	4.39147E-05
Road 10	10	2100-2200	0.252030954	3.18653E-07	7.08515E-06	0.239556951	3.02882E-07	6.73448E-06	1.32088743	1.67005E-06	3.71331E-05	1.253787344	1.58521E-06	3.52468E-05	1.493344296	1.8881E-06	4.19813E-05
Road 10	10	2200-2300	0.260898136	3.43237E-07	7.63177E-06	0.250491198	3.29546E-07	7.32735E-06	1.280377237	1.68446E-06	3.74535E-05	1.228979543	1.61684E-06	3.595E-05	1.479470741	1.94639E-06	4.32774E-05
Road 10	10	2300-0000	0.238194686	2.9302E-07	6.51521E-06	0.227281336	2.79595E-07	6.2167E-06	1.168181967	1.43706E-06	3.19526E-05	1.113410814	1.36968E-06	3.04545E-05	1.34069215	1.64928E-06	3.66712E-05
Road 11	11	0000-0100	0.311772691	2.3816E-07	1.97555E-06	0.284596018	2.174E-07	1.80335E-06	1.511173149	1.15437E-06	9.57558E-06	1.377363499	1.05215E-06	8.72769E-06	1.661959517	1.26955E-06	1.0531E-05
Road 11	11	0100-0200	0.311946496	1.67888E-07	1.39264E-06	0.28436884	1.53046E-07	1.26953E-06	1.48745618	8.00541E-07	6.64055E-06	1.352706694	7.28019E-07	6.03898E-06	1.637075535	8.81065E-07	7.30851E-06
Road 11	11	0200-0300	0.271721946	7.07609E-08	5.86968E-07	0.246075877	6.40823E-08	5.31568E-07	1.402657311	3.65275E-07	3.02999E-06	1.269505073	3.306E-07	2.74236E-06	1.51558095	3.94683E-07	3.27392E-06
Road 11	11	0300-0400	0.290703148	7.0657E-08	5.86106E-07	0.262710106	6.38532E-08	5.29667E-07	1.468228366	3.56861E-07	2.96019E-06	1.326598324	3.22437E-07	2.67464E-06	1.58930843	3.8629E-07	3.20431E-06
Road 11	11	0400-0500	0.302477972	1.05027E-07	8.71208E-07	0.272774202	9.47133E-08	7.85654E-07	1.393038309	4.83694E-07	4.01228E-06	1.250876559	4.34332E-07	3.60282E-06	1.523650761	5.29045E-07	4.38847E-06
Road 11	11	0500-0600	0.242786646	1.13806E-07	9.44032E-07	0.218716993	1.02524E-07	8.50442E-07	1.204067249	5.64407E-07	4.6818E-06	1.081638694	5.07018E-07	4.20576E-06	1.300355687	6.09542E-07	5.0562E-06
Road 11	11	0600-0700	0.26338786	2.37781E-07	1.97241E-06	0.242301775	2.18745E-07	1.8145E-06	1.324130038	1.1954E-06	9.9159E-06	1.214247726	1.0962E-06	9.09303E-06	1.456549501	1.31494E-06	1.09075E-05
Road 11	11	0700-0800	0.311837905	5.9011E-07	4.89501E-06	0.28867545	5.46278E-07	4.53142E-06	1.562891454	2.95756E-06	2.45332E-05	1.44441504	2.73335E-06	2.26734E-05	1.733090489	3.27963E-06	2.72048E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (February) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 11	11	0800-0900	0.332577765	1.18365E-06	9.8185E-06	0.307832603	1.09558E-06	9.08796E-06	1.588825133	5.65467E-06	4.6906E-05	1.464453634	5.21203E-06	4.32342E-05	1.772286237	6.30762E-06	5.23222E-05
Road 11	11	0900-1000	0.336220114	8.58062E-07	7.11769E-06	0.312001479	7.96254E-07	6.60499E-06	1.537829905	3.92467E-06	3.25555E-05	1.419067487	3.62158E-06	3.00413E-05	1.731068965	4.41783E-06	3.66463E-05
Road 11	11	1000-1100	0.345692258	7.26194E-07	6.02384E-06	0.316655169	6.65196E-07	5.51785E-06	1.560933034	3.27904E-06	2.71999E-05	1.423583572	2.99051E-06	2.48066E-05	1.740238741	3.65571E-06	3.03244E-05
Road 11	11	1100-1200	0.303277805	7.16073E-07	5.93988E-06	0.278619097	6.57851E-07	5.45692E-06	1.506713179	3.55752E-06	2.95099E-05	1.382817736	3.26499E-06	2.70833E-05	1.661436833	3.92284E-06	3.25403E-05
Road 11	11	1200-1300	0.369686061	1.05258E-06	8.73122E-06	0.340532317	9.69571E-07	8.04267E-06	1.726784157	4.91654E-06	4.07831E-05	1.587605231	4.52026E-06	3.7496E-05	1.928137548	5.48984E-06	4.55386E-05
Road 11	11	1300-1400	0.385404572	8.09617E-07	6.71584E-06	0.354010882	7.43669E-07	6.16879E-06	1.686009934	3.54179E-06	2.93794E-05	1.542539539	3.2404E-06	2.68794E-05	1.896550421	3.98407E-06	3.30482E-05
Road 11	11	1400-1500	0.306557862	6.17373E-07	5.12116E-06	0.283454023	5.70845E-07	4.7352E-06	1.479754956	2.98006E-06	2.47199E-05	1.361818006	2.74255E-06	2.27497E-05	1.64527203	3.3134E-06	2.74849E-05
Road 11	11	1500-1600	0.271782764	5.52059E-07	4.57937E-06	0.250130622	5.08078E-07	4.21455E-06	1.357635176	2.7577E-06	2.28753E-05	1.24636123	2.53167E-06	2.10004E-05	1.496491851	3.03975E-06	2.5215E-05
Road 11	11	1600-1700	0.261052546	6.34503E-07	5.26325E-06	0.242854356	5.90271E-07	4.89635E-06	1.339292021	3.25522E-06	2.70023E-05	1.242860674	3.02084E-06	2.50581E-05	1.485715031	3.61111E-06	2.99545E-05
Road 11	11	1700-1800	0.259363224	6.43905E-07	5.34125E-06	0.239381613	5.94298E-07	4.92975E-06	1.355312496	3.36475E-06	2.79109E-05	1.249367251	3.10173E-06	2.57291E-05	1.488748864	3.69603E-06	3.06588E-05
Road 11	11	1800-1900	0.279320186	5.72218E-07	4.7466E-06	0.258109531	5.28766E-07	4.38616E-06	1.427815961	2.92504E-06	2.42634E-05	1.31898534	2.70209E-06	2.2414E-05	1.577094871	3.23085E-06	2.68002E-05
Road 11	11	1900-2000	0.266300155	4.20717E-07	3.48988E-06	0.249342934	3.93927E-07	3.26766E-06	1.344800199	2.1246E-06	1.76237E-05	1.254918524	1.9826E-06	1.64458E-05	1.504261457	2.37652E-06	1.97135E-05
Road 11	11	2000-2100	0.272373269	3.83025E-07	3.17722E-06	0.254143914	3.5739E-07	2.96458E-06	1.317361207	1.85254E-06	1.5367E-05	1.227673229	1.72642E-06	1.43208E-05	1.481817143	2.08381E-06	1.72853E-05
Road 11	11	2100-2200	0.191472847	1.92803E-07	1.59931E-06	0.179287614	1.80533E-07	1.49753E-06	1.040206357	1.04743E-06	8.68852E-06	0.973262088	9.80021E-07	8.12935E-06	1.152549703	1.16055E-06	9.62689E-06
Road 11	11	2200-2300	0.251416718	2.74987E-07	2.28104E-06	0.240681551	2.63245E-07	2.18364E-06	1.232218384	1.34774E-06	1.11796E-05	1.17812558	1.28857E-06	1.06888E-05	1.418807131	1.55182E-06	1.28725E-05
Road 11	11	2300-0000	0.239924405	2.49921E-07	2.07312E-06	0.229065363	2.3861E-07	1.97929E-06	1.195698286	1.24552E-06	1.03317E-05	1.139819307	1.18731E-06	9.84885E-06	1.36888467	1.42592E-06	1.18281E-05
Haul Road 1	HR1	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0700-0800	1.31404	0.00000247	3.715E-06	1.20971	2.27389E-06	3.42004E-06	5.75703	1.08215E-05	1.6276E-05	5.30023	9.96284E-06	1.49846E-05	6.50994	1.22367E-05	1.84046E-05
Haul Road 1	HR1	0800-0900	1.32034	2.48184E-06	3.73281E-06	1.21331	2.28066E-06	3.43022E-06	5.78481	1.08737E-05	1.63546E-05	5.31601	9.9925E-06	1.50292E-05	6.52932	1.22732E-05	1.84594E-05
Haul Road 1	HR1	0900-1000	1.32283	2.48652E-06	3.73985E-06	1.2148	2.28346E-06	3.43443E-06	5.79561	1.0894E-05	1.63851E-05	5.32232	1.00044E-05	1.50471E-05	6.53712	1.22878E-05	1.84815E-05
Haul Road 1	HR1	1000-1100	1.33453	2.50852E-06	3.77293E-06	1.21351	2.28103E-06	3.43079E-06	5.84707	1.09907E-05	1.65306E-05	5.31661	9.99363E-06	1.50309E-05	6.53012	1.22747E-05	1.84617E-05
Haul Road 1	HR1	1100-1200	1.33283	2.50532E-06	3.76812E-06	1.2221	2.29718E-06	3.45507E-06	5.83927	1.09761E-05	1.65086E-05	5.35459	1.0065E-05	1.51383E-05	6.57669	1.23622E-05	1.85934E-05
Haul Road 1	HR1	1200-1300	1.32823	2.49667E-06	3.75512E-06	1.21341	2.28085E-06	3.4305E-06	5.81949	1.09389E-05	1.64526E-05	5.31631	9.99306E-06	1.50301E-05	6.52972	1.22739E-05	1.84606E-05
Haul Road 1	HR1	1300-1400	1.33493	2.50927E-06	3.77406E-06	1.21341	2.28085E-06	3.4305E-06	5.84877	1.09939E-05	1.65354E-05	5.31631	9.99306E-06	1.50301E-05	6.52972	1.22739E-05	1.84606E-05
Haul Road 1	HR1	1400-1500	1.33163	2.50306E-06	3.76473E-06	1.218	2.28947E-06	3.44348E-06	5.83408	1.09663E-05	1.64939E-05	5.33651	1.0031E-05	1.50872E-05	6.55451	1.23205E-05	1.85307E-05
Haul Road 1	HR1	1500-1600	1.32153	2.48408E-06	3.73618E-06	1.20881	2.2722E-06	3.4175E-06	5.79021	1.08839E-05	1.63699E-05	5.29613	9.95513E-06	1.4973E-05	6.50494	1.22273E-05	1.83905E-05
Haul Road 1	HR1	1600-1700	1.31824	2.47789E-06	3.72688E-06	1.21351	2.28103E-06	3.43079E-06	5.77552	1.08562E-05	1.63283E-05	5.31661	9.99363E-06	1.50309E-05	6.53012	1.22747E-05	1.84617E-05
Haul Road 1	HR1	1700-1800	1.31824	2.47789E-06	3.72688E-06	1.20481	2.26468E-06	3.40619E-06	5.77552	1.08562E-05	1.63283E-05	5.27884	9.92263E-06	1.49241E-05	6.48365	1.21873E-05	1.83303E-05
Haul Road 1	HR1	1800-1900	1.31154	2.4653E-06	3.70793E-06	1.20261	2.26055E-06	3.39997E-06	5.74614	1.0801E-05	1.62453E-05	5.26895	9.90404E-06	1.48962E-05	6.47156	1.21646E-05	1.82961E-05
Haul Road 1	HR1	1900-2000	1.30145	2.44633E-06	3.67941E-06	1.20951	2.27352E-06	3.41948E-06	5.70196	1.0718E-05	1.61204E-05	5.29933	9.96115E-06	1.49821E-05	6.50884	1.22347E-05	1.84015E-05
Haul Road 1	HR1	2000-2100	1.29205	2.42867E-06	3.65283E-06	1.20191	2.25923E-06	3.39799E-06	5.6608	1.06406E-05	1.6004E-05	5.26595	9.8984E-06	1.48877E-05	6.46786	1.21576E-05	1.82857E-05
Haul Road 1	HR1	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0700-0800	1.31404	1.70212E-06	4.53089E-06	1.20971	1.56698E-06	4.17115E-06	5.75703	7.45729E-06	1.98506E-05	5.30023	6.86558E-06	1.82755E-05	6.50994	8.43256E-06	2.24467E-05
Haul Road 2	HR2	0800-0900	1.32034	1.71028E-06	4.55261E-06	1.21331	1.57165E-06	4.18357E-06	5.78481	7.49328E-06	1.99464E-05	5.31601	6.88602E-06	1.83299E-05	6.52932	8.45767E-06	2.25135E-05
Haul Road 2	HR2	0900-1000	1.32283	1.71351E-06	4.5612E-06	1.2148	1.57358E-06	4.1887E-06	5.79561	7.50727E-06	1.99836E-05	5.32232	6.8942E-06	1.83517E-05	6.53712	8.46777E-06	2.25404E-05
Haul Road 2	HR2	1000-1100	1.33453	1.72867E-06	4.60154E-06	1.21351	1.5719E-06	4.18426E-06	5.84707	7.57392E-06	2.0161E-05	5.31661	6.8868E-06	1.8332E-05	6.53012	8.4587E-06	2.25162E-05
Haul Road 2	HR2	1100-1200	1.33283	1.72646E-06	4.59568E-06	1.2221	1.58303E-06	4.21387E-06	5.83927	7.56382E-06	2.01342E-05	5.35459	6.936E-06	1.84629E-05	6.57669	8.51903E-06	2.26768E-05
Haul Road 2	HR2	1200-1300	1.32823	1.72051E-06	4.57982E-06	1.21341	1.57177E-06	4.18391E-06	5.81949	7.5382E-06	2.0066E-05	5.31631	6.88641E-06	1.8331E-05	6.52972	8.45819E-06	2.25149E-05
Haul Road 2	HR2	1300-1400	1.33493	1.72918E-06	4.60292E-06	1.21341	1.57177E-06	4.18391E-06	5.84877	7.57613E-06	2.01669E-05	5.31631	6.88641E-06	1.8331E-05	6.52972	8.45819E-06	2.25149E-05
Haul Road 2	HR2	1400-1500	1.33163	1.72491E-06	4.59154E-06	1.218	1.57772E-06	4.19974E-06	5.83408	7.5571E-06	2.01163E-05	5.33651	6.91258E-06	1.84006E-05	6.55451	8.4903E-06	2.26003E-05
Haul Road 2	HR2	1500-1600	1.32153	1.71183E-06	4.55672E-06	1.20881	1.56582E-06	4.16805E-06	5.79021	7.50027E-06	1.9965E-05	5.29613	6.86027E-06	1.82614E-05	6.50494	8.42609E-06	2.24294E-05
Haul Road 2	HR2	1600-1700	1.31824	1.70756E-06	4.54537E-06	1.21351	1.5719E-06	4.18426E-06	5.77552	7.48124E-06	1.99143E-05	5.31661	6.8868E-06	1.8332E-05	6.53012	8.4587E-06	2.25162E-05
Haul Road 2	HR2	1700-1800	1.31824	1.70756E-06	4.54537E-06	1.20481	1.56063E-06	4.15426E-06	5.77552	7.48124E-06	1.99143E-05	5.27884	6.83788E-06	1.82018E-05	6.48365	8.39851E-06	2.2356E-05
Haul Road 2	HR2	1800-1900	1.31154	1.69889E-06	4.52227E-06	1.20261	1.55778E-06	4.14667E-06	5.74614	7.44319E-06	1.9813E-05	5.26895	6.82506E-06	1.81677E-05	6.47156	8.38285E-06	2.23143E-05
Haul Road 2	HR2	1900-2000	1.30145	1.68582E-06	4.48748E-06	1.20951	1.56672E-06	4.17046E-06	5.70196	7.38596E-06	1.96607E-05	5.29933	6.86442E-06	1.82724E-05	6.50884	8.43114E-06	2.24429E-05
Haul Road 2	HR2	2000-2100	1.29205	1.67364E-06	4.45507E-06	1.20191	1.55688E-06	4.14426E-06	5.6608	7.33264E-06	1.95188E-05	5.26595	6.82118E-06	1.81573E-05	6.46786	8.37806E-06	2.23016E-05
Haul Road 2	HR2	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (February) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Haul Road 2	HR2	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0700-0800	1.31404	1.70212E-06	4.52457E-06	1.20971	1.56698E-06	4.16534E-06	5.75703	7.45729E-06	1.98229E-05	5.30023	6.86558E-06	1.825E-05	6.50994	8.43256E-06	2.24154E-05
Haul Road 3	HR3	0800-0900	1.32034	1.71028E-06	4.54626E-06	1.21331	1.57165E-06	4.17773E-06	5.78481	7.49328E-06	1.99186E-05	5.31601	6.88602E-06	1.83044E-05	6.52932	8.45767E-06	2.24821E-05
Haul Road 3	HR3	0900-1000	1.32283	1.71351E-06	4.55484E-06	1.2148	1.57358E-06	4.18286E-06	5.79561	7.50727E-06	1.99558E-05	5.32232	6.8942E-06	1.83261E-05	6.53712	8.46777E-06	2.2509E-05
Haul Road 3	HR3	1000-1100	1.33453	1.72867E-06	4.59512E-06	1.21351	1.5719E-06	4.17842E-06	5.84707	7.57392E-06	2.01329E-05	5.31661	6.8868E-06	1.83064E-05	6.53012	8.4587E-06	2.24849E-05
Haul Road 3	HR3	1100-1200	1.33283	1.72646E-06	4.58927E-06	1.2221	1.58303E-06	4.208E-06	5.83927	7.56382E-06	2.01061E-05	5.35459	6.936E-06	1.84372E-05	6.57669	8.51903E-06	2.26452E-05
Haul Road 3	HR3	1200-1300	1.32823	1.72051E-06	4.57343E-06	1.21341	1.57177E-06	4.17808E-06	5.81949	7.5382E-06	2.0038E-05	5.31631	6.88641E-06	1.83054E-05	6.52972	8.45819E-06	2.24835E-05
Haul Road 3	HR3	1300-1400	1.33493	1.72918E-06	4.5965E-06	1.21341	1.57177E-06	4.17808E-06	5.84877	7.57613E-06	2.01388E-05	5.31631	6.88641E-06	1.83054E-05	6.52972	8.45819E-06	2.24835E-05
Haul Road 3	HR3	1400-1500	1.33163	1.72491E-06	4.58514E-06	1.218	1.57772E-06	4.19388E-06	5.83408	7.5571E-06	2.00882E-05	5.33651	6.91258E-06	1.8375E-05	6.55451	8.4903E-06	2.25688E-05
Haul Road 3	HR3	1500-1600	1.32153	1.71183E-06	4.55036E-06	1.20881	1.56582E-06	4.16224E-06	5.79021	7.50027E-06	1.99372E-05	5.29613	6.86027E-06	1.82359E-05	6.50494	8.42609E-06	2.23982E-05
Haul Road 3	HR3	1600-1700	1.31824	1.70756E-06	4.53903E-06	1.21351	1.5719E-06	4.17842E-06	5.77552	7.48124E-06	1.98866E-05	5.31661	6.8868E-06	1.83064E-05	6.53012	8.4587E-06	2.24849E-05
Haul Road 3	HR3	1700-1800	1.31824	1.70756E-06	4.53903E-06	1.20481	1.56063E-06	4.14847E-06	5.77552	7.48124E-06	1.98866E-05	5.27884	6.83788E-06	1.81764E-05	6.48365	8.39851E-06	2.23248E-05
Haul Road 3	HR3	1800-1900	1.31154	1.69889E-06	4.51596E-06	1.20261	1.55778E-06	4.14089E-06	5.74614	7.44319E-06	1.97854E-05	5.26895	6.82506E-06	1.81423E-05	6.47156	8.38285E-06	2.22832E-05
Haul Road 3	HR3	1900-2000	1.30145	1.68582E-06	4.48122E-06	1.20951	1.56672E-06	4.16465E-06	5.70196	7.38596E-06	1.96333E-05	5.29933	6.86442E-06	1.82469E-05	6.50884	8.43114E-06	2.24116E-05
Haul Road 3	HR3	2000-2100	1.29205	1.67364E-06	4.44885E-06	1.20191	1.55688E-06	4.13848E-06	5.6608	7.33264E-06	1.94916E-05	5.26595	6.82118E-06	1.8132E-05	6.46786	8.37806E-06	2.22705E-05
Haul Road 3	HR3	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (March) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 1	1	0000-0100	0.091301061	3.06736E-07	2.49534E-06	0.083497654	2.8052E-07	2.28207E-06	0.540972458	1.81746E-06	1.47853E-05	0.492328101	1.65403E-06	1.34558E-05	0.575825754	1.93455E-06	1.57378E-05
Road 1	1	0100-0200	0.071158349	1.45575E-07	1.18428E-06	0.064688349	1.32339E-07	1.0766E-06	0.429904037	8.79496E-07	7.15483E-06	0.388752018	7.95307E-07	6.46994E-06	0.453440367	9.27646E-07	7.54654E-06
Road 1	1	0200-0300	0.068567532	9.90935E-08	8.0614E-07	0.062096364	8.97414E-08	7.30059E-07	0.438814545	6.34173E-07	5.15909E-06	0.393715714	5.68996E-07	4.62887E-06	0.455812078	6.58737E-07	5.35893E-06
Road 1	1	0300-0400	0.058558	6.04484E-08	4.91757E-07	0.052219818	5.39056E-08	4.3853E-07	0.360097636	3.71722E-07	3.02402E-06	0.318007091	3.28273E-07	2.67055E-06	0.370226909	3.82179E-07	3.10908E-06
Road 1	1	0400-0500	0.076590349	1.23626E-07	1.00571E-06	0.067791279	1.09423E-07	8.90171E-07	0.44009686	7.10367E-07	5.77894E-06	0.386755698	6.24268E-07	5.07851E-06	0.454546977	7.33691E-07	5.96868E-06
Road 1	1	0500-0600	0.064055426	2.26021E-07	1.83872E-06	0.056756702	2.00268E-07	1.62921E-06	0.380908298	1.34405E-06	1.0934E-05	0.333806915	1.17785E-06	9.58196E-06	0.390563617	1.37811E-06	1.12112E-05
Road 1	1	0600-0700	0.087168249	5.51346E-07	4.48528E-06	0.076312611	4.82683E-07	3.9267E-06	0.466198843	2.94874E-06	2.39885E-05	0.404873947	2.56086E-06	2.0833E-05	0.481186558	3.04354E-06	2.47597E-05
Road 1	1	0700-0800	0.073643915	7.768E-07	6.31938E-06	0.06415331	6.76692E-07	5.50499E-06	0.408251868	4.30626E-06	3.50321E-05	0.351621904	3.70892E-06	3.01727E-05	0.415775214	4.38562E-06	3.56776E-05
Road 1	1	0800-0900	0.078754856	1.02582E-06	8.34523E-06	0.069135634	9.00528E-07	7.32593E-06	0.423798977	5.5202E-06	4.49077E-05	0.369508761	4.81305E-06	3.91548E-05	0.438644395	5.71357E-06	4.64808E-05
Road 1	1	0900-1000	0.083490798	1.11885E-06	9.10203E-06	0.073566947	9.85863E-07	8.02014E-06	0.463585252	6.21246E-06	5.05393E-05	0.406463459	5.44698E-06	4.4312E-05	0.480030406	6.43284E-06	5.23321E-05
Road 1	1	1000-1100	0.095936547	1.25142E-06	1.01805E-05	0.084636806	1.10403E-06	8.98143E-06	0.513727712	6.70122E-06	5.45154E-05	0.451643669	5.89137E-06	4.79272E-05	0.536280475	6.9954E-06	5.69086E-05
Road 1	1	1100-1200	0.08719957	1.10309E-06	8.97378E-06	0.077055445	9.74763E-07	7.92984E-06	0.500866617	6.33604E-06	5.15446E-05	0.440258813	5.56934E-06	4.53074E-05	0.517314258	6.5441E-06	5.32372E-05
Road 1	1	1200-1300	0.089681499	1.1227E-06	9.13335E-06	0.07970045	9.97752E-07	8.11686E-06	0.50823009	6.36241E-06	5.17592E-05	0.44979045	5.63082E-06	4.58076E-05	0.5294909	6.62857E-06	5.39244E-05
Road 1	1	1300-1400	0.09346378	1.24373E-06	1.01179E-05	0.081951128	1.09053E-06	8.87161E-06	0.519048646	6.90701E-06	5.61895E-05	0.452840762	6.02598E-06	4.90222E-05	0.53479189	7.11651E-06	5.78938E-05
Road 1	1	1400-1500	0.088215865	1.27324E-06	1.0358E-05	0.078166359	1.12819E-06	9.17799E-06	0.479546138	6.92138E-06	5.63064E-05	0.422889155	6.10364E-06	4.9654E-05	0.501055514	7.23183E-06	5.8832E-05
Road 1	1	1500-1600	0.094912975	1.27548E-06	1.03762E-05	0.085102821	1.14365E-06	9.30375E-06	0.514308659	6.91151E-06	5.62261E-05	0.458972221	6.16787E-06	5.01765E-05	0.544075042	7.31152E-06	5.94803E-05
Road 1	1	1600-1700	0.090344702	1.28022E-06	1.04148E-05	0.080746901	1.14422E-06	9.30838E-06	0.495667682	7.02382E-06	5.71398E-05	0.440642609	6.24409E-06	5.07966E-05	0.52138951	7.38831E-06	6.0105E-05
Road 1	1	1700-1800	0.07119843	1.01292E-06	8.24026E-06	0.064204974	9.13427E-07	7.43086E-06	0.399521253	5.68388E-06	4.62392E-05	0.357915607	5.09197E-06	4.14239E-05	0.42212058	6.00539E-06	4.88548E-05
Road 1	1	1800-1900	0.06269208	9.1073E-07	7.40892E-06	0.056472661	8.2038E-07	6.67391E-06	0.376409289	5.46811E-06	4.44839E-05	0.336025103	4.88145E-06	3.97113E-05	0.392497765	5.70183E-06	4.63852E-05
Road 1	1	1900-2000	0.076310169	8.49323E-07	6.90937E-06	0.068777218	7.65482E-07	6.22731E-06	0.439236644	4.88665E-06	3.97699E-05	0.392622715	4.36984E-06	3.55493E-05	0.461399933	5.13533E-06	4.17766E-05
Road 1	1	2000-2100	0.068662008	6.48217E-07	5.27334E-06	0.062035825	5.85661E-07	4.76444E-06	0.407212664	3.84437E-06	3.12745E-05	0.364988946	3.44575E-06	2.80317E-05	0.427024771	4.03141E-06	3.27961E-05
Road 1	1	2100-2200	0.07195366	6.19871E-07	5.04274E-06	0.065694989	5.65953E-07	4.60412E-06	0.430435098	3.70814E-06	3.01663E-05	0.390256166	3.362E-06	2.73504E-05	0.455951155	3.92796E-06	3.19545E-05
Road 1	1	2200-2300	0.070191954	5.73076E-07	4.66206E-06	0.063889103	5.21617E-07	4.24343E-06	0.419736759	3.4269E-06	2.78784E-05	0.379063172	3.09483E-06	2.51769E-05	0.442952276	3.61645E-06	2.94203E-05
Road 1	1	2300-0000	0.061155923	4.4765E-07	3.6417E-06	0.055744487	4.0804E-07	3.31946E-06	0.376301923	2.75446E-06	2.2408E-05	0.339616641	2.48593E-06	2.02234E-05	0.395361128	2.89397E-06	2.35429E-05
Road 2	2	0000-0100	0.151220577	1.82025E-07	1.1755E-06	0.138270192	1.66436E-07	1.07483E-06	0.640404615	7.70857E-07	4.97812E-06	0.583465769	7.0232E-07	4.53551E-06	0.721735962	8.68756E-07	5.61034E-06
Road 2	2	0100-0200	0.107327059	8.44704E-08	5.45501E-07	0.097560882	7.6784E-08	4.95864E-07	0.530852353	4.178E-07	2.69811E-06	0.480259706	3.77982E-07	2.44097E-06	0.577820588	4.54766E-07	2.93684E-06
Road 2	2	0200-0300	0.111434783	5.93287E-08	3.83139E-07	0.101021739	5.37847E-08	3.47336E-07	0.608853043	3.24158E-07	2.09338E-06	0.548664783	2.92113E-07	1.88644E-06	0.649686522	3.45898E-07	2.23377E-06
Road 2	2	0300-0400	0.097689333	3.39199E-08	2.19051E-07	0.087163333	3.0265E-08	1.95449E-07	0.356014667	1.23616E-07	7.98301E-07	0.314904667	1.09342E-07	7.06119E-07	0.402068	1.39607E-07	9.01568E-07
Road 2	2	0400-0500	0.133358148	8.33488E-08	5.38259E-07	0.118065556	7.3791E-08	4.76535E-07	0.643177407	4.01986E-07	2.59599E-06	0.567045926	3.54404E-07	2.2887E-06	0.685111481	4.28195E-07	2.76524E-06
Road 2	2	0500-0600	0.107143333	1.4137E-07	9.12952E-07	0.095021053	1.25375E-07	8.0966E-07	0.476321053	6.28479E-07	4.05866E-06	0.418664035	5.52404E-07	3.56737E-06	0.513685088	6.77779E-07	4.37703E-06
Road 2	2	0600-0700	0.152680673	3.67565E-07	2.3737E-06	0.133746058	3.21981E-07	2.07932E-06	0.61922875	1.49074E-06	9.62703E-06	0.539154615	1.29796E-06	8.38213E-06	0.672900673	1.61995E-06	1.04615E-05
Road 2	2	0700-0800	0.12593775	4.66436E-07	3.0122E-06	0.109757375	4.06509E-07	2.62519E-06	0.525904188	1.94779E-06	1.25787E-05	0.453885813	1.68106E-06	1.08561E-05	0.563643188	2.08757E-06	1.34813E-05
Road 2	2	0800-0900	0.141382829	9.94916E-07	6.42507E-06	0.12408273	8.73175E-07	5.63888E-06	0.595474474	4.19038E-06	2.7061E-05	0.519254934	3.65402E-06	2.35973E-05	0.643337664	4.52719E-06	2.92362E-05
Road 2	2	0900-1000	0.16478131	9.61224E-07	6.20749E-06	0.14510373	8.46438E-07	5.46622E-06	0.701918492	4.09452E-06	2.6442E-05	0.616113849	3.594E-06	2.32097E-05	0.761217579	4.44044E-06	2.86759E-05
Road 2	2	1000-1100	0.181870802	7.87265E-07	5.08408E-06	0.160425775	6.94436E-07	4.4846E-06	0.766508984	3.31799E-06	2.14273E-05	0.674592674	2.92011E-06	1.88578E-05	0.835018449	3.61455E-06	2.33424E-05
Road 2	2	1100-1200	0.216614044	9.17601E-07	5.92578E-06	0.191331585	8.10502E-07	5.23414E-06	0.884705464	3.74771E-06	2.42023E-05	0.779967486	3.30403E-06	2.13371E-05	0.971299071	4.11453E-06	2.65712E-05
Road 2	2	1200-1300	0.166404421	7.31871E-07	4.72635E-06	0.147898316	6.50479E-07	4.20073E-06	0.728685895	3.20487E-06	2.06967E-05	0.645281105	2.83804E-06	1.83278E-05	0.793179421	3.48852E-06	2.25285E-05
Road 2	2	1300-1400	0.183322287	9.46316E-07	6.11122E-06	0.160592332	8.28984E-07	5.35349E-06	0.750031928	3.87169E-06	2.5003E-05	0.654517668	3.37864E-06	2.1819E-05	0.81511	4.20763E-06	2.71725E-05
Road 2	2	1400-1500	0.156685455	5.98451E-07	3.86474E-06	0.138869152	5.30403E-07	3.42529E-06	0.677684606	2.58838E-06	1.67155E-05	0.598613091	2.28637E-06	1.47652E-05	0.737482242	2.81677E-06	1.81904E-05
Road 2	2	1500-1600	0.195962404	8.30119E-07	5.36082E-06	0.175597158	7.43849E-07	4.8037E-06	0.772323279	3.27165E-06	2.1128E-05	0.690362896	2.92445E-06	1.88858E-05	0.865960055	3.6683E-06	2.36895E-05
Road 2	2	1600-1700	0.163698054	8.37437E-07	5.40809E-06	0.146339367	7.48634E-07	4.83461E-06	0.688895339	3.52421E-06	2.2759E-05	0.613484253	3.13843E-06	2.02677E-05	0.75982362	3.88706E-06	2.51023E-05
Road 2	2	1700-1800	0.124755045	6.41102E-07	4.14018E-06	0.112561937	5.78443E-07	3.73553E-06	0.49546	2.54611E-06	1.64426E-05	0.445044234	2.28703E-06	1.47694E-05	0.557606171	2.86548E-06	1.8505E-05
Road 2	2	1800-1900	0.13591116	7.86523E-07	5.07929E-06	0.12254616	7.09179E-07	4.57981E-06	0.61203288	3.54186E-06	2.2873E-05	0.5491646	3.17804E-06	2.05234E-05	0.67171076	3.88722E-06	2.51033E-05
Road 2	2	1900-2000	0.117082781	4.58032E-07	2.95793E-06	0.105572604	4.13004E-07	2.66714E-06	0.532637337	2.0837E-06	1.34563E-05	0.476710296	1.86491E-06	1.20434E-05	0.582282899	2.27791E-06	1.47105E-05
Road 2	2	2000-2100	0.110331769	3.75434E-07	2.42452E-06	0.09963932	3.3905E-07	2.18955E-06	0.471837279	1.60556E-06	1.03685E-05	0.422610136	1.43805E-06	9.28678E-06	0.522249456	1.7771E-06	1.14763E-05
Road 2	2	2100-2200	0.085478693	3.02737E-07	1.95505E-06	0.078005948	2.76271E-07	1.78413E-06	0.393999935	1.39542E-06	9.01146E-06	0.35570902	1.2598E-06	8.13568E-06	0.433714967	1.53607E-06	9.91981E-06
Road 2	2	2200-2300	0.12430192	3.5967E-07	2.32271E-06	0.11318984	3.27517E-07	2.11507E-06	0.5309168	1.53622E-06	9.92074E-06	0.48023976	1.38958E-06	8.97379E-06	0.5934296	1.7171E-06	1.10889E-05
Road 2	2	2300-0000	0.110457568	2.83815E-07	1.83285E-06	0.100706847	2.58761E-07	1.67105E-06	0.500331622	1.28557E-06	8.30211E-06	0.452666577	1.1631E-06	7.5112E-06	0.553373423	1.42186E-06	9.18225E-06
Road 3	3	0000-0100	0.095020652	3.5054E-07	1.36246E-05	0.086816304	3.20274E-07	1.24482E-05	0.524385261	1.93451E-06	7.51895E-05	0.476850783	1.75915E-06	6.83737E-05	0.563667087	2.07942E-06	8.08219E-05
Road 3	3	0100-0200	0.07181331	1.63563E-07	6.35729E-06	0.065216761	1.48539E-07	5.77333E-06	0.419272324	9.54941E-07	3.71162E-05	0.37858493	8.62271E-07	3.35143E-05	0.44380169	1.01081E-06	3.92876E-05
Road 3	3	0200-0300	0.070465758	1.11894E-07	4.34903E-06	0.063832929	1.01361E-07	3.93966E-06	0.440766162	6.99899E-07	2.72033E-05	0.395763737	6.28439E-07	2.44259E-05	0.459596667	7.29801E-07	2.83655E-05
Road 3	3	0300-0400	0.059825429	6.71701E-08	2.61073E-06	0.053217571	5.9751E-08	2.32237E-06	0.331204714	3.71866E-07	1.44535E-05	0.291507429	3.27295E-07	1.27212E-05	0.344725	3.87046E-07	1.50435E-05
Road 3	3	0400-0500	0.08075531	1.46367E-07	5.6889E-06	0.072102389	1.30683E-07	5.07933E-06	0.448408496	8.12727E-07	3.15886E-05	0.397519381	7.20492E-07	2.80037E-05	0.46962177	8.51175E-07	3.3083E-05
Road 3	3	0500-0600	0.065826179	2.59732E-07	1.00951E-05	0.058338211	2.30187E-07	8.94678E-06	0.368645976	1.45458E-06	5.65358E-05	0.323111382	1.27491E-06	4.95526E-05	0.381449593	1.5051E-06	5.84993E-05
Road 3	3	0600-0700	0.092552793	6.5912E-07	2.56184E-05	0.081038446	5.7712E-07	2.24312E-05	0.463998153	3.30439E-06	0.000128433	0.403197905	2.8714E-06	0.000111604	0.484236351	3.44852E-06	0.000134035
Road 3	3	0700-0800	0.07652077	8.9229E-07	3.46811E-05	0.066571431	7.76273E-07	3.01718E-05	0.403589697	4.70616E-06	0.000182917	0.347341802	4.05027E-06	0.000157424	0.413913232	4.82654E-06	0.000187596
Road 3	3	0800-0900	0.08488997	1.35751E-06	5.27631E-05	0.07384679	1.18092E-06	4.58992E-05	0.421592899	6.74187E-06	0.00026204	0.363750451	5.81689E-06	0.000226088	0.437597242	6.99781E-06	0.000271987
Road 3	3	0900-1000	0.091081927	1.40978E-06	5.47947E-05	0.080160642	1.24074E-06	4.82244E-05	0.470075855	7.27591E-06	0.000282796	0.411729772	6.37282E-06	0.000247696	0.491890415	7.61356E-06	0.00029592
Road 3	3	1000-1100	0.102870944	1.45035E-06	5.63716E-05	0.090405995	1.27461E-06	4.9541E-05	0.51915463	7.31944E-06	0.000284488	0.454731775	6.41116E-06	0.000249186	0.54513777	7.68577E-06	0.000298727
Road 3	3	1100-1200	0.101491475	1.39021E-06	5.40339E-05	0.089209614	1.22197E-06	4.7495E-05	0.526997459	7.21869E-06	0.000280572	0.461127084	6.31642E-06	0.000245503	0.550336698	7.53839E-06	0.000292998
Road 3	3	1200-1300	0.095553747	1.30887E-06	5.08726E-05	0.084301663	1.15475E-06	4.48821E-05	0.507548267	6.95228E-06	0.000270218	0.445698244	6.10508E-06	0.000237289	0.529999906	7.25982E-06	0.000282171

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (March) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 3	3	1300-1400	0.101628188	1.51108E-06	5.87317E-05	0.089725556	1.3341E-06	5.18531E-05	0.518639817	7.71148E-06	0.000299726	0.455700356	6.77566E-06	0.000263353	0.545425912	8.10975E-06	0.000315206
Road 3	3	1400-1500	0.093003105	1.39327E-06	5.41531E-05	0.083003448	1.24347E-06	4.83305E-05	0.482278469	7.22499E-06	0.000280817	0.428303897	6.4164E-06	0.000249389	0.511307345	7.65987E-06	0.00029772
Road 3	3	1500-1600	0.10292219	1.47749E-06	5.74263E-05	0.092155173	1.32292E-06	5.14187E-05	0.519536827	7.45816E-06	0.00028988	0.46308657	6.64779E-06	0.000258383	0.555241743	7.97072E-06	0.000309802
Road 3	3	1600-1700	0.097003084	1.51854E-06	5.9022E-05	0.086391732	1.35243E-06	5.25655E-05	0.497615195	7.78997E-06	0.000302776	0.440735369	6.89954E-06	0.000268168	0.5271271	8.25197E-06	0.000320733
Road 3	3	1700-1800	0.076106742	1.19508E-06	4.64499E-05	0.068643902	1.0779E-06	4.18951E-05	0.392413871	6.16197E-06	0.0002395	0.351712942	5.52285E-06	0.000214659	0.420356844	6.60075E-06	0.000256554
Road 3	3	1800-1900	0.071608004	1.17957E-06	4.5847E-05	0.064984197	1.07046E-06	4.16061E-05	0.396357264	6.52904E-06	0.000253767	0.356353272	5.87007E-06	0.000228155	0.421337468	6.94053E-06	0.000269761
Road 3	3	1900-2000	0.076249224	9.29483E-07	3.61267E-05	0.068655803	8.36918E-07	3.25289E-05	0.422149934	5.14603E-06	0.000200013	0.376926658	4.59476E-06	0.000178587	0.445582461	5.43168E-06	0.000211116
Road 3	3	2000-2100	0.070674422	7.35697E-07	2.85947E-05	0.06375433	6.63661E-07	2.57949E-05	0.389134453	4.05076E-06	0.000157443	0.348257458	3.62524E-06	0.000140904	0.412011787	4.28891E-06	0.000166699
Road 3	3	2100-2200	0.068908	6.79731E-07	2.64194E-05	0.063185008	6.23277E-07	2.42252E-05	0.390804911	3.85503E-06	0.000149835	0.355686504	3.50861E-06	0.000136371	0.418871512	4.13188E-06	0.000160596
Road 3	3	2200-2300	0.074227584	6.70295E-07	2.60527E-05	0.067666092	6.11043E-07	2.37497E-05	0.408362291	3.68762E-06	0.000143329	0.369415897	3.33592E-06	0.000129659	0.437081989	3.94697E-06	0.000153409
Road 3	3	2300-0000	0.064671454	5.20725E-07	2.02393E-05	0.059025637	4.75266E-07	1.84724E-05	0.373538705	3.00768E-06	0.000116901	0.33782261	2.7201E-06	0.000105723	0.396848247	3.19536E-06	0.000124196
Road 4	4	0000-0100	0.254733714	2.06381E-07	2.20985E-06	0.232697429	1.88528E-07	2.01868E-06	1.257840857	1.01908E-06	1.09119E-05	1.148482	9.30483E-07	9.96322E-06	1.381179429	1.11901E-06	1.19819E-05
Road 4	4	0100-0200	0.2418685	1.11976E-07	1.19899E-06	0.2197255	1.01725E-07	1.08923E-06	1.1965565	5.53961E-07	5.93158E-06	1.0868985	5.03194E-07	5.38799E-06	1.306624	6.04919E-07	6.47721E-06
Road 4	4	0200-0300	0.261423077	7.8669E-08	8.42354E-07	0.237162308	7.13683E-08	7.64182E-07	1.250546154	3.76322E-07	4.02949E-06	1.134402308	3.41371E-07	3.65526E-06	1.371564615	4.12739E-07	4.41944E-06
Road 4	4	0300-0400	0.240955714	3.90438E-08	4.18064E-07	0.214758571	3.47988E-08	3.72611E-07	1.237042857	2.00447E-07	2.1463E-06	1.102288571	1.78612E-07	1.9125E-06	1.317047143	2.1341E-07	2.28511E-06
Road 4	4	0400-0500	0.250696429	8.12442E-08	8.69929E-07	0.223849286	7.25438E-08	7.76768E-07	1.199716429	3.88797E-07	4.16307E-06	1.071314286	3.47185E-07	3.71751E-06	1.295163571	4.19729E-07	4.49428E-06
Road 4	4	0500-0600	0.232715417	1.29286E-07	1.38434E-06	0.206540833	1.14745E-07	1.22864E-06	1.072202917	5.95668E-07	6.37816E-06	0.950607917	5.28116E-07	5.65484E-06	1.15714875	6.4286E-07	6.88348E-06
Road 4	4	0600-0700	0.263121887	3.22812E-07	3.45653E-06	0.230538113	2.82836E-07	3.02849E-06	1.218674906	1.49513E-06	1.60093E-05	1.066895472	1.30892E-06	1.40154E-05	1.297433585	1.59176E-06	1.70439E-05
Road 4	4	0700-0800	0.265105543	5.64577E-07	6.04525E-06	0.230945435	4.91828E-07	5.26629E-06	1.273656196	2.71242E-06	2.90434E-05	1.108083587	2.35981E-06	2.52678E-05	1.339029022	2.85164E-06	3.05341E-05
Road 4	4	0800-0900	0.272642452	9.78231E-07	1.04745E-05	0.237201935	8.51072E-07	9.11292E-06	1.313983548	4.71452E-06	5.04811E-05	1.142396903	4.09888E-06	4.38891E-05	1.379598839	4.94995E-06	5.3002E-05
Road 4	4	0900-1000	0.275118986	9.42537E-07	1.00923E-05	0.241736486	8.28171E-07	8.86771E-06	1.258499324	4.31153E-06	4.6166E-05	1.104898716	3.7853E-06	4.05314E-05	1.346635203	4.61347E-06	4.93991E-05
Road 4	4	1000-1100	0.304970139	1.01657E-06	1.0885E-05	0.267797153	8.92657E-07	9.5582E-06	1.3986325	4.66211E-06	4.99199E-05	1.227894514	4.09298E-06	4.38259E-05	1.495691667	4.98564E-06	5.33841E-05
Road 4	4	1100-1200	0.28359529	1.01753E-06	1.08953E-05	0.249053548	8.93595E-07	9.56824E-06	1.29231471	4.63678E-06	4.96487E-05	1.134635613	4.07103E-06	4.35909E-05	1.383689161	4.96463E-06	5.31591E-05
Road 4	4	1200-1300	0.290279392	9.94476E-07	1.06484E-05	0.255895473	8.76679E-07	9.38711E-06	1.38084027	4.73066E-06	5.06539E-05	1.216919595	4.16908E-06	4.46407E-05	1.472815068	5.04576E-06	5.40278E-05
Road 4	4	1300-1400	0.297802133	1.03404E-06	1.1072E-05	0.262804267	9.12515E-07	9.77082E-06	1.383750533	4.80469E-06	5.14466E-05	1.220638267	4.23833E-06	4.53822E-05	1.483442533	5.15084E-06	5.5153E-05
Road 4	4	1400-1500	0.2691905	8.72377E-07	9.34104E-06	0.240089786	7.78069E-07	8.33123E-06	1.291036571	4.18391E-06	4.47996E-05	1.150658643	3.72899E-06	3.99284E-05	1.390748429	4.50706E-06	4.82596E-05
Road 4	4	1500-1600	0.30116576	8.71429E-07	9.33089E-06	0.26946168	7.79692E-07	8.34862E-06	1.39950192	4.04948E-06	4.33602E-05	1.25172392	3.62189E-06	3.87816E-05	1.5211856	4.40158E-06	4.71302E-05
Road 4	4	1600-1700	0.281547419	8.08145E-07	8.65328E-06	0.250595645	7.19302E-07	7.70199E-06	1.321414516	3.79295E-06	4.06133E-05	1.175790323	3.37495E-06	3.61376E-05	1.426385968	4.09426E-06	4.38396E-05
Road 4	4	1700-1800	0.26723378	7.85618E-07	8.41206E-06	0.241165748	7.08983E-07	7.59149E-06	1.275140551	3.74868E-06	4.01393E-05	1.149810945	3.38023E-06	3.61941E-05	1.390976693	4.08921E-06	4.37856E-05
Road 4	4	1800-1900	0.293578679	7.20355E-07	7.71326E-06	0.266638396	6.54252E-07	7.00545E-06	1.413394528	3.46805E-06	3.71344E-05	1.283446604	3.1492E-06	3.37203E-05	1.550085	3.80345E-06	4.07257E-05
Road 4	4	1900-2000	0.264274324	4.52692E-07	4.84724E-06	0.238157838	4.07956E-07	4.36822E-06	1.275426081	2.18476E-06	2.33935E-05	1.148881351	1.96799E-06	2.10724E-05	1.387039189	2.37595E-06	2.54406E-05
Road 4	4	2000-2100	0.229040204	2.59791E-07	2.78173E-06	0.206783469	2.34546E-07	2.51142E-06	1.110162857	1.25921E-06	1.34831E-05	1.000935306	1.13532E-06	1.21565E-05	1.207718776	1.36987E-06	1.46679E-05
Road 4	4	2100-2200	0.190158108	1.62867E-07	1.74391E-06	0.174614865	1.49554E-07	1.60137E-06	0.941091351	8.06027E-07	8.6306E-06	0.862963243	7.39112E-07	7.9141E-06	1.037578108	8.88666E-07	9.51547E-06
Road 4	4	2200-2300	0.255982857	3.73308E-07	3.99723E-06	0.233534762	3.40572E-07	3.6467E-06	1.217184762	1.77506E-06	1.90066E-05	1.109752857	1.61839E-06	1.7329E-05	1.343287619	1.95896E-06	2.09757E-05
Road 4	4	2300-0000	0.237610408	2.69512E-07	2.88582E-06	0.217013061	2.46149E-07	2.63566E-06	1.160581224	1.3164E-06	1.40955E-05	1.059449388	1.20169E-06	1.28672E-05	1.276462449	1.44784E-06	1.55029E-05
Road 5	5	0000-0100	0.080446425	2.91407E-07	3.94075E-06	0.073509482	2.66279E-07	3.60094E-06	0.450265181	1.63103E-06	2.20567E-05	0.408803575	1.48084E-06	2.00257E-05	0.482313057	1.74712E-06	2.36266E-05
Road 5	5	0100-0200	0.054509836	1.24816E-07	1.68791E-06	0.049496721	1.13337E-07	1.53268E-06	0.335560082	7.68362E-07	1.03907E-05	0.30217082	6.91908E-07	9.3568E-06	0.351667541	8.05245E-07	1.08895E-05
Road 5	5	0200-0300	0.052021279	8.39683E-08	1.13552E-06	0.047097791	7.60212E-08	1.02805E-06	0.36015814	5.81336E-07	7.86152E-06	0.322021628	5.1978E-07	7.02908E-06	0.369119419	5.95801E-07	8.05713E-06
Road 5	5	0300-0400	0.047046032	5.56288E-08	7.52278E-07	0.041823333	4.94533E-08	6.68766E-07	0.261068889	3.08696E-07	4.17456E-06	0.228639683	2.70351E-07	3.65601E-06	0.270463016	3.19804E-07	4.32477E-06
Road 5	5	0400-0500	0.066082626	1.22789E-07	1.66049E-06	0.058991919	1.09613E-07	1.48232E-06	0.379676667	7.0548E-07	9.54034E-06	0.335735455	6.23833E-07	8.43621E-06	0.394727374	7.33446E-07	9.91853E-06
Road 5	5	0500-0600	0.053875591	2.22459E-07	3.00836E-06	0.047721591	1.97049E-07	2.66473E-06	0.316085818	1.30516E-06	1.76499E-05	0.2760705	1.13993E-06	1.54155E-05	0.323792091	1.33698E-06	1.80802E-05
Road 5	5	0600-0700	0.080196804	5.84016E-07	7.89775E-06	0.07020482	5.11251E-07	6.91375E-06	0.405277397	2.95134E-06	3.99116E-05	0.351367268	2.55876E-06	3.46025E-05	0.421572088	3.07001E-06	4.15163E-05
Road 5	5	0700-0800	0.062559336	7.43244E-07	1.0051E-05	0.05441425	6.46476E-07	8.74241E-06	0.333275403	3.95952E-06	5.35454E-05	0.285619352	3.39334E-06	4.58887E-05	0.340033602	4.03981E-06	5.46312E-05
Road 5	5	0800-0900	0.067154638	1.06253E-06	1.43687E-05	0.05840261	9.2405E-07	1.24961E-05	0.330438754	5.22823E-06	7.07023E-05	0.284051305	4.49428E-06	6.0777E-05	0.342453915	5.41833E-06	7.32731E-05
Road 5	5	0900-1000	0.073481838	1.1254E-06	1.5219E-05	0.064712047	9.91085E-07	1.34026E-05	0.392177341	6.00632E-06	8.12246E-05	0.343231667	5.2567E-06	7.10874E-05	0.407943713	6.24779E-06	8.449E-05
Road 5	5	1000-1100	0.083336962	1.14807E-06	1.55256E-05	0.073270245	1.00939E-06	1.36502E-05	0.431705995	5.9473E-06	8.04265E-05	0.377773488	5.20431E-06	7.03789E-05	0.451043733	6.2137E-06	8.40291E-05
Road 5	5	1100-1200	0.082278727	1.07945E-06	1.45975E-05	0.07233133	9.48941E-07	1.28327E-05	0.445700758	5.84731E-06	7.90743E-05	0.389459828	5.10947E-06	6.90963E-05	0.461791159	6.05841E-06	8.1929E-05
Road 5	5	1200-1300	0.076372249	1.01342E-06	1.37047E-05	0.067391669	8.94255E-07	1.20932E-05	0.416908883	5.53218E-06	7.48127E-05	0.365538826	4.85052E-06	6.55946E-05	0.432930495	5.74478E-06	7.76877E-05
Road 5	5	1300-1400	0.083502638	1.21775E-06	1.64678E-05	0.073757066	1.07562E-06	1.45459E-05	0.435752844	6.35473E-06	8.59362E-05	0.382242986	5.57438E-06	7.53833E-05	0.456000051	6.65E-06	8.99292E-05
Road 5	5	1400-1500	0.078177254	1.16503E-06	1.57549E-05	0.069779673	1.03988E-06	1.40626E-05	0.409909018	6.10863E-06	8.26081E-05	0.363615718	5.41875E-06	7.32787E-05	0.43339539	6.45863E-06	8.73413E-05
Road 5	5	1500-1600	0.08702174	1.25763E-06	1.70072E-05	0.077928377	1.12622E-06	1.523E-05	0.444924026	6.43002E-06	8.69544E-05	0.396116195	5.72465E-06	7.74155E-05	0.474044571	6.85087E-06	9.26456E-05
Road 5	5	1600-1700	0.082598992	1.32239E-06	1.78829E-05	0.073544045	1.17742E-06	1.59225E-05	0.430654654	6.89468E-06	9.3238E-05	0.380939179	6.09874E-06	8.24745E-05	0.454483224	7.27617E-06	9.8397E-05
Road 5	5	1700-1800	0.060182444	9.61247E-07	1.29991E-05	0.054286428	8.67075E-07	1.17256E-05	0.314522961	5.02363E-06	6.79355E-05	0.281147756	4.49055E-06	6.07266E-05	0.335434183	5.35763E-06	7.24522E-05
Road 5	5	1800-1900	0.055993591	9.65805E-07	1.30608E-05	0.050816268	8.76504E-07	1.18531E-05	0.320904135	5.53511E-06	7.48524E-05	0.287501578	4.95897E-06	6.70611E-05	0.338317845	5.83547E-06	7.89142E-05
Road 5	5	1900-2000	0.064938601	8.36109E-07	1.13069E-05	0.058457566	7.52663E-07	1.01784E-05	0.368186181	4.74054E-06	6.41071E-05	0.327957274	4.22257E-06	5.71026E-05	0.38641484	4.97524E-06	6.72811E-05
Road 5	5	2000-2100	0.062555833	7.04458E-07	9.52651E-06	0.05642675	6.35436E-07	8.59313E-06	0.349645533	3.93745E-06	5.32469E-05	0.312486067	3.51899E-06	4.75879E-05	0.368912817	4.15442E-06	5.61811E-05
Road 5	5	2100-2200	0.064257145	6.97084E-07	9.4268E-06	0.058908062	6.39055E-07	8.64206E-06	0.368520467	3.99784E-06	5.40635E-05	0.335117215	3.63547E-06	4.91631E-05	0.394025277	4.27452E-06	5.78052E-05
Road 5	5	2200-2300	0.062083828	5.81453E-07	7.8631E-06	0.056581383	5.29919E-07	7.1662E-06	0.351256132	3.28973E-06	4.44876E-05	0.316982806	2.96874E-06	4.01468E-05	0.373564188	3.49866E-06	4.7313E-05
Road 5	5	2300-0000	0.054317682	4.61823E-07	6.24531E-06	0.049565519	4.21419E-07	5.69892E-06	0.322865651	2.74509E-06	3.71223E-05	0.29122872	2.4761E-06	3.34848E-05	0.340794238	2.89752E-06	3.91837E-05
Road 6	6	0000-0100	0.048155067	1.35572E-07	4.84614E-06	0.043928733	1.23673E-07	4.42082E-06	0.312353867	8.79375E-07	3.14341E-05	0.28156	7.9268E-07	2.83351E-05	0.325488733	9.16353E-07	3.27559E-05
Road 6	6	0100-0200	0.064272982	1.37521E-07	4.91582E-06	0.058347719	1.24843E-07	4.46263E-06	0.364539912	7.79984E-07	2.78813E-05	0.327556667	7.00853E-07	2.50527E-05	0.385904386	8.25696E-07	2.95153E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (March) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 6	6	0200-0300	0.058508481	8.67524E-08	3.10105E-06	0.053070127	7.86888E-08	2.81281E-06	0.33672557	4.99274E-07	1.7847E-05	0.302203924	4.48088E-07	1.60173E-05	0.355274051	5.26776E-07	1.88301E-05
Road 6	6	0300-0400	0.060940806	7.09146E-08	2.53491E-06	0.054389032	6.32905E-08	2.26238E-06	0.391615	4.55708E-07	1.62897E-05	0.346121613	4.02769E-07	1.43974E-05	0.400510645	4.6606E-07	1.66597E-05
Road 6	6	0400-0500	0.066839111	1.12904E-07	4.03586E-06	0.059669889	1.00794E-07	3.60297E-06	0.395919	6.68782E-07	2.39062E-05	0.349421111	5.90238E-07	2.10986E-05	0.409091	6.91032E-07	2.47016E-05
Road 6	6	0500-0600	0.060203765	1.83052E-07	6.54337E-06	0.053385679	1.62321E-07	5.80233E-06	0.367231235	1.11658E-06	3.99133E-05	0.320991049	9.75986E-07	3.48876E-05	0.374376728	1.13831E-06	4.06899E-05
Road 6	6	0600-0700	0.065451448	3.56248E-07	1.27344E-05	0.057293241	3.11844E-07	1.11472E-05	0.417594172	2.27294E-06	8.12484E-05	0.360100621	1.96001E-06	7.00623E-05	0.417393862	2.27185E-06	8.12095E-05
Road 6	6	0700-0800	0.061450758	5.3285E-07	1.90472E-05	0.05347855	4.63722E-07	1.65762E-05	0.357228896	3.09759E-06	0.000110726	0.306007511	2.65344E-06	9.48498E-05	0.359486061	3.11717E-06	0.000111426
Road 6	6	0800-0900	0.052197326	6.48548E-07	2.3183E-05	0.045296949	5.62811E-07	2.01182E-05	0.311801405	3.87411E-06	0.000138484	0.265306586	3.29641E-06	0.000117833	0.310603535	3.85923E-06	0.000137952
Road 6	6	0900-1000	0.05453793	6.47945E-07	2.31614E-05	0.047910284	5.69204E-07	2.03467E-05	0.310804566	3.69255E-06	0.000131994	0.269479494	3.20159E-06	0.000114444	0.317389779	3.77079E-06	0.00013479
Road 6	6	1000-1100	0.072745944	7.30463E-07	2.61111E-05	0.063916093	6.418E-07	2.29418E-05	0.399375009	4.01024E-06	0.00014335	0.348260579	3.49699E-06	0.000125003	0.412176673	4.13879E-06	0.000147945
Road 6	6	1100-1200	0.083956259	8.38302E-07	2.99659E-05	0.073842049	7.37312E-07	2.63559E-05	0.440525658	4.39864E-06	0.000157234	0.38484797	3.8427E-06	0.000137361	0.458690019	4.58001E-06	0.000163717
Road 6	6	1200-1300	0.080584455	7.91022E-07	2.82758E-05	0.071132008	6.98236E-07	2.49591E-05	0.405539771	3.98081E-06	0.000142298	0.35602979	3.49481E-06	0.000124925	0.427161797	4.19305E-06	0.000149884
Road 6	6	1300-1400	0.093419789	9.13508E-07	3.26542E-05	0.082506449	8.06792E-07	2.88395E-05	0.478717102	4.68115E-06	0.000167332	0.42003261	4.1073E-06	0.000146819	0.50253906	4.91409E-06	0.000175659
Road 6	6	1400-1500	0.088270871	9.50966E-07	3.39932E-05	0.078773902	8.48653E-07	3.03359E-05	0.445416272	4.79859E-06	0.00017153	0.394906568	4.25444E-06	0.000152079	0.47368047	5.10309E-06	0.000182415
Road 6	6	1500-1600	0.077315943	8.15532E-07	2.9152E-05	0.069184324	7.2976E-07	2.60859E-05	0.404146495	4.26296E-06	0.000152383	0.359025302	3.78702E-06	0.00013537	0.428209626	4.51678E-06	0.000161456
Road 6	6	1600-1700	0.080838455	8.73929E-07	3.12394E-05	0.071995625	7.78331E-07	2.78222E-05	0.40346401	4.36177E-06	0.000155916	0.356926424	3.85866E-06	0.000137932	0.428922049	4.637E-06	0.000165754
Road 6	6	1700-1800	0.059921492	6.86038E-07	2.45231E-05	0.054063344	6.18968E-07	2.21256E-05	0.310314148	3.55277E-06	0.000126997	0.277555607	3.17772E-06	0.000113591	0.331618951	3.79669E-06	0.000135716
Road 6	6	1800-1900	0.058248491	7.53251E-07	2.69257E-05	0.052832787	6.83217E-07	2.44222E-05	0.308242279	3.98609E-06	0.000142487	0.276731655	3.57861E-06	0.000127921	0.329564441	4.26182E-06	0.000152343
Road 6	6	1900-2000	0.069172176	6.80297E-07	2.43179E-05	0.062247538	6.12194E-07	2.18835E-05	0.366311908	3.60262E-06	0.000128779	0.326072805	3.20687E-06	0.000114633	0.388320344	3.81907E-06	0.000136516
Road 6	6	2000-2100	0.054374761	4.26589E-07	1.52488E-05	0.049008612	3.84489E-07	1.37439E-05	0.320589785	2.51514E-06	8.9906E-05	0.285698708	2.24141E-06	8.01211E-05	0.334707321	2.62589E-06	9.38651E-05
Road 6	6	2100-2200	0.075471778	5.09944E-07	1.82284E-05	0.069220694	4.67707E-07	1.67186E-05	0.404886	2.73572E-06	9.77908E-05	0.368571111	2.49035E-06	8.90198E-05	0.437791806	2.95805E-06	0.000105738
Road 6	6	2200-2300	0.056680105	4.05314E-07	1.44883E-05	0.051598215	3.68974E-07	1.31893E-05	0.323827927	2.31566E-06	8.27755E-05	0.290394882	2.07659E-06	7.42295E-05	0.341993097	2.44556E-06	8.74188E-05
Road 6	6	2300-0000	0.038012885	2.54703E-07	9.10462E-06	0.034684286	2.324E-07	8.30737E-06	0.240871541	1.61395E-06	5.76921E-05	0.216655042	1.45169E-06	5.18919E-05	0.251339328	1.68409E-06	6.01993E-05
Road 7	7	0000-0100	0.070520409	1.90437E-07	4.75394E-06	0.064381272	1.73859E-07	4.34008E-06	0.41870183	1.13069E-06	2.82256E-05	0.379482722	1.02478E-06	2.55818E-05	0.443863994	1.19864E-06	2.99219E-05
Road 7	7	0100-0200	0.087195695	1.83564E-07	4.58235E-06	0.079209629	1.66752E-07	4.16267E-06	0.478739789	1.00784E-06	2.5159E-05	0.43224905	9.09969E-07	2.27158E-05	0.511458679	1.07672E-06	2.68784E-05
Road 7	7	0200-0300	0.07462383	1.01843E-07	2.54232E-06	0.067689894	9.23796E-08	2.3061E-06	0.424300851	5.79063E-07	1.44553E-05	0.382207872	5.21617E-07	1.30213E-05	0.449897766	6.13997E-07	1.53274E-05
Road 7	7	0300-0400	0.077147194	8.51252E-08	2.125E-06	0.068895658	7.60203E-08	1.89772E-06	0.467118763	5.15425E-07	1.28667E-05	0.414373026	4.57224E-07	1.14138E-05	0.483268684	5.33245E-07	1.33115E-05
Road 7	7	0400-0500	0.086499666	1.394E-07	3.47987E-06	0.077010899	1.24108E-07	3.09814E-06	0.484304829	7.80488E-07	1.94835E-05	0.42795788	6.89681E-07	1.72167E-05	0.504968779	8.13789E-07	2.03148E-05
Road 7	7	0500-0600	0.078651162	2.26097E-07	5.64412E-06	0.069778333	2.0059E-07	5.00739E-06	0.446767727	1.28431E-06	3.20607E-05	0.392445354	1.12815E-06	2.81624E-05	0.462223687	1.32875E-06	3.31698E-05
Road 7	7	0600-0700	0.084532345	4.34461E-07	1.08456E-05	0.074025452	3.8046E-07	9.49751E-06	0.494072232	2.53932E-06	6.33898E-05	0.428087062	2.20019E-06	5.49239E-05	0.502112514	2.58065E-06	6.44214E-05
Road 7	7	0700-0800	0.081058218	6.64921E-07	1.65986E-05	0.070612853	5.79237E-07	1.44597E-05	0.445611141	3.65535E-06	9.12494E-05	0.383960343	3.14963E-06	7.8625E-05	0.454573196	3.72886E-06	9.30846E-05
Road 7	7	0800-0900	0.080306862	9.9688E-07	2.48854E-05	0.070056034	8.69633E-07	2.17089E-05	0.439265702	5.45278E-06	0.000136119	0.378933512	4.70385E-06	0.000117423	0.448989545	5.57348E-06	0.000139132
Road 7	7	0900-1000	0.081165809	9.33303E-07	2.32983E-05	0.071348191	8.20413E-07	2.04802E-05	0.426819332	4.90788E-06	0.000122517	0.372314079	4.28114E-06	0.000106871	0.44366227	5.10155E-06	0.000127351
Road 7	7	1000-1100	0.095804417	9.66707E-07	2.41321E-05	0.084266028	8.50279E-07	2.12257E-05	0.504672475	5.09236E-06	0.000127122	0.441811384	4.45806E-06	0.000111288	0.526077412	5.30834E-06	0.000132513
Road 7	7	1100-1200	0.106585227	1.07394E-06	2.68091E-05	0.093870229	9.45827E-07	2.36109E-05	0.546992412	5.51144E-06	0.000137584	0.479681477	4.83322E-06	0.000120653	0.573551706	5.77905E-06	0.000144264
Road 7	7	1200-1300	0.103849668	1.04487E-06	2.60834E-05	0.091869756	9.24337E-07	2.30745E-05	0.525286306	5.28511E-06	0.000131933	0.463180518	4.66024E-06	0.000116335	0.555050274	5.58457E-06	0.000139409
Road 7	7	1300-1400	0.110661877	1.09574E-06	2.73532E-05	0.097470016	9.65116E-07	2.40925E-05	0.561217405	5.55699E-06	0.000138721	0.492086592	4.87248E-06	0.000121633	0.589556608	5.8376E-06	0.000145725
Road 7	7	1400-1500	0.102462101	1.06215E-06	2.65147E-05	0.091209161	9.45499E-07	2.36027E-05	0.522665266	5.41809E-06	0.000135253	0.463076048	4.80037E-06	0.000119833	0.554285209	5.74587E-06	0.000143436
Road 7	7	1500-1600	0.094900358	9.65851E-07	2.41108E-05	0.084963825	8.64722E-07	2.15863E-05	0.491231607	4.99952E-06	0.000124804	0.437519935	4.45287E-06	0.000111158	0.52248376	5.31759E-06	0.000132744
Road 7	7	1600-1700	0.098436497	1.03614E-06	2.58654E-05	0.087768603	9.2385E-07	2.30623E-05	0.491681793	5.17543E-06	0.000129196	0.436425781	4.59381E-06	0.000114676	0.524194384	5.51766E-06	0.000137739
Road 7	7	1700-1800	0.075082999	8.36106E-07	2.08719E-05	0.067732086	7.54248E-07	1.88285E-05	0.389954368	4.34244E-06	0.000108401	0.349642373	3.89353E-06	9.71953E-05	0.417374459	4.64778E-06	0.000116024
Road 7	7	1800-1900	0.068941549	7.97744E-07	1.99143E-05	0.06240463	7.22104E-07	1.80261E-05	0.364561151	4.21845E-06	0.000105306	0.327509401	3.78971E-06	9.46036E-05	0.389914031	4.51182E-06	0.00011263
Road 7	7	1900-2000	0.080255922	7.01452E-07	1.75105E-05	0.072280616	6.31746E-07	1.57704E-05	0.427750453	3.73862E-06	9.33281E-05	0.382111849	3.33973E-06	8.33705E-05	0.454392465	3.97148E-06	9.9141E-05
Road 7	7	2000-2100	0.073635639	5.30266E-07	1.32372E-05	0.066438156	4.78436E-07	1.19433E-05	0.404877941	2.91561E-06	7.27832E-05	0.362373943	2.60953E-06	6.51425E-05	0.428812099	3.08797E-06	7.70858E-05
Road 7	7	2100-2200	0.084122398	5.05634E-07	1.26223E-05	0.077041812	4.63075E-07	1.15599E-05	0.451994382	2.7168E-06	6.78202E-05	0.411348333	2.47249E-06	6.17214E-05	0.488390145	2.93556E-06	7.32813E-05
Road 7	7	2200-2300	0.070738676	4.5908E-07	1.14601E-05	0.064408581	4.17999E-07	1.04346E-05	0.392206252	2.54534E-06	6.35401E-05	0.353169767	2.292E-06	5.72159E-05	0.417578348	2.71E-06	6.76505E-05
Road 7	7	2300-0000	0.049729995	2.96746E-07	7.40774E-06	0.045378132	2.70778E-07	6.75949E-06	0.297452164	1.77494E-06	4.43082E-05	0.268589097	1.60271E-06	4.00088E-05	0.313967229	1.87349E-06	4.67683E-05
Road 8	8	0000-0100	0.223403333	1.62475E-07	2.67834E-06	0.204056667	1.48405E-07	2.4464E-06	1.106586944	8.04791E-07	1.32667E-05	1.010245833	7.34724E-07	1.21117E-05	1.2143025	8.83129E-07	1.45581E-05
Road 8	8	0100-0200	0.233043333	1.41238E-07	2.32826E-06	0.211726	1.28319E-07	2.11529E-06	1.150984667	6.97566E-07	1.14991E-05	1.045581333	6.33686E-07	1.04461E-05	1.257307333	7.62004E-07	1.25614E-05
Road 8	8	0200-0300	0.220312	6.67612E-08	1.10053E-06	0.199952	6.05915E-08	9.98828E-07	1.144196667	3.46726E-07	5.71565E-06	1.038186	3.14602E-07	5.18609E-06	1.238138	3.75193E-07	6.18492E-06
Road 8	8	0300-0400	0.203592143	5.75816E-08	9.49211E-07	0.181647143	5.13749E-08	8.46897E-07	1.035642857	2.92909E-07	4.8285E-06	0.923594286	2.61219E-07	4.30609E-06	1.105241429	3.12594E-07	5.15299E-06
Road 8	8	0400-0500	0.233805238	9.91901E-08	1.63511E-06	0.208837619	8.85978E-08	1.4605E-06	1.121429048	4.75758E-07	7.84269E-06	1.001650952	4.24943E-07	7.00502E-06	1.210488571	5.13541E-07	8.46552E-06
Road 8	8	0500-0600	0.223702353	1.53654E-07	2.53293E-06	0.198625294	1.36429E-07	2.24899E-06	1.054949118	7.24612E-07	1.19449E-05	0.936074412	6.4296E-07	1.0599E-05	1.134699706	7.7939E-07	1.28479E-05
Road 8	8	0600-0700	0.254315645	3.18537E-07	5.25096E-06	0.222941452	2.7924E-07	4.60316E-06	1.184890161	1.4841E-06	2.44649E-05	1.037798065	1.29987E-06	2.14278E-05	1.260739516	1.57911E-06	2.6031E-05
Road 8	8	0700-0800	0.253400196	5.22158E-07	8.60758E-06	0.220799314	4.5498E-07	7.50018E-06	1.192639608	2.45756E-06	4.0512E-05	1.038262059	2.13945E-06	3.5268E-05	1.259061373	2.59443E-06	4.27682E-05
Road 8	8	0800-0900	0.281582552	1.0922E-06	1.80045E-05	0.245173073	9.50974E-07	1.56765E-05	1.330187865	5.15952E-06	8.50527E-05	1.157195573	4.48852E-06	7.39915E-05	1.402368646	5.43949E-06	8.9668E-05
Road 8	8	0900-1000	0.297391899	9.49251E-07	1.5648E-05	0.261381266	8.34308E-07	1.37533E-05	1.335358418	4.26236E-06	7.02633E-05	1.173389684	3.74537E-06	6.17409E-05	1.434770949	4.57967E-06	7.54942E-05
Road 8	8	1000-1100	0.280085813	9.05328E-07	1.4924E-05	0.245987125	7.9511E-07	1.31071E-05	1.295425688	4.18723E-06	6.9025E-05	1.136976063	3.67507E-06	6.05822E-05	1.382963188	4.47018E-06	7.36893E-05
Road 8	8	1100-1200	0.291143962	9.3519E-07	1.54163E-05	0.255667987	8.21237E-07	1.35378E-05	1.359347233	4.36639E-06	7.19783E-05	1.193552264	3.83383E-06	6.31993E-05	1.449220252	4.65507E-06	7.67371E-05
Road 8	8	1200-1300	0.293179471	1.00688E-06	1.6598E-05	0.258477059	8.87699E-07	1.46334E-05	1.380605294	4.74147E-06	7.81614E-05	1.216708353	4.17859E-06	6.88826E-05	1.475185412	5.06629E-06	8.35159E-05
Road 8	8	1300-1400	0.268329753	8.7817E-07	1.44763E-05	0.236840494	7.75114E-07	1.27775E-05	1.246625741	4.07987E-06	6.72551E-05	1.099840185	3.59948E-06	5.9336E-05	1.336680679	4.37459E-06	7.21135E-05
Road 8	8	1400-1500	0.260467842	7.31415E-07	1.20571E-05	0.232338561	6.52425E-07	1.0755E-05	1.259803309	3.53763E-06	5.83165E-05	1.123349209	3.15446E-06	5.2E-05	1.35568777	3.80688E-06	6.2755E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (March) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 8	8	1500-1600	0.267726619	7.51798E-07	1.23931E-05	0.239504245	6.72547E-07	1.10867E-05	1.262868561	3.54624E-06	5.84584E-05	1.128912014	3.17008E-06	5.22575E-05	1.368416259	3.84262E-06	6.33442E-05
Road 8	8	1600-1700	0.267156577	8.04168E-07	1.32564E-05	0.237801007	7.15805E-07	1.17998E-05	1.248811946	3.75905E-06	6.19665E-05	1.110875503	3.34385E-06	5.51221E-05	1.34867651	4.05965E-06	6.69218E-05
Road 8	8	1700-1800	0.216408077	6.82013E-07	1.12427E-05	0.195237244	6.15293E-07	1.01429E-05	1.051563974	3.31402E-06	5.46304E-05	0.947202179	2.98512E-06	4.92086E-05	1.142439423	3.60042E-06	5.93515E-05
Road 8	8	1800-1900	0.216208131	4.67359E-07	7.70424E-06	0.196433458	4.24614E-07	6.9996E-06	1.076894673	2.32783E-06	3.83735E-05	0.977445514	2.11286E-06	3.48297E-05	1.173878972	2.53748E-06	4.18293E-05
Road 8	8	1900-2000	0.21452013	3.33698E-07	5.50089E-06	0.193354156	3.00773E-07	4.95813E-06	1.094450649	1.70248E-06	2.80647E-05	0.986137403	1.53399E-06	2.52873E-05	1.179491558	1.83476E-06	3.02454E-05
Road 8	8	2000-2100	0.234193896	3.64302E-07	6.00538E-06	0.211432208	3.28895E-07	5.4217E-06	1.090387273	1.69616E-06	2.79605E-05	0.983326883	1.52962E-06	2.52152E-05	1.194759091	1.85851E-06	3.06369E-05
Road 8	8	2100-2200	0.192537963	2.10041E-07	3.46245E-06	0.176717407	1.92783E-07	3.17795E-06	0.978487593	1.06744E-06	1.75964E-05	0.896658519	9.78173E-07	1.61248E-05	1.073375926	1.17096E-06	1.93028E-05
Road 8	8	2200-2300	0.231852031	2.99768E-07	4.94157E-06	0.211516406	2.73476E-07	4.50815E-06	1.114935469	1.44153E-06	2.37631E-05	1.016052188	1.31368E-06	2.16556E-05	1.227568594	1.58716E-06	2.61637E-05
Road 8	8	2300-0000	0.181286792	1.94105E-07	3.19975E-06	0.165626981	1.77338E-07	2.92335E-06	0.907433962	9.71596E-07	1.60164E-05	0.828463208	8.87041E-07	1.46225E-05	0.994090189	1.06438E-06	1.75459E-05
Road 9	9	0000-0100	0.195936415	5.20361E-08	1.55337E-06	0.181844261	4.82935E-08	1.44165E-06	0.878863692	2.33405E-07	6.96755E-06	0.809718095	2.15042E-07	6.41937E-06	0.991562356	2.63336E-07	7.86102E-06
Road 9	9	0100-0200	0.21429879	4.47171E-08	1.33488E-06	0.198377453	4.13949E-08	1.23571E-06	0.911035784	1.90103E-07	5.67491E-06	0.835375703	1.74315E-07	5.20362E-06	1.033753156	2.1571E-07	6.43932E-06
Road 9	9	0200-0300	0.083655837	7.93465E-09	2.36863E-07	0.076090784	7.21711E-09	2.15443E-07	0.593107932	5.62555E-08	1.67932E-06	0.536680308	5.09034E-08	1.51955E-06	0.612771092	5.81205E-08	1.735E-06
Road 9	9	0300-0400	0.10249871	7.7775E-09	2.32172E-07	0.091885372	6.97217E-09	2.08131E-07	0.620402429	4.70755E-08	1.40528E-06	0.555575935	4.21565E-08	1.25844E-06	0.647461307	4.91287E-08	1.46658E-06
Road 9	9	0400-0500	0.235656809	4.47035E-08	1.33448E-06	0.214695633	4.07272E-08	1.21578E-06	0.961924709	1.82475E-07	5.44718E-06	0.868407805	1.64735E-07	4.91761E-06	1.083103437	2.05462E-07	6.13339E-06
Road 9	9	0500-0600	0.170215262	5.4892E-08	1.63862E-06	0.154226401	4.97358E-08	1.4847E-06	0.848941513	2.73771E-07	8.17255E-06	0.764220867	2.4645E-07	7.35696E-06	0.918447268	2.96186E-07	8.84166E-06
Road 9	9	0600-0700	0.20337871	1.23457E-07	3.68541E-06	0.183507799	1.11395E-07	3.32533E-06	1.043075999	6.3318E-07	1.89015E-05	0.932853856	5.66272E-07	1.69042E-05	1.116361655	6.77667E-07	2.02295E-05
Road 9	9	0700-0800	0.172528371	1.60368E-07	4.78726E-06	0.156192957	1.45184E-07	4.33399E-06	0.967829528	8.99614E-07	2.6855E-05	0.867115123	8.05998E-07	2.40604E-05	1.02330808	9.51182E-07	2.83944E-05
Road 9	9	0800-0900	0.268385519	5.85488E-07	1.74778E-05	0.240457465	5.24563E-07	1.56591E-05	1.277073106	2.78596E-06	8.31657E-05	1.132051795	2.46959E-06	7.37216E-05	1.372509261	2.99416E-06	8.93807E-05
Road 9	9	0900-1000	0.275373532	4.54467E-07	1.35666E-05	0.250264619	4.13029E-07	1.23296E-05	1.185476489	1.95647E-06	5.8404E-05	1.065910329	1.75914E-06	5.25135E-05	1.316174948	2.17217E-06	6.48431E-05
Road 9	9	1000-1100	0.281522353	3.8985E-07	1.16377E-05	0.252561878	3.49745E-07	1.04405E-05	1.187488908	1.64442E-06	4.90889E-05	1.058909447	1.46637E-06	4.37736E-05	1.311471326	1.81611E-06	5.42141E-05
Road 9	9	1100-1200	0.198112977	2.8562E-07	8.52623E-06	0.175694874	2.53299E-07	7.56142E-06	1.035855649	1.49339E-06	4.45804E-05	0.919991193	1.32635E-06	3.95939E-05	1.095686067	1.57965E-06	4.71553E-05
Road 9	9	1200-1300	0.29249475	4.10593E-07	1.22569E-05	0.266816864	3.74547E-07	1.11809E-05	1.306913237	1.83459E-06	5.47658E-05	1.185953558	1.6648E-06	4.9697E-05	1.452770422	2.03934E-06	6.08779E-05
Road 9	9	1300-1400	0.333388212	3.85782E-07	1.15162E-05	0.303090827	3.50723E-07	1.04697E-05	1.273541985	1.47368E-06	4.3992E-05	1.147469611	1.3278E-06	3.96371E-05	1.450560437	1.67852E-06	5.01068E-05
Road 9	9	1400-1500	0.214618494	2.76845E-07	8.26431E-06	0.197716371	2.55043E-07	7.61346E-06	1.040370153	1.34202E-06	4.00615E-05	0.943889892	1.21756E-06	3.63464E-05	1.141606263	1.47261E-06	4.39598E-05
Road 9	9	1500-1600	0.17875473	1.93283E-07	5.76983E-06	0.163783181	1.77095E-07	5.28658E-06	0.917562974	9.92138E-07	2.9617E-05	0.832214289	8.99853E-07	2.68621E-05	0.995997469	1.07695E-06	3.21487E-05
Road 9	9	1600-1700	0.188013202	2.85325E-07	8.51744E-06	0.173583804	2.63427E-07	7.86375E-06	1.020326965	1.54843E-06	4.62232E-05	0.932864674	1.4157E-06	4.2261E-05	1.106448478	1.67912E-06	5.01247E-05
Road 9	9	1700-1800	0.1606993	2.10341E-07	6.27905E-06	0.150414908	1.9688E-07	5.8772E-06	0.95045777	1.24407E-06	3.71375E-05	0.880950832	1.15309E-06	3.44216E-05	1.031365741	1.34997E-06	4.02988E-05
Road 9	9	1800-1900	0.160221966	1.33732E-07	3.99214E-06	0.150953056	1.25996E-07	3.76119E-06	0.92373065	7.71009E-07	2.30159E-05	0.86221781	7.19666E-07	2.14833E-05	1.013170866	8.45662E-07	2.52445E-05
Road 9	9	1900-2000	0.166503228	1.35816E-07	4.05436E-06	0.155278965	1.26661E-07	3.78104E-06	0.88972894	7.25751E-07	2.16649E-05	0.814491978	6.6438E-07	1.98329E-05	0.969770942	7.91041E-07	2.36139E-05
Road 9	9	2000-2100	0.174824181	9.61747E-08	2.87098E-06	0.160795506	8.84572E-08	2.6406E-06	0.779497183	4.28819E-07	1.2801E-05	0.710126002	3.90656E-07	1.16618E-05	0.870921507	4.79113E-07	1.43024E-05
Road 9	9	2100-2200	0.021136598	1.12268E-08	3.35138E-07	0.019670773	1.04482E-08	3.11896E-07	0.30649473	1.62796E-07	4.85973E-06	0.280247897	1.48854E-07	4.44356E-06	0.29991867	1.59303E-07	4.75546E-06
Road 9	9	2200-2300	0.167658395	1.04954E-07	3.13307E-06	0.155300451	9.72183E-08	2.90213E-06	0.812009216	5.08319E-07	1.51742E-05	0.745904872	4.66937E-07	1.39389E-05	0.901205323	5.64156E-07	1.6841E-05
Road 9	9	2300-0000	0.135481365	7.71014E-08	2.30161E-06	0.126382885	7.19235E-08	2.14704E-06	0.693740836	3.94802E-07	1.17855E-05	0.63993882	3.64184E-07	1.08715E-05	0.766321705	4.36108E-07	1.30186E-05
Road 10	10	0000-0100	0.273541574	2.10314E-07	4.67627E-06	0.250757786	1.92797E-07	4.28677E-06	1.355223799	1.04197E-06	2.31679E-05	1.240343892	9.53646E-07	2.1204E-05	1.491101678	1.14644E-06	2.54908E-05
Road 10	10	0100-0200	0.270392028	1.57074E-07	3.4925E-06	0.246856682	1.43402E-07	3.18851E-06	1.329792556	7.72494E-07	1.71762E-05	1.211106136	7.03548E-07	1.56432E-05	1.457962818	8.4695E-07	1.88317E-05
Road 10	10	0200-0300	0.268142433	8.70466E-08	1.93545E-06	0.24330393	7.89833E-08	1.75617E-06	1.300768939	4.22266E-07	9.38896E-06	1.179684223	3.82959E-07	8.51497E-06	1.422988153	4.61942E-07	1.02711E-05
Road 10	10	0300-0400	0.246979099	5.06377E-08	1.12591E-06	0.220265327	4.51606E-08	1.00413E-06	1.293045805	2.65111E-07	5.89466E-06	1.152085128	2.3621E-07	5.25206E-06	1.372350455	2.81371E-07	6.25619E-06
Road 10	10	0400-0500	0.293768672	1.15443E-07	2.56683E-06	0.264441046	1.03918E-07	2.31058E-06	1.371706215	5.39041E-07	1.19854E-05	1.230056849	4.83376E-07	1.07477E-05	1.494497894	5.87294E-07	1.30583E-05
Road 10	10	0500-0600	0.269084107	1.88497E-07	4.19117E-06	0.241357206	1.69074E-07	3.75931E-06	1.263086008	8.84808E-07	1.96735E-05	1.128835274	7.90764E-07	1.75824E-05	1.370192481	9.59838E-07	2.13417E-05
Road 10	10	0600-0700	0.332526138	4.65878E-07	1.03587E-05	0.296967189	4.16059E-07	9.25094E-06	1.589400331	2.22679E-06	4.9512E-05	1.417520376	1.98598E-06	4.41577E-05	1.714487565	2.40204E-06	5.34087E-05
Road 10	10	0700-0800	0.330573888	7.28603E-07	1.62003E-05	0.292965399	6.45712E-07	1.43572E-05	1.598706304	3.52363E-06	7.8347E-05	1.414188212	3.11695E-06	6.93044E-05	1.70715361	3.76266E-06	8.36616E-05
Road 10	10	0800-0900	0.352299077	1.49278E-06	3.31915E-05	0.308332742	1.30648E-06	2.90493E-05	1.685454892	7.1417E-06	0.000158793	1.471895322	6.23679E-06	0.000138673	1.780228065	7.54327E-06	0.000167722
Road 10	10	0900-1000	0.384079524	1.29933E-06	2.88902E-05	0.343040272	1.16049E-06	2.58032E-05	1.779339667	6.01945E-06	0.000133841	1.585208804	5.36271E-06	0.000119238	1.928249076	6.5232E-06	0.000145041
Road 10	10	1000-1100	0.382072014	1.40351E-06	3.12067E-05	0.339583422	1.24743E-06	2.77363E-05	1.675620956	6.15526E-06	0.00013686	1.483799341	5.45062E-06	0.000121193	1.823382763	6.69806E-06	0.000148929
Road 10	10	1100-1200	0.371312638	1.36399E-06	3.03279E-05	0.328438686	1.20649E-06	2.6826E-05	1.687605411	6.19929E-06	0.000137839	1.489266504	5.47071E-06	0.00012164	1.81770519	6.6772E-06	0.000148466
Road 10	10	1200-1300	0.387937949	1.47146E-06	3.27174E-05	0.346277824	1.31344E-06	2.92039E-05	1.775462679	6.73437E-06	0.000149737	1.582446608	6.00226E-06	0.000133458	1.928724432	7.3157E-06	0.000162662
Road 10	10	1300-1400	0.378398929	1.24132E-06	2.76004E-05	0.338559943	1.11063E-06	2.46945E-05	1.697609395	5.56893E-06	0.000123823	1.513953405	4.96645E-06	0.000110428	1.852513348	6.07708E-06	0.000135122
Road 10	10	1400-1500	0.35032529	1.08338E-06	2.40887E-05	0.317399947	9.81562E-07	2.18247E-05	1.678627367	5.19117E-06	0.000115424	1.516198623	4.68886E-06	0.000104255	1.83359857	5.67042E-06	0.00012608
Road 10	10	1500-1600	0.344461103	1.08879E-06	2.42089E-05	0.310998535	9.8302E-07	2.18572E-05	1.600152265	5.05785E-06	0.00011246	1.441703668	4.55701E-06	0.000101324	1.752702203	5.54003E-06	0.000123181
Road 10	10	1600-1700	0.332351038	1.16976E-06	2.60093E-05	0.300011953	1.05594E-06	2.34785E-05	1.567499565	5.51705E-06	0.00012267	1.409449935	4.96077E-06	0.000110301	1.709461887	6.01671E-06	0.00013378
Road 10	10	1700-1800	0.305547941	1.018E-06	2.26349E-05	0.279856796	9.32402E-07	2.07317E-05	1.510435702	5.03233E-06	0.000111892	1.381792678	4.60373E-06	0.000102363	1.661649473	5.53613E-06	0.000123094
Road 10	10	1800-1900	0.308909281	6.38629E-07	1.41997E-05	0.283615643	5.86338E-07	1.3037E-05	1.497627804	3.09615E-06	6.88419E-05	1.371845455	2.83611E-06	6.306E-05	1.655461098	3.42245E-06	7.60971E-05
Road 10	10	1900-2000	0.269642729	5.02166E-07	1.11655E-05	0.246435198	4.58946E-07	1.02045E-05	1.37086997	2.55303E-06	5.67658E-05	1.247987515	2.32418E-06	5.16774E-05	1.494422713	2.78312E-06	6.18819E-05
Road 10	10	2000-2100	0.308005282	3.78899E-07	8.4247E-06	0.279227785	3.43498E-07	7.63756E-06	1.443676126	1.77597E-06	3.94881E-05	1.305889765	1.60647E-06	3.57193E-05	1.58511755	1.94996E-06	4.33568E-05
Road 10	10	2100-2200	0.256425999	3.2421E-07	7.20871E-06	0.240113438	3.03585E-07	6.75013E-06	1.344890198	1.7004E-06	3.78079E-05	1.256755182	1.58897E-06	3.53302E-05	1.49686862	1.89255E-06	4.20803E-05
Road 10	10	2200-2300	0.26785354	3.52388E-07	7.83523E-06	0.247005339	3.2496E-07	7.22538E-06	1.314697471	1.72961E-06	3.84574E-05	1.211557787	1.59392E-06	3.54404E-05	1.458563126	1.91888E-06	4.26658E-05
Road 10	10	2300-0000	0.244498481	3.00775E-07	6.68763E-06	0.224482906	2.76152E-07	6.14016E-06	1.200069186	1.47629E-06	3.28248E-05	1.098867932	1.35179E-06	3.00567E-05	1.323350838	1.62795E-06	3.61969E-05
Road 11	11	0000-0100	0.305837691	2.33626E-07	1.93795E-06	0.280222285	2.14059E-07	1.77563E-06	1.481762467	1.1319E-06	9.38922E-06	1.355468105	1.03543E-06	8.58895E-06	1.63569039	1.24949E-06	1.03646E-05
Road 11	11	0100-0200	0.307722885	1.65615E-07	1.37379E-06	0.280789994	1.5112E-07	1.25355E-06	1.467070095	7.89569E-07	6.54954E-06	1.33519618	7.18595E-07	5.96081E-06	1.615986174	8.69715E-07	7.21435E-06
Road 11	11	0200-0300	0.267591946	6.96854E-08	5.78046E-07	0.242823595	6.32353E-08	5.24542E-07	1.381195977	3.59686E-07	2.98363E-06	1.252520103	3.26177E-07	2.70567E-06	1.495343697	3.89412E-07	3.23021E-06
Road 11	11	0300-0400	0.290703148	7.0657E-08	5.86106E-07	0.259245821	6.30111E-08	5.22682E-07	1.468228366	3.56861E-07	2.96019E-06	1.309050267	3.18172E-07	2.63926E-06	1.568296088	3.81183E-07	3.16194E-06

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (March) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 11	11	0400-0500	0.303612472	1.05421E-07	8.74476E-07	0.273469202	9.49546E-08	7.87656E-07	1.398472309	4.85581E-07	4.02793E-06	1.254406559	4.35558E-07	3.61299E-06	1.527875761	5.30512E-07	4.40064E-06
Road 11	11	0500-0600	0.245491091	1.15074E-07	9.54548E-07	0.219875882	1.03067E-07	8.54948E-07	1.21747799	5.70693E-07	4.73394E-06	1.087446472	5.09741E-07	4.22834E-06	1.307322354	6.12807E-07	5.08329E-06
Road 11	11	0600-0700	0.271136899	2.44776E-07	2.03044E-06	0.2408048	2.17393E-07	1.80329E-06	1.362573692	1.2301E-06	1.02038E-05	1.205498527	1.0883E-06	9.02751E-06	1.446303326	1.30569E-06	1.08308E-05
Road 11	11	0700-0800	0.327370566	6.19503E-07	5.13883E-06	0.287772735	5.4457E-07	4.51725E-06	1.639563748	3.10265E-06	2.57367E-05	1.438574626	2.7223E-06	2.25817E-05	1.726347361	3.26687E-06	2.7099E-05
Road 11	11	0800-0900	0.347907476	1.23821E-06	1.02711E-05	0.306279077	1.09006E-06	9.0421E-06	1.662352708	5.91636E-06	4.90767E-05	1.456273413	5.18292E-06	4.29927E-05	1.76255249	6.27297E-06	5.20348E-05
Road 11	11	0900-1000	0.347064558	8.85738E-07	7.34727E-06	0.309759536	7.90532E-07	6.55753E-06	1.586433006	4.04871E-06	3.35844E-05	1.407874115	3.59301E-06	2.98043E-05	1.717633651	4.38354E-06	3.63619E-05
Road 11	11	1000-1100	0.353372659	7.42328E-07	6.15767E-06	0.313316963	6.58183E-07	5.45968E-06	1.593702068	3.34788E-06	2.77709E-05	1.408192509	2.95818E-06	2.45384E-05	1.721509472	3.61637E-06	2.9998E-05
Road 11	11	1100-1200	0.311866949	7.36353E-07	6.1081E-06	0.274625262	6.48421E-07	5.3787E-06	1.547182602	3.65307E-06	3.03025E-05	1.363543583	3.21948E-06	2.67058E-05	1.638168846	3.8679E-06	3.20845E-05
Road 11	11	1200-1300	0.380664963	1.08384E-06	8.99052E-06	0.339377439	9.66283E-07	8.0154E-06	1.778715681	5.0644E-06	4.20096E-05	1.582077914	4.50453E-06	3.73654E-05	1.921455353	5.47081E-06	4.53808E-05
Road 11	11	1300-1400	0.394559677	8.28849E-07	6.87537E-06	0.352815097	7.41157E-07	6.14796E-06	1.727840587	3.62967E-06	3.01084E-05	1.53716615	3.22912E-06	2.67858E-05	1.889981247	3.97027E-06	3.29337E-05
Road 11	11	1400-1500	0.312524721	6.2939E-07	5.22084E-06	0.282548334	5.69021E-07	4.72008E-06	1.510682159	3.04235E-06	2.52365E-05	1.357197144	2.73324E-06	2.26725E-05	1.639745478	3.30227E-06	2.73926E-05
Road 11	11	1500-1600	0.277532217	5.63737E-07	4.67625E-06	0.250130622	5.08078E-07	4.21455E-06	1.387463908	2.81829E-06	2.33779E-05	1.24636123	2.53167E-06	2.10004E-05	1.496491851	3.03975E-06	2.5215E-05
Road 11	11	1600-1700	0.266290401	6.47234E-07	5.36886E-06	0.24040859	5.84326E-07	4.84704E-06	1.367329694	3.32337E-06	2.75676E-05	1.230406016	2.99057E-06	2.4807E-05	1.470814606	3.5749E-06	2.96541E-05
Road 11	11	1700-1800	0.262465823	6.51608E-07	5.40514E-06	0.239381613	5.94298E-07	4.92975E-06	1.372620451	3.40772E-06	2.82673E-05	1.249367251	3.10173E-06	2.57291E-05	1.488748864	3.69603E-06	3.06588E-05
Road 11	11	1800-1900	0.282724062	5.79192E-07	4.80444E-06	0.258887073	5.30359E-07	4.39937E-06	1.446949964	2.96424E-06	2.45886E-05	1.322924493	2.71016E-06	2.2481E-05	1.581811566	3.24052E-06	2.68803E-05
Road 11	11	1900-2000	0.270837082	4.27885E-07	3.54934E-06	0.246497211	3.89431E-07	3.23036E-06	1.369288398	2.16329E-06	1.79446E-05	1.239685644	1.95853E-06	1.62462E-05	1.486182855	2.34796E-06	1.94765E-05
Road 11	11	2000-2100	0.27680279	3.89254E-07	3.22889E-06	0.250964618	3.52919E-07	2.92749E-06	1.339858068	1.88418E-06	1.56294E-05	1.211936892	1.70429E-06	1.41372E-05	1.46290151	2.05721E-06	1.70647E-05
Road 11	11	2100-2200	0.195765397	1.97125E-07	1.63517E-06	0.179813476	1.81062E-07	1.50193E-06	1.063977019	1.07137E-06	8.88707E-06	0.976295537	9.83075E-07	8.15469E-06	1.156109013	1.16414E-06	9.65662E-06
Road 11	11	2200-2300	0.258574865	2.82816E-07	2.34598E-06	0.237092484	2.5932E-07	2.15108E-06	1.268353511	1.38726E-06	1.15074E-05	1.159790212	1.26852E-06	1.05225E-05	1.396882697	1.52784E-06	1.26736E-05
Road 11	11	2300-0000	0.246263974	2.56525E-07	2.1279E-06	0.226247581	2.35675E-07	1.95494E-06	1.22820626	1.27938E-06	1.06126E-05	1.124976177	1.17185E-06	9.72059E-06	1.351223757	1.40752E-06	1.16755E-05
Haul Road 1	HR1	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0700-0800	1.38439	2.60224E-06	3.91389E-06	1.20571	2.26637E-06	3.40874E-06	6.06563	1.14016E-05	1.71485E-05	5.28264	9.92977E-06	1.49349E-05	6.48835	1.21961E-05	1.83436E-05
Haul Road 1	HR1	0800-0900	1.38739	2.60788E-06	3.92237E-06	1.20671	2.26825E-06	3.41156E-06	6.07842	1.14256E-05	1.71847E-05	5.28674	9.93748E-06	1.49465E-05	6.49345	1.22057E-05	1.8358E-05
Haul Road 1	HR1	0900-1000	1.3717	2.57838E-06	3.87802E-06	1.20481	2.26468E-06	3.40619E-06	6.00997	1.12969E-05	1.69912E-05	5.27884	9.92263E-06	1.49241E-05	6.48365	1.21873E-05	1.83303E-05
Haul Road 1	HR1	1000-1100	1.36681	2.56919E-06	3.86419E-06	1.19961	2.25491E-06	3.39149E-06	5.98827	1.12561E-05	1.69298E-05	5.25586	9.87944E-06	1.48592E-05	6.45547	1.21343E-05	1.82507E-05
Haul Road 1	HR1	1100-1200	1.3717	2.57838E-06	3.87802E-06	1.20421	2.26355E-06	3.4045E-06	6.00997	1.12969E-05	1.69912E-05	5.27595	9.9172E-06	1.4916E-05	6.48016	1.21808E-05	1.83205E-05
Haul Road 1	HR1	1200-1300	1.3717	2.57838E-06	3.87802E-06	1.20881	2.2722E-06	3.4175E-06	6.00997	1.12969E-05	1.69912E-05	5.29613	9.95513E-06	1.4973E-05	6.50494	1.22273E-05	1.83905E-05
Haul Road 1	HR1	1300-1400	1.3704	2.57594E-06	3.87434E-06	1.20881	2.2722E-06	3.4175E-06	6.00397	1.12857E-05	1.69742E-05	5.29613	9.95513E-06	1.4973E-05	6.50494	1.22273E-05	1.83905E-05
Haul Road 1	HR1	1400-1500	1.36101	2.55829E-06	3.84779E-06	1.21341	2.28085E-06	3.4305E-06	5.96279	1.12083E-05	1.68578E-05	5.31631	9.99306E-06	1.50301E-05	6.52972	1.22739E-05	1.84606E-05
Haul Road 1	HR1	1500-1600	1.35161	2.54062E-06	3.82122E-06	1.20881	2.2722E-06	3.4175E-06	5.92163	1.11309E-05	1.67414E-05	5.29613	9.95513E-06	1.4973E-05	6.50494	1.22273E-05	1.83905E-05
Haul Road 1	HR1	1600-1700	1.34842	2.53462E-06	3.8122E-06	1.19961	2.25491E-06	3.39149E-06	5.90793	1.11051E-05	1.67027E-05	5.25586	9.87944E-06	1.48592E-05	6.45547	1.21343E-05	1.82507E-05
Haul Road 1	HR1	1700-1800	1.33593	2.51115E-06	3.77689E-06	1.20481	2.26468E-06	3.40619E-06	5.85296	1.10018E-05	1.65473E-05	5.27884	9.92263E-06	1.49241E-05	6.48365	1.21873E-05	1.83303E-05
Haul Road 1	HR1	1800-1900	1.32863	2.49742E-06	3.75625E-06	1.20671	2.26825E-06	3.41156E-06	5.82139	1.09425E-05	1.6458E-05	5.28674	9.93748E-06	1.49465E-05	6.49345	1.22057E-05	1.8358E-05
Haul Road 1	HR1	1900-2000	1.32573	2.49197E-06	3.74805E-06	1.19452	2.24534E-06	3.3771E-06	5.8085	1.09182E-05	1.64216E-05	5.23337	9.83716E-06	1.47956E-05	6.42789	1.20825E-05	1.81727E-05
Haul Road 1	HR1	2000-2100	1.31404	0.00000247	3.715E-06	1.18642	2.23011E-06	3.3542E-06	5.75703	1.08215E-05	1.6276E-05	5.1978	9.7703E-06	1.4695E-05	6.38422	1.20004E-05	1.80492E-05
Haul Road 1	HR1	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0700-0800	1.38439	1.79325E-06	4.77346E-06	1.20571	1.5618E-06	4.15736E-06	6.06563	7.85703E-06	2.09147E-05	5.28264	6.8428E-06	1.82149E-05	6.48835	8.4046E-06	2.23722E-05
Haul Road 2	HR2	0800-0900	1.38739	1.79714E-06	4.7838E-06	1.20671	1.5631E-06	4.16081E-06	6.07842	7.8736E-06	2.09588E-05	5.28674	6.84811E-06	1.8229E-05	6.49345	8.4112E-06	2.23898E-05
Haul Road 2	HR2	0900-1000	1.3717	1.77681E-06	4.7297E-06	1.20481	1.56063E-06	4.15426E-06	6.00997	7.78494E-06	2.07227E-05	5.27884	6.83788E-06	1.82018E-05	6.48365	8.39851E-06	2.2356E-05
Haul Road 2	HR2	1000-1100	1.36681	1.77048E-06	4.71284E-06	1.19961	1.5539E-06	4.13633E-06	5.98827	7.75683E-06	2.06479E-05	5.25586	6.80811E-06	1.81225E-05	6.45547	8.36201E-06	2.22588E-05
Haul Road 2	HR2	1100-1200	1.3717	1.77681E-06	4.7297E-06	1.20421	1.55986E-06	4.15219E-06	6.00997	7.78494E-06	2.07227E-05	5.27595	6.83413E-06	1.81918E-05	6.48016	8.39399E-06	2.2344E-05
Haul Road 2	HR2	1200-1300	1.3717	1.77681E-06	4.7297E-06	1.20881	1.56582E-06	4.16805E-06	6.00997	7.78494E-06	2.07227E-05	5.29613	6.86027E-06	1.82614E-05	6.50494	8.42609E-06	2.24294E-05
Haul Road 2	HR2	1300-1400	1.3704	1.77513E-06	4.72522E-06	1.20881	1.56582E-06	4.16805E-06	6.00397	7.77716E-06	2.07021E-05	5.29613	6.86027E-06	1.82614E-05	6.50494	8.42609E-06	2.24294E-05
Haul Road 2	HR2	1400-1500	1.36101	1.76297E-06	4.69284E-06	1.21341	1.57177E-06	4.18391E-06	5.96279	7.72382E-06	2.05601E-05	5.31631	6.88641E-06	1.8331E-05	6.52972	8.45819E-06	2.25149E-05
Haul Road 2	HR2	1500-1600	1.35161	1.75079E-06	4.66043E-06	1.20881	1.56582E-06	4.16805E-06	5.92163	7.67051E-06	2.04181E-05	5.29613	6.86027E-06	1.82614E-05	6.50494	8.42609E-06	2.24294E-05
Haul Road 2	HR2	1600-1700	1.34842	1.74666E-06	4.64943E-06	1.19961	1.5539E-06	4.13633E-06	5.90793	7.65276E-06	2.03709E-05	5.25586	6.80811E-06	1.81225E-05	6.45547	8.36201E-06	2.22588E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (March) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Haul Road 2	HR2	1700-1800	1.33593	1.73048E-06	4.60637E-06	1.20481	1.56063E-06	4.15426E-06	5.85296	7.58155E-06	2.01814E-05	5.27884	6.83788E-06	1.82018E-05	6.48365	8.39851E-06	2.2356E-05
Haul Road 2	HR2	1800-1900	1.32863	1.72102E-06	4.5812E-06	1.20671	1.5631E-06	4.16081E-06	5.82139	7.54066E-06	2.00725E-05	5.28674	6.84811E-06	1.8229E-05	6.49345	8.4112E-06	2.23898E-05
Haul Road 2	HR2	1900-2000	1.32573	1.71727E-06	4.5712E-06	1.19452	1.54731E-06	4.11878E-06	5.8085	7.52396E-06	2.00281E-05	5.23337	6.77898E-06	1.8045E-05	6.42789	8.32628E-06	2.21638E-05
Haul Road 2	HR2	2000-2100	1.31404	1.70212E-06	4.53089E-06	1.18642	1.53681E-06	4.09085E-06	5.75703	7.45729E-06	1.98506E-05	5.1978	6.7329E-06	1.79223E-05	6.38422	8.26972E-06	2.20132E-05
Haul Road 2	HR2	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0700-0800	1.38439	1.79325E-06	4.7668E-06	1.20571	1.5618E-06	4.15156E-06	6.06563	7.85703E-06	2.08855E-05	5.28264	6.8428E-06	1.81895E-05	6.48835	8.4046E-06	2.2341E-05
Haul Road 3	HR3	0800-0900	1.38739	1.79714E-06	4.77713E-06	1.20671	1.5631E-06	4.15501E-06	6.07842	7.8736E-06	2.09295E-05	5.28674	6.84811E-06	1.82036E-05	6.49345	8.4112E-06	2.23586E-05
Haul Road 3	HR3	0900-1000	1.3717	1.77681E-06	4.72311E-06	1.20481	1.56063E-06	4.14847E-06	6.00997	7.78494E-06	2.06938E-05	5.27884	6.83788E-06	1.81764E-05	6.48365	8.39851E-06	2.23248E-05
Haul Road 3	HR3	1000-1100	1.36681	1.77048E-06	4.70627E-06	1.19961	1.5539E-06	4.13056E-06	5.98827	7.75683E-06	2.06191E-05	5.25586	6.80811E-06	1.80973E-05	6.45547	8.36201E-06	2.22278E-05
Haul Road 3	HR3	1100-1200	1.3717	1.77681E-06	4.72311E-06	1.20421	1.55986E-06	4.1464E-06	6.00997	7.78494E-06	2.06938E-05	5.27595	6.83413E-06	1.81664E-05	6.48016	8.39399E-06	2.23128E-05
Haul Road 3	HR3	1200-1300	1.3717	1.77681E-06	4.72311E-06	1.20881	1.56582E-06	4.16224E-06	6.00997	7.78494E-06	2.06938E-05	5.29613	6.86027E-06	1.82359E-05	6.50494	8.42609E-06	2.23982E-05
Haul Road 3	HR3	1300-1400	1.3704	1.77513E-06	4.71863E-06	1.20881	1.56582E-06	4.16224E-06	6.00397	7.77716E-06	2.06732E-05	5.29613	6.86027E-06	1.82359E-05	6.50494	8.42609E-06	2.23982E-05
Haul Road 3	HR3	1400-1500	1.36101	1.76297E-06	4.6863E-06	1.21341	1.57177E-06	4.17808E-06	5.96279	7.72382E-06	2.05314E-05	5.31631	6.88641E-06	1.83054E-05	6.52972	8.45819E-06	2.24835E-05
Haul Road 3	HR3	1500-1600	1.35161	1.75079E-06	4.65393E-06	1.20881	1.56582E-06	4.16224E-06	5.92163	7.67051E-06	2.03897E-05	5.29613	6.86027E-06	1.82359E-05	6.50494	8.42609E-06	2.23982E-05
Haul Road 3	HR3	1600-1700	1.34842	1.74666E-06	4.64295E-06	1.19961	1.5539E-06	4.13056E-06	5.90793	7.65276E-06	2.03425E-05	5.25586	6.80811E-06	1.80973E-05	6.45547	8.36201E-06	2.22278E-05
Haul Road 3	HR3	1700-1800	1.33593	1.73048E-06	4.59994E-06	1.20481	1.56063E-06	4.14847E-06	5.85296	7.58155E-06	2.01532E-05	5.27884	6.83788E-06	1.81764E-05	6.48365	8.39851E-06	2.23248E-05
Haul Road 3	HR3	1800-1900	1.32863	1.72102E-06	4.57481E-06	1.20671	1.5631E-06	4.15501E-06	5.82139	7.54066E-06	2.00445E-05	5.28674	6.84811E-06	1.82036E-05	6.49345	8.4112E-06	2.23586E-05
Haul Road 3	HR3	1900-2000	1.32573	1.71727E-06	4.56482E-06	1.19452	1.54731E-06	4.11303E-06	5.8085	7.52396E-06	2.00001E-05	5.23337	6.77898E-06	1.80198E-05	6.42789	8.32628E-06	2.21329E-05
Haul Road 3	HR3	2000-2100	1.31404	1.70212E-06	4.52457E-06	1.18642	1.53681E-06	4.08514E-06	5.75703	7.45729E-06	1.98229E-05	5.1978	6.7329E-06	1.78973E-05	6.38422	8.26972E-06	2.19825E-05
Haul Road 3	HR3	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (April) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 1	1	0000-0100	0.087824916	2.95057E-07	2.40034E-06	0.078050391	2.62219E-07	2.13319E-06	0.518753408	1.74281E-06	1.4178E-05	0.458977207	1.54198E-06	1.25443E-05	0.537027598	1.8042E-06	1.46775E-05
Road 1	1	0100-0200	0.067853486	1.38814E-07	1.12928E-06	0.060461101	1.23691E-07	1.00625E-06	0.408425596	8.35555E-07	6.79737E-06	0.362407431	7.41412E-07	6.03149E-06	0.422868532	8.65103E-07	7.03774E-06
Road 1	1	0200-0300	0.065395584	9.45094E-08	7.68848E-07	0.058160909	8.40539E-08	6.83791E-07	0.415980909	6.01174E-07	4.89064E-06	0.367101429	5.30533E-07	4.31597E-06	0.425262338	6.14587E-07	4.99976E-06
Road 1	1	0300-0400	0.054815818	5.65854E-08	4.60331E-07	0.048705091	5.02774E-08	4.09014E-07	0.334858909	3.45669E-07	2.81207E-06	0.29533	3.04864E-07	2.48011E-06	0.344035091	3.55141E-07	2.88913E-06
Road 1	1	0400-0500	0.071153605	1.1485E-07	9.34322E-07	0.064625233	1.04313E-07	8.48598E-07	0.406663721	6.56402E-07	5.33992E-06	0.36794	5.93897E-07	4.83144E-06	0.432565233	6.9821E-07	5.68004E-06
Road 1	1	0500-0600	0.058798457	2.07472E-07	1.68782E-06	0.052999468	1.8701E-07	1.52136E-06	0.34635617	1.22213E-06	9.94219E-06	0.310351011	1.09508E-06	8.90866E-06	0.363350479	1.28209E-06	1.043E-05
Road 1	1	0600-0700	0.079240415	5.01202E-07	4.07735E-06	0.070149703	4.43702E-07	3.60958E-06	0.421002018	2.66287E-06	2.16628E-05	0.370768991	2.34514E-06	1.90781E-05	0.440918694	2.78884E-06	2.26877E-05
Road 1	1	0700-0800	0.067379039	7.10717E-07	5.78179E-06	0.058975623	6.22078E-07	5.06069E-06	0.37042694	3.90728E-06	3.17863E-05	0.321558594	3.39182E-06	2.75929E-05	0.380534217	4.01389E-06	3.26536E-05
Road 1	1	0800-0900	0.072939697	9.50078E-07	7.72902E-06	0.063609352	8.28545E-07	6.74034E-06	0.390633141	5.0882E-06	4.13933E-05	0.338997824	4.41562E-06	3.59218E-05	0.402607176	5.24417E-06	4.26621E-05
Road 1	1	0900-1000	0.079158137	1.06079E-06	8.62969E-06	0.069114874	9.26202E-07	7.53479E-06	0.438408095	5.87506E-06	4.77945E-05	0.381032437	5.10618E-06	4.15395E-05	0.450147311	6.03238E-06	4.90743E-05
Road 1	1	1000-1100	0.091325827	1.19128E-06	9.69125E-06	0.079337986	1.03491E-06	8.41913E-06	0.48858246	6.37321E-06	5.1847E-05	0.422787568	5.51497E-06	4.48651E-05	0.502125554	6.54987E-06	5.32842E-05
Road 1	1	1100-1200	0.08230997	1.04123E-06	8.47059E-06	0.072401484	9.1589E-07	7.4509E-06	0.471359985	5.96277E-06	4.85081E-05	0.412900371	5.22325E-06	4.24919E-05	0.485301855	6.13914E-06	4.99428E-05
Road 1	1	1200-1300	0.08447904	1.05757E-06	8.60352E-06	0.074603928	9.33949E-07	7.59782E-06	0.4776397	5.97946E-06	4.86438E-05	0.420201949	5.26041E-06	4.27942E-05	0.494805877	6.19436E-06	5.0392E-05
Road 1	1	1300-1400	0.089014161	1.18452E-06	9.63622E-06	0.077847898	1.03593E-06	8.42741E-06	0.492981566	6.56013E-06	5.33677E-05	0.429553865	5.7161E-06	4.65013E-05	0.507401763	6.75202E-06	5.49287E-05
Road 1	1	1400-1500	0.084835787	1.22445E-06	9.96109E-06	0.07289212	1.05207E-06	8.55871E-06	0.459945267	6.63847E-06	5.4005E-05	0.393626697	5.68129E-06	4.62181E-05	0.466518817	6.73335E-06	5.47768E-05
Road 1	1	1500-1600	0.091445126	1.22888E-06	9.99712E-06	0.079603953	1.06975E-06	8.7026E-06	0.494219777	6.64154E-06	5.40299E-05	0.42836993	5.75662E-06	4.6831E-05	0.507973883	6.82638E-06	5.55336E-05
Road 1	1	1600-1700	0.085644927	1.21362E-06	9.87302E-06	0.074968715	1.06234E-06	8.64228E-06	0.468298132	6.63598E-06	5.39847E-05	0.40810751	5.78305E-06	4.7046E-05	0.483076225	6.84539E-06	5.56883E-05
Road 1	1	1700-1800	0.06940285	9.87375E-07	8.03244E-06	0.059655237	8.48699E-07	6.90429E-06	0.38838971	5.52551E-06	4.49509E-05	0.331333338	4.71379E-06	3.83474E-05	0.390988575	5.56249E-06	4.52517E-05
Road 1	1	1800-1900	0.061279858	8.90214E-07	7.24202E-06	0.053573307	7.78261E-07	6.33127E-06	0.366682506	5.32681E-06	4.33344E-05	0.317672248	4.61483E-06	3.75424E-05	0.371245556	5.39309E-06	4.38736E-05
Road 1	1	1900-2000	0.072719798	8.09363E-07	6.58428E-06	0.064082597	7.13232E-07	5.80224E-06	0.4162843	4.63319E-06	3.76917E-05	0.36449828	4.05682E-06	3.30028E-05	0.428580877	4.77005E-06	3.88051E-05
Road 1	1	2000-2100	0.066019503	6.2327E-07	5.07039E-06	0.05767161	5.4446E-07	4.42926E-06	0.389658111	3.67864E-06	2.99263E-05	0.338162545	3.19249E-06	2.59714E-05	0.395834155	3.73695E-06	3.04006E-05
Road 1	1	2100-2200	0.068709978	5.91927E-07	4.81542E-06	0.060407146	5.20399E-07	4.23353E-06	0.408976819	3.52328E-06	2.86624E-05	0.357372549	3.07872E-06	2.50458E-05	0.417779695	3.59912E-06	2.92793E-05
Road 1	1	2200-2300	0.066642437	5.44096E-07	4.42631E-06	0.059976667	4.89674E-07	3.98357E-06	0.396252299	3.23517E-06	2.63186E-05	0.354565241	2.89482E-06	2.35498E-05	0.414541908	3.38449E-06	2.75333E-05
Road 1	1	2300-0000	0.059398744	4.34788E-07	3.53707E-06	0.052304897	3.82862E-07	3.11464E-06	0.363339	2.65958E-06	2.1636E-05	0.317076231	2.32094E-06	1.88812E-05	0.369381128	2.7038E-06	2.19958E-05
Road 2	2	0000-0100	0.145446731	1.75075E-07	1.13062E-06	0.129260577	1.55591E-07	1.00479E-06	0.614522308	7.39703E-07	4.77693E-06	0.544194615	6.55049E-07	4.23024E-06	0.673455192	8.10641E-07	5.23504E-06
Road 2	2	0100-0200	0.102353235	8.05558E-08	5.20221E-07	0.091178824	7.17611E-08	4.63426E-07	0.504520294	3.97076E-07	2.56428E-06	0.447757941	3.52402E-07	2.27578E-06	0.538936765	4.24163E-07	2.7392E-06
Road 2	2	0200-0300	0.106338261	5.66153E-08	3.65616E-07	0.094672174	5.04042E-08	3.25505E-07	0.57879913	3.08157E-07	1.99005E-06	0.512622609	2.72924E-07	1.76252E-06	0.607294783	3.23328E-07	2.08802E-06
Road 2	2	0300-0400	0.091472	3.17611E-08	2.0511E-07	0.081294	2.82271E-08	1.82288E-07	0.331428	1.15079E-07	7.4317E-07	0.292669333	1.01621E-07	6.5626E-07	0.373963333	1.29848E-07	8.38548E-07
Road 2	2	0400-0500	0.123898519	7.74366E-08	5.00078E-07	0.11257963	7.03623E-08	4.54393E-07	0.595742222	3.72339E-07	2.40453E-06	0.539973333	3.37483E-07	2.17943E-06	0.652552963	4.07846E-07	2.63383E-06
Road 2	2	0500-0600	0.098409123	1.29845E-07	8.38529E-07	0.088790351	1.17154E-07	7.56569E-07	0.434193158	5.72894E-07	3.69969E-06	0.389694737	5.14181E-07	3.32053E-06	0.478485088	6.31334E-07	4.0771E-06
Road 2	2	0600-0700	0.138851538	3.34272E-07	2.1587E-06	0.122957212	2.96008E-07	1.91159E-06	0.560405577	1.34912E-06	8.71251E-06	0.494298462	1.18998E-06	7.68476E-06	0.617255673	1.48599E-06	9.59635E-06
Road 2	2	0700-0800	0.115279875	4.26963E-07	2.75728E-06	0.10090275	3.73714E-07	2.41341E-06	0.477918813	1.77007E-06	1.14309E-05	0.415452	1.53871E-06	9.93685E-06	0.51635475	1.91243E-06	1.23503E-05
Road 2	2	0800-0900	0.130916809	9.21266E-07	5.94945E-06	0.11414398	8.03235E-07	5.18722E-06	0.549028947	3.86354E-06	2.49503E-05	0.476271941	3.35154E-06	2.16439E-05	0.590415921	4.15478E-06	2.68312E-05
Road 2	2	0900-1000	0.156169246	9.10987E-07	5.88307E-06	0.136239087	7.94728E-07	5.13228E-06	0.664197778	3.87449E-06	2.50211E-05	0.577745873	3.37018E-06	2.17643E-05	0.71398496	4.16491E-06	2.68966E-05
Road 2	2	1000-1100	0.173176578	7.4963E-07	4.84104E-06	0.150364439	6.50883E-07	4.20334E-06	0.729245882	3.15669E-06	2.03856E-05	0.631727059	2.73456E-06	1.76595E-05	0.782091497	3.38544E-06	2.18629E-05
Road 2	2	1100-1200	0.204409071	8.659E-07	5.59189E-06	0.179702623	7.6124E-07	4.91602E-06	0.833975082	3.53281E-06	2.28145E-05	0.732111311	3.1013E-06	2.00279E-05	0.911813934	3.86255E-06	2.49439E-05
Road 2	2	1200-1300	0.156769947	6.89497E-07	4.45271E-06	0.138405895	6.0873E-07	3.93112E-06	0.685067368	3.01303E-06	1.94578E-05	0.603030579	2.65222E-06	1.71278E-05	0.741436474	3.26095E-06	2.10589E-05
Road 2	2	1300-1400	0.174552556	9.01047E-07	5.81887E-06	0.152470359	7.87058E-07	5.08274E-06	0.712586682	3.6784E-06	2.37547E-05	0.62081139	3.20465E-06	2.06953E-05	0.773281749	3.99171E-06	2.57781E-05
Road 2	2	1400-1500	0.150652727	5.7541E-07	3.71594E-06	0.129461091	4.94469E-07	3.19324E-06	0.650626909	2.48503E-06	1.60481E-05	0.557520424	2.12942E-06	1.37516E-05	0.686981515	2.62389E-06	1.69448E-05
Road 2	2	1500-1600	0.188728689	7.99476E-07	5.16294E-06	0.16408459	6.95081E-07	4.48876E-06	0.742912732	3.14706E-06	2.03234E-05	0.644567596	2.73046E-06	1.7633E-05	0.808652186	3.42554E-06	2.21218E-05
Road 2	2	1600-1700	0.155203846	7.93983E-07	5.12746E-06	0.135850271	6.94975E-07	4.48808E-06	0.651625928	3.33355E-06	2.15277E-05	0.568602715	2.90882E-06	1.87849E-05	0.704452986	3.6038E-06	2.3273E-05
Road 2	2	1700-1800	0.121647658	6.25134E-07	4.03705E-06	0.104558108	5.37313E-07	3.46991E-06	0.482153964	2.47774E-06	1.6001E-05	0.412531486	2.11995E-06	1.36905E-05	0.517089595	2.65727E-06	1.71604E-05
Road 2	2	1800-1900	0.13289212	7.69052E-07	4.96646E-06	0.11627032	6.72861E-07	4.34527E-06	0.59737196	3.45701E-06	2.23251E-05	0.520082	3.00973E-06	1.94366E-05	0.63635232	3.68259E-06	2.37818E-05
Road 2	2	1900-2000	0.111597811	4.36575E-07	2.81936E-06	0.098396746	3.84932E-07	2.48585E-06	0.505177396	1.97627E-06	1.27626E-05	0.442734793	1.73199E-06	1.11851E-05	0.541131538	2.11693E-06	1.36709E-05
Road 2	2	2000-2100	0.106056463	3.60887E-07	2.33057E-06	0.092618163	3.15159E-07	2.03527E-06	0.451389252	1.53598E-06	9.91919E-06	0.391333469	1.33162E-06	8.59948E-06	0.483951633	1.64678E-06	1.06347E-05
Road 2	2	2100-2200	0.081582092	2.88937E-07	1.86592E-06	0.071674248	2.53846E-07	1.63931E-06	0.373303922	1.32212E-06	8.53811E-06	0.324846928	1.1505E-06	7.42981E-06	0.396521176	1.40435E-06	9.06913E-06
Road 2	2	2200-2300	0.11800688	3.41455E-07	2.20508E-06	0.10627088	3.07497E-07	1.98578E-06	0.50183872	1.45208E-06	9.37739E-06	0.44954752	1.30077E-06	8.40027E-06	0.5558184	1.60827E-06	1.03861E-05
Road 2	2	2300-0000	0.107280541	2.75651E-07	1.78013E-06	0.094493243	2.42795E-07	1.56795E-06	0.483798378	1.24309E-06	8.02777E-06	0.423088198	1.0871E-06	7.0204E-06	0.517581441	1.3299E-06	8.58834E-06
Road 3	3	0000-0100	0.091605	3.3794E-07	1.31349E-05	0.081415696	3.0035E-07	1.16739E-05	0.504075913	1.85958E-06	7.22774E-05	0.44606613	1.64558E-06	6.39596E-05	0.527481826	1.94593E-06	7.56335E-05
Road 3	3	0100-0200	0.068825986	1.56759E-07	6.09284E-06	0.060893451	1.38692E-07	5.39061E-06	0.400270775	9.11663E-07	3.54341E-05	0.352520563	8.02907E-07	3.1207E-05	0.413414014	9.41599E-07	3.65976E-05
Road 3	3	0200-0300	0.067614949	1.07367E-07	4.17308E-06	0.060820707	9.65781E-08	3.75375E-06	0.42055798	6.67811E-07	2.59561E-05	0.3759	5.96897E-07	2.31999E-05	0.436720707	6.93476E-07	2.69537E-05
Road 3	3	0300-0400	0.055706857	6.25459E-08	2.431E-06	0.050501286	5.67013E-08	2.20384E-06	0.306111857	3.43693E-07	1.33585E-05	0.275688857	3.09535E-07	1.20308E-05	0.326190143	3.66236E-07	1.42347E-05
Road 3	3	0400-0500	0.074231593	1.34542E-07	5.22933E-06	0.067372832	1.22111E-07	4.74616E-06	0.409680796	7.42534E-07	2.88604E-05	0.37041	6.71357E-07	2.6094E-05	0.437782832	7.93468E-07	3.08401E-05
Road 3	3	0500-0600	0.06103439	2.40825E-07	9.36027E-06	0.054278089	2.14167E-07	8.32412E-06	0.338824837	1.33691E-06	5.19624E-05	0.29917187	1.18045E-06	4.58812E-05	0.353449959	1.39462E-06	5.42053E-05
Road 3	3	0600-0700	0.083916284	5.97615E-07	2.32278E-05	0.074186869	5.28326E-07	2.05347E-05	0.41797482	2.97663E-06	0.000115694	0.367715023	2.6187E-06	0.000101782	0.441901892	3.14703E-06	0.000122317
Road 3	3	0700-0800	0.070157015	8.18084E-07	3.17969E-05	0.062440798	7.28107E-07	2.82997E-05	0.367114924	4.28084E-06	0.000166385	0.324319409	3.78181E-06	0.000146989	0.386760206	4.50992E-06	0.000175289
Road 3	3	0800-0900	0.077726359	1.24296E-06	4.83106E-05	0.068975557	1.10302E-06	4.28715E-05	0.383728445	6.13637E-06	0.000238505	0.338796399	5.41784E-06	0.000210578	0.407771956	6.52086E-06	0.000253449
Road 3	3	0900-1000	0.086327658	1.33619E-06	5.19345E-05	0.07521372	1.16417E-06	4.52484E-05	0.444440269	6.87912E-06	0.000267374	0.385594653	5.9683E-06	0.000231973	0.460808373	7.13247E-06	0.000277221
Road 3	3	1000-1100	0.097388441	1.37306E-06	5.33673E-05	0.084665131	1.19367E-06	4.63951E-05	0.490814937	6.91988E-06	0.000268959	0.425217747	5.99505E-06	0.000233012	0.509882878	7.18872E-06	0.000279407
Road 3	3	1100-1200	0.095447518	1.30742E-06	5.08161E-05	0.08403685	1.15112E-06	4.47411E-05	0.494416838	6.77241E-06	0.000263227	0.433777037	5.94178E-06	0.000230942	0.517813888	7.0929E-06	0.000275683
Road 3	3	1200-1300	0.090406557	1.23837E-06	4.81323E-05	0.078720773	1.0783E-06	4.19108E-05	0.478960012	6.56069E-06	0.000254997	0.41548404	5.69121E-06	0.000221203	0.494204813	6.76951E-06	0.000263114

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (April) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 3	3	1300-1400	0.096508803	1.43496E-06	5.57732E-05	0.083794919	1.24592E-06	4.84257E-05	0.491118274	7.30227E-06	0.000283821	0.424856419	6.31705E-06	0.000245528	0.508651338	7.56297E-06	0.000293953
Road 3	3	1400-1500	0.088935557	1.33234E-06	5.17846E-05	0.07758758	1.16233E-06	4.5177E-05	0.459847591	6.88895E-06	0.000267756	0.399742976	5.98853E-06	0.000232759	0.477330557	7.15086E-06	0.000277936
Road 3	3	1500-1600	0.09909143	1.4225E-06	5.52889E-05	0.086063609	1.23548E-06	4.80199E-05	0.499055542	7.16414E-06	0.000278452	0.431774391	6.19829E-06	0.000240912	0.517838	7.43377E-06	0.000288932
Road 3	3	1600-1700	0.091959682	1.43959E-06	5.59533E-05	0.081732162	1.27948E-06	4.97303E-05	0.470246496	7.36152E-06	0.000286124	0.416220338	6.51576E-06	0.000253251	0.4979525	7.79525E-06	0.000302982
Road 3	3	1700-1800	0.074000112	1.162E-06	4.51641E-05	0.063457222	9.96451E-07	3.87296E-05	0.380435792	5.97388E-06	0.00023219	0.324077436	5.0889E-06	0.000197793	0.387534658	6.08535E-06	0.000236522
Road 3	3	1800-1900	0.069377381	1.14283E-06	4.44188E-05	0.060392833	9.94828E-07	3.86665E-05	0.382058608	6.29351E-06	0.000244613	0.329800049	5.43267E-06	0.000211154	0.390192882	6.4275E-06	0.000249821
Road 3	3	1900-2000	0.072425408	8.8287E-07	3.43149E-05	0.063903395	7.78986E-07	3.02772E-05	0.398658263	4.85967E-06	0.000188883	0.349508658	4.26053E-06	0.000165596	0.413412053	5.03952E-06	0.000195873
Road 3	3	2000-2100	0.06790339	7.06852E-07	2.74736E-05	0.059480478	6.19172E-07	2.40657E-05	0.372086703	3.8733E-06	0.000150545	0.323762928	3.37026E-06	0.000130994	0.383243405	3.98944E-06	0.000155059
Road 3	3	2100-2200	0.065903398	6.50092E-07	2.52675E-05	0.05911348	5.83115E-07	2.26642E-05	0.371728293	3.66685E-06	0.000142521	0.331510927	3.27013E-06	0.000127102	0.390624407	3.85325E-06	0.000149766
Road 3	3	2200-2300	0.070791297	6.39264E-07	2.48466E-05	0.063459893	5.7306E-07	2.22734E-05	0.387463268	3.4989E-06	0.000135993	0.345245773	3.11766E-06	0.000121176	0.408705666	3.69072E-06	0.000143449
Road 3	3	2300-0000	0.063085916	5.07959E-07	1.97431E-05	0.055317829	4.45411E-07	1.7312E-05	0.362568327	2.91935E-06	0.000113468	0.315146255	2.53751E-06	9.86267E-05	0.370464084	2.98292E-06	0.000115939
Road 4	4	0000-0100	0.245580857	1.98966E-07	2.13044E-06	0.218081429	1.76686E-07	1.89188E-06	1.212280286	9.82172E-07	1.05167E-05	1.076261429	8.71971E-07	9.3367E-06	1.294342857	1.04866E-06	1.12286E-05
Road 4	4	0100-0200	0.2318565	1.07341E-07	1.14936E-06	0.2050715	9.49405E-08	1.01658E-06	1.1471275	5.31078E-07	5.68655E-06	1.014559	4.69703E-07	5.02938E-06	1.2196305	5.64644E-07	6.04597E-06
Road 4	4	0200-0300	0.251045385	7.55461E-08	8.08915E-07	0.226064615	6.80287E-08	7.28423E-07	1.200793846	3.6135E-07	3.86918E-06	1.081534615	3.25462E-07	3.48491E-06	1.307599231	3.93491E-07	4.21333E-06
Road 4	4	0300-0400	0.224685714	3.64074E-08	3.89835E-07	0.203931429	3.30444E-08	3.53826E-07	1.15363	1.86931E-07	2.00158E-06	1.046847143	1.69628E-07	1.81631E-06	1.250778571	2.02672E-07	2.17013E-06
Road 4	4	0400-0500	0.230463571	7.46873E-08	7.9972E-07	0.209182143	6.77905E-08	7.25872E-07	1.103069286	3.57476E-07	3.8277E-06	1.000966429	3.24387E-07	3.4734E-06	1.210148571	3.92178E-07	4.19927E-06
Road 4	4	0500-0600	0.2160125	1.20007E-07	1.28498E-06	0.192250417	1.06806E-07	1.14363E-06	0.994330833	5.52406E-07	5.91493E-06	0.884392917	4.91329E-07	5.26095E-06	1.076643333	5.98135E-07	6.40458E-06
Road 4	4	0600-0700	0.238682075	2.92828E-07	3.13547E-06	0.2111	2.58988E-07	2.77314E-06	1.10477434	1.35539E-06	1.4513E-05	0.976386415	1.19788E-06	1.28264E-05	1.187486415	1.45687E-06	1.55995E-05
Road 4	4	0700-0800	0.243312283	5.18165E-07	5.54829E-06	0.216582174	4.6124E-07	4.93876E-06	1.16786663	2.48712E-06	2.66311E-05	1.038584783	2.2118E-06	2.3683E-05	1.255166957	2.67304E-06	2.86218E-05
Road 4	4	0800-0900	0.249701419	8.95919E-07	9.59313E-06	0.221504774	7.94751E-07	8.50986E-06	1.202816129	4.31566E-06	4.62103E-05	1.066458839	3.82641E-06	4.09716E-05	1.287963613	4.62117E-06	4.94815E-05
Road 4	4	0900-1000	0.260529595	8.92555E-07	9.5571E-06	0.226523514	7.76053E-07	8.30965E-06	1.191552635	4.08217E-06	4.37102E-05	1.035241081	3.54666E-06	3.79761E-05	1.261764595	4.32271E-06	4.62858E-05
Road 4	4	1000-1100	0.288638333	9.62128E-07	1.03021E-05	0.250616597	8.35389E-07	8.94499E-06	1.323540625	4.4118E-06	4.72397E-05	1.148997292	3.82999E-06	4.10099E-05	1.399613889	4.66538E-06	4.99549E-05
Road 4	4	1100-1200	0.266647548	9.56722E-07	1.02442E-05	0.234482258	8.41314E-07	9.00843E-06	1.21484471	4.35882E-06	4.66724E-05	1.068009419	3.83198E-06	4.10312E-05	1.302491677	4.67329E-06	5.00396E-05
Road 4	4	1200-1300	0.274493446	9.40394E-07	1.00693E-05	0.238808716	8.18141E-07	8.76031E-06	1.305728919	4.47333E-06	4.78985E-05	1.135537432	3.89027E-06	4.16553E-05	1.374346149	4.70841E-06	5.04156E-05
Road 4	4	1300-1400	0.282720667	9.81669E-07	1.05113E-05	0.245264333	8.51612E-07	9.1187E-06	1.3135492	4.56093E-06	4.88366E-05	1.139022133	3.95494E-06	4.23478E-05	1.384286467	4.80655E-06	5.14665E-05
Road 4	4	1400-1500	0.257289071	8.33807E-07	8.92806E-06	0.224321143	7.26967E-07	7.78405E-06	1.233776071	3.99835E-06	4.28126E-05	1.074762357	3.48303E-06	3.72948E-05	1.2990835	4.20999E-06	4.50788E-05
Road 4	4	1500-1600	0.28990656	8.3885E-07	8.98205E-06	0.25146664	7.27623E-07	7.79108E-06	1.34696176	3.89746E-06	4.17323E-05	1.16802952	3.37972E-06	3.61886E-05	1.41949616	4.10734E-06	4.39796E-05
Road 4	4	1600-1700	0.266917016	7.66151E-07	8.20362E-06	0.23702	6.80335E-07	7.28474E-06	1.252487258	3.5951E-06	3.84948E-05	1.111769032	3.19119E-06	3.41699E-05	1.348789032	3.87152E-06	4.14546E-05
Road 4	4	1700-1800	0.259905906	7.64075E-07	8.1814E-06	0.222922047	6.5535E-07	7.01721E-06	1.239692205	3.64447E-06	3.90234E-05	1.062504646	3.12357E-06	3.34458E-05	1.285426693	3.77892E-06	4.0463E-05
Road 4	4	1800-1900	0.284657547	6.98465E-07	7.47887E-06	0.247891604	6.08253E-07	6.51291E-06	1.370303302	3.36232E-06	3.60023E-05	1.192972925	2.9272E-06	3.13432E-05	1.440864528	3.53545E-06	3.78562E-05
Road 4	4	1900-2000	0.251148378	4.30208E-07	4.60648E-06	0.221707838	3.79777E-07	4.0665E-06	1.211611486	2.07545E-06	2.2223E-05	1.069338243	1.83174E-06	1.96135E-05	1.291046081	2.21151E-06	2.368E-05
Road 4	4	2000-2100	0.220189796	2.49752E-07	2.67424E-06	0.192917143	2.18818E-07	2.34301E-06	1.066501633	1.20969E-06	1.29528E-05	0.933284082	1.05859E-06	1.13349E-05	1.126201224	1.2774E-06	1.36779E-05
Road 4	4	2100-2200	0.182001892	1.55881E-07	1.66911E-06	0.163482973	1.4002E-07	1.49928E-06	0.899777027	7.70642E-07	8.25171E-06	0.807353784	6.91484E-07	7.40411E-06	0.970836757	8.31504E-07	8.90339E-06
Road 4	4	2200-2300	0.244309683	3.56285E-07	3.81495E-06	0.219095714	3.19515E-07	3.42123E-06	1.161047302	1.69319E-06	1.813E-05	1.04087873	1.51795E-06	1.62535E-05	1.259974444	1.83746E-06	1.96748E-05
Road 4	4	2300-0000	0.231854898	2.62984E-07	2.81592E-06	0.203461429	2.30778E-07	2.47107E-06	1.132267959	1.28429E-06	1.37516E-05	0.992664694	1.12594E-06	1.20561E-05	1.196126122	1.35672E-06	1.45272E-05
Road 5	5	0000-0100	0.07754829	2.80909E-07	3.79878E-06	0.068935389	2.4971E-07	3.37687E-06	0.432388601	1.56627E-06	2.1181E-05	0.382135596	1.38424E-06	1.87193E-05	0.451070984	1.63395E-06	2.20962E-05
Road 5	5	0100-0200	0.052224918	1.19584E-07	1.61716E-06	0.046214098	1.05821E-07	1.43103E-06	0.319752705	7.32166E-07	9.90122E-06	0.281061557	6.43572E-07	8.70314E-06	0.327275656	7.49392E-07	1.01342E-05
Road 5	5	0200-0300	0.049901744	8.05471E-08	1.08925E-06	0.044853953	7.23994E-08	9.79071E-07	0.342750814	5.53239E-07	7.48155E-06	0.305395698	4.92944E-07	6.66617E-06	0.350249651	5.65343E-07	7.64524E-06
Road 5	5	0300-0400	0.043777619	5.17641E-08	7.00015E-07	0.039673333	4.6911E-08	6.34387E-07	0.240432698	2.84295E-07	3.84458E-06	0.215858413	2.55238E-07	3.45163E-06	0.255531746	3.02149E-07	4.08602E-06
Road 5	5	0400-0500	0.06073202	1.12847E-07	1.52605E-06	0.055124848	1.02428E-07	1.38515E-06	0.346121212	6.43131E-07	8.69718E-06	0.312537172	5.80728E-07	7.85329E-06	0.36766202	6.83156E-07	9.23844E-06
Road 5	5	0500-0600	0.049935909	2.06192E-07	2.78837E-06	0.044395318	1.83314E-07	2.47899E-06	0.289719545	1.19629E-06	1.61776E-05	0.255240545	1.05392E-06	1.42524E-05	0.299635864	1.23724E-06	1.67314E-05
Road 5	5	0600-0700	0.072700052	5.29422E-07	7.15948E-06	0.064268015	4.68018E-07	6.32909E-06	0.364369588	2.65344E-06	3.5883E-05	0.320104253	2.33109E-06	3.15238E-05	0.384372268	2.79911E-06	3.78529E-05
Road 5	5	0700-0800	0.057343476	6.81277E-07	9.21303E-06	0.05103703	6.06352E-07	8.19981E-06	0.302199731	3.59032E-06	4.85526E-05	0.266291564	3.16371E-06	4.27835E-05	0.317328594	3.77006E-06	5.09833E-05
Road 5	5	0800-0900	0.061487177	9.72855E-07	1.31561E-05	0.054579265	8.63557E-07	1.1678E-05	0.299916856	4.74531E-06	6.41717E-05	0.264269964	4.1813E-06	5.65445E-05	0.318849229	5.04486E-06	6.82225E-05
Road 5	5	0900-1000	0.069669436	1.06701E-06	1.44294E-05	0.060772537	9.30751E-07	1.25867E-05	0.370633946	5.67638E-06	7.67627E-05	0.321377512	4.922E-06	6.65611E-05	0.382150049	5.85275E-06	7.91478E-05
Road 5	5	1000-1100	0.078911213	1.0871E-06	1.47011E-05	0.068645027	9.45673E-07	1.27885E-05	0.407963052	5.62021E-06	7.60032E-05	0.353120136	4.86468E-06	6.5786E-05	0.421765163	5.81035E-06	7.85745E-05
Road 5	5	1100-1200	0.077396581	1.01539E-06	1.37314E-05	0.068173705	8.94396E-07	1.20951E-05	0.417801001	5.48129E-06	7.41245E-05	0.366239299	4.80483E-06	6.49766E-05	0.434413004	5.69922E-06	7.70717E-05
Road 5	5	1200-1300	0.072241598	9.58611E-07	1.29635E-05	0.062962405	8.35481E-07	1.12984E-05	0.393106337	5.21633E-06	7.05414E-05	0.340583607	4.51938E-06	6.11164E-05	0.403546011	5.35486E-06	7.24148E-05
Road 5	5	1300-1400	0.0792939	1.15637E-06	1.56378E-05	0.068907529	1.0049E-06	1.35895E-05	0.412199665	6.01125E-06	8.12912E-05	0.356236268	5.19511E-06	7.02545E-05	0.425143797	6.20001E-06	8.38439E-05
Road 5	5	1400-1500	0.074731814	1.11368E-06	1.50606E-05	0.065249937	9.72381E-07	1.31497E-05	0.390568174	5.8204E-06	7.87104E-05	0.339260214	5.05579E-06	6.83704E-05	0.404510151	6.02817E-06	8.15201E-05
Road 5	5	1500-1600	0.083768831	1.21062E-06	1.63715E-05	0.072813052	1.05229E-06	1.42303E-05	0.427094818	6.17235E-06	8.34699E-05	0.369213065	5.33585E-06	7.21577E-05	0.442026117	6.38814E-06	8.6388E-05
Road 5	5	1600-1700	0.078307503	1.25368E-06	1.69538E-05	0.069608792	1.11442E-06	1.50705E-05	0.406582943	6.5093E-06	8.80264E-05	0.359601419	5.75713E-06	7.78548E-05	0.429210211	6.87155E-06	9.29253E-05
Road 5	5	1700-1800	0.058510658	9.34545E-07	1.2638E-05	0.050187955	8.01613E-07	1.08404E-05	0.304545899	4.86427E-06	6.57805E-05	0.258761692	4.133E-06	5.58913E-05	0.308949647	4.93461E-06	6.67317E-05
Road 5	5	1800-1900	0.054221284	9.35236E-07	1.26474E-05	0.04722506	8.14561E-07	1.10155E-05	0.308701251	5.32463E-06	7.2006E-05	0.265631382	4.58174E-06	6.19598E-05	0.312856442	5.3963E-06	7.29752E-05
Road 5	5	1900-2000	0.061650306	7.93771E-07	1.07343E-05	0.054405466	7.00491E-07	9.47287E-06	0.347184898	4.47014E-06	6.04505E-05	0.303839504	3.91205E-06	5.29034E-05	0.358244971	4.61254E-06	6.23762E-05
Road 5	5	2000-2100	0.060082167	6.76601E-07	9.1498E-06	0.052639917	5.92792E-07	8.01644E-06	0.334058467	3.76192E-06	5.08731E-05	0.2903545	3.26976E-06	4.42175E-05	0.342994417	3.86255E-06	5.2234E-05
Road 5	5	2100-2200	0.061448374	6.66613E-07	9.01474E-06	0.055102924	5.97776E-07	8.08383E-06	0.350323685	3.80043E-06	5.1394E-05	0.312180069	3.38664E-06	4.57981E-05	0.367282993	3.98441E-06	5.3882E-05
Road 5	5	2200-2300	0.059192184	5.54371E-07	7.49687E-06	0.053058076	4.96922E-07	6.71996E-06	0.332728717	3.11621E-06	4.21411E-05	0.295908176	2.77136E-06	3.74777E-05	0.348966253	3.26828E-06	4.41976E-05
Road 5	5	2300-0000	0.052981148	4.50459E-07	6.09164E-06	0.046447042	3.94904E-07	5.34037E-06	0.312935519	2.66066E-06	3.59806E-05	0.271353091	2.30711E-06	3.11995E-05	0.317800132	2.70202E-06	3.65399E-05
Road 6	6	0000-0100	0.0463774	1.30567E-07	4.66724E-06	0.041143667	1.15832E-07	4.14054E-06	0.298660267	8.40823E-07	3.0056E-05	0.262254667	7.3833E-07	2.63923E-05	0.303398333	8.54162E-07	3.05328E-05
Road 6	6	0100-0200	0.061566316	1.3173E-07	4.7088E-06	0.054480088	1.16568E-07	4.16682E-06	0.34682886	7.42089E-07	2.65267E-05	0.304418158	6.51345E-07	2.32829E-05	0.358898246	7.67913E-07	2.74498E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (April) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 6	6	0200-0300	0.056176456	8.32947E-08	2.97745E-06	0.050586076	7.50056E-08	2.68115E-06	0.321105063	4.76113E-07	1.70191E-05	0.287066582	4.25643E-07	1.5215E-05	0.337652658	5.00649E-07	1.78962E-05
Road 6	6	0300-0400	0.056854839	6.61599E-08	2.36495E-06	0.051699032	6.01603E-08	2.15049E-06	0.362947258	4.22349E-07	1.50972E-05	0.327874355	3.81535E-07	1.36383E-05	0.379573387	4.41696E-07	1.57888E-05
Road 6	6	0400-0500	0.061425556	1.03759E-07	3.70898E-06	0.05576	9.41892E-08	3.36688E-06	0.360339778	6.08682E-07	2.17579E-05	0.324954444	5.4891E-07	1.96213E-05	0.380714444	6.43099E-07	2.29882E-05
Road 6	6	0500-0600	0.055835062	1.69769E-07	6.06855E-06	0.049703765	1.51126E-07	5.40215E-06	0.336757654	1.02393E-06	3.66012E-05	0.296918765	9.02794E-07	3.22712E-05	0.346622531	1.05392E-06	3.76734E-05
Road 6	6	0600-0700	0.059303966	3.22788E-07	1.15384E-05	0.05246631	2.85571E-07	1.0208E-05	0.373695276	2.034E-06	7.27073E-05	0.327458586	1.78234E-06	6.37114E-05	0.379924897	2.06791E-06	7.39194E-05
Road 6	6	0700-0800	0.056359372	4.88702E-07	1.74691E-05	0.050168896	4.35023E-07	1.55503E-05	0.323713528	2.80698E-06	0.000100338	0.28537342	2.47452E-06	8.84541E-05	0.335542316	2.90954E-06	0.000104004
Road 6	6	0800-0900	0.047704955	5.9273E-07	2.11877E-05	0.042307085	5.25662E-07	1.87903E-05	0.280811843	3.48907E-06	0.00012472	0.246022613	3.05681E-06	0.000109269	0.288329698	3.58247E-06	0.000128059
Road 6	6	0900-1000	0.051625308	6.13341E-07	2.19245E-05	0.044922954	5.33713E-07	1.90781E-05	0.292413523	3.47406E-06	0.000124183	0.251479384	2.98773E-06	0.000106799	0.296402338	3.52145E-06	0.000125877
Road 6	6	1000-1100	0.068866131	6.91505E-07	2.47185E-05	0.05984071	6.00878E-07	2.1479E-05	0.376857421	3.78414E-06	0.000135267	0.325140785	3.26483E-06	0.000116705	0.384981495	3.86571E-06	0.000138184
Road 6	6	1100-1200	0.078976372	7.88578E-07	2.81885E-05	0.069586955	6.94825E-07	2.48372E-05	0.412863647	4.12244E-06	0.00014736	0.361960489	3.61417E-06	0.000129192	0.431547444	4.30899E-06	0.000154029
Road 6	6	1200-1300	0.07625065	7.48481E-07	2.67552E-05	0.066485545	6.52627E-07	2.33288E-05	0.382621434	3.75584E-06	0.000134256	0.331935086	3.2583E-06	0.000116471	0.398420631	3.91092E-06	0.0001398
Road 6	6	1300-1400	0.088704184	8.67396E-07	3.10059E-05	0.077090173	7.53828E-07	2.69463E-05	0.452936104	4.42905E-06	0.000158321	0.391480038	3.8281E-06	0.000136839	0.468570211	4.58193E-06	0.000163785
Road 6	6	1400-1500	0.084363293	9.08869E-07	3.24884E-05	0.073658885	7.93547E-07	2.83661E-05	0.424312909	4.57124E-06	0.000163403	0.368402213	3.9689E-06	0.000141872	0.442061098	4.76245E-06	0.000170238
Road 6	6	1500-1600	0.074395783	7.8473E-07	2.80509E-05	0.0646379	6.81804E-07	2.43717E-05	0.38755153	4.08791E-06	0.000146126	0.334365445	3.5269E-06	0.000126072	0.399003345	4.20871E-06	0.000150444
Road 6	6	1600-1700	0.076623455	8.28362E-07	2.96106E-05	0.068130365	7.36544E-07	2.63285E-05	0.380995139	4.11887E-06	0.000147233	0.336961875	3.64283E-06	0.000130216	0.40509224	4.37938E-06	0.000156545
Road 6	6	1700-1800	0.058245443	6.66849E-07	2.38372E-05	0.049983098	5.72254E-07	2.04558E-05	0.300539164	3.44086E-06	0.000122997	0.255558393	2.92588E-06	0.000104588	0.305541492	3.49813E-06	0.000125044
Road 6	6	1800-1900	0.056418737	7.29589E-07	2.60799E-05	0.04908939	6.34808E-07	2.26918E-05	0.296916197	3.83963E-06	0.000137251	0.25590656	3.3093E-06	0.000118294	0.304995951	3.94411E-06	0.000140986
Road 6	6	1900-2000	0.065659905	6.45754E-07	2.30831E-05	0.057916279	5.69597E-07	2.03608E-05	0.345349695	3.39646E-06	0.00012141	0.301932462	2.96946E-06	0.000106146	0.35984874	3.53905E-06	0.000126507
Road 6	6	2000-2100	0.052202608	4.09547E-07	1.46397E-05	0.045702273	3.5855E-07	1.28167E-05	0.30584122	2.39943E-06	8.57699E-05	0.265080239	2.07965E-06	7.43389E-05	0.310782512	2.4382E-06	8.71556E-05
Road 6	6	2100-2200	0.072177917	4.87689E-07	1.74329E-05	0.064750722	4.37505E-07	1.5639E-05	0.385202611	2.60272E-06	9.30367E-05	0.343511917	2.32103E-06	8.29673E-05	0.408262639	2.75853E-06	9.86063E-05
Road 6	6	2200-2300	0.05401378	3.86247E-07	1.38068E-05	0.048385853	3.46002E-07	1.23682E-05	0.305445879	2.18421E-06	7.80768E-05	0.270233255	1.93241E-06	6.90759E-05	0.318619108	2.27841E-06	8.14441E-05
Road 6	6	2300-0000	0.037076667	2.4843E-07	8.88038E-06	0.03250084	2.1777E-07	7.7844E-06	0.2331207	1.56201E-06	5.58357E-05	0.201583081	1.3507E-06	4.8282E-05	0.234083922	1.56847E-06	5.60664E-05
Road 7	7	0000-0100	0.067897903	1.83355E-07	4.57715E-06	0.060256935	1.62721E-07	4.06205E-06	0.401268065	1.08361E-06	2.70504E-05	0.353867634	9.55604E-07	2.3855E-05	0.41412457	1.11833E-06	2.79171E-05
Road 7	7	0100-0200	0.083414766	1.75604E-07	4.38366E-06	0.073986502	1.55756E-07	3.88818E-06	0.456045804	9.60065E-07	2.39664E-05	0.402571609	8.47492E-07	2.11562E-05	0.476558111	1.00325E-06	2.50443E-05
Road 7	7	0200-0300	0.071503925	9.75848E-08	2.43603E-06	0.064154364	8.75545E-08	2.18565E-06	0.404720112	5.52341E-07	1.37882E-05	0.361247704	4.93012E-07	1.23072E-05	0.425402067	5.80566E-07	1.44928E-05
Road 7	7	0300-0400	0.072123192	7.95816E-08	1.98662E-06	0.065089281	7.18203E-08	1.79287E-06	0.434623641	4.79569E-07	1.19716E-05	0.390449072	4.30826E-07	1.07548E-05	0.455538353	5.02647E-07	1.25477E-05
Road 7	7	0400-0500	0.079823021	1.2864E-07	3.21127E-06	0.072479685	1.16806E-07	2.91585E-06	0.44420397	7.15863E-07	1.78703E-05	0.401635139	6.4726E-07	1.61577E-05	0.474114824	7.64066E-07	1.90736E-05
Road 7	7	0500-0600	0.072716778	2.09037E-07	5.21826E-06	0.065048404	1.86993E-07	4.66796E-06	0.40977963	1.17799E-06	2.94064E-05	0.364266899	1.04715E-06	2.61403E-05	0.429315303	1.23414E-06	3.08083E-05
Road 7	7	0600-0700	0.076717493	3.94296E-07	9.84291E-06	0.067888298	3.48917E-07	8.71011E-06	0.444403124	2.28405E-06	5.70172E-05	0.390702892	2.00805E-06	5.01274E-05	0.45859119	2.35697E-06	5.88376E-05
Road 7	7	0700-0800	0.074297469	6.09462E-07	1.52142E-05	0.065766342	5.39481E-07	1.34672E-05	0.405176407	3.32366E-06	8.29695E-05	0.356117945	2.92124E-06	7.29236E-05	0.421884287	3.46072E-06	8.63908E-05
Road 7	7	0800-0900	0.073785927	9.15934E-07	2.28647E-05	0.065066674	8.07698E-07	2.01628E-05	0.400451776	4.97096E-06	0.000124091	0.350596444	4.35209E-06	0.000108642	0.415663118	5.15979E-06	0.000128805
Road 7	7	0900-1000	0.076875067	8.83965E-07	2.20666E-05	0.066939244	7.69716E-07	1.92146E-05	0.402731498	4.6309E-06	0.000115602	0.348204621	4.00391E-06	9.99506E-05	0.415143864	4.77362E-06	0.000119165
Road 7	7	1000-1100	0.090849069	9.16705E-07	2.28839E-05	0.078914437	7.9628E-07	1.98777E-05	0.477774019	4.82094E-06	0.000120346	0.41301584	4.1675E-06	0.000104034	0.491930277	4.96378E-06	0.000123912
Road 7	7	1100-1200	0.100372619	1.01134E-06	2.52465E-05	0.088334175	8.90046E-07	2.22185E-05	0.513907082	5.17808E-06	0.000129262	0.45085632	4.54278E-06	0.000113403	0.539190494	5.43283E-06	0.000135621
Road 7	7	1200-1300	0.09810724	9.87094E-07	2.46411E-05	0.08587379	8.64009E-07	2.15685E-05	0.495343764	4.98384E-06	0.000124413	0.432340917	4.34995E-06	0.000108589	0.518214707	5.21396E-06	0.000130157
Road 7	7	1300-1400	0.105187864	1.04154E-06	2.60001E-05	0.091577557	9.06771E-07	2.2636E-05	0.532152498	5.2692E-06	0.000131536	0.461661287	4.57122E-06	0.000114113	0.553238844	5.47799E-06	0.000136749
Road 7	7	1400-1500	0.098160655	1.01756E-06	2.54016E-05	0.085208059	8.8329E-07	2.20498E-05	0.499441378	5.17734E-06	0.000129243	0.431788483	4.47604E-06	0.000111736	0.516996541	5.35933E-06	0.000133786
Road 7	7	1500-1600	0.091357634	9.29795E-07	2.32107E-05	0.079373725	8.07828E-07	2.0166E-05	0.471664465	4.80038E-06	0.000119833	0.407853379	4.15094E-06	0.000103621	0.487227105	4.95877E-06	0.000123787
Road 7	7	1600-1700	0.093332566	9.82416E-07	2.45243E-05	0.082495728	8.68348E-07	2.16768E-05	0.464850579	4.89301E-06	0.000122145	0.40940087	4.30934E-06	0.000107575	0.491896599	5.17769E-06	0.000129252
Road 7	7	1700-1800	0.073067478	8.13662E-07	2.03116E-05	0.062755843	6.98834E-07	1.74452E-05	0.378521221	4.21512E-06	0.000105223	0.322793642	3.59455E-06	8.97317E-05	0.385549484	4.29338E-06	0.000107177
Road 7	7	1800-1900	0.067009912	7.75393E-07	1.93563E-05	0.058444083	6.76275E-07	1.6882E-05	0.353039649	4.08513E-06	0.000101978	0.305578779	3.53595E-06	8.82688E-05	0.364022861	4.21222E-06	0.000105151
Road 7	7	1900-2000	0.076301572	6.6689E-07	1.66478E-05	0.067289832	5.88126E-07	1.46815E-05	0.404584613	3.53615E-06	8.82737E-05	0.354451807	3.09798E-06	7.73356E-05	0.421741639	3.6861E-06	9.20171E-05
Road 7	7	2000-2100	0.070747708	5.0947E-07	1.2718E-05	0.061886008	4.45655E-07	1.1125E-05	0.387217529	2.78844E-06	6.96085E-05	0.33635996	2.4222E-06	6.04661E-05	0.398245968	2.86786E-06	7.1591E-05
Road 7	7	2100-2200	0.080416089	4.83357E-07	1.20662E-05	0.071636371	4.30584E-07	1.07488E-05	0.430176163	2.58566E-06	6.45464E-05	0.381224773	2.29143E-06	5.72015E-05	0.452861144	2.72201E-06	6.79502E-05
Road 7	7	2200-2300	0.067334899	4.36991E-07	1.09087E-05	0.060420063	3.92115E-07	9.78846E-06	0.370465391	2.40425E-06	6.00179E-05	0.329495178	2.13836E-06	5.33804E-05	0.389915241	2.53048E-06	6.31689E-05
Road 7	7	2300-0000	0.048444793	2.89077E-07	7.2163E-06	0.042551169	2.53909E-07	6.33839E-06	0.288055474	1.71887E-06	4.29085E-05	0.250530077	1.49495E-06	3.73188E-05	0.293081246	1.74886E-06	4.36572E-05
Road 8	8	0000-0100	0.215354167	1.56621E-07	2.58184E-06	0.191217778	1.39067E-07	2.29248E-06	1.066505278	7.7564E-07	1.27861E-05	0.946605278	6.8844E-07	1.13487E-05	1.137823056	8.27508E-07	1.36412E-05
Road 8	8	0100-0200	0.223420667	1.35406E-07	2.23212E-06	0.197636333	1.1978E-07	1.97452E-06	1.103455333	6.68761E-07	1.10243E-05	0.976045667	5.91543E-07	9.75136E-06	1.173682	7.11322E-07	1.17259E-05
Road 8	8	0200-0300	0.211603333	6.41222E-08	1.05703E-06	0.190630667	5.77669E-08	9.52265E-07	1.098766	3.32959E-07	5.48871E-06	0.989942	2.99982E-07	4.9451E-06	1.180572667	3.57749E-07	5.89736E-06
Road 8	8	0300-0400	0.189965714	5.37277E-08	8.85681E-07	0.172597857	4.88156E-08	8.04706E-07	0.966265	2.73287E-07	4.50503E-06	0.87748	2.48176E-07	4.09109E-06	1.050077857	2.96992E-07	4.8958E-06
Road 8	8	0400-0500	0.214986667	9.12065E-08	1.5035E-06	0.195195714	8.28103E-08	1.3651E-06	1.031265714	4.37507E-07	7.21213E-06	0.936026667	3.97102E-07	6.54608E-06	1.131222381	4.79913E-07	7.91118E-06
Road 8	8	0500-0600	0.207701765	1.42664E-07	2.35176E-06	0.184923529	1.27018E-07	2.09385E-06	0.978977353	6.72429E-07	1.10847E-05	0.871129118	5.98351E-07	9.8636E-06	1.056052647	7.25369E-07	1.19574E-05
Road 8	8	0600-0700	0.230797258	2.89079E-07	4.76537E-06	0.204187419	2.5575E-07	4.21594E-06	1.074480484	1.34581E-06	2.21852E-05	0.950095	1.19002E-06	1.9617E-05	1.154282419	1.44577E-06	2.38329E-05
Road 8	8	0700-0800	0.23259951	4.79296E-07	7.90101E-06	0.207090686	4.26732E-07	7.03452E-06	1.094046569	2.2544E-06	3.71629E-05	0.973406667	2.00581E-06	3.3065E-05	1.180497353	2.43254E-06	4.00995E-05
Road 8	8	0800-0900	0.257982813	1.00066E-06	1.64955E-05	0.229008646	8.88276E-07	1.46429E-05	1.218206198	4.72516E-06	7.78925E-05	1.080617813	4.19149E-06	6.90951E-05	1.309626458	5.07976E-06	8.3738E-05
Road 8	8	0900-1000	0.281660316	8.99037E-07	1.48203E-05	0.244960633	7.81895E-07	1.28892E-05	1.264787468	4.0371E-06	6.65501E-05	1.099795506	3.51046E-06	5.78686E-05	1.344756139	4.29235E-06	7.07578E-05
Road 8	8	1000-1100	0.265102563	8.56897E-07	1.41256E-05	0.230226375	7.44166E-07	1.22673E-05	1.225748375	3.96201E-06	6.53123E-05	1.063812625	3.43859E-06	5.66838E-05	1.294039	4.18275E-06	6.89511E-05
Road 8	8	1100-1200	0.273736541	8.79275E-07	1.44945E-05	0.240701132	7.73161E-07	1.27453E-05	1.277911698	4.10481E-06	6.76662E-05	1.123453145	3.60867E-06	5.94875E-05	1.364154277	4.38183E-06	7.22328E-05
Road 8	8	1200-1300	0.277285706	9.52294E-07	1.56982E-05	0.241199765	8.28363E-07	1.36552E-05	1.305425471	4.48328E-06	7.39052E-05	1.135358118	3.89921E-06	6.4277E-05	1.376557882	4.72757E-06	7.79323E-05
Road 8	8	1300-1400	0.254758148	8.33754E-07	1.37441E-05	0.221058148	7.23463E-07	1.1926E-05	1.183439877	3.87308E-06	6.38462E-05	1.026409938	3.35916E-06	5.53745E-05	1.247468086	4.08262E-06	6.73005E-05
Road 8	8	1400-1500	0.248965971	6.99117E-07	1.15247E-05	0.217095612	6.09622E-07	1.00494E-05	1.20422964	3.38157E-06	5.5744E-05	1.049439712	2.94691E-06	4.85787E-05	1.266535324	3.55653E-06	5.86281E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (April) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 8	8	1500-1600	0.257678921	7.23583E-07	1.1928E-05	0.223496835	6.27597E-07	1.03457E-05	1.215193165	3.41236E-06	5.62515E-05	1.05318482	2.95743E-06	4.87521E-05	1.276681655	3.58503E-06	5.90978E-05
Road 8	8	1600-1700	0.253285034	7.62414E-07	1.25681E-05	0.22491047	6.77003E-07	1.11601E-05	1.183479262	3.56239E-06	5.87247E-05	1.050300067	3.16151E-06	5.21163E-05	1.275210537	3.83851E-06	6.32764E-05
Road 8	8	1700-1800	0.210417628	6.63134E-07	1.09315E-05	0.180418205	5.68591E-07	9.373E-06	1.022031859	3.22095E-06	5.30961E-05	0.874848718	2.7571E-06	4.54497E-05	1.055266923	3.32569E-06	5.48227E-05
Road 8	8	1800-1900	0.209659813	4.53204E-07	7.4709E-06	0.182685888	3.94897E-07	6.50972E-06	1.043752243	2.25619E-06	3.71925E-05	0.908456075	1.96373E-06	3.23714E-05	1.091141963	2.35863E-06	3.88811E-05
Road 8	8	1900-2000	0.203852727	3.17104E-07	5.22734E-06	0.180048701	2.80076E-07	4.61694E-06	1.03989026	1.61761E-06	2.66656E-05	0.917977403	1.42796E-06	2.35395E-05	1.098026104	1.70804E-06	2.81564E-05
Road 8	8	2000-2100	0.225143766	3.50224E-07	5.77331E-06	0.197258312	3.06846E-07	5.05825E-06	1.047645714	1.62967E-06	2.68645E-05	0.916947273	1.42636E-06	2.3513E-05	1.114205584	1.73321E-06	2.85713E-05
Road 8	8	2100-2200	0.18423963	2.00989E-07	3.31322E-06	0.16539963	1.80436E-07	2.97442E-06	0.935171667	1.02019E-06	1.68174E-05	0.83847963	9.14705E-07	1.50786E-05	1.003879259	1.09514E-06	1.8053E-05
Road 8	8	2200-2300	0.221274688	2.86093E-07	4.71613E-06	0.1984375	2.56566E-07	4.22939E-06	1.063207656	1.37465E-06	2.26606E-05	0.952730938	1.23181E-06	2.0306E-05	1.151168438	1.48838E-06	2.45354E-05
Road 8	8	2300-0000	0.176909057	1.89418E-07	3.12248E-06	0.155333962	1.66317E-07	2.74168E-06	0.885315472	9.47914E-07	1.5626E-05	0.776298113	8.31188E-07	1.37018E-05	0.931632075	9.97505E-07	1.64435E-05
Road 9	9	0000-0100	0.189896057	5.04319E-08	1.50548E-06	0.172405009	4.57867E-08	1.36681E-06	0.848166711	2.25253E-07	6.72419E-06	0.764306301	2.02982E-07	6.05935E-06	0.936711309	2.48768E-07	7.42616E-06
Road 9	9	0100-0200	0.206781779	4.31486E-08	1.28806E-06	0.187944914	3.92179E-08	1.17072E-06	0.8735776	1.82287E-07	5.44158E-06	0.787533606	1.64332E-07	4.9056E-06	0.975478521	2.0355E-07	6.07633E-06
Road 9	9	0200-0300	0.080164337	7.60348E-09	2.26977E-07	0.072351973	6.86249E-09	2.04857E-07	0.56501841	5.35913E-08	1.59979E-06	0.510184733	4.83904E-08	1.44454E-06	0.582536706	5.52528E-08	1.64939E-06
Road 9	9	0300-0400	0.095981527	7.28298E-09	2.17409E-07	0.087050307	6.60529E-09	1.97179E-07	0.58030756	4.40331E-08	1.31446E-06	0.526661192	3.99625E-08	1.19295E-06	0.613711499	4.65678E-08	1.39013E-06
Road 9	9	0400-0500	0.220654314	4.18575E-08	1.24952E-06	0.204374073	3.87692E-08	1.15733E-06	0.893903278	1.69571E-07	5.06199E-06	0.822979981	1.56117E-07	4.66037E-06	1.027354054	1.94886E-07	5.81769E-06
Road 9	9	0500-0600	0.159557723	5.14551E-08	1.53602E-06	0.145657477	4.69724E-08	1.40221E-06	0.79084763	2.55037E-07	7.61329E-06	0.718994696	2.31865E-07	6.92158E-06	0.864652173	2.78838E-07	8.32379E-06
Road 9	9	0600-0700	0.188507224	1.1443E-07	3.41593E-06	0.171843118	1.04314E-07	3.11396E-06	0.957730353	5.81373E-07	1.7355E-05	0.868085324	5.26955E-07	1.57305E-05	1.039928442	6.31269E-07	1.88445E-05
Road 9	9	0700-0800	0.161901102	1.5049E-07	4.49238E-06	0.148713575	1.38232E-07	4.12646E-06	0.90097121	8.37468E-07	2.49999E-05	0.822055351	7.64115E-07	2.28101E-05	0.970768926	9.02346E-07	2.69366E-05
Road 9	9	0800-0900	0.250601243	5.46692E-07	1.63197E-05	0.227131516	4.95492E-07	1.47913E-05	1.184669329	2.58438E-06	7.71482E-05	1.065145137	2.32364E-06	6.93645E-05	1.292276653	2.81913E-06	8.41558E-05
Road 9	9	0900-1000	0.264422239	4.36394E-07	1.30271E-05	0.238883071	3.94245E-07	1.17689E-05	1.134211701	1.87187E-06	5.58784E-05	1.014354456	1.67406E-06	4.99735E-05	1.253237527	2.0683E-06	6.17424E-05
Road 9	9	1000-1100	0.269056811	3.72587E-07	1.11224E-05	0.239117821	3.31128E-07	9.88475E-06	1.132421491	1.56817E-06	4.68125E-05	1.000497924	1.38548E-06	4.1359E-05	1.239615745	1.71661E-06	5.12437E-05
Road 9	9	1100-1200	0.18718393	2.69863E-07	8.05588E-06	0.166052468	2.39398E-07	7.14644E-06	0.978836536	1.41119E-06	4.21264E-05	0.873032252	1.25865E-06	3.75729E-05	1.039084719	1.49805E-06	4.47193E-05
Road 9	9	1200-1300	0.280301947	3.93477E-07	1.1746E-05	0.253982185	3.5653E-07	1.0643E-05	1.248762316	1.75296E-06	5.2329E-05	1.127694685	1.58301E-06	4.72557E-05	1.38167687	1.93954E-06	5.78987E-05
Road 9	9	1300-1400	0.320745235	3.71152E-07	1.10795E-05	0.289166064	3.3461E-07	9.98867E-06	1.219947144	1.41167E-06	4.21407E-05	1.091490906	1.26302E-06	3.77034E-05	1.38065697	1.59763E-06	4.76921E-05
Road 9	9	1400-1500	0.208033476	2.68351E-07	8.01074E-06	0.188732631	2.43454E-07	7.26753E-06	1.000386482	1.29044E-06	3.85219E-05	0.897228791	1.15737E-06	3.45496E-05	1.085961422	1.40083E-06	4.18171E-05
Road 9	9	1500-1600	0.173395015	1.87488E-07	5.59683E-06	0.155429225	1.68062E-07	5.01693E-06	0.883887204	9.55725E-07	2.853E-05	0.790248699	8.54476E-07	2.55076E-05	0.945677924	1.02254E-06	3.05245E-05
Road 9	9	1600-1700	0.18110157	2.74836E-07	8.20433E-06	0.166653407	2.5291E-07	7.54979E-06	0.977305326	1.48314E-06	4.42742E-05	0.893893646	1.35655E-06	4.04955E-05	1.060547053	1.60946E-06	4.80453E-05
Road 9	9	1700-1800	0.157773261	2.06511E-07	6.16472E-06	0.143607274	1.87969E-07	5.61121E-06	0.929056218	1.21605E-06	3.63013E-05	0.842313953	1.10251E-06	3.2912E-05	0.985921226	1.29048E-06	3.85232E-05
Road 9	9	1800-1900	0.157262604	1.31262E-07	3.9184E-06	0.145305874	1.21282E-07	3.62048E-06	0.901036249	7.52067E-07	2.24505E-05	0.829711662	6.92534E-07	2.06733E-05	0.975017535	8.13816E-07	2.42938E-05
Road 9	9	1900-2000	0.160742898	1.31118E-07	3.91409E-06	0.148507416	1.21137E-07	3.61616E-06	0.849386516	6.92844E-07	2.06826E-05	0.77527645	6.32392E-07	1.8878E-05	0.923783866	7.53529E-07	2.24941E-05
Road 9	9	2000-2100	0.169047294	9.29967E-08	2.77611E-06	0.152153849	8.37032E-08	2.49869E-06	0.747669023	4.1131E-07	1.22783E-05	0.67275918	3.701E-07	1.10481E-05	0.824913028	4.53803E-07	1.35468E-05
Road 9	9	2100-2200	0.020267136	1.07649E-08	3.21352E-07	0.01864014	9.90076E-09	2.95555E-07	0.290629696	1.54369E-07	4.60817E-06	0.263089815	1.39741E-07	4.17151E-06	0.281729955	1.49642E-07	4.46706E-06
Road 9	9	2200-2300	0.16095993	1.00761E-07	3.00789E-06	0.147466178	9.2314E-08	2.75573E-06	0.774534593	4.8486E-07	1.44739E-05	0.705958553	4.41931E-07	1.31924E-05	0.853424731	5.34245E-07	1.59481E-05
Road 9	9	2300-0000	0.132692652	7.55144E-08	2.25423E-06	0.120460638	6.85532E-08	2.04643E-06	0.675625625	3.84493E-07	1.14778E-05	0.606925845	3.45397E-07	1.03107E-05	0.727386483	4.1395E-07	1.23571E-05
Road 10	10	0000-0100	0.263973307	2.02957E-07	4.5127E-06	0.235700312	1.8122E-07	4.02936E-06	1.306202691	1.00428E-06	2.23299E-05	1.165310759	8.95956E-07	1.99213E-05	1.401011071	1.07718E-06	2.39507E-05
Road 10	10	0100-0200	0.259644747	1.50831E-07	3.35368E-06	0.231358885	1.34399E-07	2.98833E-06	1.274507395	7.40378E-07	1.64621E-05	1.134418753	6.58999E-07	1.46526E-05	1.365777638	7.93399E-07	1.7641E-05
Road 10	10	0200-0300	0.2574631	8.35798E-08	1.85837E-06	0.231990511	7.53106E-08	1.67451E-06	1.247991905	4.05133E-07	9.00802E-06	1.124946014	3.65189E-07	8.11987E-06	1.356936525	4.405E-07	9.79438E-06
Road 10	10	0300-0400	0.230434013	4.72455E-08	1.05049E-06	0.209249892	4.29021E-08	9.53916E-07	1.204998841	2.47059E-07	5.49328E-06	1.094617463	2.24428E-07	4.99008E-06	1.303867355	2.6733E-07	5.94399E-06
Road 10	10	0400-0500	0.271702785	1.06771E-07	2.37403E-06	0.248404559	9.76158E-08	2.17046E-06	1.264450762	4.96892E-07	1.10483E-05	1.152803722	4.53018E-07	1.00727E-05	1.401208281	5.50634E-07	1.22432E-05
Road 10	10	0500-0600	0.251348422	1.76073E-07	3.91493E-06	0.226231773	1.58478E-07	3.52372E-06	1.176608642	8.2423E-07	1.83265E-05	1.055643036	7.39492E-07	1.64424E-05	1.28187481	8.9797E-07	1.99661E-05
Road 10	10	0600-0700	0.305822311	4.28465E-07	9.52679E-06	0.275760668	3.86348E-07	8.59033E-06	1.458985742	2.04408E-06	4.54495E-05	1.314907152	1.84222E-06	4.09612E-05	1.59066782	2.22857E-06	4.95515E-05
Road 10	10	0700-0800	0.306524082	6.75596E-07	1.50217E-05	0.277087461	6.10716E-07	1.35791E-05	1.4799999	3.262E-06	7.25296E-05	1.336825089	2.94643E-06	6.55131E-05	1.61391255	3.55715E-06	7.90922E-05
Road 10	10	0800-0900	0.323805335	1.37204E-06	3.0507E-05	0.288855369	1.22395E-06	2.72142E-05	1.547160476	6.55571E-06	0.000145764	1.378525259	5.84116E-06	0.000129876	1.667380629	7.06511E-06	0.000157091
Road 10	10	0900-1000	0.366219851	1.23891E-06	2.75468E-05	0.324402355	1.09744E-06	2.44013E-05	1.695065528	5.73435E-06	0.000127502	1.498238826	5.06849E-06	0.000112696	1.822641181	6.16593E-06	0.000137098
Road 10	10	1000-1100	0.363410079	1.33496E-06	2.96824E-05	0.319973638	1.1754E-06	2.61346E-05	1.591424629	5.84598E-06	0.000129984	1.395948561	5.12791E-06	0.000114018	1.715922199	6.30331E-06	0.000140152
Road 10	10	1100-1200	0.350258804	1.28665E-06	2.86082E-05	0.310338384	1.14E-06	2.53477E-05	1.59010292	5.84112E-06	0.000129876	1.406436452	5.16644E-06	0.000114874	1.716774837	6.30644E-06	0.000140222
Road 10	10	1200-1300	0.36886917	1.39913E-06	3.11092E-05	0.325594462	1.23499E-06	2.74596E-05	1.686767739	6.39795E-06	0.000142256	1.487589078	5.64246E-06	0.000125458	1.81318354	6.87745E-06	0.000152918
Road 10	10	1300-1400	0.361262772	1.18511E-06	2.63505E-05	0.318660612	1.04535E-06	2.32431E-05	1.617983071	5.30772E-06	0.000118015	1.423318153	4.66913E-06	0.000103817	1.741978765	5.71448E-06	0.00012706
Road 10	10	1400-1500	0.336891129	1.04184E-06	2.3165E-05	0.299626872	9.26599E-07	2.06026E-05	1.611326481	4.98304E-06	0.000110796	1.430438583	4.42365E-06	9.83584E-05	1.730065456	5.35024E-06	0.000118961
Road 10	10	1500-1600	0.332580655	1.05124E-06	2.3374E-05	0.292090873	9.23256E-07	2.05283E-05	1.542840211	4.87669E-06	0.000108432	1.353654508	4.2787E-06	9.51357E-05	1.645745381	5.20196E-06	0.000115664
Road 10	10	1600-1700	0.317066272	1.11596E-06	2.48131E-05	0.285831687	1.00603E-06	2.23687E-05	1.492061294	5.25154E-06	0.000116766	1.341547058	4.72178E-06	0.000104987	1.627378746	5.72781E-06	0.000127356
Road 10	10	1700-1800	0.298294249	9.9383E-07	2.20975E-05	0.262034058	8.73021E-07	1.94114E-05	1.473145191	4.90809E-06	0.00010913	1.295574733	4.31648E-06	9.59756E-05	1.557608791	5.1895E-06	0.000115387
Road 10	10	1800-1900	0.300433618	6.21107E-07	1.38101E-05	0.26608631	5.50098E-07	1.22313E-05	1.454187695	3.00634E-06	6.68451E-05	1.287060648	2.66083E-06	5.91627E-05	1.553146959	3.21093E-06	7.1394E-05
Road 10	10	1900-2000	0.257898282	4.80294E-07	1.06792E-05	0.231951635	4.31973E-07	9.60479E-06	1.307577466	2.43515E-06	5.41449E-05	1.174542753	2.1874E-06	4.86361E-05	1.406494388	2.61937E-06	5.82409E-05
Road 10	10	2000-2100	0.296489428	3.64732E-07	8.10971E-06	0.261340447	3.21493E-07	7.1483E-06	1.387875227	1.70732E-06	3.79618E-05	1.221693686	1.50289E-06	3.34163E-05	1.483034133	1.82438E-06	4.05646E-05
Road 10	10	2100-2200	0.247784436	3.13284E-07	6.96578E-06	0.228472997	2.88868E-07	6.42289E-06	1.297138162	1.64002E-06	3.64655E-05	1.195434795	1.51144E-06	3.36064E-05	1.423907792	1.80031E-06	4.00292E-05
Road 10	10	2200-2300	0.256925873	3.38011E-07	7.51558E-06	0.233639389	3.07376E-07	6.8344E-06	1.259847985	1.65745E-06	3.6853E-05	1.146286135	1.50805E-06	3.35311E-05	1.379925524	1.81543E-06	4.03655E-05
Road 10	10	2300-0000	0.238872129	2.93853E-07	6.53374E-06	0.211246428	2.59869E-07	5.77811E-06	1.170719829	1.44018E-06	3.20221E-05	1.033016017	1.27078E-06	2.82555E-05	1.244262445	1.53065E-06	3.40336E-05
Road 11	11	0000-0100	0.295151018	2.25463E-07	1.87023E-06	0.263287957	2.01123E-07	1.66833E-06	1.428887135	1.09151E-06	9.05417E-06	1.272263368	9.71868E-07	8.06172E-06	1.535551326	1.17299E-06	9.73005E-06
Road 11	11	0100-0200	0.295530131	1.59053E-07	1.31935E-06	0.263018358	1.41555E-07	1.17421E-06	1.406886049	7.57178E-07	6.28086E-06	1.248867505	6.72134E-07	5.5754E-06	1.511885863	8.13689E-07	6.74961E-06
Road 11	11	0200-0300	0.256941877	6.69119E-08	5.5504E-07	0.23155858	6.03017E-08	5.00208E-07	1.325061073	3.45068E-07	2.86237E-06	1.194360637	3.11031E-07	2.58003E-06	1.425919217	3.71333E-07	3.08024E-06
Road 11	11	0300-0400	0.271244392	6.59275E-08	5.46874E-07	0.246268001	5.98568E-08	4.96517E-07	1.369460466	3.32855E-07	2.76106E-06	1.243667555	3.0228E-07	2.50744E-06	1.489935556	3.62137E-07	3.00396E-06

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (April) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 11	11	0400-0500	0.280948202	9.75515E-08	8.09197E-07	0.257001743	8.92367E-08	7.40226E-07	1.289297559	4.47673E-07	3.71348E-06	1.175878463	4.08291E-07	3.38681E-06	1.432880206	4.97528E-07	4.12703E-06
Road 11	11	0500-0600	0.229094776	1.07388E-07	8.90794E-07	0.205931687	9.65305E-08	8.00728E-07	1.133346553	5.31256E-07	4.40681E-06	1.016628656	4.76545E-07	3.95298E-06	1.222560343	5.73075E-07	4.75371E-06
Road 11	11	0600-0700	0.248345953	2.24201E-07	1.85977E-06	0.222737864	2.01083E-07	1.668E-06	1.242829681	1.122E-06	9.30707E-06	1.111839099	1.00374E-06	8.32613E-06	1.334576964	1.20483E-06	9.99413E-06
Road 11	11	0700-0800	0.302064716	5.71616E-07	4.7416E-06	0.271053204	5.12931E-07	4.2548E-06	1.510349535	2.85813E-06	2.37084E-05	1.354303234	2.56283E-06	2.12589E-05	1.625356438	3.07576E-06	2.55137E-05
Road 11	11	0800-0900	0.320962881	1.14232E-06	9.4756E-06	0.287851999	1.02447E-06	8.49809E-06	1.528810361	5.44108E-06	4.51342E-05	1.36621478	4.8624E-06	4.0334E-05	1.654066779	5.88687E-06	4.88321E-05
Road 11	11	0900-1000	0.330793279	8.44212E-07	7.00281E-06	0.292802618	7.47257E-07	6.19855E-06	1.509137931	3.85145E-06	3.19481E-05	1.328282212	3.38989E-06	2.81194E-05	1.62108483	4.13714E-06	3.43179E-05
Road 11	11	1000-1100	0.335777368	7.05366E-07	5.85107E-06	0.294817419	6.19321E-07	5.13732E-06	1.512270701	3.17682E-06	2.6352E-05	1.323219798	2.77968E-06	2.30577E-05	1.618037217	3.399E-06	2.8195E-05
Road 11	11	1100-1200	0.293599173	6.9322E-07	5.75032E-06	0.258911471	6.11319E-07	5.07094E-06	1.456774631	3.43961E-06	2.85318E-05	1.287681964	3.04036E-06	2.522E-05	1.546593435	3.65168E-06	3.0291E-05
Road 11	11	1200-1300	0.361746684	1.02997E-06	8.54371E-06	0.318880258	9.07923E-07	7.53129E-06	1.688361274	4.80714E-06	3.98756E-05	1.485514669	4.22959E-06	3.50848E-05	1.804394927	5.13751E-06	4.26161E-05
Road 11	11	1300-1400	0.376559687	7.91037E-07	6.56171E-06	0.331906427	6.97234E-07	5.78361E-06	1.645431238	3.45655E-06	2.86723E-05	1.442737309	3.03075E-06	2.51403E-05	1.774643736	3.72798E-06	3.09239E-05
Road 11	11	1400-1500	0.300264011	6.04698E-07	5.01602E-06	0.266309085	5.36317E-07	4.44879E-06	1.446754809	2.9136E-06	2.41686E-05	1.277057961	2.57185E-06	2.13337E-05	1.543367046	3.10817E-06	2.57825E-05
Road 11	11	1500-1600	0.267790328	5.43949E-07	4.5121E-06	0.23462088	4.76574E-07	3.95322E-06	1.335699262	2.71314E-06	2.25057E-05	1.169522758	2.37559E-06	1.97057E-05	1.404143638	2.85217E-06	2.3659E-05
Road 11	11	1600-1700	0.254030897	6.17436E-07	5.12168E-06	0.229077236	5.56785E-07	4.61858E-06	1.301800187	3.1641E-06	2.62464E-05	1.171928155	2.84844E-06	2.3628E-05	1.401005391	3.40522E-06	2.82466E-05
Road 11	11	1700-1800	0.255931564	6.35386E-07	5.27058E-06	0.223363949	5.54532E-07	4.59989E-06	1.336737845	3.31864E-06	2.75284E-05	1.167841866	2.89933E-06	2.40502E-05	1.391205815	3.45386E-06	2.86501E-05
Road 11	11	1800-1900	0.274754204	5.62865E-07	4.66901E-06	0.24232694	4.96434E-07	4.11796E-06	1.404121484	2.8765E-06	2.38608E-05	1.239170514	2.53858E-06	2.10577E-05	1.481497454	3.03501E-06	2.51757E-05
Road 11	11	1900-2000	0.258527482	4.08438E-07	3.38802E-06	0.231318039	3.6545E-07	3.03144E-06	1.30265874	2.05802E-06	1.70714E-05	1.161909525	1.83566E-06	1.52269E-05	1.393227564	2.20111E-06	1.82584E-05
Road 11	11	2000-2100	0.266424475	3.74659E-07	3.10783E-06	0.234936119	3.30379E-07	2.74052E-06	1.287443947	1.81047E-06	1.5018E-05	1.13468679	1.59565E-06	1.32361E-05	1.369622909	1.92603E-06	1.59766E-05
Road 11	11	2100-2200	0.187337217	1.88638E-07	1.56477E-06	0.168439653	1.69609E-07	1.40692E-06	1.016941216	1.024E-06	8.49419E-06	0.91466944	9.21021E-07	7.63995E-06	1.083109093	1.09063E-06	9.04687E-06
Road 11	11	2200-2300	0.24730282	2.70487E-07	2.24372E-06	0.223319001	2.44255E-07	2.02612E-06	1.210560977	1.32405E-06	1.09831E-05	1.091167517	1.19346E-06	9.89988E-06	1.314486517	1.43772E-06	1.1926E-05
Road 11	11	2300-0000	0.240631326	2.50658E-07	2.07923E-06	0.213031119	2.21907E-07	1.84074E-06	1.198247813	1.24817E-06	1.03537E-05	1.057863196	1.10194E-06	9.14069E-06	1.270894315	1.32385E-06	1.09814E-05
Haul Road 1	HR1	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0700-0800	1.27037	2.38791E-06	3.59154E-06	1.13056	2.12511E-06	3.19627E-06	5.56605	1.04625E-05	1.57361E-05	4.95326	9.31064E-06	1.40037E-05	6.08382	1.14358E-05	1.71999E-05
Haul Road 1	HR1	0800-0900	1.27037	2.38791E-06	3.59154E-06	1.12656	2.11759E-06	3.18497E-06	5.56605	1.04625E-05	1.57361E-05	4.93557	9.27739E-06	1.39536E-05	6.06213	1.1395E-05	1.71386E-05
Haul Road 1	HR1	0900-1000	1.29895	2.44164E-06	3.67234E-06	1.12896	2.12211E-06	3.19175E-06	5.69117	1.06977E-05	1.60899E-05	4.94616	9.29729E-06	1.39836E-05	6.07512	1.14194E-05	1.71753E-05
Haul Road 1	HR1	1000-1100	1.29325	2.43092E-06	3.65623E-06	1.12227	2.10953E-06	3.17284E-06	5.66629	1.06509E-05	1.60195E-05	4.91718	9.24282E-06	1.39017E-05	6.03945	1.13523E-05	1.70745E-05
Haul Road 1	HR1	1100-1200	1.28946	2.4238E-06	3.64551E-06	1.13336	2.13038E-06	3.20419E-06	5.6496	1.06195E-05	1.59723E-05	4.96565	9.33393E-06	1.40387E-05	6.09901	1.14643E-05	1.72429E-05
Haul Road 1	HR1	1200-1300	1.29705	2.43806E-06	3.66697E-06	1.12786	2.12004E-06	3.18864E-06	5.68298	1.06823E-05	1.60667E-05	4.94137	9.28829E-06	1.397E-05	6.06923	1.14083E-05	1.71587E-05
Haul Road 1	HR1	1300-1400	1.30085	2.44521E-06	3.67771E-06	1.12786	2.12004E-06	3.18864E-06	5.69967	1.07137E-05	1.61139E-05	4.94137	9.28829E-06	1.397E-05	6.06923	1.14083E-05	1.71587E-05
Haul Road 1	HR1	1400-1500	1.30085	2.44521E-06	3.67771E-06	1.13336	2.13038E-06	3.20419E-06	5.69967	1.07137E-05	1.61139E-05	4.96565	9.33393E-06	1.40387E-05	6.09901	1.14643E-05	1.72429E-05
Haul Road 1	HR1	1500-1600	1.30085	2.44521E-06	3.67771E-06	1.12786	2.12004E-06	3.18864E-06	5.69967	1.07137E-05	1.61139E-05	4.94137	9.28829E-06	1.397E-05	6.06923	1.14083E-05	1.71587E-05
Haul Road 1	HR1	1600-1700	1.27806	2.40237E-06	3.61328E-06	1.13416	2.13188E-06	3.20645E-06	5.59954	1.05255E-05	1.58308E-05	4.96894	9.34011E-06	1.4048E-05	6.1031	1.1472E-05	1.72544E-05
Haul Road 1	HR1	1700-1800	1.29895	2.44164E-06	3.67234E-06	1.11327	2.09261E-06	3.14739E-06	5.69117	1.06977E-05	1.60899E-05	4.87771	9.16863E-06	1.37901E-05	5.99098	1.12612E-05	1.69375E-05
Haul Road 1	HR1	1800-1900	1.28826	2.42154E-06	3.64212E-06	1.12167	2.1084E-06	3.17114E-06	5.6442	1.06094E-05	1.59571E-05	4.91408	9.23699E-06	1.38929E-05	6.03575	1.13454E-05	1.7064E-05
Haul Road 1	HR1	1900-2000	1.25968	2.36782E-06	3.56132E-06	1.11177	2.08979E-06	3.14315E-06	5.51918	1.03744E-05	1.56036E-05	4.87121	9.15641E-06	1.37717E-05	5.98298	1.12462E-05	1.69148E-05
Haul Road 1	HR1	2000-2100	1.26327	2.37457E-06	3.57147E-06	1.10688	2.0806E-06	3.12933E-06	5.53478	1.04037E-05	1.56477E-05	4.84982	9.1162E-06	1.37112E-05	5.9567	1.11968E-05	1.68405E-05
Haul Road 1	HR1	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0700-0800	1.27037	1.64556E-06	4.38031E-06	1.13056	1.46446E-06	3.89824E-06	5.56605	7.20991E-06	1.91921E-05	4.95326	6.41614E-06	1.70791E-05	6.08382	7.8806E-06	2.09774E-05
Haul Road 2	HR2	0800-0900	1.27037	1.64556E-06	4.38031E-06	1.12656	1.45927E-06	3.88445E-06	5.56605	7.20991E-06	1.91921E-05	4.93557	6.39323E-06	1.70181E-05	6.06213	7.8525E-06	2.09026E-05
Haul Road 2	HR2	0900-1000	1.29895	1.68258E-06	4.47886E-06	1.12896	1.46238E-06	3.89272E-06	5.69117	7.37198E-06	1.96235E-05	4.94616	6.40694E-06	1.70547E-05	6.07512	7.86933E-06	2.09474E-05
Haul Road 2	HR2	1000-1100	1.29325	1.67519E-06	4.4592E-06	1.12227	1.45372E-06	3.86965E-06	5.66629	7.33975E-06	1.95377E-05	4.91718	6.3694E-06	1.69547E-05	6.03945	7.82312E-06	2.08244E-05
Haul Road 2	HR2	1100-1200	1.28946	1.67028E-06	4.44614E-06	1.13336	1.46808E-06	3.90789E-06	5.6496	7.31813E-06	1.94802E-05	4.96565	6.43219E-06	1.71219E-05	6.09901	7.90027E-06	2.10298E-05
Haul Road 2	HR2	1200-1300	1.29705	1.68012E-06	4.47231E-06	1.12786	1.46096E-06	3.88893E-06	5.68298	7.36137E-06	1.95953E-05	4.94137	6.40074E-06	1.70381E-05	6.06923	7.8617E-06	2.09271E-05
Haul Road 2	HR2	1300-1400	1.30085	1.68504E-06	4.48541E-06	1.12786	1.46096E-06	3.88893E-06	5.69967	7.38299E-06	1.96528E-05	4.94137	6.40074E-06	1.70381E-05	6.06923	7.8617E-06	2.09271E-05
Haul Road 2	HR2	1400-1500	1.30085	1.68504E-06	4.48541E-06	1.13336	1.46808E-06	3.90789E-06	5.69967	7.38299E-06	1.96528E-05	4.96565	6.43219E-06	1.71219E-05	6.09901	7.90027E-06	2.10298E-05
Haul Road 2	HR2	1500-1600	1.30085	1.68504E-06	4.48541E-06	1.12786	1.46096E-06	3.88893E-06	5.69967	7.38299E-06	1.96528E-05	4.94137	6.40074E-06	1.70381E-05	6.06923	7.8617E-06	2.09271E-05
Haul Road 2	HR2	1600-1700	1.27806	1.65552E-06	4.40683E-06	1.13416	1.46912E-06	3.91065E-06	5.59954	7.25329E-06	1.93076E-05	4.96894	6.43645E-06	1.71332E-05	6.1031	7.90557E-06	2.10439E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (April) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Haul Road 2	HR2	1700-1800	1.29895	1.68258E-06	4.47886E-06	1.11327	1.44206E-06	3.83862E-06	5.69117	7.37198E-06	1.96235E-05	4.87771	6.31828E-06	1.68186E-05	5.99098	7.76034E-06	2.06573E-05
Haul Road 2	HR2	1800-1900	1.28826	1.66873E-06	4.442E-06	1.12167	1.45294E-06	3.86759E-06	5.6442	7.31114E-06	1.94615E-05	4.91408	6.36539E-06	1.6944E-05	6.03575	7.81833E-06	2.08116E-05
Haul Road 2	HR2	1900-2000	1.25968	1.63171E-06	4.34345E-06	1.11177	1.44012E-06	3.83345E-06	5.51918	7.1492E-06	1.90305E-05	4.87121	6.30986E-06	1.67962E-05	5.98298	7.74997E-06	2.06297E-05
Haul Road 2	HR2	2000-2100	1.26327	1.63636E-06	4.35583E-06	1.10688	1.43378E-06	3.81659E-06	5.53478	7.1694E-06	1.90843E-05	4.84982	6.28215E-06	1.67225E-05	5.9567	7.71593E-06	2.05391E-05
Haul Road 2	HR2	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0700-0800	1.27037	1.64556E-06	4.37421E-06	1.13056	1.46446E-06	3.8928E-06	5.56605	7.20991E-06	1.91653E-05	4.95326	6.41614E-06	1.70553E-05	6.08382	7.8806E-06	2.09481E-05
Haul Road 3	HR3	0800-0900	1.27037	1.64556E-06	4.37421E-06	1.12656	1.45927E-06	3.87903E-06	5.56605	7.20991E-06	1.91653E-05	4.93557	6.39323E-06	1.69944E-05	6.06213	7.8525E-06	2.08734E-05
Haul Road 3	HR3	0900-1000	1.29895	1.68258E-06	4.47261E-06	1.12896	1.46238E-06	3.88729E-06	5.69117	7.37198E-06	1.95961E-05	4.94616	6.40694E-06	1.70309E-05	6.07512	7.86933E-06	2.09182E-05
Haul Road 3	HR3	1000-1100	1.29325	1.67519E-06	4.45299E-06	1.12227	1.45372E-06	3.86426E-06	5.66629	7.33975E-06	1.95105E-05	4.91718	6.3694E-06	1.69311E-05	6.03945	7.82312E-06	2.07954E-05
Haul Road 3	HR3	1100-1200	1.28946	1.67028E-06	4.43994E-06	1.13336	1.46808E-06	3.90245E-06	5.6496	7.31813E-06	1.9453E-05	4.96565	6.43219E-06	1.7098E-05	6.09901	7.90027E-06	2.10004E-05
Haul Road 3	HR3	1200-1300	1.29705	1.68012E-06	4.46607E-06	1.12786	1.46096E-06	3.88351E-06	5.68298	7.36137E-06	1.95679E-05	4.94137	6.40074E-06	1.70144E-05	6.06923	7.8617E-06	2.08979E-05
Haul Road 3	HR3	1300-1400	1.30085	1.68504E-06	4.47916E-06	1.12786	1.46096E-06	3.88351E-06	5.69967	7.38299E-06	1.96254E-05	4.94137	6.40074E-06	1.70144E-05	6.06923	7.8617E-06	2.08979E-05
Haul Road 3	HR3	1400-1500	1.30085	1.68504E-06	4.47916E-06	1.13336	1.46808E-06	3.90245E-06	5.69967	7.38299E-06	1.96254E-05	4.96565	6.43219E-06	1.7098E-05	6.09901	7.90027E-06	2.10004E-05
Haul Road 3	HR3	1500-1600	1.30085	1.68504E-06	4.47916E-06	1.12786	1.46096E-06	3.88351E-06	5.69967	7.38299E-06	1.96254E-05	4.94137	6.40074E-06	1.70144E-05	6.06923	7.8617E-06	2.08979E-05
Haul Road 3	HR3	1600-1700	1.27806	1.65552E-06	4.40068E-06	1.13416	1.46912E-06	3.9052E-06	5.59954	7.25329E-06	1.92806E-05	4.96894	6.43645E-06	1.71093E-05	6.1031	7.90557E-06	2.10145E-05
Haul Road 3	HR3	1700-1800	1.29895	1.68258E-06	4.47261E-06	1.11327	1.44206E-06	3.83327E-06	5.69117	7.37198E-06	1.95961E-05	4.87771	6.31828E-06	1.67952E-05	5.99098	7.76034E-06	2.06285E-05
Haul Road 3	HR3	1800-1900	1.28826	1.66873E-06	4.4358E-06	1.12167	1.45294E-06	3.86219E-06	5.6442	7.31114E-06	1.94344E-05	4.91408	6.36539E-06	1.69204E-05	6.03575	7.81833E-06	2.07826E-05
Haul Road 3	HR3	1900-2000	1.25968	1.63171E-06	4.3374E-06	1.11177	1.44012E-06	3.82811E-06	5.51918	7.1492E-06	1.90039E-05	4.87121	6.30986E-06	1.67728E-05	5.98298	7.74997E-06	2.06009E-05
Haul Road 3	HR3	2000-2100	1.26327	1.63636E-06	4.34976E-06	1.10688	1.43378E-06	3.81127E-06	5.53478	7.1694E-06	1.90576E-05	4.84982	6.28215E-06	1.66992E-05	5.9567	7.71593E-06	2.05104E-05
Haul Road 3	HR3	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (May) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 1	1	0000-0100	0.087481844	2.93905E-07	2.39096E-06	0.076666257	2.57569E-07	2.09536E-06	0.516621397	1.73565E-06	1.41197E-05	0.450553352	1.51368E-06	1.2314E-05	0.527219609	1.77125E-06	1.44094E-05
Road 1	1	0100-0200	0.067782385	1.38669E-07	1.12809E-06	0.059129541	1.20967E-07	9.84084E-07	0.407928257	8.34538E-07	6.78909E-06	0.354089266	7.24394E-07	5.89306E-06	0.413218807	8.45361E-07	6.87714E-06
Road 1	1	0200-0300	0.065784675	9.50717E-08	7.73422E-07	0.056593247	8.17883E-08	6.6536E-07	0.418505584	6.04822E-07	4.92032E-06	0.35658013	5.15328E-07	4.19227E-06	0.413173377	5.97116E-07	4.85763E-06
Road 1	1	0300-0400	0.054933091	5.67065E-08	4.61315E-07	0.047591273	4.91276E-08	3.99661E-07	0.335429818	3.46258E-07	2.81686E-06	0.288216	2.9752E-07	2.42037E-06	0.335807273	3.46648E-07	2.82003E-06
Road 1	1	0400-0500	0.072785116	1.17483E-07	9.55746E-07	0.062132209	1.00288E-07	8.15862E-07	0.416422791	6.72154E-07	5.46807E-06	0.35313407	5.69999E-07	4.63702E-06	0.415266279	6.70287E-07	5.45289E-06
Road 1	1	0500-0600	0.060528245	2.13576E-07	1.73747E-06	0.052304149	1.84557E-07	1.5014E-06	0.357151915	1.26022E-06	1.02521E-05	0.30606234	1.07995E-06	8.78555E-06	0.358366489	1.26451E-06	1.02869E-05
Road 1	1	0600-0700	0.081332878	5.14437E-07	4.18502E-06	0.069205401	4.37729E-07	3.56099E-06	0.432569674	2.73604E-06	2.22581E-05	0.365619763	2.31257E-06	1.88131E-05	0.434825163	2.7503E-06	2.23741E-05
Road 1	1	0700-0800	0.068983381	7.2764E-07	5.91946E-06	0.057958737	6.11352E-07	4.97344E-06	0.37986774	4.00686E-06	3.25964E-05	0.315763915	3.33069E-06	2.70957E-05	0.373722651	3.94204E-06	3.20691E-05
Road 1	1	0800-0900	0.074669092	9.72604E-07	7.91228E-06	0.062564957	8.14941E-07	6.62967E-06	0.400353127	5.21481E-06	4.24233E-05	0.333282017	4.34117E-06	3.53161E-05	0.395846974	5.15611E-06	4.19458E-05
Road 1	1	0900-1000	0.078222087	1.04825E-06	8.52764E-06	0.068096555	9.12555E-07	7.42377E-06	0.433118305	5.80418E-06	4.72178E-05	0.375229384	5.02841E-06	4.09069E-05	0.443325938	5.94097E-06	4.83306E-05
Road 1	1	1000-1100	0.091333108	1.19138E-06	9.69202E-06	0.07817495	1.01974E-06	8.29571E-06	0.488693727	6.37466E-06	5.18588E-05	0.41635846	5.4311E-06	4.41828E-05	0.49453341	6.45084E-06	5.24785E-05
Road 1	1	1100-1200	0.082832611	1.04784E-06	8.52437E-06	0.071	8.98161E-07	7.30667E-06	0.474690237	6.0049E-06	4.88508E-05	0.404773991	5.12045E-06	4.16556E-05	0.475773991	6.01861E-06	4.89623E-05
Road 1	1	1200-1300	0.086437256	1.08209E-06	8.80295E-06	0.072452864	9.07021E-07	7.37875E-06	0.488962024	6.1212E-06	4.97969E-05	0.407993643	5.10758E-06	4.15509E-05	0.480446507	6.0146E-06	4.89297E-05
Road 1	1	1300-1400	0.090146643	1.19959E-06	9.75881E-06	0.075203413	1.00074E-06	8.14114E-06	0.499619986	6.64847E-06	5.40863E-05	0.414679055	5.51816E-06	4.4891E-05	0.489882468	6.51889E-06	5.30322E-05
Road 1	1	1400-1500	0.085654746	1.23627E-06	1.00572E-05	0.071013914	1.02496E-06	8.33818E-06	0.464785787	6.70834E-06	5.45733E-05	0.383256255	5.53161E-06	4.50004E-05	0.454270169	6.55656E-06	5.33386E-05
Road 1	1	1500-1600	0.092312961	1.24054E-06	1.0092E-05	0.078025237	1.04854E-06	8.53001E-06	0.499158659	6.70791E-06	5.45699E-05	0.41977074	5.64106E-06	4.58909E-05	0.497795978	6.6896E-06	5.44209E-05
Road 1	1	1600-1700	0.08872498	1.25727E-06	1.02281E-05	0.073388556	1.03995E-06	8.46012E-06	0.485900225	6.88541E-06	5.60138E-05	0.399375351	5.65932E-06	4.60394E-05	0.472763907	6.69926E-06	5.44995E-05
Road 1	1	1700-1800	0.069263325	9.8539E-07	8.0163E-06	0.058664921	8.3461E-07	6.78967E-06	0.387558113	5.51368E-06	4.48546E-05	0.325863166	4.63597E-06	3.77143E-05	0.384528087	5.47058E-06	4.45039E-05
Road 1	1	1800-1900	0.060864871	8.84186E-07	7.19298E-06	0.052436667	7.61749E-07	6.19694E-06	0.364092571	5.28918E-06	4.30283E-05	0.310673256	4.51316E-06	3.67152E-05	0.363109922	5.27491E-06	4.29122E-05
Road 1	1	1900-2000	0.073341248	8.16279E-07	6.64055E-06	0.062710304	6.97958E-07	5.67799E-06	0.420167572	4.67641E-06	3.80433E-05	0.356266577	3.9652E-06	3.22575E-05	0.41897688	4.66316E-06	3.79355E-05
Road 1	1	2000-2100	0.064776879	6.11538E-07	4.97496E-06	0.056395964	5.32417E-07	4.33129E-06	0.382035149	3.60668E-06	2.93408E-05	0.330244871	3.11774E-06	2.53633E-05	0.386640835	3.65016E-06	2.96946E-05
Road 1	1	2100-2200	0.067275251	5.79567E-07	4.71486E-06	0.060133769	5.18044E-07	4.21437E-06	0.400190153	3.44758E-06	2.80466E-05	0.355671786	3.06406E-06	2.49266E-05	0.415805556	3.58211E-06	2.9141E-05
Road 1	1	2200-2300	0.066352276	5.41727E-07	4.40703E-06	0.058421494	4.76977E-07	3.88028E-06	0.39438423	3.21992E-06	2.61945E-05	0.344877954	2.81573E-06	2.29064E-05	0.403299448	3.2927E-06	2.67866E-05
Road 1	1	2300-0000	0.05824541	4.26346E-07	3.46839E-06	0.051157974	3.74467E-07	3.04635E-06	0.355898769	2.60511E-06	2.1193E-05	0.309689179	2.26687E-06	1.84413E-05	0.360847154	2.64134E-06	2.14877E-05
Road 2	2	0000-0100	0.144879615	1.74392E-07	1.12621E-06	0.126959231	1.52821E-07	9.86905E-07	0.612004231	7.36672E-07	4.75735E-06	0.534311154	6.43152E-07	4.15341E-06	0.661270385	7.95974E-07	5.14032E-06
Road 2	2	0100-0200	0.102245882	8.04713E-08	5.19676E-07	0.089158824	7.01713E-08	4.53159E-07	0.503893235	3.96583E-07	2.56109E-06	0.437528235	3.44351E-07	2.22378E-06	0.526687059	4.14522E-07	2.67694E-06
Road 2	2	0200-0300	0.106939565	5.69354E-08	3.67683E-07	0.092142174	4.90572E-08	3.16806E-07	0.582236087	3.09987E-07	2.00186E-06	0.498359565	2.6533E-07	1.71348E-06	0.590501739	3.14388E-07	2.03028E-06
Road 2	2	0300-0400	0.091642667	3.18204E-08	2.05493E-07	0.079422667	2.75773E-08	1.78092E-07	0.332016	1.15283E-07	7.44489E-07	0.285696667	9.92002E-08	6.40625E-07	0.365119333	1.26778E-07	8.18717E-07
Road 2	2	0400-0500	0.126762593	7.92266E-08	5.11638E-07	0.108221111	6.76382E-08	4.36801E-07	0.609794074	3.81121E-07	2.46124E-06	0.518595926	3.24122E-07	2.09315E-06	0.626817037	3.91761E-07	2.52995E-06
Road 2	2	0500-0600	0.101320351	1.33687E-07	8.63335E-07	0.087604386	1.15589E-07	7.46463E-07	0.447520351	5.90478E-07	3.81325E-06	0.384382105	5.07171E-07	3.27526E-06	0.471986491	6.2276E-07	4.02172E-06
Road 2	2	0600-0700	0.142541538	3.43156E-07	2.21607E-06	0.121300962	2.92021E-07	1.88584E-06	0.575633558	1.38578E-06	8.94926E-06	0.487496538	1.1736E-06	7.57901E-06	0.6087975	1.46562E-06	9.46485E-06
Road 2	2	0700-0800	0.11803125	4.37153E-07	2.82309E-06	0.09913325	3.6716E-07	2.37108E-06	0.48995175	1.81464E-06	1.17187E-05	0.40799025	1.51108E-06	9.75837E-06	0.5071235	1.87824E-06	1.21295E-05
Road 2	2	0800-0900	0.134022566	9.43122E-07	6.09059E-06	0.112241053	7.89844E-07	5.10074E-06	0.562592664	3.95899E-06	2.55667E-05	0.468207796	3.2948E-06	2.12775E-05	0.580448849	4.08464E-06	2.63782E-05
Road 2	2	0900-1000	0.154341468	9.00325E-07	5.81421E-06	0.134184167	7.82741E-07	5.05486E-06	0.656223611	3.82797E-06	2.47207E-05	0.569009603	3.31922E-06	2.14352E-05	0.70319377	4.10196E-06	2.64901E-05
Road 2	2	1000-1100	0.173184652	7.49665E-07	4.84126E-06	0.148104278	6.411E-07	4.14016E-06	0.729454385	3.15759E-06	2.03914E-05	0.622204011	2.69334E-06	1.73933E-05	0.770308289	3.33444E-06	2.15335E-05
Road 2	2	1100-1200	0.205726776	8.71481E-07	5.62794E-06	0.176194317	7.46379E-07	4.82004E-06	0.839578361	3.55655E-06	2.29678E-05	0.71780082	3.04068E-06	1.96364E-05	0.893995137	3.78706E-06	2.44565E-05
Road 2	2	1200-1300	0.160352684	7.05255E-07	4.55447E-06	0.134429632	5.91241E-07	3.81818E-06	0.701272737	3.0843E-06	1.99181E-05	0.585550737	2.57534E-06	1.66313E-05	0.719980368	3.16658E-06	2.04495E-05
Road 2	2	1300-1400	0.176798161	9.12639E-07	5.89373E-06	0.147234753	7.60031E-07	4.90821E-06	0.722088206	3.72745E-06	2.40715E-05	0.599222466	3.09321E-06	1.99756E-05	0.74645722	3.85324E-06	2.48838E-05
Road 2	2	1400-1500	0.152186848	5.81269E-07	3.75378E-06	0.126137636	4.81776E-07	3.11126E-06	0.657266424	2.51039E-06	1.62119E-05	0.542929636	2.07369E-06	1.33917E-05	0.669067273	2.55547E-06	1.65029E-05
Road 2	2	1500-1600	0.190565574	8.07257E-07	5.21319E-06	0.160814426	6.81228E-07	4.3993E-06	0.750206393	3.17796E-06	2.05229E-05	0.631645738	2.67572E-06	1.72795E-05	0.792460164	3.35695E-06	2.16789E-05
Road 2	2	1600-1700	0.160784118	8.2253E-07	5.31182E-06	0.133012579	6.80458E-07	4.39433E-06	0.675704706	3.45673E-06	2.23232E-05	0.556496109	2.84689E-06	1.83849E-05	0.689508688	3.52735E-06	2.27793E-05
Road 2	2	1700-1800	0.121415721	6.23942E-07	4.02936E-06	0.102869685	5.28636E-07	3.41388E-06	0.481166712	2.47266E-06	1.59682E-05	0.40575464	2.08513E-06	1.34656E-05	0.508624324	2.61376E-06	1.68794E-05
Road 2	2	1800-1900	0.13203708	7.64103E-07	4.93451E-06	0.11384284	6.58813E-07	4.25455E-06	0.59331616	3.43354E-06	2.21735E-05	0.50895184	2.94532E-06	1.90206E-05	0.62279468	3.60414E-06	2.32752E-05
Road 2	2	1900-2000	0.112583787	4.40432E-07	2.84427E-06	0.096240947	3.76498E-07	2.43139E-06	0.509847988	1.99454E-06	1.28806E-05	0.432827219	1.69324E-06	1.09348E-05	0.529068166	2.06973E-06	1.33661E-05
Road 2	2	2000-2100	0.104046735	3.54048E-07	2.28641E-06	0.09055034	3.08123E-07	1.98983E-06	0.442510748	1.50577E-06	9.72409E-06	0.382129252	1.3003E-06	8.39722E-06	0.472679592	1.60842E-06	1.0387E-05
Road 2	2	2100-2200	0.079889608	2.82942E-07	1.82721E-06	0.071362484	2.52742E-07	1.63218E-06	0.365000719	1.29271E-06	8.3482E-06	0.323216209	1.14472E-06	7.39252E-06	0.394578693	1.39747E-06	9.0247E-06
Road 2	2	2200-2300	0.1175056	3.40005E-07	2.19572E-06	0.10350976	2.99507E-07	1.93419E-06	0.4994896	1.44528E-06	9.33349E-06	0.43737344	1.26555E-06	8.17279E-06	0.5408832	1.56506E-06	1.0107E-05
Road 2	2	2300-0000	0.105221261	2.7036E-07	1.74596E-06	0.092441802	2.37524E-07	1.53391E-06	0.474038108	1.21801E-06	7.86582E-06	0.413346667	1.06207E-06	6.85875E-06	0.505788468	1.2996E-06	8.39266E-06
Road 3	3	0000-0100	0.091249217	3.36627E-07	1.30839E-05	0.079633826	2.93777E-07	1.14184E-05	0.50198913	1.85189E-06	7.19782E-05	0.435828478	1.60781E-06	6.24917E-05	0.515462304	1.90159E-06	7.391E-05
Road 3	3	0100-0200	0.06855669	1.56146E-07	6.069E-06	0.059796972	1.36195E-07	5.29354E-06	0.398608451	9.07877E-07	3.52869E-05	0.345909859	7.8785E-07	3.06217E-05	0.405706831	9.24044E-07	3.59153E-05
Road 3	3	0200-0300	0.067614949	1.07367E-07	4.17308E-06	0.059548081	9.45573E-08	3.67521E-06	0.42055798	6.67811E-07	2.59561E-05	0.367490303	5.83544E-07	2.26809E-05	0.427038384	6.78101E-07	2.63561E-05
Road 3	3	0300-0400	0.056683	6.36419E-08	2.4736E-06	0.049419286	5.54864E-08	2.15662E-06	0.311735	3.50006E-07	1.36039E-05	0.269405	3.02479E-07	1.17566E-05	0.318824286	3.57966E-07	1.39132E-05
Road 3	3	0400-0500	0.076166283	1.38049E-07	5.36562E-06	0.066221947	1.20025E-07	4.66508E-06	0.420696372	7.62499E-07	2.96364E-05	0.363820796	6.59414E-07	2.56298E-05	0.430042743	7.79439E-07	3.02948E-05
Road 3	3	0500-0600	0.062855569	2.48011E-07	9.63957E-06	0.053542642	2.11265E-07	8.21133E-06	0.349495528	1.37901E-06	5.35988E-05	0.294959065	1.16383E-06	4.52351E-05	0.348501707	1.37509E-06	5.34464E-05
Road 3	3	0600-0700	0.086367207	6.15069E-07	2.39062E-05	0.0731725	5.21102E-07	2.02539E-05	0.430706059	3.0673E-06	0.000119218	0.362500653	2.58157E-06	0.000100339	0.435673153	3.10267E-06	0.000120593
Road 3	3	0700-0800	0.071822545	8.37505E-07	3.25517E-05	0.060043164	7.00149E-07	2.7213E-05	0.376419959	4.38934E-06	0.000170603	0.311329972	3.63034E-06	0.000141102	0.371373136	4.33049E-06	0.000168315
Road 3	3	0800-0900	0.080017874	1.2796E-06	4.97349E-05	0.06817011	1.09014E-06	4.23709E-05	0.395554002	6.32548E-06	0.000245855	0.33481679	5.3542E-06	0.000208104	0.402986901	6.44434E-06	0.000250475
Road 3	3	0900-1000	0.085529078	1.32383E-06	5.14541E-05	0.073707886	1.14086E-06	4.43425E-05	0.440306456	6.81514E-06	0.000264887	0.37765657	5.84543E-06	0.000227197	0.451364456	6.98629E-06	0.00027154
Road 3	3	1000-1100	0.097625916	1.3764E-06	5.34974E-05	0.083379022	1.17554E-06	4.56903E-05	0.4920776	6.93769E-06	0.00026965	0.418602753	5.90178E-06	0.000229387	0.501981775	7.07732E-06	0.000275078
Road 3	3	1100-1200	0.096620995	1.32349E-06	5.14408E-05	0.082377857	1.12839E-06	4.38578E-05	0.500878841	6.86093E-06	0.000266667	0.425057939	5.82235E-06	0.0002263	0.507435796	6.95074E-06	0.000270158
Road 3	3	1200-1300	0.092087459	1.26139E-06	4.90272E-05	0.077952763	1.06778E-06	4.15019E-05	0.488324625	6.68896E-06	0.000259983	0.411402693	5.6353E-06	0.00021903	0.489355457	6.70308E-06	0.000260532

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (May) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 3	3	1300-1400	0.09770822	1.45279E-06	5.64663E-05	0.082545933	1.22735E-06	4.77039E-05	0.497541381	7.39778E-06	0.000287533	0.418410787	6.22121E-06	0.000241803	0.500956721	7.44856E-06	0.000289507
Road 3	3	1400-1500	0.090041542	1.34891E-06	5.24286E-05	0.076068276	1.13957E-06	4.42924E-05	0.465874368	6.97924E-06	0.000271265	0.39169455	5.86795E-06	0.000228073	0.467762827	7.00753E-06	0.000272365
Road 3	3	1500-1600	0.100846145	1.44769E-06	5.62679E-05	0.084335698	1.21067E-06	4.70558E-05	0.508259128	7.29626E-06	0.000283587	0.422913989	6.0711E-06	0.000235968	0.507249687	7.28177E-06	0.000283024
Road 3	3	1600-1700	0.094973986	1.48678E-06	5.77874E-05	0.078415379	1.22756E-06	4.77122E-05	0.486299416	7.61282E-06	0.000295891	0.398852859	6.24388E-06	0.000242684	0.477268238	7.47144E-06	0.000290396
Road 3	3	1700-1800	0.074280123	1.1664E-06	4.5335E-05	0.062423534	9.80219E-07	3.80987E-05	0.38199523	5.99836E-06	0.000233141	0.318583228	5.00262E-06	0.000194439	0.381006762	5.98284E-06	0.000232538
Road 3	3	1800-1900	0.068920925	1.13531E-06	4.41266E-05	0.059130331	9.74031E-07	3.78582E-05	0.379373145	6.24927E-06	0.000242893	0.322425725	5.3112E-06	0.000206433	0.381556056	6.28523E-06	0.000244291
Road 3	3	1900-2000	0.073255947	8.92994E-07	3.47084E-05	0.062802947	7.65572E-07	2.97558E-05	0.403483697	4.91849E-06	0.000191169	0.343216921	4.18383E-06	0.000162615	0.406019868	4.94941E-06	0.000192371
Road 3	3	2000-2100	0.066816965	6.95542E-07	2.7034E-05	0.057869507	6.02402E-07	2.34139E-05	0.365876163	3.80865E-06	0.000148033	0.314579076	3.27466E-06	0.000127278	0.372448582	3.87707E-06	0.000150692
Road 3	3	2100-2200	0.065417008	6.45295E-07	2.5081E-05	0.05757413	5.6793E-07	2.2074E-05	0.368894114	3.63889E-06	0.000141435	0.322415691	3.18041E-06	0.000123615	0.379989821	3.74834E-06	0.000145689
Road 3	3	2200-2300	0.070264476	6.34507E-07	2.46617E-05	0.061801083	5.5808E-07	2.16912E-05	0.384401155	3.47125E-06	0.000134919	0.335666998	3.03116E-06	0.000117814	0.397468082	3.58924E-06	0.000139505
Road 3	3	2300-0000	0.061684183	4.96672E-07	1.93044E-05	0.054107689	4.35667E-07	1.69333E-05	0.353998227	2.85034E-06	0.000110786	0.307672131	2.47733E-06	9.62876E-05	0.361779821	2.913E-06	0.000113221
Road 4	4	0000-0100	0.244590857	1.98164E-07	2.12186E-06	0.213221429	1.72749E-07	1.84972E-06	1.207481143	9.78283E-07	1.0475E-05	1.052218286	8.52492E-07	9.12812E-06	1.265439714	1.02524E-06	1.09778E-05
Road 4	4	0100-0200	0.230978	1.06934E-07	1.14501E-06	0.2013515	9.32183E-08	9.98142E-07	1.142553	5.2896E-07	5.66388E-06	0.996078	4.61147E-07	4.93777E-06	1.1974295	5.54366E-07	5.93591E-06
Road 4	4	0200-0300	0.251045385	7.55461E-08	8.08915E-07	0.22132	6.66009E-08	7.13135E-07	1.200793846	3.6135E-07	3.86918E-06	1.058723077	3.18597E-07	3.4114E-06	1.280043077	3.85198E-07	4.12454E-06
Road 4	4	0300-0400	0.228585714	3.70394E-08	3.96602E-07	0.19961	3.23442E-08	3.46328E-07	1.173514286	1.90153E-07	2.03608E-06	1.02442	1.65994E-07	1.77739E-06	1.22403	1.98338E-07	2.12372E-06
Road 4	4	0400-0500	0.236526429	7.66521E-08	8.20758E-07	0.205545	6.66118E-08	7.13251E-07	1.131825714	3.66795E-07	3.92749E-06	0.983654286	3.18777E-07	3.41333E-06	1.189199286	3.85389E-07	4.12658E-06
Road 4	4	0500-0600	0.222442083	1.23579E-07	1.32323E-06	0.1896475	1.0536E-07	1.12815E-06	1.024191667	5.68995E-07	6.09256E-06	0.87239875	4.84666E-07	5.1896E-06	1.06204625	5.90026E-07	6.31775E-06
Road 4	4	0600-0700	0.245689623	3.01425E-07	3.22753E-06	0.208166415	2.55389E-07	2.7346E-06	1.137437736	1.39547E-06	1.49421E-05	0.962847736	1.18127E-06	1.26486E-05	1.171014151	1.43666E-06	1.53832E-05
Road 4	4	0700-0800	0.249127391	5.30549E-07	5.6809E-06	0.208292065	4.43585E-07	4.74972E-06	1.195997826	2.54703E-06	2.72725E-05	0.99864087	2.12674E-06	2.27722E-05	1.206932935	2.57032E-06	2.75219E-05
Road 4	4	0800-0900	0.257092774	9.22439E-07	9.87709E-06	0.218894	7.85384E-07	8.40956E-06	1.238566258	4.44393E-06	4.75837E-05	1.053983742	3.78165E-06	4.04924E-05	1.272877742	4.56704E-06	4.89019E-05
Road 4	4	0900-1000	0.258149054	8.844E-07	9.46978E-06	0.22188777	7.60171E-07	8.13959E-06	1.180424459	4.04405E-06	4.33019E-05	1.013939189	3.47368E-06	3.71947E-05	1.235826959	4.23385E-06	4.53343E-05
Road 4	4	1000-1100	0.289259861	9.642E-07	1.03242E-05	0.246709167	8.22364E-07	8.80553E-06	1.326665139	4.42222E-06	4.73512E-05	1.131166944	3.77056E-06	4.03735E-05	1.377876111	4.59292E-06	4.91791E-05
Road 4	4	1100-1200	0.269933806	9.68513E-07	1.03704E-05	0.229770065	8.24406E-07	8.8274E-06	1.229956645	4.41304E-06	4.7253E-05	1.046696774	3.75551E-06	4.02124E-05	1.276466839	4.57992E-06	4.90398E-05
Road 4	4	1200-1300	0.279690946	9.582E-07	1.026E-05	0.236450608	8.10062E-07	8.67381E-06	1.330347365	4.55767E-06	4.88016E-05	1.124201892	3.85143E-06	4.12395E-05	1.3606525	4.66149E-06	4.99133E-05
Road 4	4	1300-1400	0.286286333	9.9405E-07	1.06439E-05	0.241561067	8.38754E-07	8.98102E-06	1.330017867	4.61812E-06	4.94489E-05	1.121719267	3.89486E-06	4.17045E-05	1.363280333	4.73361E-06	5.06855E-05
Road 4	4	1400-1500	0.260534429	8.44325E-07	9.04067E-06	0.219820214	7.1238E-07	7.62787E-06	1.249306929	4.04868E-06	4.33516E-05	1.053265857	3.41336E-06	3.65488E-05	1.273086071	4.12574E-06	4.41767E-05
Road 4	4	1500-1600	0.29512208	8.53941E-07	9.14364E-06	0.24634032	7.1279E-07	7.63226E-06	1.37123008	3.96768E-06	4.24842E-05	1.14421608	3.31081E-06	3.54508E-05	1.3905564	4.0236E-06	4.3083E-05
Road 4	4	1600-1700	0.27569379	7.91343E-07	8.47337E-06	0.227263226	6.5233E-07	6.98487E-06	1.293771532	3.7136E-06	3.97637E-05	1.065833145	3.05934E-06	3.27581E-05	1.293096371	3.71167E-06	3.97429E-05
Road 4	4	1700-1800	0.260917323	7.67049E-07	8.21323E-06	0.219180079	6.44349E-07	6.89942E-06	1.244517638	3.65865E-06	3.91753E-05	1.04472622	3.0713E-06	3.28862E-05	1.263906299	3.71565E-06	3.97856E-05
Road 4	4	1800-1900	0.282763962	6.93819E-07	7.42912E-06	0.242575755	5.95209E-07	6.37325E-06	1.361199811	3.33998E-06	3.57631E-05	1.167544528	2.86481E-06	3.06752E-05	1.410120283	3.46002E-06	3.70484E-05
Road 4	4	1900-2000	0.254017162	4.35122E-07	4.6591E-06	0.217898243	3.73252E-07	3.99662E-06	1.225597838	2.0994E-06	2.24795E-05	1.050708649	1.79983E-06	1.92718E-05	1.268606892	2.17308E-06	2.32684E-05
Road 4	4	2000-2100	0.216677143	2.45768E-07	2.63158E-06	0.187676122	2.12873E-07	2.27936E-06	1.049294898	1.19017E-06	1.27439E-05	0.907704898	1.02957E-06	1.10242E-05	1.09538102	1.24245E-06	1.33036E-05
Road 4	4	2100-2200	0.180660811	1.54733E-07	1.65681E-06	0.159275676	1.36417E-07	1.46069E-06	0.89329973	7.65095E-07	8.19231E-06	0.786298649	6.7345E-07	7.21102E-06	0.945574324	8.09867E-07	8.67171E-06
Road 4	4	2200-2300	0.242462698	3.53591E-07	3.78611E-06	0.213336984	3.11116E-07	3.3313E-06	1.152451429	1.68066E-06	1.79958E-05	1.013379048	1.47784E-06	1.58241E-05	1.226716032	1.78896E-06	1.91554E-05
Road 4	4	2300-0000	0.226740816	2.57183E-07	2.75381E-06	0.198882245	2.25584E-07	2.41546E-06	1.107154082	1.2558E-06	1.34466E-05	0.970517755	1.10082E-06	1.17871E-05	1.1694	1.3264E-06	1.42026E-05
Road 5	5	0000-0100	0.077249845	2.79828E-07	3.78416E-06	0.067415699	2.44205E-07	3.30243E-06	0.430582332	1.55973E-06	2.10925E-05	0.373320052	1.3523E-06	1.82875E-05	0.440735751	1.59651E-06	2.15899E-05
Road 5	5	0100-0200	0.05202377	1.19123E-07	1.61093E-06	0.045382869	1.03917E-07	1.40529E-06	0.318390984	7.29048E-07	9.85906E-06	0.27572623	6.31355E-07	8.53793E-06	0.321109098	7.35272E-07	9.94323E-06
Road 5	5	0200-0300	0.049901744	8.05471E-08	1.08925E-06	0.043919186	7.08906E-08	9.58667E-07	0.342750814	5.53239E-07	7.48155E-06	0.298396977	4.81647E-07	6.5134E-06	0.342316163	5.52537E-07	7.47207E-06
Road 5	5	0300-0400	0.044553016	5.26809E-08	7.12414E-07	0.038819048	4.59009E-08	6.20726E-07	0.244957143	2.89645E-07	3.91693E-06	0.210815397	2.49275E-07	3.37099E-06	0.249634444	2.95176E-07	3.99172E-06
Road 5	5	0400-0500	0.062316566	1.15791E-07	1.56586E-06	0.05418697	1.00685E-07	1.36159E-06	0.355526465	6.60607E-07	8.93351E-06	0.306929697	5.70309E-07	7.71239E-06	0.361116667	6.70994E-07	9.07398E-06
Road 5	5	0500-0600	0.051426864	2.12348E-07	2.87162E-06	0.043792818	1.80826E-07	2.44535E-06	0.2989755	1.23451E-06	1.66945E-05	0.251606682	1.03892E-06	1.40495E-05	0.2953995	1.21974E-06	1.64948E-05
Road 5	5	0600-0700	0.074818582	5.4485E-07	7.36811E-06	0.063392706	4.61644E-07	6.24289E-06	0.375572371	2.73502E-06	3.69862E-05	0.315529716	2.29778E-06	3.10733E-05	0.378922423	2.75942E-06	3.73162E-05
Road 5	5	0700-0800	0.058698136	6.97371E-07	9.43068E-06	0.049062543	5.82894E-07	7.88258E-06	0.310052938	3.68362E-06	4.98143E-05	0.255477409	3.03523E-06	4.1046E-05	0.304539953	3.61813E-06	4.89286E-05
Road 5	5	0800-0900	0.06330331	1.00159E-06	1.35447E-05	0.053951483	8.53624E-07	1.15437E-05	0.309283535	4.89351E-06	6.61758E-05	0.261144757	4.13185E-06	5.58758E-05	0.31509624	4.98548E-06	6.74195E-05
Road 5	5	0900-1000	0.069025564	1.05715E-06	1.4296E-05	0.059561373	9.12201E-07	1.23359E-05	0.367186863	5.62358E-06	7.60488E-05	0.31479087	4.82112E-06	6.51969E-05	0.374352243	5.73332E-06	7.75328E-05
Road 5	5	1000-1100	0.07908921	1.08955E-06	1.47343E-05	0.067576894	9.30958E-07	1.25895E-05	0.40910767	5.63598E-06	7.62164E-05	0.347673351	4.78964E-06	6.47713E-05	0.415250245	5.7206E-06	7.73608E-05
Road 5	5	1100-1200	0.078335007	1.02771E-06	1.38979E-05	0.066826352	8.7672E-07	1.1856E-05	0.423388698	5.55459E-06	7.51158E-05	0.358865579	4.70809E-06	6.36684E-05	0.425691931	5.58481E-06	7.55244E-05
Road 5	5	1200-1300	0.073599236	9.76627E-07	1.32071E-05	0.062364158	8.27542E-07	1.1191E-05	0.400904484	5.31981E-06	7.19408E-05	0.337277765	4.47551E-06	6.05232E-05	0.399641924	5.30306E-06	7.17142E-05
Road 5	5	1300-1400	0.080291673	1.17092E-06	1.58346E-05	0.067871454	9.89792E-07	1.33851E-05	0.417676525	6.09112E-06	8.23713E-05	0.350848172	5.11654E-06	6.91919E-05	0.418719627	6.10633E-06	8.2577E-05
Road 5	5	1400-1500	0.075675038	1.12774E-06	1.52506E-05	0.063966096	9.53248E-07	1.2891E-05	0.395756877	5.89773E-06	7.97561E-05	0.33243636	4.9541E-06	6.69952E-05	0.396402456	5.90735E-06	7.98862E-05
Road 5	5	1500-1600	0.085267701	1.23228E-06	1.66644E-05	0.071352	1.03118E-06	1.39448E-05	0.435046221	6.28727E-06	8.50239E-05	0.361604013	5.22588E-06	7.06706E-05	0.432956013	6.25706E-06	8.46154E-05
Road 5	5	1600-1700	0.080873376	1.29476E-06	1.75093E-05	0.066767151	1.06893E-06	1.44553E-05	0.420613306	6.73392E-06	9.1064E-05	0.344555451	5.51625E-06	7.45973E-05	0.411322603	6.58518E-06	8.90526E-05
Road 5	5	1700-1800	0.05873215	9.38083E-07	1.26859E-05	0.049334512	7.87982E-07	1.0656E-05	0.305833502	4.88484E-06	6.60586E-05	0.254370482	4.06286E-06	5.49428E-05	0.303704994	4.85084E-06	6.55989E-05
Road 5	5	1800-1900	0.053876464	9.29288E-07	1.25669E-05	0.046202655	7.96926E-07	1.0777E-05	0.306480903	5.28634E-06	7.14881E-05	0.259633983	4.4783E-06	6.05608E-05	0.305836638	5.27522E-06	7.13378E-05
Road 5	5	1900-2000	0.062352668	8.02814E-07	1.08566E-05	0.053461356	6.88335E-07	9.30848E-06	0.351443455	4.52497E-06	6.1192E-05	0.298341676	3.84126E-06	5.19461E-05	0.351803032	4.5296E-06	6.12546E-05
Road 5	5	2000-2100	0.059134667	6.65931E-07	9.00551E-06	0.05121895	5.7679E-07	7.80004E-06	0.328434333	3.69858E-06	5.00167E-05	0.282027567	3.17599E-06	4.29495E-05	0.333246517	3.75278E-06	5.07495E-05
Road 5	5	2100-2200	0.060990986	6.61651E-07	8.94764E-06	0.053669187	5.82222E-07	7.8735E-06	0.347606834	3.77096E-06	5.09954E-05	0.303547907	3.29299E-06	4.45318E-05	0.357217093	3.87522E-06	5.24053E-05
Road 5	5	2200-2300	0.058757956	5.50304E-07	7.44187E-06	0.051669639	4.83918E-07	6.54411E-06	0.330047415	3.0911E-06	4.18015E-05	0.287576573	2.69333E-06	3.64224E-05	0.339246212	3.17725E-06	4.29665E-05
Road 5	5	2300-0000	0.051807395	4.4048E-07	5.95669E-06	0.045433355	3.86286E-07	5.22382E-06	0.305411965	2.59669E-06	3.51155E-05	0.264819514	2.25156E-06	3.04483E-05	0.31025287	2.63785E-06	3.56721E-05
Road 6	6	0000-0100	0.0461996	1.30066E-07	4.64935E-06	0.0402216	1.13236E-07	4.04775E-06	0.2973464	8.37124E-07	2.99238E-05	0.255915133	7.20482E-07	2.57543E-05	0.296136733	8.33718E-07	2.9802E-05
Road 6	6	0100-0200	0.061330175	1.31224E-07	4.69074E-06	0.053494737	1.14459E-07	4.09146E-06	0.34534386	7.38911E-07	2.64131E-05	0.298589386	6.38874E-07	2.28371E-05	0.352084123	7.53333E-07	2.69286E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (May) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 6	6	0200-0300	0.056176456	8.32947E-08	2.97745E-06	0.049542278	7.3458E-08	2.62582E-06	0.321105063	4.76113E-07	1.70191E-05	0.280666835	4.16154E-07	1.48758E-05	0.330209114	4.89612E-07	1.75016E-05
Road 6	6	0300-0400	0.057824032	6.72877E-08	2.40526E-06	0.050617097	5.89013E-08	2.10548E-06	0.369440806	4.29905E-07	1.53674E-05	0.320633226	3.73109E-07	1.33371E-05	0.371250323	4.32011E-07	1.54426E-05
Road 6	6	0400-0500	0.063021556	1.06455E-07	3.80535E-06	0.054813333	9.25901E-08	3.30972E-06	0.370199556	6.25337E-07	2.23533E-05	0.319066222	5.38963E-07	1.92658E-05	0.373879556	6.31553E-07	2.25755E-05
Road 6	6	0500-0600	0.057466049	1.74728E-07	6.24581E-06	0.049034259	1.49091E-07	5.32939E-06	0.347473272	1.05651E-06	3.77658E-05	0.29271642	8.90016E-07	3.18145E-05	0.341750679	1.03911E-06	3.71439E-05
Road 6	6	0600-0700	0.061051931	3.32302E-07	1.18785E-05	0.05175169	2.81681E-07	1.0069E-05	0.385441172	2.09793E-06	7.49926E-05	0.322704621	1.75646E-06	6.27864E-05	0.37445631	2.03814E-06	7.28554E-05
Road 6	6	0700-0800	0.057696104	5.00293E-07	1.78834E-05	0.048255952	4.18436E-07	1.49574E-05	0.332169091	2.8803E-06	0.000102959	0.273811039	2.37426E-06	8.48703E-05	0.322066991	2.7927E-06	9.98276E-05
Road 6	6	0800-0900	0.049119335	6.10304E-07	2.18159E-05	0.041778293	5.19092E-07	1.85554E-05	0.290152613	3.60512E-06	0.000128869	0.243123263	3.02079E-06	0.000107981	0.284901556	3.53988E-06	0.000126536
Road 6	6	0900-1000	0.051148183	6.07673E-07	2.17218E-05	0.044002828	5.22781E-07	1.86873E-05	0.289588294	3.44049E-06	0.000122984	0.24614158	2.92432E-06	0.000104532	0.290144408	3.4471E-06	0.00012322
Road 6	6	1000-1100	0.069024131	6.93091E-07	2.47752E-05	0.058897701	5.91409E-07	2.11405E-05	0.37812228	3.79684E-06	0.000135721	0.320103626	3.21425E-06	0.000114897	0.379001327	3.80566E-06	0.000136037
Road 6	6	1100-1200	0.07994703	7.9827E-07	2.85349E-05	0.068210695	6.81083E-07	2.43459E-05	0.418455771	4.17827E-06	0.000149356	0.354704868	3.54172E-06	0.000126602	0.422915564	4.22281E-06	0.000150948
Road 6	6	1200-1300	0.077683327	7.62545E-07	2.72579E-05	0.065814799	6.46042E-07	2.30934E-05	0.39016088	3.82984E-06	0.000136901	0.328741683	3.22695E-06	0.00011535	0.394556482	3.87299E-06	0.000138444
Road 6	6	1300-1400	0.089830653	8.78412E-07	3.13997E-05	0.07591737	7.4236E-07	2.65364E-05	0.458922898	4.48759E-06	0.000160413	0.385565451	3.77026E-06	0.000134772	0.461482821	4.51262E-06	0.000161308
Road 6	6	1400-1500	0.085434077	9.20405E-07	3.29007E-05	0.072198153	7.7781E-07	2.78036E-05	0.429952909	4.632E-06	0.000165575	0.360983554	3.88897E-06	0.000139015	0.433181707	4.66678E-06	0.000166819
Road 6	6	1500-1600	0.075753772	7.99054E-07	2.8563E-05	0.063300801	6.677E-07	2.38676E-05	0.394844431	4.16484E-06	0.000148876	0.327449448	3.45395E-06	0.000123465	0.390750249	4.12165E-06	0.000147332
Road 6	6	1600-1700	0.079130694	8.55467E-07	3.05795E-05	0.065336372	7.06339E-07	2.52488E-05	0.394093646	4.26047E-06	0.000152295	0.322894479	3.49075E-06	0.00012478	0.388230851	4.19709E-06	0.000150029
Road 6	6	1700-1800	0.058483311	6.69572E-07	2.39345E-05	0.049166377	5.62903E-07	2.01215E-05	0.301798574	3.45528E-06	0.000123512	0.251234967	2.87638E-06	0.000102819	0.300401344	3.43928E-06	0.00012294
Road 6	6	1800-1900	0.056044819	7.24754E-07	2.5907E-05	0.048047039	6.21329E-07	2.221E-05	0.294775022	3.81194E-06	0.000136261	0.250138462	3.23471E-06	0.000115628	0.298185501	3.85604E-06	0.000137838
Road 6	6	1900-2000	0.066410401	6.53135E-07	2.33469E-05	0.056910592	5.59706E-07	2.00072E-05	0.349568645	3.43795E-06	0.000122893	0.296441927	2.91546E-06	0.000104216	0.353352519	3.47516E-06	0.000124223
Road 6	6	2000-2100	0.051375861	4.03061E-07	1.44078E-05	0.04446299	3.48828E-07	1.24692E-05	0.300547464	2.3579E-06	8.42853E-05	0.257384785	2.01927E-06	7.21808E-05	0.301847775	2.3681E-06	8.465E-05
Road 6	6	2100-2200	0.071663472	4.84213E-07	1.73086E-05	0.063066694	4.26126E-07	1.52323E-05	0.382216861	2.58255E-06	9.23156E-05	0.334090417	2.25737E-06	8.06917E-05	0.397157111	2.68349E-06	9.5924E-05
Road 6	6	2200-2300	0.053623543	3.83457E-07	1.3707E-05	0.047104593	3.3684E-07	1.20407E-05	0.302840026	2.16558E-06	7.74107E-05	0.262303806	1.87571E-06	6.7049E-05	0.309408399	2.21255E-06	7.90897E-05
Road 6	6	2300-0000	0.036257087	2.42939E-07	8.68408E-06	0.031797983	2.13061E-07	7.61606E-06	0.227384762	1.52358E-06	5.44618E-05	0.196651317	1.31765E-06	4.71007E-05	0.2284493	1.53071E-06	5.47168E-05
Road 7	7	0000-0100	0.067631452	1.82636E-07	4.55919E-06	0.059007863	1.59348E-07	3.97785E-06	0.399571237	1.07902E-06	2.6936E-05	0.346143199	9.34745E-07	2.33343E-05	0.405151062	1.09409E-06	2.73121E-05
Road 7	7	0100-0200	0.083174345	1.75098E-07	4.37102E-06	0.072542621	1.52716E-07	3.8123E-06	0.454634552	9.57094E-07	2.38922E-05	0.394405862	8.30301E-07	2.0727E-05	0.466948483	9.83018E-07	2.45393E-05
Road 7	7	0200-0300	0.071651809	9.77866E-08	2.44107E-06	0.062692323	8.55592E-08	2.13584E-06	0.405567021	5.53496E-07	1.38171E-05	0.352588884	4.81195E-07	1.20122E-05	0.415281207	5.66754E-07	1.4148E-05
Road 7	7	0300-0400	0.072953277	8.04976E-08	2.00948E-06	0.063698393	7.02856E-08	1.75456E-06	0.439843279	4.85329E-07	1.21154E-05	0.381734272	4.2121E-07	1.05148E-05	0.445432664	4.91496E-07	1.22693E-05
Road 7	7	0400-0500	0.081807297	1.31838E-07	3.2911E-06	0.070689488	1.13921E-07	2.84383E-06	0.455680991	7.34359E-07	1.8332E-05	0.391272381	6.3056E-07	1.57408E-05	0.461961869	7.44481E-07	1.85847E-05
Road 7	7	0500-0600	0.074849008	2.15167E-07	5.37127E-06	0.064183805	1.84508E-07	4.60592E-06	0.422489794	1.21452E-06	3.03185E-05	0.359221622	1.03265E-06	2.57782E-05	0.423405427	1.21716E-06	3.03842E-05
Road 7	7	0600-0700	0.078873559	4.05377E-07	1.01195E-05	0.066967875	3.44187E-07	8.59202E-06	0.457627712	2.35201E-06	5.87139E-05	0.385181057	1.97967E-06	4.9419E-05	0.452148932	2.32386E-06	5.8011E-05
Road 7	7	0700-0800	0.076062336	6.23939E-07	1.55756E-05	0.063739349	5.22854E-07	1.30521E-05	0.415474655	3.40814E-06	8.50783E-05	0.344719885	2.82774E-06	7.05896E-05	0.408459234	3.35059E-06	8.36417E-05
Road 7	7	0800-0900	0.075833041	9.41345E-07	2.3499E-05	0.064197698	7.96911E-07	1.98935E-05	0.412221673	5.11707E-06	0.000127739	0.345810823	4.29269E-06	0.000107159	0.41000852	5.0896E-06	0.000127053
Road 7	7	0900-1000	0.076098384	8.75034E-07	2.18437E-05	0.065679835	7.55234E-07	1.88531E-05	0.398502449	4.58227E-06	0.000114388	0.341634544	3.92836E-06	9.80647E-05	0.40731438	4.68359E-06	0.000116918
Road 7	7	1000-1100	0.090988364	9.18111E-07	2.2919E-05	0.077715514	7.84182E-07	1.95757E-05	0.478755911	4.83085E-06	0.000120594	0.406634828	4.10312E-06	0.000102427	0.484350342	4.8873E-06	0.000122003
Road 7	7	1100-1200	0.101401614	1.02171E-06	2.55053E-05	0.086618835	8.72763E-07	2.1787E-05	0.51951768	5.23461E-06	0.000130673	0.441879806	4.45234E-06	0.000111145	0.528498641	5.3251E-06	0.000132932
Road 7	7	1200-1300	0.100104199	1.00719E-06	2.51427E-05	0.084451541	8.49699E-07	2.12113E-05	0.505645166	5.08749E-06	0.000127	0.425151779	4.27761E-06	0.000106783	0.50960332	5.12731E-06	0.000127994
Road 7	7	1300-1400	0.106545902	1.05498E-06	2.63358E-05	0.089583045	8.87022E-07	2.2143E-05	0.539117603	5.33817E-06	0.000133258	0.451463042	4.47024E-06	0.000111592	0.541046087	5.35726E-06	0.000133735
Road 7	7	1400-1500	0.099309279	1.02947E-06	2.56988E-05	0.083332425	8.63846E-07	2.15644E-05	0.505511226	5.24027E-06	0.000130814	0.422174206	4.37637E-06	0.000109249	0.505506632	5.24022E-06	0.000130813
Road 7	7	1500-1600	0.092730273	9.43765E-07	2.35595E-05	0.077769701	7.91503E-07	1.97585E-05	0.47901151	4.87515E-06	0.0001217	0.399509585	4.06602E-06	0.000101501	0.477279285	4.85752E-06	0.00012126
Road 7	7	1600-1700	0.096486377	1.01561E-06	2.5353E-05	0.079694653	8.38864E-07	2.09408E-05	0.481142284	5.06449E-06	0.000126426	0.395258071	4.16048E-06	0.000103859	0.474952724	4.99934E-06	0.0001248
Road 7	7	1700-1800	0.073198824	8.15124E-07	2.03482E-05	0.061707616	6.87161E-07	1.71538E-05	0.379192906	4.2226E-06	0.00010541	0.317386159	3.53433E-06	8.82285E-05	0.379093775	4.2215E-06	0.000105382
Road 7	7	1800-1900	0.066561782	7.70207E-07	1.92269E-05	0.057186153	6.61719E-07	1.65187E-05	0.350557039	4.05641E-06	0.000101261	0.2988573	3.45817E-06	8.63272E-05	0.356043453	4.11989E-06	0.000102846
Road 7	7	1900-2000	0.077095566	6.7383E-07	1.6821E-05	0.066022741	5.77051E-07	1.44051E-05	0.409050868	3.57518E-06	8.92482E-05	0.34749711	3.03719E-06	7.58182E-05	0.41351985	3.61424E-06	9.02233E-05
Road 7	7	2000-2100	0.069547016	5.00823E-07	1.25022E-05	0.060312062	4.3432E-07	1.08421E-05	0.38027494	2.73844E-06	6.83605E-05	0.327347059	2.3573E-06	5.88458E-05	0.387659121	2.79162E-06	6.96879E-05
Road 7	7	2100-2200	0.079450022	4.7755E-07	1.19212E-05	0.070314143	4.22637E-07	1.05504E-05	0.424770558	2.55317E-06	6.37354E-05	0.373871892	2.24723E-06	5.60982E-05	0.444186035	2.66987E-06	6.66486E-05
Road 7	7	2200-2300	0.066910014	4.34233E-07	1.08399E-05	0.058834523	3.81825E-07	9.53159E-06	0.367851885	2.38729E-06	5.95945E-05	0.320157625	2.07776E-06	5.18677E-05	0.378992148	2.45959E-06	6.13993E-05
Road 7	7	2300-0000	0.047421989	2.82974E-07	7.06394E-06	0.041625566	2.48386E-07	6.20051E-06	0.281505733	1.67978E-06	4.19329E-05	0.244601695	1.45957E-06	3.64357E-05	0.286227261	1.70796E-06	4.26362E-05
Road 8	8	0000-0100	0.214531944	1.56023E-07	2.57198E-06	0.186958889	1.3597E-07	2.24142E-06	1.062201111	7.7251E-07	1.27345E-05	0.925407778	6.73024E-07	1.10945E-05	1.112366667	8.08994E-07	1.3336E-05
Road 8	8	0100-0200	0.222565667	1.34888E-07	2.22358E-06	0.194056	1.1761E-07	1.93875E-06	1.099064	6.66099E-07	1.09804E-05	0.958277333	5.80774E-07	9.57384E-06	1.152333333	6.98384E-07	1.15126E-05
Road 8	8	0200-0300	0.211603333	6.41222E-08	1.05703E-06	0.186646	5.65594E-08	9.3236E-07	1.098766	3.32959E-07	5.48871E-06	0.969132667	2.93677E-07	4.84115E-06	1.155778667	3.50236E-07	5.77351E-06
Road 8	8	0300-0400	0.193236429	5.46527E-08	9.0093E-07	0.168963571	4.77877E-08	7.87762E-07	0.982797143	2.77963E-07	4.58211E-06	0.858847143	2.42906E-07	4.00422E-06	1.027810714	2.90694E-07	4.79198E-06
Road 8	8	0400-0500	0.22062619	9.3599E-08	1.54294E-06	0.191811429	8.13745E-08	1.34143E-06	1.058097619	4.4889E-07	7.39978E-06	0.919885238	3.90254E-07	6.4332E-06	1.111696667	4.71629E-07	7.77462E-06
Road 8	8	0500-0600	0.213862353	1.46895E-07	2.42151E-06	0.182428235	1.25304E-07	2.06559E-06	1.008211176	6.92509E-07	1.14157E-05	0.859350588	5.90261E-07	9.73023E-06	1.041778824	7.15565E-07	1.17958E-05
Road 8	8	0600-0700	0.237580323	2.97575E-07	4.90542E-06	0.201343387	2.52188E-07	4.15722E-06	1.106144355	1.38547E-06	2.2839E-05	0.936980161	1.17359E-06	1.93462E-05	1.138323548	1.42578E-06	2.35034E-05
Road 8	8	0700-0800	0.238154804	4.90743E-07	8.08972E-06	0.199178627	4.10429E-07	6.76576E-06	1.120303333	2.3085E-06	3.80548E-05	0.936110294	1.92895E-06	3.17981E-05	1.135288922	2.33938E-06	3.85639E-05
Road 8	8	0800-0900	0.265612344	1.03025E-06	1.69833E-05	0.226327031	8.77875E-07	1.44714E-05	1.254169323	4.86466E-06	8.0192E-05	1.067968229	4.14242E-06	6.82863E-05	1.29429526	5.0203E-06	8.27577E-05
Road 8	8	0900-1000	0.279092468	8.90841E-07	1.46852E-05	0.239957025	7.65923E-07	1.2626E-05	1.253110823	3.99983E-06	6.59357E-05	1.077270316	3.43856E-06	5.66834E-05	1.317227342	4.20448E-06	6.93093E-05
Road 8	8	1000-1100	0.265674688	8.58746E-07	1.41561E-05	0.226641875	7.3258E-07	1.20763E-05	1.228561063	3.97111E-06	6.54622E-05	1.047271	3.38512E-06	5.58024E-05	1.273912875	4.1177E-06	6.78787E-05
Road 8	8	1100-1200	0.277102453	8.90087E-07	1.46727E-05	0.235868742	7.57639E-07	1.24894E-05	1.293763019	4.15572E-06	6.85055E-05	1.101003082	3.53656E-06	5.82988E-05	1.336871824	4.29419E-06	7.07882E-05
Road 8	8	1200-1300	0.282479941	9.70133E-07	1.59923E-05	0.238805824	8.20141E-07	1.35197E-05	1.330130765	4.56813E-06	7.53038E-05	1.124020059	3.86027E-06	6.36351E-05	1.362825882	4.68041E-06	7.71548E-05
Road 8	8	1300-1400	0.257962593	8.44241E-07	1.3917E-05	0.21772858	7.12566E-07	1.17464E-05	1.198259321	3.92158E-06	6.46457E-05	1.010842716	3.30821E-06	5.45346E-05	1.228571296	4.02078E-06	6.6281E-05
Road 8	8	1400-1500	0.252103453	7.07927E-07	1.16699E-05	0.212749065	5.97417E-07	9.84819E-06	1.219326259	3.42397E-06	5.64428E-05	1.028481583	2.88806E-06	4.76086E-05	1.241230647	3.48548E-06	5.74568E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (May) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 8	8	1500-1600	0.262340216	7.36673E-07	1.21438E-05	0.21894964	6.14828E-07	1.01352E-05	1.237109353	3.4739E-06	5.7266E-05	1.031663381	2.89699E-06	4.77559E-05	1.250613022	3.51182E-06	5.78911E-05
Road 8	8	1600-1700	0.261628322	7.87528E-07	1.29821E-05	0.215591879	6.48953E-07	1.06978E-05	1.222497383	3.67984E-06	6.06608E-05	1.00692396	3.03094E-06	4.9964E-05	1.222515839	3.6799E-06	6.06617E-05
Road 8	8	1700-1800	0.211253141	6.65767E-07	1.09749E-05	0.1774075	5.59102E-07	9.21659E-06	1.025862115	3.23302E-06	5.32951E-05	0.860096923	2.71061E-06	4.46834E-05	1.037504423	3.26971E-06	5.39E-05
Road 8	8	1800-1900	0.20826243	4.50183E-07	7.4211E-06	0.178776449	3.86446E-07	6.37042E-06	1.036753645	2.24106E-06	3.69431E-05	0.88910028	1.92189E-06	3.16817E-05	1.067876729	2.30834E-06	3.80521E-05
Road 8	8	1900-2000	0.206230649	3.20803E-07	5.28832E-06	0.176911818	2.75196E-07	4.53651E-06	1.051874156	1.63625E-06	2.69729E-05	0.902072727	1.40322E-06	2.31316E-05	1.078984545	1.67842E-06	2.76681E-05
Road 8	8	2000-2100	0.221553117	3.44638E-07	5.68123E-06	0.191891948	2.98499E-07	4.92064E-06	1.030768571	1.60342E-06	2.64317E-05	0.891855584	1.38733E-06	2.28696E-05	1.083747532	1.68583E-06	2.77903E-05
Road 8	8	2100-2200	0.182882222	1.99508E-07	3.28881E-06	0.161117222	1.75764E-07	2.89741E-06	0.928378519	1.01278E-06	1.66952E-05	0.816465926	8.9069E-07	1.46827E-05	0.977583148	1.06645E-06	1.75801E-05
Road 8	8	2200-2300	0.219599219	2.83926E-07	4.68042E-06	0.193224063	2.49825E-07	4.11827E-06	1.055277031	1.3644E-06	2.24916E-05	0.927481406	1.19917E-06	1.97678E-05	1.120705469	1.44899E-06	2.38861E-05
Road 8	8	2300-0000	0.173021132	1.85255E-07	3.05386E-06	0.151853019	1.6259E-07	2.68024E-06	0.86567	9.26879E-07	1.52793E-05	0.759020566	8.12689E-07	1.33969E-05	0.910873585	9.75279E-07	1.60771E-05
Road 9	9	0000-0100	0.189277183	5.02675E-08	1.50057E-06	0.169486816	4.50117E-08	1.34368E-06	0.844634044	2.24315E-07	6.69618E-06	0.750339317	1.99272E-07	5.94862E-06	0.919826133	2.44284E-07	7.2923E-06
Road 9	9	0100-0200	0.206250892	4.30378E-08	1.28475E-06	0.185115127	3.86274E-08	1.1531E-06	0.870530143	1.81651E-07	5.4226E-06	0.774633011	1.6164E-07	4.82525E-06	0.959748138	2.00268E-07	5.97834E-06
Road 9	9	0200-0300	0.080285631	7.61499E-09	2.2732E-07	0.07081942	6.71713E-09	2.00518E-07	0.565803219	5.36657E-08	1.60201E-06	0.499308208	4.73587E-08	1.41374E-06	0.570127628	5.40759E-08	1.61426E-06
Road 9	9	0300-0400	0.097160099	7.37241E-09	2.20079E-07	0.085268884	6.47011E-09	1.93144E-07	0.587062954	4.45457E-08	1.32977E-06	0.515872405	3.91439E-08	1.16851E-06	0.601141288	4.5614E-08	1.36166E-06
Road 9	9	0400-0500	0.225067982	4.26948E-08	1.27451E-06	0.20065755	3.80642E-08	1.13628E-06	0.911995523	1.73003E-07	5.16444E-06	0.806654142	1.5302E-07	4.56792E-06	1.007311691	1.91084E-07	5.7042E-06
Road 9	9	0500-0600	0.163266014	5.26509E-08	1.57172E-06	0.144125823	4.64785E-08	1.38746E-06	0.806934344	2.60225E-07	7.76815E-06	0.711182738	2.29346E-07	6.84638E-06	0.855308561	2.75825E-07	8.23384E-06
Road 9	9	0600-0700	0.192562922	1.16892E-07	3.48942E-06	0.170081464	1.03245E-07	3.08204E-06	0.97558311	5.9221E-07	1.76785E-05	0.859279353	5.2161E-07	1.55709E-05	1.029360817	6.24855E-07	1.8653E-05
Road 9	9	0700-0800	0.164596491	1.52995E-07	4.56717E-06	0.145424296	1.35174E-07	4.03519E-06	0.912347434	8.48043E-07	2.53155E-05	0.804265029	7.47578E-07	2.23165E-05	0.949689325	8.82753E-07	2.63517E-05
Road 9	9	0800-0900	0.256127715	5.58748E-07	1.66796E-05	0.224818688	4.90446E-07	1.46407E-05	1.209362018	2.63825E-06	7.87562E-05	1.05380117	2.29889E-06	6.86258E-05	1.278619858	2.78933E-06	8.32664E-05
Road 9	9	0900-1000	0.262389216	4.33039E-07	1.29269E-05	0.235642352	3.88896E-07	1.16092E-05	1.120611895	1.84942E-06	5.52084E-05	0.999903297	1.65021E-06	4.92615E-05	1.235545649	2.0391E-06	6.08708E-05
Road 9	9	1000-1100	0.269393493	3.73054E-07	1.11363E-05	0.236099701	3.26949E-07	9.75998E-06	1.132077536	1.56769E-06	4.67983E-05	0.98751366	1.3675E-06	4.08222E-05	1.223613361	1.69445E-06	5.05822E-05
Road 9	9	1100-1200	0.188897838	2.72334E-07	8.12964E-06	0.163017523	2.35022E-07	7.01582E-06	0.984485228	1.41933E-06	4.23695E-05	0.858454871	1.23763E-06	3.69455E-05	1.021472394	1.47266E-06	4.39613E-05
Road 9	9	1200-1300	0.284363056	3.99178E-07	1.19161E-05	0.251214225	3.52645E-07	1.0527E-05	1.265963378	1.77711E-06	5.30498E-05	1.115527446	1.56593E-06	4.67458E-05	1.366741671	1.91858E-06	5.72729E-05
Road 9	9	1300-1400	0.32376235	3.74643E-07	1.11837E-05	0.284865498	3.29633E-07	9.84012E-06	1.230674964	1.42408E-06	4.25113E-05	1.074234553	1.24305E-06	3.71073E-05	1.359100051	1.57269E-06	4.69474E-05
Road 9	9	1400-1500	0.209643361	2.70428E-07	8.07274E-06	0.186003899	2.39934E-07	7.16245E-06	1.006369599	1.29816E-06	3.87523E-05	0.883409599	1.13955E-06	3.40174E-05	1.069413498	1.37948E-06	4.11799E-05
Road 9	9	1500-1600	0.175410899	1.89667E-07	5.6619E-06	0.15309227	1.65535E-07	4.9415E-06	0.891931683	9.64424E-07	2.87897E-05	0.77862491	8.41908E-07	2.51324E-05	0.931717179	1.00744E-06	3.00739E-05
Road 9	9	1600-1700	0.185266815	2.81157E-07	8.39302E-06	0.162768349	2.47014E-07	7.37379E-06	0.999487575	1.5168E-06	4.52791E-05	0.872160428	1.32357E-06	3.95109E-05	1.034928777	1.57059E-06	4.68847E-05
Road 9	9	1700-1800	0.157900652	2.06678E-07	6.1697E-06	0.142219951	1.86153E-07	5.557E-06	0.924803207	1.21049E-06	3.61351E-05	0.834567912	1.09238E-06	3.26093E-05	0.976787863	1.27853E-06	3.81663E-05
Road 9	9	1800-1900	0.156531885	1.30652E-07	3.90019E-06	0.143586752	1.19847E-07	3.57765E-06	0.893134462	7.45471E-07	2.22536E-05	0.82023053	6.84621E-07	2.04371E-05	0.963817282	8.04468E-07	2.40148E-05
Road 9	9	1900-2000	0.16179665	1.31977E-07	3.93975E-06	0.14683979	1.19777E-07	3.57555E-06	0.852123243	6.95076E-07	2.07492E-05	0.765992827	6.24819E-07	1.86519E-05	0.912832616	7.44596E-07	2.22275E-05
Road 9	9	2000-2100	0.166674502	9.16914E-08	2.73715E-06	0.149109514	8.20285E-08	2.44869E-06	0.733934506	4.03754E-07	1.20527E-05	0.660188066	3.63184E-07	1.08417E-05	0.809297581	4.45213E-07	1.32904E-05
Road 9	9	2100-2200	0.020076397	1.06636E-08	3.18328E-07	0.018386453	9.76601E-09	2.91532E-07	0.28666282	1.52262E-07	4.54527E-06	0.258754976	1.37438E-07	4.10277E-06	0.27714143	1.47204E-07	4.3943E-06
Road 9	9	2200-2300	0.160087887	1.00215E-07	2.9916E-06	0.144398656	9.03938E-08	2.69841E-06	0.768813413	4.81278E-07	1.4367E-05	0.690826298	4.32458E-07	1.29096E-05	0.835224954	5.22852E-07	1.5608E-05
Road 9	9	2300-0000	0.130512665	7.42737E-08	2.2172E-06	0.118533152	6.74563E-08	2.01369E-06	0.661341235	3.76364E-07	1.12351E-05	0.596579975	3.39509E-07	1.01349E-05	0.715113127	4.06965E-07	1.21486E-05
Road 10	10	0000-0100	0.262973563	2.02189E-07	4.49561E-06	0.230720858	1.77391E-07	3.94424E-06	1.300562336	9.99445E-07	2.22335E-05	1.140635385	8.76984E-07	1.94995E-05	1.371356243	1.05438E-06	2.34437E-05
Road 10	10	0100-0200	0.258679035	1.5027E-07	3.34121E-06	0.227449099	1.32128E-07	2.93783E-06	1.268978195	7.37166E-07	1.63907E-05	1.115128347	6.47793E-07	1.44035E-05	1.342577446	7.79921E-07	1.73413E-05
Road 10	10	0200-0300	0.2574631	8.35798E-08	1.85837E-06	0.227125472	7.37313E-08	1.63939E-06	1.247991905	4.05133E-07	9.00802E-06	1.101446385	3.5756E-07	7.95025E-06	1.328571857	4.31292E-07	9.58964E-06
Road 10	10	0300-0400	0.234325679	4.80434E-08	1.06823E-06	0.204780246	4.19857E-08	9.3354E-07	1.225380508	2.51238E-07	5.58619E-06	1.071468508	2.19681E-07	4.88455E-06	1.276248755	2.61667E-07	5.81809E-06
Road 10	10	0400-0500	0.278236948	1.09339E-07	2.43112E-06	0.244450831	9.60621E-08	2.13591E-06	1.29538746	5.0905E-07	1.13186E-05	1.133799246	4.4555E-07	9.90667E-06	1.378250077	5.41612E-07	1.20426E-05
Road 10	10	0500-0600	0.258092816	1.80797E-07	4.01998E-06	0.223493444	1.5656E-07	3.48107E-06	1.20759186	8.45934E-07	1.88091E-05	1.042531404	7.30307E-07	1.62382E-05	1.266024848	8.86867E-07	1.97192E-05
Road 10	10	0600-0700	0.313437481	4.39134E-07	9.76402E-06	0.272574715	3.81884E-07	8.49108E-06	1.493444708	2.09236E-06	4.65229E-05	1.30003835	1.82139E-06	4.0498E-05	1.572613064	2.20327E-06	4.89891E-05
Road 10	10	0700-0800	0.312858344	6.89557E-07	1.53321E-05	0.268003054	5.90693E-07	1.31339E-05	1.508889607	3.32567E-06	7.39454E-05	1.293639837	2.85125E-06	6.33967E-05	1.561642891	3.44195E-06	7.65306E-05
Road 10	10	0800-0900	0.332949274	1.41079E-06	3.13685E-05	0.285622674	1.21025E-06	2.69097E-05	1.589094758	6.73339E-06	0.000149715	1.36323077	5.77635E-06	0.000128435	1.648853444	6.98661E-06	0.000155345
Road 10	10	0900-1000	0.363232444	1.2288E-06	2.73221E-05	0.318662658	1.07803E-06	2.39696E-05	1.679059662	5.6802E-06	0.000126298	1.471805217	4.97907E-06	0.000110708	1.790467875	6.05709E-06	0.000134678
Road 10	10	1000-1100	0.364136492	1.33763E-06	2.97417E-05	0.315527591	1.15907E-06	2.57715E-05	1.59352976	5.85371E-06	0.000130155	1.37618145	5.0553E-06	0.000112403	1.691709042	6.21436E-06	0.000138174
Road 10	10	1100-1200	0.354330733	1.30161E-06	2.89408E-05	0.304534431	1.11868E-06	2.48736E-05	1.607634969	5.90552E-06	0.000131308	1.379960586	5.06918E-06	0.000112712	1.684495017	6.18786E-06	0.000137585
Road 10	10	1200-1300	0.37505742	1.4226E-06	3.16311E-05	0.322698381	1.224E-06	2.72153E-05	1.714602105	6.50353E-06	0.000144604	1.474502289	5.59282E-06	0.000124355	1.79720067	6.81682E-06	0.00015157
Road 10	10	1300-1400	0.36522091	1.19809E-06	2.66392E-05	0.31443707	1.0315E-06	2.2935E-05	1.63537487	5.36477E-06	0.000119284	1.404166961	4.6063E-06	0.00010242	1.718604031	5.6378E-06	0.000125355
Road 10	10	1400-1500	0.340443264	1.05282E-06	2.34092E-05	0.294599966	9.11053E-07	2.0257E-05	1.62752143	5.03313E-06	0.00011191	1.40627547	4.34892E-06	9.66969E-05	1.700875436	5.25997E-06	0.000116954
Road 10	10	1500-1600	0.338022561	1.06844E-06	2.37564E-05	0.28669844	9.06211E-07	2.01493E-05	1.56778878	4.95555E-06	0.000110185	1.328731337	4.19992E-06	9.3384E-05	1.615429777	5.10614E-06	0.000113533
Road 10	10	1600-1700	0.32618662	1.14806E-06	2.55268E-05	0.275687513	9.70324E-07	2.15749E-05	1.535095061	5.403E-06	0.000120134	1.292969208	4.5508E-06	0.000101186	1.568656721	5.52113E-06	0.000122761
Road 10	10	1700-1800	0.299206892	9.9687E-07	2.21651E-05	0.258410058	8.60947E-07	1.91429E-05	1.475725968	4.91669E-06	0.000109321	1.278078146	4.25818E-06	9.46795E-05	1.536488204	5.11913E-06	0.000113822
Road 10	10	1800-1900	0.298603081	6.17323E-07	1.3726E-05	0.261143572	5.3988E-07	1.20041E-05	1.443814215	2.9849E-06	6.63683E-05	1.263422518	2.61196E-06	5.80761E-05	1.52456609	3.15184E-06	7.00802E-05
Road 10	10	1900-2000	0.26040562	4.84964E-07	1.0783E-05	0.228573353	4.25681E-07	9.4649E-06	1.318685655	2.45584E-06	5.46049E-05	1.15760918	2.15586E-06	4.79349E-05	1.386182533	2.58154E-06	5.73998E-05
Road 10	10	2000-2100	0.291953896	3.59153E-07	7.98565E-06	0.254634128	3.13243E-07	6.96487E-06	1.365602126	1.67992E-06	3.73526E-05	1.189950042	1.46384E-06	3.2548E-05	1.44458417	1.77708E-06	3.95129E-05
Road 10	10	2100-2200	0.246413843	3.11551E-07	6.92725E-06	0.224087703	2.83323E-07	6.29961E-06	1.289174236	1.62996E-06	3.62416E-05	1.172560161	1.48252E-06	3.29633E-05	1.396647864	1.76584E-06	3.92629E-05
Road 10	10	2200-2300	0.255267287	3.35829E-07	7.46706E-06	0.228374017	3.00448E-07	6.68038E-06	1.251070904	1.64591E-06	3.65962E-05	1.120573587	1.47422E-06	3.27789E-05	1.348947605	1.77467E-06	3.94593E-05
Road 10	10	2300-0000	0.233886517	2.8772E-07	6.39737E-06	0.206862527	2.54476E-07	5.6582E-06	1.14490321	1.40843E-06	3.13159E-05	1.011399822	1.24419E-06	2.76643E-05	1.218262349	1.49867E-06	3.33225E-05
Road 11	11	0000-0100	0.294006376	2.24588E-07	1.86298E-06	0.257671532	1.96832E-07	1.63274E-06	1.423194923	1.08716E-06	9.0181E-06	1.244541885	9.50692E-07	7.88607E-06	1.502213416	1.14752E-06	9.51881E-06
Road 11	11	0100-0200	0.294398704	1.58444E-07	1.3143E-06	0.258524722	1.39137E-07	1.15415E-06	1.401278438	7.5416E-07	6.25582E-06	1.226831068	6.60274E-07	5.47702E-06	1.485355791	7.9941E-07	6.63117E-06
Road 11	11	0200-0300	0.256941877	6.69119E-08	5.5504E-07	0.226682197	5.90318E-08	4.89674E-07	1.325061073	3.45068E-07	2.86237E-06	1.169424807	3.04538E-07	2.52617E-06	1.396107004	3.6357E-07	3.01584E-06
Road 11	11	0300-0400	0.275829392	6.70419E-08	5.56118E-07	0.240983001	5.85723E-08	4.85862E-07	1.392940466	3.38562E-07	2.8084E-06	1.217265341	2.95863E-07	2.45421E-06	1.458248342	3.54435E-07	2.94007E-06

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (May) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 11	11	0400-0500	0.287668991	9.98851E-08	8.28555E-07	0.252924956	8.78212E-08	7.28484E-07	1.320632761	4.58553E-07	3.80373E-06	1.156562315	4.01584E-07	3.33117E-06	1.409487271	4.89405E-07	4.05966E-06
Road 11	11	0500-0600	0.235282178	1.10289E-07	9.14852E-07	0.203405705	9.53464E-08	7.90906E-07	1.162411286	5.4488E-07	4.51983E-06	1.004059178	4.70653E-07	3.9041E-06	1.207464883	5.65999E-07	4.69501E-06
Road 11	11	0600-0700	0.254834875	2.30059E-07	1.90836E-06	0.220029438	1.98638E-07	1.64772E-06	1.273378068	1.14958E-06	9.53584E-06	1.098402265	9.91613E-07	8.22551E-06	1.318431703	1.19025E-06	9.87323E-06
Road 11	11	0700-0800	0.308718331	5.84207E-07	4.84604E-06	0.261494351	4.94842E-07	4.10475E-06	1.542076369	2.91817E-06	2.42064E-05	1.307156808	2.47361E-06	2.05188E-05	1.568651159	2.96845E-06	2.46236E-05
Road 11	11	0800-0900	0.329587516	1.17301E-06	9.73022E-06	0.284798679	1.01361E-06	8.40795E-06	1.569090535	5.58444E-06	4.63234E-05	1.351508746	4.81006E-06	3.98998E-05	1.636307425	5.82366E-06	4.83078E-05
Road 11	11	0900-1000	0.328089264	8.37311E-07	6.94556E-06	0.28765806	7.34127E-07	6.08965E-06	1.493742822	3.81216E-06	3.16221E-05	1.304009951	3.32794E-06	2.76055E-05	1.591668011	4.06207E-06	3.36952E-05
Road 11	11	1000-1100	0.336486632	7.06856E-07	5.86342E-06	0.290641386	6.10549E-07	5.06455E-06	1.514407716	3.18131E-06	2.63892E-05	1.304106934	2.73953E-06	2.27246E-05	1.59474832	3.35008E-06	2.77892E-05
Road 11	11	1100-1200	0.297051145	7.01371E-07	5.81793E-06	0.253919338	5.99532E-07	4.97316E-06	1.472066819	3.47571E-06	2.88313E-05	1.263438142	2.98312E-06	2.47452E-05	1.51735748	3.58265E-06	2.97184E-05
Road 11	11	1200-1300	0.367950611	1.04764E-06	8.69024E-06	0.316058307	8.99888E-07	7.46465E-06	1.716607066	4.88756E-06	4.05427E-05	1.472130188	4.19148E-06	3.47687E-05	1.788188495	5.09137E-06	4.22333E-05
Road 11	11	1300-1400	0.380799229	7.99943E-07	6.63559E-06	0.32747651	6.87928E-07	5.70642E-06	1.663675929	3.49487E-06	2.89903E-05	1.422775531	2.98882E-06	2.47925E-05	1.750252041	3.67674E-06	3.04989E-05
Road 11	11	1400-1500	0.3035457	6.11307E-07	5.07084E-06	0.261759085	5.27154E-07	4.37278E-06	1.461338175	2.94297E-06	2.44122E-05	1.254484237	2.52639E-06	2.09566E-05	1.516243322	3.05355E-06	2.53294E-05
Road 11	11	1500-1600	0.272206221	5.52919E-07	4.58651E-06	0.230246008	4.67687E-07	3.8795E-06	1.356967418	2.75634E-06	2.28641E-05	1.147800273	2.33147E-06	1.93397E-05	1.378046281	2.79916E-06	2.32192E-05
Road 11	11	1600-1700	0.261319867	6.35152E-07	5.26864E-06	0.220977093	5.37097E-07	4.45526E-06	1.338710472	3.25381E-06	2.69906E-05	1.130163753	2.74693E-06	2.2786E-05	1.351140846	3.28402E-06	2.72412E-05
Road 11	11	1700-1800	0.256775731	6.37481E-07	5.28796E-06	0.220123669	5.46488E-07	4.53316E-06	1.338613244	3.32329E-06	2.7567E-05	1.151301177	2.85827E-06	2.37095E-05	1.371424846	3.40475E-06	2.82427E-05
Road 11	11	1800-1900	0.273076989	5.59429E-07	4.64051E-06	0.237655796	4.86864E-07	4.03858E-06	1.394004662	2.85577E-06	2.36889E-05	1.215800109	2.4907E-06	2.06606E-05	1.453455906	2.97757E-06	2.46992E-05
Road 11	11	1900-2000	0.261171725	4.12615E-07	3.42268E-06	0.227785835	3.5987E-07	2.98515E-06	1.314575227	2.07685E-06	1.72276E-05	1.143946501	1.80728E-06	1.49915E-05	1.371732335	2.16715E-06	1.79767E-05
Road 11	11	2000-2100	0.262354124	3.68935E-07	3.06035E-06	0.228932203	3.21936E-07	2.67048E-06	1.266387263	1.78086E-06	1.47724E-05	1.105701663	1.55489E-06	1.2898E-05	1.334633866	1.87683E-06	1.55684E-05
Road 11	11	2100-2200	0.185990028	1.87282E-07	1.55352E-06	0.164142914	1.65283E-07	1.37103E-06	1.00923864	1.01625E-06	8.42985E-06	0.891472868	8.97664E-07	7.44619E-06	1.055615782	1.06295E-06	8.81723E-06
Road 11	11	2200-2300	0.245600262	2.68625E-07	2.22827E-06	0.217898943	2.38327E-07	1.97694E-06	1.201292752	1.31391E-06	1.0899E-05	1.064140892	1.1639E-06	9.65468E-06	1.282039835	1.40223E-06	1.16316E-05
Road 11	11	2300-0000	0.235604747	2.45422E-07	2.03579E-06	0.208665437	2.1736E-07	1.80302E-06	1.171853677	1.22068E-06	1.01256E-05	1.035786015	1.07894E-06	8.94993E-06	1.244451452	1.2963E-06	1.07529E-05
Haul Road 1	HR1	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0700-0800	1.30085	2.44521E-06	3.67771E-06	1.08729	2.04378E-06	3.07394E-06	5.69967	1.07137E-05	1.61139E-05	4.76348	8.95391E-06	1.34671E-05	5.85077	1.09977E-05	1.65411E-05
Haul Road 1	HR1	0800-0900	1.30814	2.45891E-06	3.69832E-06	1.11327	2.09261E-06	3.14739E-06	5.73125	1.0773E-05	1.62032E-05	4.87771	9.16863E-06	1.37901E-05	5.99098	1.12612E-05	1.69375E-05
Haul Road 1	HR1	0900-1000	1.28696	2.4191E-06	3.63844E-06	1.10568	2.07835E-06	3.12593E-06	5.63871	1.05991E-05	1.59415E-05	4.84432	9.10586E-06	1.36957E-05	5.95	1.11842E-05	1.68216E-05
Haul Road 1	HR1	1000-1100	1.29625	2.43656E-06	3.66471E-06	1.10478	2.07665E-06	3.12339E-06	5.67938	1.06755E-05	1.60565E-05	4.84043	9.09855E-06	1.36847E-05	5.94521	1.11752E-05	1.68081E-05
Haul Road 1	HR1	1100-1200	1.30545	2.45385E-06	3.69072E-06	1.11067	2.08773E-06	3.14004E-06	5.71975	1.07514E-05	1.61707E-05	4.86622	9.14703E-06	1.37576E-05	5.97689	1.12348E-05	1.68976E-05
Haul Road 1	HR1	1200-1300	1.32153	2.48408E-06	3.73618E-06	1.11657	2.09882E-06	3.15672E-06	5.79031	1.0884E-05	1.63701E-05	4.8919	9.1953E-06	1.38302E-05	6.00847	1.12941E-05	1.69869E-05
Haul Road 1	HR1	1300-1400	1.31724	2.47602E-06	3.72405E-06	1.11067	2.08773E-06	3.14004E-06	5.77132	1.08483E-05	1.63164E-05	4.86622	9.14703E-06	1.37576E-05	5.97689	1.12348E-05	1.68976E-05
Haul Road 1	HR1	1400-1500	1.31724	2.47602E-06	3.72405E-06	1.11067	2.08773E-06	3.14004E-06	5.77132	1.08483E-05	1.63164E-05	4.86622	9.14703E-06	1.37576E-05	5.97689	1.12348E-05	1.68976E-05
Haul Road 1	HR1	1500-1600	1.32433	2.48934E-06	3.74409E-06	1.10478	2.07665E-06	3.12339E-06	5.8024	1.09068E-05	1.64043E-05	4.84043	9.09855E-06	1.36847E-05	5.94521	1.11752E-05	1.68081E-05
Haul Road 1	HR1	1600-1700	1.32034	2.48184E-06	3.73281E-06	1.08719	2.04359E-06	3.07366E-06	5.78451	1.08731E-05	1.63537E-05	4.76308	8.95316E-06	1.3466E-05	5.85027	1.09967E-05	1.65397E-05
Haul Road 1	HR1	1700-1800	1.30405	2.45122E-06	3.68676E-06	1.09458	2.05748E-06	3.09455E-06	5.71346	1.07396E-05	1.61529E-05	4.79586	9.01477E-06	1.35587E-05	5.89044	1.10723E-05	1.66532E-05
Haul Road 1	HR1	1800-1900	1.27966	2.40538E-06	3.6178E-06	1.09768	2.06331E-06	3.10332E-06	5.60683	1.05392E-05	1.58514E-05	4.80915	9.03976E-06	1.35962E-05	5.90683	1.11031E-05	1.66996E-05
Haul Road 1	HR1	1900-2000	1.27427	2.39524E-06	3.60257E-06	1.09248	2.05353E-06	3.08862E-06	5.58284	1.04941E-05	1.57836E-05	4.78637	8.99694E-06	1.35318E-05	5.87885	1.10505E-05	1.66205E-05
Haul Road 1	HR1	2000-2100	1.24319	2.33682E-06	3.5147E-06	1.07679	2.02404E-06	3.04426E-06	5.44673	1.02382E-05	1.53988E-05	4.71792	8.86827E-06	1.33383E-05	5.79471	1.08923E-05	1.63826E-05
Haul Road 1	HR1	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0700-0800	1.30085	1.68504E-06	4.48541E-06	1.08729	1.40841E-06	3.74904E-06	5.69967	7.38299E-06	1.96528E-05	4.76348	6.17031E-06	1.64248E-05	5.85077	7.57872E-06	2.01738E-05
Haul Road 2	HR2	0800-0900	1.30814	1.69448E-06	4.51055E-06	1.11327	1.44206E-06	3.83862E-06	5.73125	7.4239E-06	1.97617E-05	4.87771	6.31828E-06	1.68186E-05	5.99098	7.76034E-06	2.06573E-05
Haul Road 2	HR2	0900-1000	1.28696	1.66705E-06	4.43752E-06	1.10568	1.43223E-06	3.81245E-06	5.63871	7.30403E-06	1.94426E-05	4.84432	6.27503E-06	1.67035E-05	5.95	7.70725E-06	2.0516E-05
Haul Road 2	HR2	1000-1100	1.29625	1.67908E-06	4.46955E-06	1.10478	1.43106E-06	3.80935E-06	5.67938	7.35671E-06	1.95828E-05	4.84043	6.26999E-06	1.66901E-05	5.94521	7.70105E-06	2.04994E-05
Haul Road 2	HR2	1100-1200	1.30545	1.691E-06	4.50127E-06	1.11067	1.43869E-06	3.82966E-06	5.71975	7.409E-06	1.9722E-05	4.86622	6.30339E-06	1.6779E-05	5.97689	7.74209E-06	2.06087E-05
Haul Road 2	HR2	1200-1300	1.32153	1.71183E-06	4.55672E-06	1.11657	1.44633E-06	3.85E-06	5.79031	7.5004E-06	1.99653E-05	4.8919	6.33666E-06	1.68676E-05	6.00847	7.78299E-06	2.07176E-05
Haul Road 2	HR2	1300-1400	1.31724	1.70627E-06	4.54192E-06	1.11067	1.43869E-06	3.82966E-06	5.77132	7.4758E-06	1.98999E-05	4.86622	6.30339E-06	1.6779E-05	5.97689	7.74209E-06	2.06087E-05
Haul Road 2	HR2	1400-1500	1.31724	1.70627E-06	4.54192E-06	1.11067	1.43869E-06	3.82966E-06	5.77132	7.4758E-06	1.98999E-05	4.86622	6.30339E-06	1.6779E-05	5.97689	7.74209E-06	2.06087E-05
Haul Road 2	HR2	1500-1600	1.32433	1.71545E-06	4.56637E-06	1.10478	1.43106E-06	3.80935E-06	5.8024	7.51606E-06	2.0007E-05	4.84043	6.26999E-06	1.66901E-05	5.94521	7.70105E-06	2.04994E-05
Haul Road 2	HR2	1600-1700	1.32034	1.71028E-06	4.55261E-06	1.08719	1.40828E-06	3.7487E-06	5.78451	7.49289E-06	1.99453E-05	4.76308	6.16979E-06	1.64234E-05	5.85027	7.57807E-06	2.01721E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (May) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Haul Road 2	HR2	1700-1800	1.30405	1.68918E-06	4.49644E-06	1.09458	1.41785E-06	3.77418E-06	5.71346	7.40085E-06	1.97004E-05	4.79586	6.21225E-06	1.65364E-05	5.89044	7.6301E-06	2.03106E-05
Haul Road 2	HR2	1800-1900	1.27966	1.65759E-06	4.41234E-06	1.09768	1.42187E-06	3.78487E-06	5.60683	7.26273E-06	1.93327E-05	4.80915	6.22947E-06	1.65822E-05	5.90683	7.65133E-06	2.03671E-05
Haul Road 2	HR2	1900-2000	1.27427	1.65061E-06	4.39376E-06	1.09248	1.41513E-06	3.76694E-06	5.58284	7.23166E-06	1.925E-05	4.78637	6.19996E-06	1.65037E-05	5.87885	7.61509E-06	2.02706E-05
Haul Road 2	HR2	2000-2100	1.24319	1.61035E-06	4.28659E-06	1.07679	1.39481E-06	3.71284E-06	5.44673	7.05535E-06	1.87807E-05	4.71792	6.1113E-06	1.62677E-05	5.79471	7.5061E-06	1.99805E-05
Haul Road 2	HR2	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0700-0800	1.30085	1.68504E-06	4.47916E-06	1.08729	1.40841E-06	3.74381E-06	5.69967	7.38299E-06	1.96254E-05	4.76348	6.17031E-06	1.64019E-05	5.85077	7.57872E-06	2.01457E-05
Haul Road 3	HR3	0800-0900	1.30814	1.69448E-06	4.50426E-06	1.11327	1.44206E-06	3.83327E-06	5.73125	7.4239E-06	1.97341E-05	4.87771	6.31828E-06	1.67952E-05	5.99098	7.76034E-06	2.06285E-05
Haul Road 3	HR3	0900-1000	1.28696	1.66705E-06	4.43133E-06	1.10568	1.43223E-06	3.80714E-06	5.63871	7.30403E-06	1.94155E-05	4.84432	6.27503E-06	1.66802E-05	5.95	7.70725E-06	2.04874E-05
Haul Road 3	HR3	1000-1100	1.29625	1.67908E-06	4.46332E-06	1.10478	1.43106E-06	3.80404E-06	5.67938	7.35671E-06	1.95555E-05	4.84043	6.26999E-06	1.66668E-05	5.94521	7.70105E-06	2.04709E-05
Haul Road 3	HR3	1100-1200	1.30545	1.691E-06	4.49499E-06	1.11067	1.43869E-06	3.82432E-06	5.71975	7.409E-06	1.96945E-05	4.86622	6.30339E-06	1.67556E-05	5.97689	7.74209E-06	2.05799E-05
Haul Road 3	HR3	1200-1300	1.32153	1.71183E-06	4.55036E-06	1.11657	1.44633E-06	3.84463E-06	5.79031	7.5004E-06	1.99375E-05	4.8919	6.33666E-06	1.6844E-05	6.00847	7.78299E-06	2.06887E-05
Haul Road 3	HR3	1300-1400	1.31724	1.70627E-06	4.53559E-06	1.11067	1.43869E-06	3.82432E-06	5.77132	7.4758E-06	1.98721E-05	4.86622	6.30339E-06	1.67556E-05	5.97689	7.74209E-06	2.05799E-05
Haul Road 3	HR3	1400-1500	1.31724	1.70627E-06	4.53559E-06	1.11067	1.43869E-06	3.82432E-06	5.77132	7.4758E-06	1.98721E-05	4.86622	6.30339E-06	1.67556E-05	5.97689	7.74209E-06	2.05799E-05
Haul Road 3	HR3	1500-1600	1.32433	1.71545E-06	4.56E-06	1.10478	1.43106E-06	3.80404E-06	5.8024	7.51606E-06	1.99791E-05	4.84043	6.26999E-06	1.66668E-05	5.94521	7.70105E-06	2.04709E-05
Haul Road 3	HR3	1600-1700	1.32034	1.71028E-06	4.54626E-06	1.08719	1.40828E-06	3.74347E-06	5.78451	7.49289E-06	1.99175E-05	4.76308	6.16979E-06	1.64005E-05	5.85027	7.57807E-06	2.0144E-05
Haul Road 3	HR3	1700-1800	1.30405	1.68918E-06	4.49017E-06	1.09458	1.41785E-06	3.76892E-06	5.71346	7.40085E-06	1.96729E-05	4.79586	6.21225E-06	1.65134E-05	5.89044	7.6301E-06	2.02823E-05
Haul Road 3	HR3	1800-1900	1.27966	1.65759E-06	4.40619E-06	1.09768	1.42187E-06	3.77959E-06	5.60683	7.26273E-06	1.93057E-05	4.80915	6.22947E-06	1.65591E-05	5.90683	7.65133E-06	2.03387E-05
Haul Road 3	HR3	1900-2000	1.27427	1.65061E-06	4.38763E-06	1.09248	1.41513E-06	3.76168E-06	5.58284	7.23166E-06	1.92231E-05	4.78637	6.19996E-06	1.64807E-05	5.87885	7.61509E-06	2.02424E-05
Haul Road 3	HR3	2000-2100	1.24319	1.61035E-06	4.28062E-06	1.07679	1.39481E-06	3.70766E-06	5.44673	7.05535E-06	1.87545E-05	4.71792	6.1113E-06	1.6245E-05	5.79471	7.5061E-06	1.99527E-05
Haul Road 3	HR3	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (June) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 1	1	0000-0100	0.080428324	2.70208E-07	2.19818E-06	0.070187709	2.35803E-07	1.91829E-06	0.473604078	1.59112E-06	1.2944E-05	0.411327039	1.3819E-06	1.12419E-05	0.481514749	1.6177E-06	1.31602E-05
Road 1	1	0100-0200	0.062951743	1.28786E-07	1.0477E-06	0.055639083	1.13826E-07	9.25993E-07	0.377916055	7.73139E-07	6.2896E-06	0.332585596	6.80402E-07	5.53517E-06	0.388224679	7.94228E-07	6.46117E-06
Road 1	1	0200-0300	0.059978571	8.66807E-08	7.05161E-07	0.053450649	7.72466E-08	6.28413E-07	0.379505584	5.4846E-07	4.4618E-06	0.335749351	4.85223E-07	3.94736E-06	0.3892	5.6247E-07	4.57578E-06
Road 1	1	0300-0400	0.050653091	5.22883E-08	4.25373E-07	0.044947636	4.63986E-08	3.7746E-07	0.308034545	3.17979E-07	2.5868E-06	0.271481091	2.80245E-07	2.27984E-06	0.316428727	3.26644E-07	2.6573E-06
Road 1	1	0400-0500	0.0655	1.05724E-07	8.60084E-07	0.058125	9.38204E-08	7.63243E-07	0.373181163	6.02357E-07	4.90026E-06	0.329632907	5.32065E-07	4.32843E-06	0.387757907	6.25886E-07	5.09167E-06
Road 1	1	0500-0600	0.054281383	1.91533E-07	1.55815E-06	0.047804096	1.68678E-07	1.37222E-06	0.318323032	1.12321E-06	9.1375E-06	0.278503777	9.82709E-07	7.99448E-06	0.326307872	1.15139E-06	9.3667E-06
Road 1	1	0600-0700	0.074226677	4.69489E-07	3.81936E-06	0.064856231	4.10221E-07	3.3372E-06	0.393299614	2.48765E-06	2.02374E-05	0.341877656	2.1624E-06	1.75915E-05	0.406733887	2.57262E-06	2.09287E-05
Road 1	1	0700-0800	0.063876886	6.73776E-07	5.48127E-06	0.054580018	5.75713E-07	4.68351E-06	0.35007573	3.69262E-06	3.004E-05	0.296358416	3.126E-06	2.54305E-05	0.350938434	3.70172E-06	3.0114E-05
Road 1	1	0800-0900	0.070096599	9.13045E-07	7.42776E-06	0.058597853	7.63268E-07	6.2093E-06	0.374865403	4.88282E-06	3.97225E-05	0.311387867	4.05599E-06	3.29961E-05	0.36998572	4.81926E-06	3.92054E-05
Road 1	1	0900-1000	0.07577479	1.01545E-06	8.26084E-06	0.063698165	8.53613E-07	6.94427E-06	0.419038221	5.61549E-06	4.56828E-05	0.350312787	4.69451E-06	3.81905E-05	0.414010952	5.54812E-06	4.51348E-05
Road 1	1	1000-1100	0.088477295	1.15412E-06	9.38897E-06	0.073385698	9.57265E-07	7.78749E-06	0.472773281	6.16699E-06	5.01694E-05	0.390430691	5.09289E-06	4.14314E-05	0.463816388	6.05016E-06	4.92189E-05
Road 1	1	1100-1200	0.078374525	9.9145E-07	8.06559E-06	0.066323412	8.39001E-07	6.8254E-06	0.448184807	5.66961E-06	4.61231E-05	0.377369362	4.77378E-06	3.88354E-05	0.443692774	5.61278E-06	4.56608E-05
Road 1	1	1200-1300	0.081050615	1.01465E-06	8.25436E-06	0.069188486	8.66155E-07	7.0463E-06	0.45772036	5.7301E-06	4.66152E-05	0.389113508	4.87122E-06	3.96281E-05	0.458301994	5.73738E-06	4.66744E-05
Road 1	1	1300-1400	0.085317151	1.13532E-06	9.236E-06	0.072207913	9.60875E-07	7.81686E-06	0.472420606	6.28653E-06	5.11418E-05	0.397904683	5.29494E-06	4.30751E-05	0.470112595	6.25582E-06	5.0892E-05
Road 1	1	1400-1500	0.081064434	1.17002E-06	9.51827E-06	0.067343784	9.71985E-07	7.90724E-06	0.439393498	6.34185E-06	5.15919E-05	0.363003719	5.2393E-06	4.26225E-05	0.430347503	6.21128E-06	5.05297E-05
Road 1	1	1500-1600	0.086892263	1.1677E-06	9.49938E-06	0.073765852	9.91298E-07	8.06435E-06	0.469229134	6.30571E-06	5.12979E-05	0.396140447	5.32351E-06	4.33075E-05	0.469906299	6.31481E-06	5.13719E-05
Road 1	1	1600-1700	0.081971748	1.16157E-06	9.44958E-06	0.069586384	9.86068E-07	8.02181E-06	0.447953258	6.34769E-06	5.16394E-05	0.378124689	5.35819E-06	4.35896E-05	0.447711073	6.34425E-06	5.16114E-05
Road 1	1	1700-1800	0.066292084	9.43119E-07	7.67242E-06	0.055653047	7.91761E-07	6.44109E-06	0.370438496	5.27013E-06	4.28733E-05	0.308521069	4.38924E-06	3.57072E-05	0.364174116	5.18101E-06	4.21482E-05
Road 1	1	1800-1900	0.056432158	8.19791E-07	6.66913E-06	0.048429884	7.03542E-07	5.72342E-06	0.336298398	4.88542E-06	3.97436E-05	0.285725478	4.15074E-06	3.37669E-05	0.334155362	4.85428E-06	3.94903E-05
Road 1	1	1900-2000	0.067197976	7.47905E-07	6.08432E-06	0.060056796	6.68425E-07	5.43774E-06	0.383577892	4.26918E-06	3.47304E-05	0.340695565	3.7919E-06	3.08477E-05	0.400752361	4.46033E-06	3.62854E-05
Road 1	1	2000-2100	0.061512823	5.80724E-07	4.72427E-06	0.053632048	5.06324E-07	4.11902E-06	0.362127117	3.41873E-06	2.78119E-05	0.313359563	2.95833E-06	2.40665E-05	0.36699161	3.46465E-06	2.81855E-05
Road 1	1	2100-2200	0.063654183	5.48372E-07	4.46109E-06	0.056036253	4.82745E-07	3.9272E-06	0.377743464	3.25421E-06	2.64735E-05	0.330663181	2.84862E-06	2.31739E-05	0.386699434	3.33136E-06	2.71011E-05
Road 1	1	2200-2300	0.061325954	5.00691E-07	4.07319E-06	0.054394069	4.44096E-07	3.61278E-06	0.36314108	2.96483E-06	2.41194E-05	0.320139586	2.61375E-06	2.12633E-05	0.374533655	3.05785E-06	2.4876E-05
Road 1	1	2300-0000	0.052389897	3.83485E-07	3.1197E-06	0.047355385	3.46633E-07	2.81991E-06	0.318136077	2.3287E-06	1.89443E-05	0.285502436	2.08983E-06	1.7001E-05	0.332857821	2.43646E-06	1.9821E-05
Road 2	2	0000-0100	0.133166923	1.60294E-07	1.03516E-06	0.116209808	1.39882E-07	9.03345E-07	0.561417885	6.75781E-07	4.36413E-06	0.488042885	5.87459E-07	3.79375E-06	0.604252692	7.27341E-07	4.6971E-06
Road 2	2	0100-0200	0.094945882	7.47259E-08	4.82573E-07	0.083888824	6.60236E-08	4.26374E-07	0.466894118	3.67463E-07	2.37304E-06	0.410975294	3.23453E-07	2.08883E-06	0.494864118	3.89476E-07	2.5152E-06
Road 2	2	0200-0300	0.097565217	5.19444E-08	3.35452E-07	0.087068696	4.6356E-08	2.99363E-07	0.52930913	2.81808E-07	1.81989E-06	0.469898261	2.50177E-07	1.61562E-06	0.556966957	2.96533E-07	1.91498E-06
Road 2	2	0300-0400	0.084498	2.93396E-08	1.89472E-07	0.075036667	2.60544E-08	1.68257E-07	0.305156	1.05957E-07	6.8426E-07	0.269198	9.34715E-08	6.0363E-07	0.344234667	1.19526E-07	7.71887E-07
Road 2	2	0400-0500	0.114042593	7.12766E-08	4.60297E-07	0.101264815	6.32905E-08	4.08724E-07	0.54744963	3.42156E-07	2.20961E-06	0.484527407	3.0283E-07	1.95564E-06	0.585792222	3.6612E-07	2.36437E-06
Road 2	2	0500-0600	0.090892982	1.19928E-07	7.74485E-07	0.080140175	1.05741E-07	6.82862E-07	0.399529123	5.27156E-07	3.40433E-06	0.350220877	4.62097E-07	2.98418E-06	0.430361053	5.67838E-07	3.66704E-06
Road 2	2	0600-0700	0.130083269	3.13163E-07	2.02238E-06	0.113704038	2.73732E-07	1.76773E-06	0.523916538	1.26128E-06	8.14523E-06	0.456140192	1.09812E-06	7.09152E-06	0.569844231	1.37185E-06	8.85926E-06
Road 2	2	0700-0800	0.109262563	4.04676E-07	2.61336E-06	0.093357813	3.4577E-07	2.23295E-06	0.451914563	1.67376E-06	1.0809E-05	0.383125813	1.41898E-06	9.16366E-06	0.476483625	1.76475E-06	1.13966E-05
Road 2	2	0800-0900	0.125769605	8.85045E-07	5.71554E-06	0.105091414	7.39532E-07	4.77583E-06	0.526711151	3.70649E-06	2.39361E-05	0.437376349	3.07783E-06	1.98763E-05	0.542467763	3.81737E-06	2.46522E-05
Road 2	2	0900-1000	0.149440437	8.71736E-07	5.62959E-06	0.125476825	7.31948E-07	4.72685E-06	0.635030278	3.70434E-06	2.39223E-05	0.531401032	3.09984E-06	2.00185E-05	0.656877857	3.83179E-06	2.47453E-05
Road 2	2	1000-1100	0.167722246	7.2602E-07	4.68857E-06	0.139066096	6.01976E-07	3.8875E-06	0.705904973	3.05565E-06	1.97331E-05	0.583702246	2.52667E-06	1.6317E-05	0.722768342	3.12865E-06	2.02045E-05
Road 2	2	1100-1200	0.19461459	8.24409E-07	5.32395E-06	0.16455541	6.97075E-07	4.50164E-06	0.79356071	3.36161E-06	2.1709E-05	0.669891749	2.83774E-06	1.83258E-05	0.834447158	3.53481E-06	2.28275E-05
Road 2	2	1200-1300	0.150360368	6.61307E-07	4.27066E-06	0.128360474	5.64548E-07	3.6458E-06	0.656592526	2.88779E-06	1.86491E-05	0.558592684	2.45677E-06	1.58656E-05	0.686953158	3.02132E-06	1.95114E-05
Road 2	2	1300-1400	0.167241435	8.63306E-07	5.57515E-06	0.14134722	7.2964E-07	4.71194E-06	0.682626682	3.52374E-06	2.2756E-05	0.574870269	2.9675E-06	1.91638E-05	0.716217489	3.69714E-06	2.38758E-05
Road 2	2	1400-1500	0.143986303	5.49948E-07	3.55151E-06	0.119579273	4.56726E-07	2.94949E-06	0.621535152	2.37392E-06	1.53305E-05	0.514413758	1.96477E-06	1.26883E-05	0.63399303	2.4215E-06	1.56378E-05
Road 2	2	1500-1600	0.179241694	7.59288E-07	4.90341E-06	0.151879945	6.4338E-07	4.15489E-06	0.705326557	2.98784E-06	1.92952E-05	0.596245792	2.52576E-06	1.63111E-05	0.748125738	3.16914E-06	2.0466E-05
Road 2	2	1600-1700	0.14850914	7.59734E-07	4.90629E-06	0.126077511	6.4498E-07	4.16522E-06	0.623269638	3.18849E-06	2.05909E-05	0.52708724	2.69644E-06	1.74134E-05	0.653164751	3.34142E-06	2.15786E-05
Road 2	2	1700-1800	0.116172027	5.96995E-07	3.85534E-06	0.097578964	5.01447E-07	3.2383E-06	0.460146036	2.36464E-06	1.52706E-05	0.384459279	1.97569E-06	1.27588E-05	0.482038243	2.47714E-06	1.59971E-05
Road 2	2	1800-1900	0.12242168	7.08459E-07	4.57516E-06	0.10514988	6.08506E-07	3.92967E-06	0.54919512	3.17821E-06	2.05246E-05	0.46915428	2.71501E-06	1.75333E-05	0.57430416	3.32352E-06	2.1463E-05
Road 2	2	1900-2000	0.103147929	4.03519E-07	2.60588E-06	0.09218426	3.60628E-07	2.3289E-06	0.46572787	1.82194E-06	1.17659E-05	0.413991124	1.61955E-06	1.04589E-05	0.506175385	1.98018E-06	1.27878E-05
Road 2	2	2000-2100	0.098808435	3.36223E-07	2.1713E-06	0.086073197	2.92888E-07	1.89144E-06	0.419255442	1.42663E-06	9.21306E-06	0.362469524	1.2334E-06	7.9652E-06	0.448542721	1.52629E-06	9.85664E-06
Road 2	2	2100-2200	0.075549739	2.67572E-07	1.72795E-06	0.06648183	2.35456E-07	1.52055E-06	0.344050523	1.21851E-06	7.86903E-06	0.299980784	1.06243E-06	6.86108E-06	0.366462614	1.29789E-06	8.38164E-06
Road 2	2	2200-2300	0.10862488	3.14308E-07	2.02977E-06	0.09634944	2.78789E-07	1.80039E-06	0.46026064	1.33177E-06	8.60046E-06	0.4062328	1.17544E-06	7.59089E-06	0.50258224	1.45423E-06	9.39128E-06
Road 2	2	2300-0000	0.094677027	2.43267E-07	1.571E-06	0.085567027	2.1986E-07	1.41983E-06	0.424324234	1.09028E-06	7.04091E-06	0.381457297	9.80133E-07	6.32961E-06	0.467024324	1.19999E-06	7.74944E-06
Road 3	3	0000-0100	0.084243826	3.10784E-07	1.20794E-05	0.074930609	2.76426E-07	1.0744E-05	0.462297391	1.70546E-06	6.62869E-05	0.409434043	1.51044E-06	5.87071E-05	0.484364652	1.78687E-06	6.94511E-05
Road 3	3	0100-0200	0.063417676	1.44441E-07	5.61406E-06	0.055955704	1.27446E-07	4.95349E-06	0.367703592	8.37488E-07	3.2551E-05	0.323047183	7.35778E-07	2.85978E-05	0.379002887	8.63223E-07	3.35513E-05
Road 3	3	0200-0300	0.061658687	9.79088E-08	3.80547E-06	0.054650303	8.67801E-08	3.37292E-06	0.381526162	6.05831E-07	2.35471E-05	0.335762525	5.33163E-07	2.07227E-05	0.390412828	6.19943E-07	2.40956E-05
Road 3	3	0300-0400	0.051619571	5.79568E-08	2.25264E-06	0.045540857	5.11318E-08	1.98737E-06	0.282336571	3.16999E-07	1.23209E-05	0.247192714	2.7754E-07	1.07873E-05	0.292733571	3.28672E-07	1.27747E-05
Road 3	3	0400-0500	0.068543363	1.24233E-07	4.82861E-06	0.060828407	1.1025E-07	4.28513E-06	0.377149115	6.83571E-07	2.65687E-05	0.333293097	6.04084E-07	2.34792E-05	0.394121504	7.14333E-07	2.77643E-05
Road 3	3	0500-0600	0.055796504	2.20158E-07	8.55699E-06	0.04914565	1.93915E-07	7.53701E-06	0.308145285	1.21586E-06	4.72573E-05	0.269636626	1.06391E-06	4.13516E-05	0.318782276	1.25783E-06	4.88886E-05
Road 3	3	0600-0700	0.078204955	5.56941E-07	2.16469E-05	0.068515225	4.87935E-07	1.89648E-05	0.388490631	2.76666E-06	0.000107533	0.338678378	2.41192E-06	9.37452E-05	0.407193604	2.89985E-06	0.00011271
Road 3	3	0700-0800	0.065997593	7.69582E-07	2.99117E-05	0.056146231	6.54707E-07	2.54468E-05	0.34410696	4.01255E-06	0.000155958	0.290130509	3.38314E-06	0.000131494	0.34627674	4.03785E-06	0.000156941
Road 3	3	0800-0900	0.074261314	1.18754E-06	4.61569E-05	0.064079318	1.02472E-06	3.98283E-05	0.365985176	5.85263E-06	0.000227477	0.314061916	5.0223E-06	0.000195204	0.378141234	6.04702E-06	0.000235032
Road 3	3	0900-1000	0.082223368	1.27267E-06	4.94654E-05	0.068805109	1.06498E-06	4.1393E-05	0.422832725	6.54468E-06	0.000254375	0.351841627	5.44586E-06	0.000211667	0.420646736	6.51084E-06	0.00025306
Road 3	3	1000-1100	0.094188931	1.32795E-06	5.1614E-05	0.079705381	1.12375E-06	4.36772E-05	0.474304573	6.68711E-06	0.000259911	0.399764403	5.63618E-06	0.000219064	0.479469784	6.75993E-06	0.000262742
Road 3	3	1100-1200	0.091058817	1.2473E-06	4.84796E-05	0.076855515	1.05275E-06	4.09177E-05	0.471140375	6.45358E-06	0.000250834	0.395936171	5.42345E-06	0.000210796	0.472791686	6.4762E-06	0.000251713
Road 3	3	1200-1300	0.085979309	1.17773E-06	4.57752E-05	0.072800211	9.97201E-07	3.87587E-05	0.455179016	6.23494E-06	0.000242336	0.383600948	5.25448E-06	0.000204228	0.456401159	6.25168E-06	0.000242987

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (June) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 3	3	1300-1400	0.092737875	1.37889E-06	5.35939E-05	0.077502082	1.15235E-06	4.4789E-05	0.472007346	7.01812E-06	0.000272777	0.39232069	5.83328E-06	0.000226725	0.469822772	6.98564E-06	0.000271514
Road 3	3	1400-1500	0.086460814	1.29526E-06	5.03437E-05	0.071872024	1.07671E-06	4.1849E-05	0.447062355	6.69741E-06	0.000260312	0.369654197	5.53777E-06	0.000215239	0.441526221	6.61448E-06	0.000257088
Road 3	3	1500-1600	0.093566581	1.34319E-06	5.22063E-05	0.07960124	1.14271E-06	4.44142E-05	0.470901821	6.75998E-06	0.000262744	0.398718302	5.72376E-06	0.000222468	0.478319542	6.86647E-06	0.000266882
Road 3	3	1600-1700	0.088780338	1.38982E-06	5.40188E-05	0.074236178	1.16214E-06	4.51694E-05	0.453784355	7.10381E-06	0.000276107	0.377287244	5.90628E-06	0.000229562	0.451523422	7.06842E-06	0.000274732
Road 3	3	1700-1800	0.070256813	1.10322E-06	4.28795E-05	0.059141021	9.28675E-07	3.60953E-05	0.360777732	5.66519E-06	0.000220192	0.301387109	4.7326E-06	0.000183944	0.360528131	5.66127E-06	0.000220039
Road 3	3	1800-1900	0.063347089	1.04349E-06	4.05579E-05	0.056010954	9.22647E-07	3.5861E-05	0.347271977	5.72048E-06	0.000222341	0.304835823	5.02144E-06	0.000195171	0.360846777	5.94409E-06	0.000231032
Road 3	3	1900-2000	0.068132618	8.30541E-07	3.2281E-05	0.059824013	7.29258E-07	2.83444E-05	0.374249553	4.56212E-06	0.000177318	0.326245895	3.97696E-06	0.000154574	0.386069908	4.70622E-06	0.000182919
Road 3	3	2000-2100	0.063178028	6.57662E-07	2.55617E-05	0.054988783	5.72415E-07	2.22483E-05	0.345237042	3.5938E-06	0.000139682	0.298134869	3.10349E-06	0.000120625	0.353123652	3.6759E-06	0.000142873
Road 3	3	2100-2200	0.061221854	6.03912E-07	2.34726E-05	0.053591512	5.28644E-07	2.05471E-05	0.344228748	3.39558E-06	0.000131978	0.299173317	2.95114E-06	0.000114704	0.352764829	3.47979E-06	0.000135251
Road 3	3	2200-2300	0.065148384	5.88307E-07	2.2866E-05	0.057453393	5.1882E-07	2.01652E-05	0.355135755	3.20697E-06	0.000124647	0.311196465	2.81019E-06	0.000109225	0.368649858	3.32901E-06	0.00012939
Road 3	3	2300-0000	0.056537211	4.55229E-07	1.76936E-05	0.050022251	4.02772E-07	1.56547E-05	0.322763606	2.59885E-06	0.000101011	0.283316255	2.28122E-06	8.86653E-05	0.333338506	2.68399E-06	0.00010432
Road 4	4	0000-0100	0.225691143	1.82852E-07	1.9579E-06	0.200583143	1.62509E-07	1.74008E-06	1.113997429	9.02544E-07	9.66406E-06	0.989594286	8.01755E-07	8.58485E-06	1.190177429	9.64264E-07	1.03249E-05
Road 4	4	0100-0200	0.2136125	9.88947E-08	1.05892E-06	0.188386	8.72157E-08	9.33869E-07	1.0565945	4.89164E-07	5.23776E-06	0.931839	4.31407E-07	4.61932E-06	1.120225	5.18623E-07	5.55319E-06
Road 4	4	0200-0300	0.229056923	6.89292E-08	7.38064E-07	0.203256154	6.1165E-08	6.5493E-07	1.095576154	3.29687E-07	3.53015E-06	0.97219	2.92557E-07	3.13258E-06	1.175446154	3.53722E-07	3.78751E-06
Road 4	4	0300-0400	0.208244286	3.37433E-08	3.61309E-07	0.184025714	2.9819E-08	3.19289E-07	1.069204286	1.73251E-07	1.8551E-06	0.944644286	1.53067E-07	1.63898E-06	1.12867	1.82886E-07	1.95827E-06
Road 4	4	0400-0500	0.212729286	6.894E-08	7.38181E-07	0.188767857	6.11748E-08	6.55034E-07	1.017912143	3.29879E-07	3.5322E-06	0.903231429	2.92714E-07	3.13426E-06	1.091999286	3.53889E-07	3.78929E-06
Road 4	4	0500-0600	0.197559167	1.09755E-07	1.17521E-06	0.174161667	9.67565E-08	1.03603E-06	0.9088925	5.0494E-07	5.40669E-06	0.800756667	4.44865E-07	4.76342E-06	0.974918333	5.41621E-07	5.79945E-06
Road 4	4	0600-0700	0.222481698	2.72952E-07	2.92266E-06	0.194941321	2.39164E-07	2.56087E-06	1.029359245	1.26287E-06	1.35223E-05	0.90128717	1.10575E-06	1.18399E-05	1.096228491	1.34491E-06	1.44007E-05
Road 4	4	0700-0800	0.228893913	4.87459E-07	5.21951E-06	0.19476337	4.14774E-07	4.44122E-06	1.098157283	2.33867E-06	2.50415E-05	0.933468261	1.98794E-06	2.1286E-05	1.12823163	2.40272E-06	2.57273E-05
Road 4	4	0800-0900	0.238553806	8.55922E-07	9.16485E-06	0.205695806	7.38029E-07	7.9025E-06	1.148805677	4.12187E-06	4.41353E-05	0.990256581	3.553E-06	3.80441E-05	1.195952387	4.29103E-06	4.59466E-05
Road 4	4	0900-1000	0.248053919	8.49814E-07	9.09945E-06	0.206893784	7.08803E-07	7.58956E-06	1.134005743	3.88502E-06	4.15992E-05	0.945016824	3.23756E-06	3.46664E-05	1.151910608	3.94636E-06	4.2256E-05
Road 4	4	1000-1100	0.279056736	9.30189E-07	9.96007E-06	0.235758889	7.85863E-07	8.41469E-06	1.279645	4.26548E-06	4.5673E-05	1.080958125	3.60319E-06	3.85815E-05	1.316717014	4.38906E-06	4.69962E-05
Road 4	4	1100-1200	0.254216903	9.12121E-07	9.76661E-06	0.214264452	7.68773E-07	8.2317E-06	1.158383355	4.15624E-06	4.45032E-05	0.975843935	3.50129E-06	3.74904E-05	1.190108387	4.27006E-06	4.57221E-05
Road 4	4	1200-1300	0.261033649	8.94282E-07	9.57559E-06	0.220717027	7.5616E-07	8.09664E-06	1.241368919	4.25284E-06	4.55376E-05	1.049224662	3.59457E-06	3.84891E-05	1.269941689	4.35073E-06	4.65857E-05
Road 4	4	1300-1400	0.2716666	9.43287E-07	1.01003E-05	0.226687333	7.87109E-07	8.42803E-06	1.261894867	4.38158E-06	4.69161E-05	1.052459267	3.65437E-06	3.91295E-05	1.2791466	4.44148E-06	4.75575E-05
Road 4	4	1400-1500	0.250120571	8.10576E-07	8.67931E-06	0.207571714	6.72686E-07	7.20284E-06	1.199187571	3.88626E-06	4.16124E-05	0.994441643	3.22273E-06	3.45076E-05	1.202013357	3.89541E-06	4.17104E-05
Road 4	4	1500-1600	0.27360328	7.91676E-07	8.47693E-06	0.23237696	6.72387E-07	7.19964E-06	1.27117184	3.67816E-06	3.93842E-05	1.07931056	3.12301E-06	3.34398E-05	1.31168752	3.79539E-06	4.06395E-05
Road 4	4	1600-1700	0.257586129	7.39368E-07	7.91684E-06	0.215135403	6.17518E-07	6.61213E-06	1.208578306	3.46907E-06	3.71453E-05	1.008735726	2.89545E-06	3.10032E-05	1.223871129	3.51296E-06	3.76153E-05
Road 4	4	1700-1800	0.246775748	7.25475E-07	7.76808E-06	0.207678504	6.10536E-07	6.53737E-06	1.176866142	3.45977E-06	3.70457E-05	0.98970126	2.90954E-06	3.11541E-05	1.197379764	3.52007E-06	3.76915E-05
Road 4	4	1800-1900	0.259832925	6.37553E-07	6.82665E-06	0.229835849	5.63949E-07	6.03853E-06	1.250657547	3.06874E-06	3.28588E-05	1.106342358	2.71464E-06	2.90672E-05	1.336178208	3.27859E-06	3.51057E-05
Road 4	4	1900-2000	0.236363243	4.04881E-07	4.3353E-06	0.20747527	3.55397E-07	3.80545E-06	1.140063514	1.95289E-06	2.09107E-05	1.000440135	1.71372E-06	1.83498E-05	1.207915405	2.06911E-06	2.21552E-05
Road 4	4	2000-2100	0.204905306	2.32416E-07	2.48861E-06	0.178202653	2.02128E-07	2.1643E-06	0.991701224	1.12485E-06	1.20444E-05	0.861542041	9.77212E-07	1.04636E-05	1.039744694	1.17934E-06	1.26279E-05
Road 4	4	2100-2200	0.169203243	1.44919E-07	1.55174E-06	0.148321622	1.27035E-07	1.36023E-06	0.836082162	7.16089E-07	7.66758E-06	0.731834595	6.26803E-07	6.71154E-06	0.880156216	7.53838E-07	8.07177E-06
Road 4	4	2200-2300	0.22486381	3.27926E-07	3.5113E-06	0.198310635	2.89203E-07	3.09666E-06	1.068356349	1.55802E-06	1.66826E-05	0.94194	1.37366E-06	1.47086E-05	1.140250635	1.66287E-06	1.78053E-05
Road 4	4	2300-0000	0.207843878	2.35749E-07	2.5243E-06	0.18388102	2.08569E-07	2.23327E-06	1.014386939	1.15058E-06	1.23199E-05	0.896753061	1.01715E-06	1.08912E-05	1.080634082	1.22572E-06	1.31245E-05
Road 5	5	0000-0100	0.07133228	2.58392E-07	3.49428E-06	0.063465648	2.29896E-07	3.10893E-06	0.396251347	1.43537E-06	1.94108E-05	0.350511036	1.26968E-06	1.71701E-05	0.413976684	1.49958E-06	2.02791E-05
Road 5	5	0100-0200	0.048133361	1.10215E-07	1.49046E-06	0.042473607	9.72556E-08	1.31521E-06	0.293367787	6.71751E-07	9.08421E-06	0.257279426	5.89116E-07	7.96672E-06	0.299753033	6.86371E-07	9.28193E-06
Road 5	5	0200-0300	0.045489651	7.34255E-08	9.92947E-07	0.040293023	6.50375E-08	8.79515E-07	0.310209535	5.00714E-07	6.77124E-06	0.272048256	4.39117E-07	5.93826E-06	0.312341279	5.04154E-07	6.81778E-06
Road 5	5	0300-0400	0.040566667	4.79673E-08	6.48671E-07	0.035763175	4.22875E-08	5.71862E-07	0.221323492	2.617E-07	3.53902E-06	0.193037778	2.28254E-07	3.08672E-06	0.228800952	2.70542E-07	3.65859E-06
Road 5	5	0400-0500	0.056089697	1.04221E-07	1.4094E-06	0.04977899	9.24947E-08	1.25082E-06	0.318364848	5.91556E-07	7.99973E-06	0.280931919	5.22002E-07	7.05913E-06	0.330710909	6.14497E-07	8.30995E-06
Road 5	5	0500-0600	0.045643909	1.8847E-07	2.54871E-06	0.040191318	1.65955E-07	2.24424E-06	0.263073227	1.08626E-06	1.46897E-05	0.229706318	9.48487E-07	1.28266E-05	0.269897636	1.11444E-06	1.50708E-05
Road 5	5	0600-0700	0.067749665	4.93372E-07	6.67196E-06	0.059360206	4.32278E-07	5.84577E-06	0.338414381	2.46443E-06	3.33269E-05	0.294615412	2.14547E-06	2.90136E-05	0.353975619	2.57775E-06	3.48594E-05
Road 5	5	0700-0800	0.053921264	6.40619E-07	8.66321E-06	0.045884739	5.4514E-07	7.37203E-06	0.282977678	3.36195E-06	4.54643E-05	0.237804487	2.82527E-06	3.82066E-05	0.283689226	3.37041E-06	4.55786E-05
Road 5	5	0800-0900	0.058757248	9.29661E-07	1.2572E-05	0.050718138	8.02466E-07	1.08519E-05	0.285877865	4.52318E-06	6.11678E-05	0.244752313	3.87249E-06	5.23684E-05	0.295470451	4.67495E-06	6.32203E-05
Road 5	5	0900-1000	0.066395502	1.01687E-06	1.37513E-05	0.055613174	8.51733E-07	1.15181E-05	0.352567377	5.39968E-06	7.30209E-05	0.29325239	4.49125E-06	6.07361E-05	0.348865564	5.34299E-06	7.22542E-05
Road 5	5	1000-1100	0.076321213	1.05142E-06	1.42186E-05	0.064627984	8.90333E-07	1.20401E-05	0.394158556	5.43004E-06	7.34314E-05	0.331915068	4.57255E-06	6.18355E-05	0.396543052	5.46289E-06	7.38756E-05
Road 5	5	1100-1200	0.073846595	9.68821E-07	1.31015E-05	0.062385021	8.18452E-07	1.10681E-05	0.39802804	5.22188E-06	7.06164E-05	0.334135222	4.38364E-06	5.92808E-05	0.396520243	5.2021E-06	7.03489E-05
Road 5	5	1200-1300	0.068742037	9.12174E-07	1.23355E-05	0.058243324	7.72861E-07	1.04515E-05	0.373492008	4.95606E-06	6.70217E-05	0.314348685	4.17126E-06	5.64087E-05	0.372592008	4.94412E-06	6.68602E-05
Road 5	5	1300-1400	0.076244402	1.1119E-06	1.50364E-05	0.063749138	9.29675E-07	1.25722E-05	0.396193102	5.77782E-06	7.81345E-05	0.328856422	4.79582E-06	6.48548E-05	0.39260556	5.7255E-06	7.7427E-05
Road 5	5	1400-1500	0.072681549	1.08313E-06	1.46474E-05	0.060444068	9.00762E-07	1.21812E-05	0.37973131	5.65891E-06	7.65265E-05	0.313688816	4.67472E-06	6.32171E-05	0.374132884	5.57548E-06	7.53982E-05
Road 5	5	1500-1600	0.07913761	1.14369E-06	1.54664E-05	0.067369377	9.73619E-07	1.31664E-05	0.402975896	5.82379E-06	7.87562E-05	0.340861169	4.92611E-06	6.66167E-05	0.408230545	5.89973E-06	7.97831E-05
Road 5	5	1600-1700	0.075600211	1.21034E-06	1.63677E-05	0.063251125	1.01264E-06	1.36941E-05	0.392378839	6.28189E-06	8.49512E-05	0.325855311	5.21687E-06	7.05486E-05	0.389106436	6.2295E-06	8.42427E-05
Road 5	5	1700-1800	0.055554054	8.87322E-07	1.19994E-05	0.046769777	7.47017E-07	1.01021E-05	0.288698425	4.61116E-06	6.23575E-05	0.240489483	3.84115E-06	5.19446E-05	0.28725926	4.58817E-06	6.20467E-05
Road 5	5	1800-1900	0.049513036	8.54026E-07	1.15491E-05	0.043804233	7.55557E-07	1.02175E-05	0.28017235	4.83255E-06	6.53515E-05	0.24521556	4.2296E-06	5.71977E-05	0.289019793	4.98516E-06	6.74152E-05
Road 5	5	1900-2000	0.058019475	7.47023E-07	1.01021E-05	0.050917507	6.55582E-07	8.86556E-06	0.325682726	4.19329E-06	5.67066E-05	0.283447434	3.64949E-06	4.93528E-05	0.334364942	4.30507E-06	5.82183E-05
Road 5	5	2000-2100	0.055919483	6.29724E-07	8.51587E-06	0.048635183	5.47694E-07	7.40656E-06	0.309807	3.48882E-06	4.71799E-05	0.267290717	3.01003E-06	4.07052E-05	0.3159259	3.55772E-06	4.81118E-05
Road 5	5	2100-2200	0.057075381	6.19174E-07	8.3732E-06	0.049948478	5.41858E-07	7.32765E-06	0.324260675	3.51769E-06	4.75704E-05	0.281553789	3.05439E-06	4.13051E-05	0.331502266	3.59625E-06	4.86328E-05
Road 5	5	2200-2300	0.054473928	5.10182E-07	6.89929E-06	0.048035491	4.49882E-07	6.08384E-06	0.304594409	2.85271E-06	3.85778E-05	0.266387936	2.49489E-06	3.37388E-05	0.314423427	2.94477E-06	3.98227E-05
Road 5	5	2300-0000	0.047480265	4.03689E-07	5.45916E-06	0.042005342	3.5714E-07	4.82967E-06	0.278070574	2.36423E-06	3.19719E-05	0.243594834	2.0711E-06	2.80079E-05	0.285600177	2.42824E-06	3.28376E-05
Road 6	6	0000-0100	0.042615533	1.19976E-07	4.28866E-06	0.0378354	1.06519E-07	3.80761E-06	0.272632467	7.67546E-07	2.74367E-05	0.239601067	6.74553E-07	2.41125E-05	0.277436467	7.81071E-07	2.79201E-05
Road 6	6	0100-0200	0.056738421	1.214E-07	4.33955E-06	0.050065088	1.07121E-07	3.82915E-06	0.317949649	6.80298E-07	2.43179E-05	0.278431754	5.95744E-07	2.12954E-05	0.328496842	7.02865E-07	2.51246E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (June) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 6	6	0200-0300	0.051283418	7.60396E-08	2.71811E-06	0.045516962	6.74895E-08	2.41248E-06	0.291419494	4.32097E-07	1.54457E-05	0.256521899	3.80353E-07	1.35961E-05	0.302038861	4.47843E-07	1.60086E-05
Road 6	6	0300-0400	0.0528	6.14414E-08	2.19628E-06	0.046772581	5.44276E-08	1.94556E-06	0.33551629	3.90428E-07	1.39562E-05	0.294947097	3.43219E-07	1.22687E-05	0.341719677	3.97647E-07	1.42143E-05
Road 6	6	0400-0500	0.056733222	9.58331E-08	3.42565E-06	0.050364556	8.50753E-08	3.0411E-06	0.331108333	5.59305E-07	1.99929E-05	0.291776	4.92865E-07	1.76179E-05	0.342140556	5.7794E-07	2.0659E-05
Road 6	6	0500-0600	0.051076481	1.553E-07	5.55135E-06	0.045044938	1.36961E-07	4.8958E-06	0.305962284	9.30291E-07	3.32541E-05	0.267393148	8.1302E-07	2.90622E-05	0.312438086	9.49981E-07	3.3958E-05
Road 6	6	0600-0700	0.055298586	3.00987E-07	1.07591E-05	0.048480103	2.63874E-07	9.43244E-06	0.346682931	1.88698E-06	6.74517E-05	0.301009138	1.63838E-06	5.85653E-05	0.349489241	1.90225E-06	6.79977E-05
Road 6	6	0700-0800	0.05301513	4.59703E-07	1.64325E-05	0.045147749	3.91484E-07	1.3994E-05	0.303230281	2.62936E-06	9.3989E-05	0.254938571	2.21062E-06	7.90206E-05	0.30008632	2.6021E-06	9.30145E-05
Road 6	6	0800-0900	0.045557326	5.66046E-07	2.02339E-05	0.039275906	4.88E-07	1.7444E-05	0.267251994	3.32059E-06	0.000118697	0.227253716	2.82361E-06	0.000100933	0.266529622	3.31161E-06	0.000118377
Road 6	6	0900-1000	0.049168673	5.84155E-07	2.08812E-05	0.041078088	4.88034E-07	1.74452E-05	0.277440521	3.29617E-06	0.000117825	0.228397393	2.71351E-06	9.69968E-05	0.269475482	3.20154E-06	0.000114442
Road 6	6	1000-1100	0.066597645	6.68726E-07	2.39043E-05	0.056307439	5.65399E-07	2.02107E-05	0.363871589	3.65374E-06	0.000130606	0.305234262	3.06495E-06	0.000109559	0.361541701	3.63035E-06	0.00012977
Road 6	6	1100-1200	0.075374079	7.52609E-07	2.69027E-05	0.063699812	6.36042E-07	2.27359E-05	0.393360357	3.9277E-06	0.000140399	0.330285865	3.2979E-06	0.000117887	0.393985677	3.93394E-06	0.000140622
Road 6	6	1200-1300	0.072565182	7.12305E-07	2.5462E-05	0.061500019	6.03688E-07	2.15794E-05	0.363697553	3.57008E-06	0.000127616	0.306566195	3.00927E-06	0.000107569	0.368066214	3.61296E-06	0.000129149
Road 6	6	1300-1400	0.085289347	8.34004E-07	2.98123E-05	0.071291536	6.97126E-07	2.49194E-05	0.435380806	4.25738E-06	0.000152184	0.361421228	3.53417E-06	0.000126332	0.432712764	4.23129E-06	0.000151252
Road 6	6	1400-1500	0.082061498	8.84071E-07	3.1602E-05	0.068249652	7.35272E-07	2.6283E-05	0.412508101	4.44406E-06	0.000158857	0.340566986	3.66902E-06	0.000131153	0.408816638	4.40429E-06	0.000157436
Road 6	6	1500-1600	0.070290783	7.41431E-07	2.65031E-05	0.059764057	6.30394E-07	2.2534E-05	0.365462135	3.85491E-06	0.000137797	0.308436566	3.2534E-06	0.000116296	0.368200623	3.8838E-06	0.00013883
Road 6	6	1600-1700	0.073990608	7.99898E-07	2.85931E-05	0.061909219	6.69289E-07	2.39244E-05	0.367604253	3.9741E-06	0.000142058	0.305291267	3.30045E-06	0.000117978	0.367200486	3.96973E-06	0.000141902
Road 6	6	1700-1800	0.055351672	6.33718E-07	2.26529E-05	0.046625689	5.33815E-07	1.90817E-05	0.284934787	3.2622E-06	0.000116611	0.237565721	2.71988E-06	9.72246E-05	0.28419141	3.25369E-06	0.000116306
Road 6	6	1800-1900	0.051499434	6.65974E-07	2.38059E-05	0.045549347	5.8903E-07	2.10554E-05	0.269602322	3.48641E-06	0.000124625	0.236311103	3.0559E-06	0.000109236	0.28186045	3.64493E-06	0.000130291
Road 6	6	1900-2000	0.061770954	6.07507E-07	2.17159E-05	0.054194885	5.32998E-07	1.90525E-05	0.323726546	3.1838E-06	0.000113808	0.281502729	2.76853E-06	9.89638E-05	0.335697615	3.30153E-06	0.000118016
Road 6	6	2000-2100	0.04856701	3.81025E-07	1.36201E-05	0.04220878	3.31142E-07	1.1837E-05	0.283235789	2.22208E-06	7.94304E-05	0.243695718	1.91188E-06	6.83419E-05	0.285904498	2.24302E-06	8.01789E-05
Road 6	6	2100-2200	0.067067917	4.53162E-07	1.61987E-05	0.058693972	3.96581E-07	1.41762E-05	0.356671528	2.40994E-06	8.61457E-05	0.310028389	2.09479E-06	7.48801E-05	0.368722361	2.49137E-06	8.90563E-05
Road 6	6	2200-2300	0.049682336	3.55273E-07	1.26996E-05	0.043755223	3.12889E-07	1.11845E-05	0.278630682	1.99246E-06	7.12224E-05	0.242353018	1.73304E-06	6.19492E-05	0.286108241	2.04593E-06	7.31338E-05
Road 6	6	2300-0000	0.033233725	2.22681E-07	7.95994E-06	0.029403866	1.97019E-07	7.04264E-06	0.206700196	1.38498E-06	4.95076E-05	0.180676611	1.21061E-06	4.32746E-05	0.210080476	1.40763E-06	5.03172E-05
Road 7	7	0000-0100	0.06229374	1.68222E-07	4.19936E-06	0.054949865	1.4839E-07	3.70429E-06	0.366628188	9.90064E-07	2.47152E-05	0.321337941	8.67759E-07	2.16621E-05	0.376287806	1.01615E-06	2.53664E-05
Road 7	7	0100-0200	0.077043273	1.62191E-07	4.04882E-06	0.068014581	1.43184E-07	3.57434E-06	0.419954761	8.84087E-07	2.20697E-05	0.36903658	7.76894E-07	1.93938E-05	0.437051161	9.20078E-07	2.29681E-05
Road 7	7	0200-0300	0.065410213	8.92684E-08	2.22843E-06	0.058177778	7.9398E-08	1.98203E-06	0.368763936	5.0327E-07	1.25632E-05	0.32620873	4.45192E-07	1.11135E-05	0.384386508	5.2459E-07	1.30955E-05
Road 7	7	0300-0400	0.066871974	7.37874E-08	1.84197E-06	0.059333985	6.54699E-08	1.63434E-06	0.401775789	4.43324E-07	1.10668E-05	0.354612234	3.91284E-07	9.76771E-06	0.413946219	4.56753E-07	1.14021E-05
Road 7	7	0400-0500	0.073631802	1.18662E-07	2.9622E-06	0.065365315	1.0534E-07	2.62964E-06	0.408375586	6.58123E-07	1.64289E-05	0.360775135	5.81412E-07	1.45139E-05	0.42614045	6.86752E-07	1.71436E-05
Road 7	7	0500-0600	0.066753182	1.91894E-07	4.7903E-06	0.058872323	1.69239E-07	4.22476E-06	0.374464293	1.07647E-06	2.68721E-05	0.328201768	9.43475E-07	2.35522E-05	0.387074091	1.11271E-06	2.7777E-05
Road 7	7	0600-0700	0.071646996	3.68235E-07	9.19236E-06	0.062745625	3.22486E-07	8.05031E-06	0.413656339	2.12602E-06	5.30724E-05	0.359841477	1.84943E-06	4.61679E-05	0.422587103	2.17192E-06	5.42182E-05
Road 7	7	0700-0800	0.070092859	5.74972E-07	1.43532E-05	0.059773667	4.90323E-07	1.22401E-05	0.381170046	3.12674E-06	7.80536E-05	0.322207074	2.64307E-06	6.59795E-05	0.38198074	3.13339E-06	7.82196E-05
Road 7	7	0800-0900	0.070636289	8.76836E-07	2.18887E-05	0.060254385	7.47961E-07	1.86716E-05	0.382580044	4.74912E-06	0.000118553	0.323613519	4.01714E-06	0.000100281	0.383867903	4.7651E-06	0.000118952
Road 7	7	0900-1000	0.073341759	8.43336E-07	2.10524E-05	0.06132301	7.05136E-07	1.76025E-05	0.383293381	4.40738E-06	0.000110023	0.317896058	3.6554E-06	9.12507E-05	0.379219069	4.36053E-06	0.000108853
Road 7	7	1000-1100	0.087909764	8.87046E-07	2.21436E-05	0.073810963	7.44783E-07	1.85922E-05	0.461764142	4.65939E-06	0.000116314	0.385575522	3.89062E-06	9.71225E-05	0.459386485	4.6354E-06	0.000115715
Road 7	7	1100-1200	0.095700638	9.6427E-07	2.40713E-05	0.08085421	8.14679E-07	2.0337E-05	0.489412178	4.93127E-06	0.000123101	0.411827945	4.14954E-06	0.000103586	0.492682155	4.96422E-06	0.000123923
Road 7	7	1200-1300	0.093613036	9.41876E-07	2.35123E-05	0.079506693	7.99947E-07	1.99693E-05	0.472283082	4.75182E-06	0.000118621	0.39980803	4.02262E-06	0.000100418	0.479314723	4.82257E-06	0.000120387
Road 7	7	1300-1400	0.101014927	1.00022E-06	2.49687E-05	0.084782325	8.39487E-07	2.09563E-05	0.510903622	5.0588E-06	0.000126284	0.426816776	4.2262E-06	0.0001055	0.511599101	5.06569E-06	0.000126456
Road 7	7	1400-1500	0.09487076	9.83456E-07	2.45503E-05	0.078851411	8.17395E-07	2.04048E-05	0.482562751	5.00238E-06	0.000124876	0.398924588	4.13536E-06	0.000103232	0.477775999	4.95276E-06	0.000123637
Road 7	7	1500-1600	0.086454437	8.79893E-07	2.1965E-05	0.07343051	7.47341E-07	1.86561E-05	0.445888072	4.53804E-06	0.000113284	0.376615702	3.83302E-06	9.56846E-05	0.450046212	4.58036E-06	0.000114341
Road 7	7	1600-1700	0.089809524	9.45333E-07	2.35986E-05	0.07550707	7.94786E-07	1.98404E-05	0.4471198	4.70637E-06	0.000117486	0.374009277	3.93681E-06	9.82757E-05	0.449516348	4.7316E-06	0.000118116
Road 7	7	1700-1800	0.06954456	7.74431E-07	1.93323E-05	0.05851417	6.516E-07	1.6266E-05	0.359694973	4.00548E-06	9.99897E-05	0.300385691	3.34502E-06	8.35026E-05	0.358899861	3.99662E-06	9.97687E-05
Road 7	7	1800-1900	0.06135921	7.10007E-07	1.77241E-05	0.053723451	6.21651E-07	1.55184E-05	0.322107261	3.7272E-06	9.30432E-05	0.279902069	3.23883E-06	8.08519E-05	0.33362552	3.86049E-06	9.63703E-05
Road 7	7	1900-2000	0.071329664	6.23435E-07	1.5563E-05	0.062994976	5.50588E-07	1.37445E-05	0.37714367	3.29631E-06	8.22866E-05	0.330942236	2.8925E-06	7.22062E-05	0.393937212	3.44309E-06	8.59506E-05
Road 7	7	2000-2100	0.065848526	4.7419E-07	1.18373E-05	0.057287403	4.12539E-07	1.02983E-05	0.35928249	2.58727E-06	6.45867E-05	0.310312146	2.23463E-06	5.57835E-05	0.367599549	2.64716E-06	6.60819E-05
Road 7	7	2100-2200	0.074644879	4.48668E-07	1.12002E-05	0.065470806	3.93525E-07	9.82367E-06	0.398154106	2.39318E-06	5.97416E-05	0.347300306	2.08752E-06	5.21112E-05	0.412771112	2.48104E-06	6.19349E-05
Road 7	7	2200-2300	0.061943356	4.02E-07	1.00352E-05	0.054699409	3.54989E-07	8.86167E-06	0.338746913	2.1984E-06	5.48793E-05	0.296453727	1.92393E-06	4.80275E-05	0.351153136	2.27892E-06	5.68892E-05
Road 7	7	2300-0000	0.043182507	2.57676E-07	6.43243E-06	0.038510777	2.29799E-07	5.73654E-06	0.25475259	1.52014E-06	3.79478E-05	0.225249061	1.34409E-06	3.35529E-05	0.263759838	1.57389E-06	3.92895E-05
Road 8	8	0000-0100	0.197879722	1.43913E-07	2.37234E-06	0.175856389	1.27896E-07	2.10831E-06	0.979808333	7.12588E-07	1.17467E-05	0.870190278	6.32866E-07	1.04326E-05	1.046046667	7.60761E-07	1.25409E-05
Road 8	8	0100-0200	0.205855333	1.24761E-07	2.05664E-06	0.181575667	1.10046E-07	1.81406E-06	1.016450333	6.16031E-07	1.0155E-05	0.896538667	5.43357E-07	8.95703E-06	1.078114333	6.53403E-07	1.07711E-05
Road 8	8	0200-0300	0.193150667	5.85305E-08	9.64853E-07	0.171482	5.19642E-08	8.56611E-07	1.002758667	3.03866E-07	5.00912E-06	0.890178	2.69751E-07	4.44674E-06	1.06166	3.21715E-07	5.30335E-06
Road 8	8	0300-0400	0.1762	4.98343E-08	8.215E-07	0.155925714	4.41002E-08	7.26975E-07	0.896082143	2.53437E-07	4.17782E-06	0.792524286	2.24148E-07	3.695E-06	0.94845	2.68248E-07	4.42198E-06
Road 8	8	0400-0500	0.198495714	8.42103E-08	1.38818E-06	0.176205714	7.47539E-08	1.23229E-06	0.951840952	4.03811E-07	6.65668E-06	0.84487	3.5843E-07	5.90858E-06	1.021075714	4.33184E-07	7.14087E-06
Road 8	8	0500-0600	0.190013529	1.30514E-07	2.15148E-06	0.167585294	1.15109E-07	1.89753E-06	0.895086176	6.14807E-07	1.01349E-05	0.789049706	5.41974E-07	8.93423E-06	0.956635	6.57083E-07	1.08318E-05
Road 8	8	0600-0700	0.215146774	2.69477E-07	4.44222E-06	0.188607258	2.36235E-07	3.89425E-06	1.001440968	1.25433E-06	2.06772E-05	0.877330161	1.09888E-06	1.81146E-05	1.065937419	1.33511E-06	2.20088E-05
Road 8	8	0700-0800	0.218838431	4.5094E-07	7.43357E-06	0.186266471	3.83822E-07	6.32716E-06	1.02900402	2.12037E-06	3.49535E-05	0.875260392	1.80357E-06	2.97311E-05	1.061526863	2.18739E-06	3.60583E-05
Road 8	8	0800-0900	0.246526927	9.56226E-07	1.5763E-05	0.21274026	8.25174E-07	1.36027E-05	1.163634271	4.51349E-06	7.44032E-05	1.003667448	3.89301E-06	6.41749E-05	1.216407708	4.71819E-06	7.77775E-05
Road 8	8	0900-1000	0.268199114	8.5607E-07	1.4112E-05	0.223772342	7.14263E-07	1.17744E-05	1.204080253	3.84333E-06	6.33558E-05	1.004447152	3.20611E-06	5.28516E-05	1.228219494	3.92038E-06	6.46259E-05
Road 8	8	1000-1100	0.25631225	8.28484E-07	1.36572E-05	0.216594438	7.00103E-07	1.15409E-05	1.184967563	3.8302E-06	6.31394E-05	1.000706813	3.23461E-06	5.33213E-05	1.21730125	3.93471E-06	6.48622E-05
Road 8	8	1100-1200	0.260965723	8.38254E-07	1.38183E-05	0.219938931	7.06471E-07	1.16459E-05	1.218496352	3.91396E-06	6.45201E-05	1.026465283	3.29713E-06	5.4352E-05	1.246404214	4.0036E-06	6.59979E-05
Road 8	8	1200-1300	0.263669118	9.0553E-07	1.49273E-05	0.222928882	7.65614E-07	1.26209E-05	1.241149882	4.26253E-06	7.02663E-05	1.049105059	3.60299E-06	5.93939E-05	1.272033941	4.3686E-06	7.20148E-05
Road 8	8	1300-1400	0.244813889	8.01209E-07	1.32076E-05	0.204346235	6.68769E-07	1.10244E-05	1.136965802	3.72098E-06	6.13389E-05	0.948530617	3.10428E-06	5.11729E-05	1.152876852	3.77305E-06	6.21973E-05
Road 8	8	1400-1500	0.242031079	6.79643E-07	1.12037E-05	0.200902662	5.64151E-07	9.29982E-06	1.170521151	3.28692E-06	5.41836E-05	0.971179065	2.72715E-06	4.4956E-05	1.172081727	3.2913E-06	5.42558E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (June) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 8	8	1500-1600	0.243226547	6.83E-07	1.1259E-05	0.206545971	5.79998E-07	9.56105E-06	1.146499065	3.21946E-06	5.30716E-05	0.972884101	2.73194E-06	4.5035E-05	1.179430072	3.31193E-06	5.4596E-05
Road 8	8	1600-1700	0.244414161	7.35711E-07	1.21279E-05	0.204103826	6.14373E-07	1.01277E-05	1.141879262	3.43717E-06	5.66605E-05	0.952865973	2.86822E-06	4.72816E-05	1.156969799	3.4826E-06	5.74093E-05
Road 8	8	1700-1800	0.199785769	6.29628E-07	1.03792E-05	0.168103526	5.29781E-07	8.73324E-06	0.9696725	3.05594E-06	5.0376E-05	0.814446026	2.56674E-06	4.23117E-05	0.982549551	3.09652E-06	5.1045E-05
Road 8	8	1800-1900	0.19144215	4.13824E-07	6.82174E-06	0.16945215	3.66291E-07	6.03816E-06	0.952492991	2.05892E-06	3.39406E-05	0.84246972	1.8211E-06	3.00201E-05	1.011921869	2.18739E-06	3.60582E-05
Road 8	8	1900-2000	0.191906753	2.98522E-07	4.92102E-06	0.168481299	2.62082E-07	4.32032E-06	0.978582597	1.52224E-06	2.50935E-05	0.85896974	1.33618E-06	2.20263E-05	1.027451039	1.59826E-06	2.63467E-05
Road 8	8	2000-2100	0.209504026	3.25895E-07	5.37226E-06	0.182194416	2.83414E-07	4.67197E-06	0.974251558	1.5155E-06	2.49825E-05	0.846535325	1.31683E-06	2.17075E-05	1.02872974	1.60025E-06	2.63795E-05
Road 8	8	2100-2200	0.171220926	1.86786E-07	3.0791E-06	0.149996667	1.63633E-07	2.69742E-06	0.868524259	9.47481E-07	1.56189E-05	0.759510926	8.28557E-07	1.36585E-05	0.909507593	9.9219E-07	1.63559E-05
Road 8	8	2200-2300	0.203662031	2.63321E-07	4.34074E-06	0.17961875	2.32234E-07	3.8283E-06	0.977976094	1.26445E-06	2.0844E-05	0.8618825	1.11435E-06	1.83697E-05	1.04150125	1.34659E-06	2.2198E-05
Road 8	8	2300-0000	0.158657358	1.69876E-07	2.80033E-06	0.140451887	1.50383E-07	2.479E-06	0.793251698	8.4934E-07	1.40011E-05	0.70146	7.51058E-07	1.23809E-05	0.841911887	9.01441E-07	1.48599E-05
Road 9	9	0000-0100	0.177040944	4.70179E-08	1.40356E-06	0.160452778	4.26125E-08	1.27206E-06	0.786019738	2.08748E-07	6.23149E-06	0.707867594	1.87993E-07	5.61191E-06	0.868320373	2.30605E-07	6.88397E-06
Road 9	9	0100-0200	0.193971026	4.04754E-08	1.20826E-06	0.176058188	3.67376E-08	1.09668E-06	0.814684054	1.69998E-07	5.07473E-06	0.734127177	1.53188E-07	4.57293E-06	0.910185365	1.89926E-07	5.66961E-06
Road 9	9	0200-0300	0.073516046	6.9729E-09	2.08153E-07	0.065862844	6.24701E-09	1.86484E-07	0.517421667	4.90768E-08	1.46503E-06	0.465910603	4.4191E-08	1.31918E-06	0.531773447	5.0438E-08	1.50566E-06
Road 9	9	0300-0400	0.089185504	6.7673E-09	2.02016E-07	0.079496341	6.0321E-09	1.80069E-07	0.538843313	4.08869E-08	1.22054E-06	0.481610966	3.65441E-08	1.09091E-06	0.561107307	4.25762E-08	1.27097E-06
Road 9	9	0400-0500	0.206865639	3.92419E-08	1.17144E-06	0.188640528	3.57846E-08	1.06823E-06	0.833153678	1.58047E-07	4.71798E-06	0.75523391	1.43266E-07	4.27673E-06	0.943874437	1.79051E-07	5.34497E-06
Road 9	9	0500-0600	0.148644355	4.79357E-08	1.43096E-06	0.134779786	4.34645E-08	1.29749E-06	0.733048695	2.36398E-07	7.05688E-06	0.666213124	2.14844E-07	6.41347E-06	0.80099291	2.58309E-07	7.71096E-06
Road 9	9	0600-0700	0.178816663	1.08547E-07	3.24033E-06	0.162157759	9.84349E-08	2.93845E-06	0.902890957	5.48083E-07	1.63612E-05	0.81990234	4.97707E-07	1.48574E-05	0.982060099	5.96142E-07	1.77959E-05
Road 9	9	0700-0800	0.155161755	1.44226E-07	4.30538E-06	0.13929237	1.29475E-07	3.86504E-06	0.856811047	7.96421E-07	2.37745E-05	0.771740983	7.17347E-07	2.1414E-05	0.911033353	8.46821E-07	2.52791E-05
Road 9	9	0800-0900	0.241884909	5.27677E-07	1.57521E-05	0.214199365	4.6728E-07	1.39491E-05	1.138067822	2.48272E-06	7.41134E-05	1.001735294	2.18531E-06	6.52351E-05	1.215934659	2.65259E-06	7.91842E-05
Road 9	9	0900-1000	0.255191921	4.2116E-07	1.25724E-05	0.224452129	3.70428E-07	1.10579E-05	1.087985208	1.79558E-06	5.3601E-05	0.950018539	1.56788E-06	4.68039E-05	1.174470667	1.93831E-06	5.78618E-05
Road 9	9	1000-1100	0.26159916	3.6226E-07	1.08141E-05	0.22660291	3.13798E-07	9.3674E-06	1.098190466	1.52076E-06	4.53974E-05	0.946641216	1.3109E-06	3.91326E-05	1.173244127	1.6247E-06	4.85E-05
Road 9	9	1100-1200	0.178900032	2.5792E-07	7.69936E-06	0.153003211	2.20585E-07	6.58483E-06	0.935568583	1.34881E-06	4.02643E-05	0.810015634	1.1678E-06	3.48608E-05	0.963018845	1.38838E-06	4.14457E-05
Road 9	9	1200-1300	0.270483943	3.79695E-07	1.13345E-05	0.240429309	3.37505E-07	1.00751E-05	1.202535091	1.68807E-06	5.03918E-05	1.067285138	1.49821E-06	4.47242E-05	1.307714447	1.83572E-06	5.47993E-05
Road 9	9	1300-1400	0.311072093	3.59958E-07	1.07454E-05	0.273448285	3.16422E-07	9.44573E-06	1.179610728	1.36499E-06	4.07473E-05	1.028501741	1.19014E-06	3.55276E-05	1.301950026	1.50656E-06	4.49733E-05
Road 9	9	1400-1500	0.203176356	2.62086E-07	7.82371E-06	0.179291525	2.31276E-07	6.90398E-06	0.972199958	1.25408E-06	3.74365E-05	0.849482294	1.09578E-06	3.2711E-05	1.02877382	1.32706E-06	3.9615E-05
Road 9	9	1500-1600	0.165877448	1.79359E-07	5.35418E-06	0.146663684	1.58584E-07	4.734E-06	0.842702269	9.11193E-07	2.72007E-05	0.747160838	8.07886E-07	2.41168E-05	0.893824522	9.6647E-07	2.88508E-05
Road 9	9	1600-1700	0.176377526	2.67667E-07	7.99032E-06	0.157183051	2.38538E-07	7.12076E-06	0.948468061	1.43938E-06	4.29678E-05	0.841300168	1.27674E-06	3.81129E-05	0.998483219	1.51528E-06	4.52336E-05
Road 9	9	1700-1800	0.15272492	1.99903E-07	5.96746E-06	0.137905243	1.80506E-07	5.38841E-06	0.893783654	1.16988E-06	3.49231E-05	0.810706507	1.06114E-06	3.1677E-05	0.94861175	1.24165E-06	3.70654E-05
Road 9	9	1800-1900	0.149242103	1.24568E-07	3.71856E-06	0.138978961	1.16001E-07	3.46284E-06	0.85130454	7.10557E-07	2.12114E-05	0.795665408	6.64117E-07	1.9825E-05	0.934644369	7.80118E-07	2.32879E-05
Road 9	9	1900-2000	0.153948784	1.25576E-07	3.74865E-06	0.142797923	1.1648E-07	3.47713E-06	0.805177619	6.56782E-07	1.96061E-05	0.744616023	6.07382E-07	1.81314E-05	0.887413946	7.23862E-07	2.16085E-05
Road 9	9	2000-2100	0.159546556	8.77701E-08	2.62009E-06	0.143419637	7.88984E-08	2.35525E-06	0.702928285	3.86697E-07	1.15436E-05	0.637757317	3.50845E-07	1.04733E-05	0.781176954	4.29743E-07	1.28286E-05
Road 9	9	2100-2200	0.01914175	1.01672E-08	3.03508E-07	0.017534577	9.31354E-09	2.78025E-07	0.270764512	1.43817E-07	4.29319E-06	0.245631253	1.30468E-07	3.89469E-06	0.26316583	1.39781E-07	4.17271E-06
Road 9	9	2200-2300	0.150379498	9.41378E-08	2.81017E-06	0.136413777	8.53952E-08	2.54919E-06	0.719830188	4.50615E-07	1.34516E-05	0.652765638	4.08632E-07	1.21984E-05	0.789179414	4.94027E-07	1.47476E-05
Road 9	9	2300-0000	0.121832034	6.93337E-08	2.06973E-06	0.112132609	6.38138E-08	1.90495E-06	0.61380552	3.49312E-07	1.04276E-05	0.563717108	3.20807E-07	9.57664E-06	0.675849717	3.84621E-07	1.14816E-05
Road 10	10	0000-0100	0.243502413	1.87218E-07	4.16274E-06	0.217709919	1.67388E-07	3.72181E-06	1.203617608	9.25409E-07	2.05762E-05	1.076691099	8.2782E-07	1.84063E-05	1.294401018	9.95208E-07	2.21282E-05
Road 10	10	0100-0200	0.240302414	1.39595E-07	3.10385E-06	0.213749956	1.2417E-07	2.76089E-06	1.178181989	6.84422E-07	1.52179E-05	1.048425999	6.09045E-07	1.35419E-05	1.262175955	7.33215E-07	1.63028E-05
Road 10	10	0200-0300	0.234960592	7.62748E-08	1.69595E-06	0.208674743	6.77417E-08	1.50622E-06	1.139080094	3.69777E-07	8.22189E-06	1.012770216	3.28774E-07	7.31018E-06	1.22144496	3.96515E-07	8.8164E-06
Road 10	10	0300-0400	0.213651686	4.38046E-08	9.73983E-07	0.188990749	3.87484E-08	8.6156E-07	1.116946528	2.29006E-07	5.09187E-06	0.989654415	2.02907E-07	4.51158E-06	1.178645164	2.41656E-07	5.37314E-06
Road 10	10	0400-0500	0.252232452	9.912E-08	2.2039E-06	0.226115012	8.88566E-08	1.9757E-06	1.17096144	4.60154E-07	1.02314E-05	1.046332411	4.11178E-07	9.14242E-06	1.272447423	5.00035E-07	1.11181E-05
Road 10	10	0500-0600	0.231769298	1.62357E-07	3.60997E-06	0.207172288	1.45127E-07	3.22685E-06	1.08169238	7.5774E-07	1.68481E-05	0.965537968	6.76372E-07	1.50389E-05	1.172710256	8.21499E-07	1.82658E-05
Road 10	10	0600-0700	0.288119692	4.03663E-07	8.97533E-06	0.258212482	3.61763E-07	8.04368E-06	1.372895201	1.92346E-06	4.27676E-05	1.232646845	1.72697E-06	3.83987E-05	1.490859327	2.08873E-06	4.64424E-05
Road 10	10	0700-0800	0.290577384	6.40448E-07	1.42402E-05	0.253214759	5.58099E-07	1.24092E-05	1.40094036	3.08775E-06	6.86551E-05	1.223578761	2.69683E-06	5.99633E-05	1.47679352	3.25493E-06	7.23724E-05
Road 10	10	0800-0900	0.309948441	1.31333E-06	2.92015E-05	0.269299973	1.14109E-06	2.53718E-05	1.47898285	6.26682E-06	0.000139341	1.285676901	5.44774E-06	0.000121129	1.554976874	6.58883E-06	0.000146501
Road 10	10	0900-1000	0.350815654	1.1868E-06	2.63881E-05	0.300267929	1.0158E-06	2.25859E-05	1.621208492	5.48449E-06	0.000121946	1.38629644	4.68979E-06	0.000104276	1.686564369	5.70559E-06	0.000126862
Road 10	10	1000-1100	0.352436166	1.29465E-06	2.87861E-05	0.303058052	1.11326E-06	2.4753E-05	1.541263388	5.66171E-06	0.000125886	1.320500337	4.85076E-06	0.000107855	1.623558389	5.96402E-06	0.000132608
Road 10	10	1100-1200	0.334907359	1.23026E-06	2.73544E-05	0.285337996	1.04817E-06	2.33057E-05	1.518629182	5.57857E-06	0.000124038	1.292134897	4.74656E-06	0.000105538	1.577472892	5.79473E-06	0.000128844
Road 10	10	1200-1300	0.352492615	1.33701E-06	2.97281E-05	0.303716249	1.152E-06	2.56144E-05	1.610806964	6.10983E-06	0.00013585	1.387541256	5.26298E-06	0.000117021	1.691257505	6.41498E-06	0.000142635
Road 10	10	1300-1400	0.348608997	1.1436E-06	2.54275E-05	0.297543775	9.76078E-07	2.17028E-05	1.559608883	5.11622E-06	0.000113758	1.327480388	4.35474E-06	9.68262E-05	1.625024163	5.33081E-06	0.000118529
Road 10	10	1400-1500	0.328721955	1.01658E-06	2.26033E-05	0.280837297	8.68492E-07	1.93107E-05	1.57065144	4.85725E-06	0.000108	1.340289511	4.14486E-06	9.21597E-05	1.621126808	5.01335E-06	0.00011147
Road 10	10	1500-1600	0.315376711	9.96859E-07	2.21649E-05	0.272032853	8.59856E-07	1.91186E-05	1.461913644	4.62089E-06	0.000102744	1.260911628	3.98556E-06	8.86176E-05	1.532944481	4.84541E-06	0.000107736
Road 10	10	1600-1700	0.307253338	1.08142E-06	2.40452E-05	0.263046378	9.25832E-07	2.05856E-05	1.44407832	5.08265E-06	0.000113011	1.23272712	4.33877E-06	9.64713E-05	1.495773498	5.2646E-06	0.000117057
Road 10	10	1700-1800	0.285339596	9.50669E-07	2.11378E-05	0.247180748	8.23534E-07	1.8311E-05	1.408000015	4.69105E-06	0.000104304	1.224220197	4.07875E-06	9.06897E-05	1.471400945	4.90228E-06	0.000109001
Road 10	10	1800-1900	0.277224233	5.73125E-07	1.27433E-05	0.249311671	5.15419E-07	1.14602E-05	1.340405741	2.77111E-06	6.16149E-05	1.206891871	2.49509E-06	5.54776E-05	1.456203542	3.01051E-06	6.69378E-05
Road 10	10	1900-2000	0.244752644	4.55813E-07	1.01349E-05	0.21945216	4.08695E-07	9.0872E-06	1.238525872	2.30656E-06	5.12856E-05	1.112502745	2.07186E-06	4.60671E-05	1.331954905	2.48055E-06	5.51543E-05
Road 10	10	2000-2100	0.276754058	3.40454E-07	7.5699E-06	0.242400239	2.98193E-07	6.63024E-06	1.29378313	1.59157E-06	3.53881E-05	1.133070258	1.39387E-06	3.09922E-05	1.375470497	1.69206E-06	3.76225E-05
Road 10	10	2100-2200	0.234432567	2.96403E-07	6.59042E-06	0.21270973	2.68938E-07	5.97975E-06	1.22582854	1.54987E-06	3.44608E-05	1.114142243	1.40866E-06	3.1321E-05	1.326851973	1.67759E-06	3.73008E-05
Road 10	10	2200-2300	0.238927264	3.14332E-07	6.98908E-06	0.214544076	2.82254E-07	6.27583E-06	1.171554886	1.5413E-06	3.42702E-05	1.054376289	1.38714E-06	3.08425E-05	1.268920366	1.66939E-06	3.71184E-05
Road 10	10	2300-0000	0.215522805	2.6513E-07	5.89508E-06	0.192278446	2.36535E-07	5.25929E-06	1.053744822	1.29628E-06	2.88225E-05	0.940247186	1.15666E-06	2.57181E-05	1.132525632	1.3932E-06	3.09774E-05
Road 11	11	0000-0100	0.272106986	2.0786E-07	1.72421E-06	0.242986509	1.85615E-07	1.53969E-06	1.315334612	1.00477E-06	8.33464E-06	1.172649839	8.95774E-07	7.43052E-06	1.415636349	1.08139E-06	8.97021E-06
Road 11	11	0100-0200	0.273343842	1.47112E-07	1.22031E-06	0.242735654	1.30639E-07	1.08366E-06	1.298803311	6.99009E-07	5.79833E-06	1.150687595	6.19294E-07	5.13709E-06	1.393423249	7.49933E-07	6.22075E-06
Road 11	11	0200-0300	0.234498682	6.10674E-08	5.06559E-07	0.208269932	5.4237E-08	4.499E-07	1.209400556	3.14948E-07	2.61252E-06	1.075292865	2.80024E-07	2.32282E-06	1.283562798	3.34261E-07	2.77272E-06
Road 11	11	0300-0400	0.25147443	6.11223E-08	5.07014E-07	0.222338734	5.40407E-08	4.48272E-07	1.269655232	3.08597E-07	2.55984E-06	1.123337043	2.73033E-07	2.26483E-06	1.345675777	3.27074E-07	2.71311E-06

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (June) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 11	11	0400-0500	0.26092782	9.05999E-08	7.51534E-07	0.234080264	8.12779E-08	6.74207E-07	1.194271839	4.14678E-07	3.43979E-06	1.067761955	3.70751E-07	3.07541E-06	1.301842219	4.52029E-07	3.74961E-06
Road 11	11	0500-0600	0.211031631	9.89211E-08	8.20558E-07	0.188387273	8.83065E-08	7.3251E-07	1.041356586	4.88136E-07	4.04913E-06	0.930686041	4.36259E-07	3.6188E-06	1.119073314	5.24566E-07	4.35131E-06
Road 11	11	0600-0700	0.233281903	2.10602E-07	1.74696E-06	0.207807448	1.87604E-07	1.55619E-06	1.164061022	1.05089E-06	8.7172E-06	1.037781516	9.36886E-07	7.77155E-06	1.245588965	1.12449E-06	9.32774E-06
Road 11	11	0700-0800	0.285273387	5.3984E-07	4.47802E-06	0.245912149	4.65355E-07	3.86015E-06	1.424330298	2.69535E-06	2.23581E-05	1.230583623	2.32871E-06	1.93168E-05	1.476495773	2.79406E-06	2.3177E-05
Road 11	11	0800-0900	0.307781923	1.0954E-06	9.08647E-06	0.269325606	9.58537E-07	7.95114E-06	1.46306382	5.20708E-06	4.31932E-05	1.27684606	4.54433E-06	3.76956E-05	1.546171666	5.50287E-06	4.56467E-05
Road 11	11	0900-1000	0.316776483	8.0844E-07	6.70608E-06	0.270931164	6.91439E-07	5.73554E-06	1.440809402	3.67707E-06	3.05016E-05	1.225894392	3.12858E-06	2.59519E-05	1.496825556	3.82002E-06	3.16874E-05
Road 11	11	1000-1100	0.325463905	6.837E-07	5.67135E-06	0.278870304	5.85821E-07	4.85944E-06	1.463788708	3.07497E-06	2.55071E-05	1.250269587	2.62643E-06	2.17865E-05	1.52913989	3.21226E-06	2.66459E-05
Road 11	11	1100-1200	0.280203752	6.61592E-07	5.48796E-06	0.237249318	5.60172E-07	4.64667E-06	1.390493217	3.28311E-06	2.72337E-05	1.183076362	2.79337E-06	2.31713E-05	1.42032568	3.35355E-06	2.78179E-05
Road 11	11	1200-1300	0.345528855	9.83797E-07	8.16068E-06	0.297176465	8.46127E-07	7.0187E-06	1.610951348	4.58674E-06	3.80474E-05	1.383724889	3.93977E-06	3.26807E-05	1.680901354	4.7859E-06	3.96994E-05
Road 11	11	1300-1400	0.363354113	7.63296E-07	6.3316E-06	0.309727246	6.50642E-07	5.39713E-06	1.584873342	3.32933E-06	2.76171E-05	1.342753927	2.82072E-06	2.33981E-05	1.652481173	3.47136E-06	2.87952E-05
Road 11	11	1400-1500	0.292831671	5.8973E-07	4.89186E-06	0.249192425	5.01846E-07	4.16285E-06	1.408121383	2.8358E-06	2.35232E-05	1.193036728	2.40264E-06	1.99301E-05	1.442229153	2.90449E-06	2.4093E-05
Road 11	11	1500-1600	0.253674384	5.15276E-07	4.27426E-06	0.218237265	4.43294E-07	3.67716E-06	1.264081562	2.56767E-06	2.1299E-05	1.088703866	2.21143E-06	1.8344E-05	1.306941132	2.65472E-06	2.20212E-05
Road 11	11	1600-1700	0.246228736	5.98473E-07	4.96438E-06	0.210881571	5.12559E-07	4.25172E-06	1.260100012	3.06274E-06	2.54057E-05	1.078495129	2.62134E-06	2.17442E-05	1.2893767	3.1339E-06	2.5996E-05
Road 11	11	1700-1800	0.244317935	6.06553E-07	5.03141E-06	0.210034349	5.21439E-07	4.32538E-06	1.274268719	3.16355E-06	2.62419E-05	1.100347059	2.73176E-06	2.26602E-05	1.310381409	3.2532E-06	2.69856E-05
Road 11	11	1800-1900	0.252839356	5.1797E-07	4.2966E-06	0.226499356	4.64009E-07	3.84899E-06	1.291886296	2.64657E-06	2.19535E-05	1.159969099	2.37633E-06	1.97118E-05	1.386468455	2.84033E-06	2.35608E-05
Road 11	11	1900-2000	0.244745842	3.86664E-07	3.20741E-06	0.218223197	3.44762E-07	2.85983E-06	1.229791283	1.9429E-06	1.61165E-05	1.096030661	1.73158E-06	1.43636E-05	1.314253858	2.07634E-06	1.72234E-05
Road 11	11	2000-2100	0.248726613	3.49772E-07	2.90139E-06	0.218004055	3.06568E-07	2.54301E-06	1.200457284	1.68814E-06	1.40033E-05	1.053903634	1.48205E-06	1.22937E-05	1.271907688	1.78862E-06	1.48367E-05
Road 11	11	2100-2200	0.174287396	1.75498E-07	1.45577E-06	0.152984915	1.54047E-07	1.27783E-06	0.94550873	9.52075E-07	7.89754E-06	0.832022412	8.378E-07	6.94962E-06	0.985007327	9.91848E-07	8.22746E-06
Road 11	11	2200-2300	0.228765451	2.50212E-07	2.07553E-06	0.203661545	2.22755E-07	1.84777E-06	1.117715813	1.2225E-06	1.01408E-05	0.994637996	1.08789E-06	9.0241E-06	1.198299541	1.31064E-06	1.08719E-05
Road 11	11	2300-0000	0.21726127	2.26314E-07	1.87729E-06	0.194109196	2.02197E-07	1.67724E-06	1.078976015	1.12393E-06	9.32312E-06	0.963334843	1.00347E-06	8.3239E-06	1.157444039	1.20567E-06	1.00011E-05
Haul Road 1	HR1	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0700-0800	1.19502	2.24628E-06	3.37851E-06	1.01653	1.91077E-06	2.87389E-06	5.23567	9.84148E-06	1.48021E-05	4.45399	8.37216E-06	1.25921E-05	5.47052	1.02829E-05	1.5466E-05
Haul Road 1	HR1	0800-0900	1.21341	2.28085E-06	3.4305E-06	1.04602	1.9662E-06	2.95727E-06	5.31631	9.99306E-06	1.50301E-05	4.58269	8.61408E-06	1.2956E-05	5.62871	1.05803E-05	1.59133E-05
Haul Road 1	HR1	0900-1000	1.23639	2.32404E-06	3.49547E-06	1.03063	1.93727E-06	2.91376E-06	5.41725	1.01828E-05	1.53154E-05	4.51564	8.48805E-06	1.27664E-05	5.54627	1.04253E-05	1.56802E-05
Haul Road 1	HR1	1000-1100	1.25028	2.35015E-06	3.53474E-06	1.05561	1.98423E-06	2.98438E-06	5.47761	1.02963E-05	1.54861E-05	4.62497	8.69355E-06	1.30755E-05	5.68058	1.06778E-05	1.60599E-05
Haul Road 1	HR1	1100-1200	1.2294	2.3109E-06	3.47571E-06	1.03532	1.94609E-06	2.92702E-06	5.38637	1.01248E-05	1.52281E-05	4.53623	8.52675E-06	1.28247E-05	5.57155	1.04728E-05	1.57517E-05
Haul Road 1	HR1	1200-1300	1.23309	2.31784E-06	3.48614E-06	1.04202	1.95868E-06	2.94596E-06	5.40276	1.01556E-05	1.52745E-05	4.56511	8.58103E-06	1.29063E-05	5.60713	1.05397E-05	1.58523E-05
Haul Road 1	HR1	1300-1400	1.24968	2.34902E-06	3.53305E-06	1.04202	1.95868E-06	2.94596E-06	5.47512	1.02916E-05	1.5479E-05	4.56511	8.58103E-06	1.29063E-05	5.60713	1.05397E-05	1.58523E-05
Haul Road 1	HR1	1400-1500	1.26437	2.37664E-06	3.57458E-06	1.04861	1.97107E-06	2.96459E-06	5.53967	1.04129E-05	1.56615E-05	4.5942	8.63571E-06	1.29885E-05	5.64281	1.06068E-05	1.59531E-05
Haul Road 1	HR1	1500-1600	1.2275	2.30733E-06	3.47034E-06	1.04202	1.95868E-06	2.94596E-06	5.37807	1.01092E-05	1.52047E-05	4.56511	8.58103E-06	1.29063E-05	5.60713	1.05397E-05	1.58523E-05
Haul Road 1	HR1	1600-1700	1.23309	2.31784E-06	3.48614E-06	1.02873	1.9337E-06	2.90838E-06	5.40276	1.01556E-05	1.52745E-05	4.50715	8.47209E-06	1.27424E-05	5.53588	1.04058E-05	1.56508E-05
Haul Road 1	HR1	1700-1800	1.23309	2.31784E-06	3.48614E-06	1.03692	1.9491E-06	2.93154E-06	5.40276	1.01556E-05	1.52745E-05	4.54293	8.53934E-06	1.28436E-05	5.57985	1.04884E-05	1.57751E-05
Haul Road 1	HR1	1800-1900	1.17583	2.21021E-06	3.32426E-06	1.04012	1.95511E-06	2.94059E-06	5.15163	9.68352E-06	1.45645E-05	4.55692	8.56564E-06	1.28831E-05	5.59704	1.05208E-05	1.58237E-05
Haul Road 1	HR1	1900-2000	1.18532	2.22805E-06	3.35109E-06	1.04012	1.95511E-06	2.94059E-06	5.1931	9.76147E-06	1.46817E-05	4.55692	8.56564E-06	1.28831E-05	5.59704	1.05208E-05	1.58237E-05
Haul Road 1	HR1	2000-2100	1.17553	2.20964E-06	3.32341E-06	1.02243	1.92186E-06	2.89057E-06	5.15023	9.68088E-06	1.45605E-05	4.47967	8.42043E-06	1.26647E-05	5.5021	1.03423E-05	1.55553E-05
Haul Road 1	HR1	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0700-0800	1.19502	1.54795E-06	4.1205E-06	1.01653	1.31675E-06	3.50506E-06	5.23567	6.78196E-06	1.80529E-05	4.45399	5.76942E-06	1.53576E-05	5.47052	7.08617E-06	1.88627E-05
Haul Road 2	HR2	0800-0900	1.21341	1.57177E-06	4.18391E-06	1.04602	1.35495E-06	3.60674E-06	5.31631	6.88641E-06	1.8331E-05	4.58269	5.93613E-06	1.58014E-05	5.62871	7.29108E-06	1.94081E-05
Haul Road 2	HR2	0900-1000	1.23639	1.60154E-06	4.26315E-06	1.03063	1.33501E-06	3.55367E-06	5.41725	7.01716E-06	1.8679E-05	4.51564	5.84927E-06	1.55702E-05	5.54627	7.18429E-06	1.91239E-05
Haul Road 2	HR2	1000-1100	1.25028	1.61953E-06	4.31104E-06	1.05561	1.36737E-06	3.63981E-06	5.47761	7.09535E-06	1.88871E-05	4.62497	5.99089E-06	1.59472E-05	5.68058	7.35826E-06	1.9587E-05
Haul Road 2	HR2	1100-1200	1.2294	1.59249E-06	4.23905E-06	1.03532	1.34109E-06	3.56985E-06	5.38637	6.97716E-06	1.85725E-05	4.53623	5.87595E-06	1.56412E-05	5.57155	7.21703E-06	1.9211E-05
Haul Road 2	HR2	1200-1300	1.23309	1.59727E-06	4.25177E-06	1.04202	1.34977E-06	3.59295E-06	5.40276	6.99839E-06	1.8629E-05	4.56511	5.91335E-06	1.57408E-05	5.60713	7.26312E-06	1.93337E-05
Haul Road 2	HR2	1300-1400	1.24968	1.61876E-06	4.30897E-06	1.04202	1.34977E-06	3.59295E-06	5.47512	7.09212E-06	1.88785E-05	4.56511	5.91335E-06	1.57408E-05	5.60713	7.26312E-06	1.93337E-05
Haul Road 2	HR2	1400-1500	1.26437	1.63778E-06	4.35962E-06	1.04861	1.3583E-06	3.61567E-06	5.53967	7.17574E-06	1.91011E-05	4.5942	5.95104E-06	1.58411E-05	5.64281	7.30934E-06	1.94567E-05
Haul Road 2	HR2	1500-1600	1.2275	1.59003E-06	4.23249E-06	1.04202	1.34977E-06	3.59295E-06	5.37807	6.96641E-06	1.85439E-05	4.56511	5.91335E-06	1.57408E-05	5.60713	7.26312E-06	1.93337E-05
Haul Road 2	HR2	1600-1700	1.23309	1.59727E-06	4.25177E-06	1.02873	1.33255E-06	3.54712E-06	5.40276	6.99839E-06	1.8629E-05	4.50715	5.83828E-06	1.55409E-05	5.53588	7.17083E-06	1.9088E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (June) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Haul Road 2	HR2	1700-1800	1.23309	1.59727E-06	4.25177E-06	1.03692	1.34316E-06	3.57536E-06	5.40276	6.99839E-06	1.8629E-05	4.54293	5.88462E-06	1.56643E-05	5.57985	7.22778E-06	1.92397E-05
Haul Road 2	HR2	1800-1900	1.17583	1.5231E-06	4.05433E-06	1.04012	1.34731E-06	3.5864E-06	5.15163	6.6731E-06	1.77631E-05	4.55692	5.90275E-06	1.57125E-05	5.59704	7.25005E-06	1.92989E-05
Haul Road 2	HR2	1900-2000	1.18532	1.53539E-06	4.08705E-06	1.04012	1.34731E-06	3.5864E-06	5.1931	6.72681E-06	1.79061E-05	4.55692	5.90275E-06	1.57125E-05	5.59704	7.25005E-06	1.92989E-05
Haul Road 2	HR2	2000-2100	1.17553	1.52271E-06	4.0533E-06	1.02243	1.32439E-06	3.5254E-06	5.15023	6.67128E-06	1.77583E-05	4.47967	5.80268E-06	1.54462E-05	5.5021	7.12707E-06	1.89716E-05
Haul Road 2	HR2	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0700-0800	1.19502	1.54795E-06	4.11476E-06	1.01653	1.31675E-06	3.50017E-06	5.23567	6.78196E-06	1.80277E-05	4.45399	5.76942E-06	1.53362E-05	5.47052	7.08617E-06	1.88364E-05
Haul Road 3	HR3	0800-0900	1.21341	1.57177E-06	4.17808E-06	1.04602	1.35495E-06	3.60171E-06	5.31631	6.88641E-06	1.83054E-05	4.58269	5.93613E-06	1.57794E-05	5.62871	7.29108E-06	1.93811E-05
Haul Road 3	HR3	0900-1000	1.23639	1.60154E-06	4.2572E-06	1.03063	1.33501E-06	3.54872E-06	5.41725	7.01716E-06	1.8653E-05	4.51564	5.84927E-06	1.55485E-05	5.54627	7.18429E-06	1.90972E-05
Haul Road 3	HR3	1000-1100	1.25028	1.61953E-06	4.30503E-06	1.05561	1.36737E-06	3.63473E-06	5.47761	7.09535E-06	1.88608E-05	4.62497	5.99089E-06	1.59249E-05	5.68058	7.35826E-06	1.95597E-05
Haul Road 3	HR3	1100-1200	1.2294	1.59249E-06	4.23314E-06	1.03532	1.34109E-06	3.56487E-06	5.38637	6.97716E-06	1.85466E-05	4.53623	5.87595E-06	1.56194E-05	5.57155	7.21703E-06	1.91843E-05
Haul Road 3	HR3	1200-1300	1.23309	1.59727E-06	4.24584E-06	1.04202	1.34977E-06	3.58794E-06	5.40276	6.99839E-06	1.86031E-05	4.56511	5.91335E-06	1.57188E-05	5.60713	7.26312E-06	1.93068E-05
Haul Road 3	HR3	1300-1400	1.24968	1.61876E-06	4.30296E-06	1.04202	1.34977E-06	3.58794E-06	5.47512	7.09212E-06	1.88522E-05	4.56511	5.91335E-06	1.57188E-05	5.60713	7.26312E-06	1.93068E-05
Haul Road 3	HR3	1400-1500	1.26437	1.63778E-06	4.35355E-06	1.04861	1.3583E-06	3.61063E-06	5.53967	7.17574E-06	1.90745E-05	4.5942	5.95104E-06	1.5819E-05	5.64281	7.30934E-06	1.94296E-05
Haul Road 3	HR3	1500-1600	1.2275	1.59003E-06	4.22659E-06	1.04202	1.34977E-06	3.58794E-06	5.37807	6.96641E-06	1.85181E-05	4.56511	5.91335E-06	1.57188E-05	5.60713	7.26312E-06	1.93068E-05
Haul Road 3	HR3	1600-1700	1.23309	1.59727E-06	4.24584E-06	1.02873	1.33255E-06	3.54218E-06	5.40276	6.99839E-06	1.86031E-05	4.50715	5.83828E-06	1.55193E-05	5.53588	7.17083E-06	1.90614E-05
Haul Road 3	HR3	1700-1800	1.23309	1.59727E-06	4.24584E-06	1.03692	1.34316E-06	3.57038E-06	5.40276	6.99839E-06	1.86031E-05	4.54293	5.88462E-06	1.56425E-05	5.57985	7.22778E-06	1.92128E-05
Haul Road 3	HR3	1800-1900	1.17583	1.5231E-06	4.04868E-06	1.04012	1.34731E-06	3.5814E-06	5.15163	6.6731E-06	1.77384E-05	4.55692	5.90275E-06	1.56906E-05	5.59704	7.25005E-06	1.9272E-05
Haul Road 3	HR3	1900-2000	1.18532	1.53539E-06	4.08136E-06	1.04012	1.34731E-06	3.5814E-06	5.1931	6.72681E-06	1.78812E-05	4.55692	5.90275E-06	1.56906E-05	5.59704	7.25005E-06	1.9272E-05
Haul Road 3	HR3	2000-2100	1.17553	1.52271E-06	4.04765E-06	1.02243	1.32439E-06	3.52049E-06	5.15023	6.67128E-06	1.77335E-05	4.47967	5.80268E-06	1.54246E-05	5.5021	7.12707E-06	1.89451E-05
Haul Road 3	HR3	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (July) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 1	1	0000-0100	0.079971397	2.68673E-07	2.18569E-06	0.07265514	2.44093E-07	1.98573E-06	0.470936872	1.58216E-06	1.28711E-05	0.426416872	1.43259E-06	1.16544E-05	0.499072011	1.67669E-06	1.36401E-05
Road 1	1	0100-0200	0.060125413	1.23004E-07	1.00066E-06	0.055957248	1.14477E-07	9.31288E-07	0.36065	7.37816E-07	6.00224E-06	0.334661927	6.8465E-07	5.56973E-06	0.390619174	7.99127E-07	6.50102E-06
Road 1	1	0200-0300	0.056953506	8.23089E-08	6.69595E-07	0.053444156	7.72372E-08	6.28336E-07	0.359701688	5.19839E-07	4.22897E-06	0.336041429	4.85645E-07	3.9508E-06	0.389485584	5.62883E-07	4.57913E-06
Road 1	1	0300-0400	0.047420545	4.89514E-08	3.98227E-07	0.044695091	4.6138E-08	3.75339E-07	0.287498545	2.9678E-07	2.41435E-06	0.269993091	2.78709E-07	2.26734E-06	0.314688182	3.24847E-07	2.64268E-06
Road 1	1	0400-0500	0.062567209	1.00991E-07	8.21574E-07	0.058438488	9.43264E-08	7.67359E-07	0.356088488	5.74767E-07	4.67582E-06	0.331686395	5.3538E-07	4.35539E-06	0.390124884	6.29706E-07	5.12275E-06
Road 1	1	0500-0600	0.052845957	1.86468E-07	1.51695E-06	0.047805691	1.68684E-07	1.37227E-06	0.309905266	1.09351E-06	8.89586E-06	0.278595479	9.83032E-07	7.99711E-06	0.32640117	1.15172E-06	9.36938E-06
Road 1	1	0600-0700	0.070453383	4.45623E-07	3.62521E-06	0.064904777	4.10528E-07	3.3397E-06	0.372880237	2.3585E-06	1.91867E-05	0.342087626	2.16373E-06	1.76023E-05	0.406992404	2.57426E-06	2.0942E-05
Road 1	1	0700-0800	0.062651655	6.60853E-07	5.37613E-06	0.054719199	5.77181E-07	4.69545E-06	0.343336317	3.62153E-06	2.94617E-05	0.297425641	3.13726E-06	2.55221E-05	0.35214484	3.71444E-06	3.02175E-05
Road 1	1	0800-0900	0.068938847	8.97965E-07	7.30508E-06	0.05885268	7.66587E-07	6.2363E-06	0.368808285	4.80392E-06	3.90806E-05	0.313067378	4.07787E-06	3.31741E-05	0.371920058	4.84445E-06	3.94104E-05
Road 1	1	0900-1000	0.073788249	9.88829E-07	8.04427E-06	0.064036779	8.58151E-07	6.98118E-06	0.407881975	5.46599E-06	4.44666E-05	0.352461569	4.7233E-06	3.84248E-05	0.416498347	5.58145E-06	4.54059E-05
Road 1	1	1000-1100	0.08665364	1.13034E-06	9.19545E-06	0.073436374	9.57926E-07	7.79287E-06	0.462940432	6.03873E-06	4.9126E-05	0.390947986	5.09964E-06	4.14863E-05	0.46438436	6.05757E-06	4.92792E-05
Road 1	1	1100-1200	0.077960148	9.86208E-07	8.02294E-06	0.067256068	8.50799E-07	6.92138E-06	0.446052018	5.64263E-06	4.59036E-05	0.383259926	4.8483E-06	3.94416E-05	0.450515994	5.69909E-06	4.6363E-05
Road 1	1	1200-1300	0.08069931	1.01026E-06	8.21858E-06	0.069284318	8.67354E-07	7.05606E-06	0.455945232	5.70787E-06	4.64344E-05	0.389976732	4.88203E-06	3.9716E-05	0.459261049	5.74938E-06	4.67721E-05
Road 1	1	1300-1400	0.084581467	1.12553E-06	9.15636E-06	0.072796812	9.68711E-07	7.88061E-06	0.468121241	6.22932E-06	5.06764E-05	0.401525487	5.34312E-06	4.34671E-05	0.474322299	6.31183E-06	5.13477E-05
Road 1	1	1400-1500	0.080665826	1.16426E-06	9.47147E-06	0.069136398	9.97858E-07	8.11773E-06	0.436942367	6.30647E-06	5.13041E-05	0.373274356	5.38754E-06	4.38284E-05	0.442410754	6.3854E-06	5.19461E-05
Road 1	1	1500-1600	0.087229874	1.17223E-06	9.53629E-06	0.07383486	9.92225E-07	8.0719E-06	0.470915279	6.32837E-06	5.14822E-05	0.396908268	5.33383E-06	4.33915E-05	0.470743128	6.32605E-06	5.14634E-05
Road 1	1	1600-1700	0.083030358	1.17658E-06	9.57161E-06	0.069621457	9.86565E-07	8.02585E-06	0.453881669	6.43169E-06	5.23228E-05	0.378593921	5.36484E-06	4.36437E-05	0.448215377	6.3514E-06	5.16696E-05
Road 1	1	1700-1800	0.064083654	9.11701E-07	7.41682E-06	0.055254499	7.86091E-07	6.39496E-06	0.357456082	5.08543E-06	4.13707E-05	0.306413245	4.35926E-06	3.54632E-05	0.361667744	5.14535E-06	4.18582E-05
Road 1	1	1800-1900	0.056172532	8.1602E-07	6.63844E-06	0.049910891	7.25057E-07	5.89845E-06	0.334699819	4.86219E-06	3.95547E-05	0.295357868	4.29067E-06	3.49052E-05	0.34526876	5.01573E-06	4.08037E-05
Road 1	1	1900-2000	0.067507487	7.5135E-07	6.11235E-06	0.05991774	6.66877E-07	5.42515E-06	0.385383592	4.28927E-06	3.48939E-05	0.340118516	3.78548E-06	3.07954E-05	0.400036256	4.45236E-06	3.62206E-05
Road 1	1	2000-2100	0.060199423	5.68324E-07	4.6234E-06	0.053430417	5.0442E-07	4.10353E-06	0.35408994	3.34285E-06	2.71946E-05	0.312484632	2.95007E-06	2.39993E-05	0.36591505	3.45449E-06	2.81028E-05
Road 1	1	2100-2200	0.064202048	5.53092E-07	4.49949E-06	0.055825316	4.80928E-07	3.91242E-06	0.381404096	3.28574E-06	2.673E-05	0.329545447	2.83899E-06	2.30956E-05	0.385370763	3.31992E-06	2.7008E-05
Road 1	1	2200-2300	0.064039954	5.22849E-07	4.25345E-06	0.055664851	4.54471E-07	3.69719E-06	0.380572391	3.10715E-06	2.52771E-05	0.328115448	2.67887E-06	2.1793E-05	0.383780299	3.13334E-06	2.54902E-05
Road 1	1	2300-0000	0.054116513	3.96123E-07	3.22252E-06	0.048473051	3.54814E-07	2.88646E-06	0.329442333	2.41146E-06	1.96176E-05	0.292779205	2.14309E-06	1.74344E-05	0.341252256	2.49791E-06	2.03208E-05
Road 2	2	0000-0100	0.132388462	1.59356E-07	1.02911E-06	0.120273462	1.44774E-07	9.34934E-07	0.558203269	6.71911E-07	4.33914E-06	0.505798846	6.08832E-07	3.93178E-06	0.626072308	7.53606E-07	4.86671E-06
Road 2	2	0100-0200	0.090667941	7.1359E-08	4.6083E-07	0.084355	6.63905E-08	4.28743E-07	0.445545588	3.50661E-07	2.26453E-06	0.41352	3.25456E-07	2.10176E-06	0.497875	3.91846E-07	2.5305E-06
Road 2	2	0200-0300	0.092737826	4.93743E-08	3.18854E-07	0.087080435	4.63623E-08	2.99403E-07	0.502188696	2.67369E-07	1.72664E-06	0.470082174	2.50275E-07	1.61625E-06	0.557162609	2.96638E-07	1.91566E-06
Road 2	2	0300-0400	0.079108	2.74681E-08	1.77386E-07	0.074591333	2.58998E-08	1.67258E-07	0.284933333	9.89352E-08	6.38914E-07	0.267702	9.29521E-08	6.00275E-07	0.342293333	1.18852E-07	7.67534E-07
Road 2	2	0400-0500	0.108947037	6.80919E-08	4.39731E-07	0.101805185	6.36282E-08	4.10905E-07	0.52259963	3.26625E-07	2.10931E-06	0.487361111	3.04601E-07	1.96708E-06	0.589166296	3.68229E-07	2.37799E-06
Road 2	2	0500-0600	0.088529123	1.16809E-07	7.54343E-07	0.080089474	1.05674E-07	6.8243E-07	0.389006667	5.13273E-07	3.31466E-06	0.350306667	4.6221E-07	2.98491E-06	0.43039614	5.67884E-07	3.66734E-06
Road 2	2	0600-0700	0.123504519	2.97326E-07	1.9201E-06	0.113721346	2.73774E-07	1.768E-06	0.49689875	1.19624E-06	7.72519E-06	0.456388942	1.09871E-06	7.09539E-06	0.570110288	1.37249E-06	8.86339E-06
Road 2	2	0700-0800	0.107197125	3.97026E-07	2.56396E-06	0.093575875	3.46577E-07	2.23816E-06	0.44314975	1.6413E-06	1.05993E-05	0.384436375	1.42384E-06	9.19501E-06	0.47801225	1.77042E-06	1.14332E-05
Road 2	2	0800-0900	0.123732171	8.70708E-07	5.62295E-06	0.105535428	7.42657E-07	4.796E-06	0.518087632	3.6458E-06	2.35442E-05	0.439635658	3.09373E-06	1.9979E-05	0.545171086	3.83639E-06	2.4775E-05
Road 2	2	0900-1000	0.145497619	8.48736E-07	5.48105E-06	0.126121746	7.3571E-07	4.75114E-06	0.618139206	3.60581E-06	2.3286E-05	0.534559563	3.11826E-06	2.01374E-05	0.66068131	3.85397E-06	2.48886E-05
Road 2	2	1000-1100	0.164267968	7.11067E-07	4.592E-06	0.139155722	6.02364E-07	3.89001E-06	0.691275561	2.99233E-06	1.93242E-05	0.584417914	2.52977E-06	1.6337E-05	0.723573636	3.13214E-06	2.0227E-05
Road 2	2	1100-1200	0.193548525	8.19893E-07	5.29479E-06	0.166875574	7.06903E-07	4.56511E-06	0.789487978	3.34436E-06	2.15975E-05	0.67967235	2.87917E-06	1.85934E-05	0.846547923	3.58607E-06	2.31585E-05
Road 2	2	1200-1300	0.149735316	6.58558E-07	4.2529E-06	0.128567579	5.65459E-07	3.65168E-06	0.654036579	2.87655E-06	1.85765E-05	0.559772263	2.46196E-06	1.58991E-05	0.688339842	3.02742E-06	1.95508E-05
Road 2	2	1300-1400	0.165756682	8.55642E-07	5.52565E-06	0.142516233	7.35674E-07	4.75091E-06	0.676456726	3.49189E-06	2.25503E-05	0.57996426	2.9938E-06	1.93336E-05	0.722480493	3.72947E-06	2.40846E-05
Road 2	2	1400-1500	0.143290606	5.47291E-07	3.53435E-06	0.122775879	4.68936E-07	3.02834E-06	0.618221818	2.36126E-06	1.52488E-05	0.528676	2.01925E-06	1.30401E-05	0.651451879	2.48818E-06	1.60685E-05
Road 2	2	1500-1600	0.179951913	7.62296E-07	4.92284E-06	0.152054262	6.44119E-07	4.15966E-06	0.707984208	2.9991E-06	1.93679E-05	0.597140546	2.52955E-06	1.63356E-05	0.749194809	3.17367E-06	2.04953E-05
Road 2	2	1600-1700	0.150461176	7.6972E-07	4.97078E-06	0.126122398	6.45209E-07	4.1667E-06	0.631490905	3.23054E-06	2.08625E-05	0.52758543	2.69899E-06	1.74298E-05	0.653707828	3.3442E-06	2.15965E-05
Road 2	2	1700-1800	0.112291802	5.77055E-07	3.72657E-06	0.096857883	4.97742E-07	3.21437E-06	0.444310586	2.28326E-06	1.47451E-05	0.381751892	1.96178E-06	1.2669E-05	0.478609775	2.45952E-06	1.58834E-05
Road 2	2	1800-1900	0.12188852	7.05373E-07	4.55523E-06	0.10836404	6.27107E-07	4.04979E-06	0.54666464	3.16357E-06	2.043E-05	0.48425768	2.80242E-06	1.80977E-05	0.59262172	3.42952E-06	2.21475E-05
Road 2	2	1900-2000	0.103601834	4.05294E-07	2.61735E-06	0.091936213	3.59658E-07	2.32264E-06	0.467910769	1.83048E-06	1.18211E-05	0.413269231	1.61672E-06	1.04406E-05	0.505205444	1.97638E-06	1.27633E-05
Road 2	2	2000-2100	0.096673265	3.28958E-07	2.12438E-06	0.085747823	2.91781E-07	1.88429E-06	0.409891905	1.39477E-06	9.0073E-06	0.361455034	1.22995E-06	7.9429E-06	0.447202857	1.52173E-06	9.8272E-06
Road 2	2	2100-2200	0.076231373	2.69986E-07	1.74354E-06	0.066258627	2.34666E-07	1.51545E-06	0.347558954	1.23094E-06	7.94928E-06	0.299046928	1.05912E-06	6.83972E-06	0.365305556	1.29379E-06	8.35517E-06
Road 2	2	2200-2300	0.11341632	3.28172E-07	2.1193E-06	0.09858224	2.8525E-07	1.84211E-06	0.48201376	1.39472E-06	9.00694E-06	0.41623792	1.20439E-06	7.77785E-06	0.51482016	1.48964E-06	9.61996E-06
Road 2	2	2300-0000	0.097743514	2.51147E-07	1.62188E-06	0.087586036	2.25047E-07	1.45333E-06	0.439136396	1.12834E-06	7.28669E-06	0.390936396	1.00449E-06	6.48689E-06	0.478522432	1.22954E-06	7.94023E-06
Road 3	3	0000-0100	0.083028304	3.06299E-07	1.19051E-05	0.075361783	2.78017E-07	1.08058E-05	0.455492565	1.68036E-06	6.53112E-05	0.412010304	1.51995E-06	5.90765E-05	0.487372087	1.79796E-06	6.98823E-05
Road 3	3	0100-0200	0.06049007	1.37773E-07	5.3549E-06	0.056253451	1.28124E-07	4.97985E-06	0.350528239	7.98369E-07	3.10306E-05	0.324987324	7.40196E-07	2.87696E-05	0.381240775	8.6832E-07	3.37494E-05
Road 3	3	0200-0300	0.058275556	9.25367E-08	3.59667E-06	0.054653636	8.67854E-08	3.37313E-06	0.359685556	5.7115E-07	2.21992E-05	0.335879495	5.33348E-07	2.07299E-05	0.390533131	6.20134E-07	2.4103E-05
Road 3	3	0300-0400	0.048068857	5.39702E-08	2.09769E-06	0.04554	5.11309E-08	1.98733E-06	0.261932714	2.9409E-07	1.14305E-05	0.247310857	2.77673E-07	1.07924E-05	0.292850857	3.28804E-07	1.27798E-05
Road 3	3	0400-0500	0.065128673	1.18044E-07	4.58806E-06	0.060820354	1.10235E-07	4.28456E-06	0.358015664	6.48892E-07	2.52208E-05	0.333302389	6.041E-07	2.34799E-05	0.394122743	7.14335E-07	2.77644E-05
Road 3	3	0500-0600	0.05408313	2.13397E-07	8.29422E-06	0.050251382	1.98278E-07	7.70658E-06	0.29846187	1.17765E-06	4.57723E-05	0.275960122	1.08886E-06	4.23214E-05	0.326211504	1.28714E-06	5.0028E-05
Road 3	3	0600-0700	0.075985	5.41132E-07	2.10324E-05	0.068928356	4.90877E-07	1.90792E-05	0.377227635	2.68645E-06	0.000104416	0.340811847	2.42711E-06	9.43358E-05	0.409740203	2.91799E-06	0.000113415
Road 3	3	0700-0800	0.064953343	7.57405E-07	2.94384E-05	0.056608239	6.60095E-07	2.56562E-05	0.338615695	3.94851E-06	0.000153469	0.2928526	3.41488E-06	0.000132728	0.349460839	4.07498E-06	0.000158384
Road 3	3	0800-0900	0.073578134	1.17662E-06	4.57323E-05	0.063916169	1.02211E-06	3.97269E-05	0.362661775	5.79948E-06	0.000225411	0.313432808	5.01224E-06	0.000194813	0.377348977	6.03435E-06	0.00023454
Road 3	3	0900-1000	0.08066001	1.24847E-06	4.85249E-05	0.06952687	1.07615E-06	4.18272E-05	0.414677845	6.41845E-06	0.000249469	0.356085005	5.51154E-06	0.00021422	0.425611876	6.58769E-06	0.000256047
Road 3	3	1000-1100	0.092536485	1.30465E-06	5.07085E-05	0.079682924	1.12343E-06	4.36649E-05	0.465904516	6.56868E-06	0.000255308	0.399862935	5.63757E-06	0.000219118	0.479545859	6.761E-06	0.000262783
Road 3	3	1100-1200	0.09092219	1.24543E-06	4.84068E-05	0.07689411	1.05328E-06	4.09383E-05	0.470772354	6.44853E-06	0.000250638	0.39634322	5.42902E-06	0.000211012	0.47323733	6.4823E-06	0.000251951
Road 3	3	1200-1300	0.085979309	1.17773E-06	4.57752E-05	0.072852623	9.97919E-07	3.87866E-05	0.455179016	6.23494E-06	0.000242336	0.384169122	5.26226E-06	0.000204531	0.457021745	6.26018E-06	0.000243318

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (July) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 3	3	1300-1400	0.09152069	1.36079E-06	5.28905E-05	0.078064779	1.16072E-06	4.51142E-05	0.465588015	6.92267E-06	0.000269067	0.395630992	5.8825E-06	0.000228638	0.473695771	7.04322E-06	0.000273752
Road 3	3	1400-1500	0.084687762	1.2687E-06	4.93113E-05	0.071936906	1.07768E-06	4.18868E-05	0.437607056	6.55577E-06	0.000254806	0.370369208	5.54848E-06	0.000215655	0.442306113	6.62616E-06	0.000257542
Road 3	3	1500-1600	0.094769687	1.36046E-06	5.28775E-05	0.079657777	1.14352E-06	4.44457E-05	0.476970648	6.8471E-06	0.00026613	0.399289218	5.73196E-06	0.000222787	0.478946994	6.87548E-06	0.000267232
Road 3	3	1600-1700	0.088419928	1.38418E-06	5.37996E-05	0.075649549	1.18426E-06	4.60294E-05	0.451800645	7.07276E-06	0.0002749	0.384878863	6.02513E-06	0.000234182	0.460528412	7.20939E-06	0.000280211
Road 3	3	1700-1800	0.068499448	1.07563E-06	4.18069E-05	0.058683524	9.21491E-07	3.5816E-05	0.351245271	5.51551E-06	0.000214374	0.2991738	4.69784E-06	0.000182593	0.357857324	5.61933E-06	0.000218409
Road 3	3	1800-1900	0.06463036	1.06463E-06	4.13795E-05	0.056185813	9.25528E-07	3.59729E-05	0.354693817	5.84274E-06	0.000227092	0.306195794	5.04385E-06	0.000196042	0.362381607	5.96937E-06	0.000232015
Road 3	3	1900-2000	0.067304789	8.20449E-07	3.18888E-05	0.059638684	7.26999E-07	2.82566E-05	0.369556579	4.50492E-06	0.000175095	0.325573316	3.96876E-06	0.000154256	0.385212	4.69576E-06	0.000182512
Road 3	3	2000-2100	0.061820863	6.43535E-07	2.50126E-05	0.054765747	5.70093E-07	2.21581E-05	0.337420077	3.51243E-06	0.000136519	0.29717319	3.09347E-06	0.000120236	0.351938937	3.66357E-06	0.000142394
Road 3	3	2100-2200	0.061483268	6.06491E-07	2.35728E-05	0.054847919	5.41038E-07	2.10288E-05	0.34594187	3.41248E-06	0.000132635	0.306656244	3.02496E-06	0.000117572	0.361504163	3.56599E-06	0.000138601
Road 3	3	2200-2300	0.067735115	6.11666E-07	2.37739E-05	0.058797815	5.3096E-07	2.06371E-05	0.370414192	3.34494E-06	0.000130009	0.318983606	2.88051E-06	0.000111958	0.377781421	3.41147E-06	0.000132595
Road 3	3	2300-0000	0.057229721	4.60805E-07	1.79103E-05	0.051213625	4.12365E-07	1.60276E-05	0.327213705	2.63468E-06	0.000102403	0.29052012	2.33923E-06	9.09198E-05	0.341733745	2.75159E-06	0.000106947
Road 4	4	0000-0100	0.222369429	1.8016E-07	1.92908E-06	0.201689714	1.63406E-07	1.74968E-06	1.097667143	8.89314E-07	9.5224E-06	0.995157143	8.06262E-07	8.63311E-06	1.196846857	9.69668E-07	1.03828E-05
Road 4	4	0100-0200	0.2037465	9.43271E-08	1.01001E-06	0.189396	8.76833E-08	9.38876E-07	1.0077865	4.66568E-07	4.99581E-06	0.936772	4.33691E-07	4.64378E-06	1.126168	5.21374E-07	5.58265E-06
Road 4	4	0200-0300	0.216523846	6.51576E-08	6.97681E-07	0.203156154	6.1135E-08	6.54607E-07	1.035786154	3.11695E-07	3.3375E-06	0.971747692	2.92424E-07	3.13115E-06	1.174903846	3.53559E-07	3.78576E-06
Road 4	4	0300-0400	0.194088571	3.14495E-08	3.36748E-07	0.18394	2.98051E-08	3.1914E-07	0.996115714	1.61408E-07	1.72828E-06	0.944222857	1.52999E-07	1.63825E-06	1.128162857	1.82804E-07	1.95739E-06
Road 4	4	0400-0500	0.202130714	6.55053E-08	7.01403E-07	0.188675	6.11447E-08	6.54711E-07	0.967255714	3.13463E-07	3.35642E-06	0.902824286	2.92582E-07	3.13284E-06	1.091499286	3.53727E-07	3.78756E-06
Road 4	4	0500-0600	0.191545833	1.06414E-07	1.13944E-06	0.177972083	9.88734E-08	1.05869E-06	0.881187917	4.89549E-07	5.24188E-06	0.818334583	4.5463E-07	4.86799E-06	0.996306667	5.53504E-07	5.92668E-06
Road 4	4	0600-0700	0.216135472	2.65166E-07	2.83929E-06	0.196000566	2.40464E-07	2.57478E-06	1.000007358	1.22686E-06	1.31367E-05	0.90641566	1.11204E-06	1.19072E-05	1.102416226	1.3525E-06	1.4482E-05
Road 4	4	0700-0800	0.225212826	4.7962E-07	5.13557E-06	0.19630913	4.18066E-07	4.47647E-06	1.080521413	2.30111E-06	2.46393E-05	0.940750761	2.00345E-06	2.14521E-05	1.137059891	2.42152E-06	2.59286E-05
Road 4	4	0800-0900	0.236271548	8.47734E-07	9.07717E-06	0.205151032	7.36074E-07	7.88157E-06	1.137963226	4.08297E-06	4.37187E-05	0.987615613	3.54353E-06	3.79426E-05	1.192766645	4.2796E-06	4.58242E-05
Road 4	4	0900-1000	0.243212162	8.33227E-07	8.92184E-06	0.209134257	7.16478E-07	7.67175E-06	1.111883041	3.80923E-06	4.07876E-05	0.955511149	3.27351E-06	3.50514E-05	1.164645405	3.98999E-06	4.27231E-05
Road 4	4	1000-1100	0.274101667	9.13672E-07	9.78322E-06	0.235665833	7.85553E-07	8.41137E-06	1.256837083	4.18946E-06	4.48589E-05	1.080545486	3.60182E-06	3.85668E-05	1.316211319	4.38737E-06	4.69781E-05
Road 4	4	1100-1200	0.253878065	9.10905E-07	9.75359E-06	0.214314516	7.68953E-07	8.23362E-06	1.156631548	4.14995E-06	4.44359E-05	0.976188452	3.50253E-06	3.75036E-05	1.190502968	4.27148E-06	4.57372E-05
Road 4	4	1200-1300	0.261033649	8.94282E-07	9.57559E-06	0.2208775	7.5671E-07	8.10253E-06	1.241368919	4.25284E-06	4.55376E-05	1.049928446	3.59698E-06	3.85149E-05	1.270805946	4.35369E-06	4.66174E-05
Road 4	4	1300-1400	0.268047667	9.30721E-07	9.96577E-06	0.228355267	7.929E-07	8.49004E-06	1.245139	4.3234E-06	4.62931E-05	1.060264933	3.68148E-06	3.94197E-05	1.2886202	4.47438E-06	4.79097E-05
Road 4	4	1400-1500	0.244989786	7.93948E-07	8.50126E-06	0.207801857	6.73432E-07	7.21083E-06	1.174444429	3.80607E-06	4.07538E-05	0.995554357	3.22633E-06	3.45462E-05	1.203356214	3.89977E-06	4.1757E-05
Road 4	4	1500-1600	0.27718128	8.02029E-07	8.58779E-06	0.23251984	6.728E-07	7.20406E-06	1.28769648	3.72597E-06	3.98962E-05	1.08007376	3.12521E-06	3.34635E-05	1.3125936	3.79801E-06	4.06675E-05
Road 4	4	1600-1700	0.256496774	7.36241E-07	7.88336E-06	0.219245	6.29314E-07	6.73843E-06	1.203451129	3.45435E-06	3.69877E-05	1.028180968	2.95126E-06	3.16008E-05	1.247425968	3.58057E-06	3.83393E-05
Road 4	4	1700-1800	0.240557953	7.07196E-07	7.57235E-06	0.206091181	6.0587E-07	6.4874E-06	1.147017874	3.37202E-06	3.61062E-05	0.981903465	2.88661E-06	3.09086E-05	1.187994646	3.49248E-06	3.7396E-05
Road 4	4	1800-1900	0.265150472	6.50601E-07	6.96636E-06	0.230552925	5.65709E-07	6.05737E-06	1.276431415	3.13198E-06	3.3536E-05	1.109571132	2.72256E-06	2.9152E-05	1.340124057	3.28827E-06	3.52094E-05
Road 4	4	1900-2000	0.233459865	3.99908E-07	4.28205E-06	0.206837568	3.54305E-07	3.79375E-06	1.125951892	1.92871E-06	2.06519E-05	0.997405135	1.70852E-06	1.82941E-05	1.204242703	2.06282E-06	2.20878E-05
Road 4	4	2000-2100	0.200416735	2.27325E-07	2.4341E-06	0.177476327	2.01304E-07	2.15548E-06	0.969832449	1.10004E-06	1.17788E-05	0.857977551	9.73169E-07	1.04203E-05	1.035453878	1.17447E-06	1.25758E-05
Road 4	4	2100-2200	0.169877027	1.45497E-07	1.55792E-06	0.15170973	1.29937E-07	1.39131E-06	0.83951973	7.19033E-07	7.6991E-06	0.748896486	6.41416E-07	6.86801E-06	0.900606216	7.71353E-07	8.25932E-06
Road 4	4	2200-2300	0.23371254	3.40831E-07	3.64947E-06	0.202939524	2.95953E-07	3.16894E-06	1.110819048	1.61994E-06	1.73457E-05	0.963925238	1.40572E-06	1.50519E-05	1.166864762	1.70168E-06	1.82208E-05
Road 4	4	2300-0000	0.21030102	2.38536E-07	2.55414E-06	0.188145714	2.13406E-07	2.28506E-06	1.026540408	1.16436E-06	1.24675E-05	0.91787898	1.04111E-06	1.11478E-05	1.106024694	1.25452E-06	1.34329E-05
Road 5	5	0000-0100	0.070287306	2.54607E-07	3.4431E-06	0.063829223	2.31213E-07	3.12674E-06	0.390425855	1.41427E-06	1.91254E-05	0.352787668	1.27793E-06	1.72817E-05	0.416616891	1.50914E-06	2.04084E-05
Road 5	5	0100-0200	0.045914262	1.05134E-07	1.42175E-06	0.042702951	9.77808E-08	1.32231E-06	0.27959082	6.40204E-07	8.6576E-06	0.258912131	5.92854E-07	8.01728E-06	0.301615082	6.90635E-07	9.33959E-06
Road 5	5	0200-0300	0.042984419	6.93818E-08	9.38263E-07	0.040306047	6.50586E-08	8.79799E-07	0.292116279	4.71509E-07	6.3763E-06	0.272249884	4.39442E-07	5.94266E-06	0.31255593	5.04501E-07	6.82246E-06
Road 5	5	0300-0400	0.037762698	4.46518E-08	6.03835E-07	0.035770159	4.22958E-08	5.71974E-07	0.20498254	2.42378E-07	3.27772E-06	0.19320127	2.28447E-07	3.08934E-06	0.228971429	2.70743E-07	3.66131E-06
Road 5	5	0400-0500	0.053296566	9.90308E-08	1.33921E-06	0.049777778	9.24925E-08	1.25079E-06	0.302106869	5.61347E-07	7.5912E-06	0.281000202	5.22129E-07	7.06085E-06	0.33077798	6.14621E-07	8.31164E-06
Road 5	5	0500-0600	0.044236409	1.82658E-07	2.47012E-06	0.0411045	1.69726E-07	2.29523E-06	0.254730909	1.05182E-06	1.42239E-05	0.235203818	9.71187E-07	1.31335E-05	0.276308318	1.14091E-06	1.54288E-05
Road 5	5	0600-0700	0.065830851	4.79399E-07	6.483E-06	0.059720928	4.34905E-07	5.8813E-06	0.328549665	2.39259E-06	3.23555E-05	0.296532629	2.15943E-06	2.92024E-05	0.356253557	2.59434E-06	3.50837E-05
Road 5	5	0700-0800	0.053082148	6.30649E-07	8.52839E-06	0.046259447	5.49591E-07	7.43223E-06	0.278419889	3.3078E-06	4.47321E-05	0.240176935	2.85345E-06	3.85878E-05	0.286436382	3.40304E-06	4.602E-05
Road 5	5	0800-0900	0.058217438	9.2112E-07	1.24565E-05	0.050587663	8.00402E-07	1.0824E-05	0.283303132	4.48244E-06	6.06169E-05	0.244334093	3.86587E-06	5.22789E-05	0.294921756	4.66627E-06	6.31029E-05
Road 5	5	0900-1000	0.065139265	9.97628E-07	1.34911E-05	0.056230699	8.61191E-07	1.1646E-05	0.345794767	5.29596E-06	7.16182E-05	0.296870956	4.54667E-06	6.14855E-05	0.353101654	5.40786E-06	7.31315E-05
Road 5	5	1000-1100	0.074980204	1.03295E-06	1.39687E-05	0.064605967	8.9003E-07	1.2036E-05	0.387213501	5.33436E-06	7.21376E-05	0.332098243	4.57508E-06	6.18696E-05	0.39670421	5.46511E-06	7.39057E-05
Road 5	5	1100-1200	0.073746724	9.67511E-07	1.30838E-05	0.062415923	8.18858E-07	1.10736E-05	0.397815508	5.21909E-06	7.05787E-05	0.334594678	4.38967E-06	5.93623E-05	0.397010601	5.20853E-06	7.04359E-05
Road 5	5	1200-1300	0.068742037	9.12174E-07	1.23355E-05	0.058298175	7.73589E-07	1.04614E-05	0.373492008	4.95606E-06	6.70217E-05	0.314913041	4.17874E-06	5.65099E-05	0.373211216	4.95233E-06	6.69713E-05
Road 5	5	1300-1400	0.075230064	1.09711E-06	1.48364E-05	0.064216628	9.36492E-07	1.26644E-05	0.390777735	5.69884E-06	7.70665E-05	0.331764015	4.83823E-06	6.54282E-05	0.395980644	5.77472E-06	7.80926E-05
Road 5	5	1400-1500	0.071198237	1.06102E-06	1.43484E-05	0.06051903	9.01879E-07	1.21963E-05	0.371635227	5.53826E-06	7.48949E-05	0.314351096	4.68459E-06	6.33505E-05	0.374870126	5.58647E-06	7.55468E-05
Road 5	5	1500-1600	0.080149935	1.15832E-06	1.56642E-05	0.067406481	9.74155E-07	1.31737E-05	0.408139961	5.89842E-06	7.97654E-05	0.341441299	4.93449E-06	6.67301E-05	0.408847779	5.90865E-06	7.99038E-05
Road 5	5	1600-1700	0.075288148	1.20535E-06	1.63001E-05	0.064444455	1.03174E-06	1.39524E-05	0.390662415	6.25441E-06	8.45796E-05	0.332496659	5.32319E-06	7.19865E-05	0.396941114	6.35493E-06	8.59389E-05
Road 5	5	1700-1800	0.054164806	8.65132E-07	1.16993E-05	0.046410928	7.41286E-07	1.00245E-05	0.280930811	4.48709E-06	6.06798E-05	0.238788472	3.81398E-06	5.15772E-05	0.285199401	4.55527E-06	6.16017E-05
Road 5	5	1800-1900	0.050541143	8.71759E-07	1.1789E-05	0.043931153	7.57746E-07	1.02471E-05	0.286206931	4.93664E-06	6.67591E-05	0.246470261	4.25124E-06	5.74903E-05	0.290401415	5.00899E-06	6.77375E-05
Road 5	5	1900-2000	0.057299373	7.37751E-07	9.97674E-06	0.050771283	6.53699E-07	8.8401E-06	0.32160258	4.14075E-06	5.59962E-05	0.282948499	3.64307E-06	4.92659E-05	0.333719781	4.29677E-06	5.8106E-05
Road 5	5	2000-2100	0.0547215	6.16233E-07	8.33344E-06	0.048485083	5.46003E-07	7.3837E-06	0.302757217	3.40943E-06	4.61063E-05	0.266408333	3.00009E-06	4.05708E-05	0.314893417	3.5461E-06	4.79545E-05
Road 5	5	2100-2200	0.057317163	6.21797E-07	8.40867E-06	0.051128651	5.54661E-07	7.50079E-06	0.325904118	3.53552E-06	4.78115E-05	0.288670484	3.1316E-06	4.23492E-05	0.339799135	3.68626E-06	4.985E-05
Road 5	5	2200-2300	0.056642545	5.30492E-07	7.17395E-06	0.049163086	4.60443E-07	6.22665E-06	0.318012204	2.97838E-06	4.02772E-05	0.273194629	2.55864E-06	3.46009E-05	0.322357715	3.01908E-06	4.08276E-05
Road 5	5	2300-0000	0.04807011	4.08704E-07	5.52698E-06	0.043008587	3.6567E-07	4.94502E-06	0.282039956	2.39797E-06	3.24283E-05	0.249929161	2.12496E-06	2.87362E-05	0.292937748	2.49063E-06	3.36813E-05
Road 6	6	0000-0100	0.0419684	1.18154E-07	4.22354E-06	0.038062733	1.07159E-07	3.83049E-06	0.2685548	7.56066E-07	2.70263E-05	0.2414148	6.79659E-07	2.4295E-05	0.279477533	7.86817E-07	2.81255E-05
Road 6	6	0100-0200	0.054127018	1.15812E-07	4.13982E-06	0.050337982	1.07705E-07	3.85002E-06	0.302968333	6.48243E-07	2.31721E-05	0.280288421	5.99716E-07	2.14374E-05	0.330626404	7.07421E-07	2.52874E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (July) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 6	6	0200-0300	0.048498101	7.19097E-08	2.57048E-06	0.045520253	6.74944E-08	2.41265E-06	0.274835949	4.07508E-07	1.45668E-05	0.256668354	3.80571E-07	1.36039E-05	0.302188608	4.48065E-07	1.60165E-05
Road 6	6	0300-0400	0.049282903	5.73487E-08	2.04998E-06	0.046773871	5.44291E-08	1.94562E-06	0.311923226	3.62974E-07	1.29748E-05	0.295032097	3.43318E-07	1.22722E-05	0.341805968	3.97747E-07	1.42178E-05
Road 6	6	0400-0500	0.053913444	9.107E-08	3.25538E-06	0.050364222	8.50747E-08	3.04108E-06	0.314047444	5.30486E-07	1.89627E-05	0.291867778	4.9302E-07	1.76235E-05	0.342232	5.78095E-07	2.06645E-05
Road 6	6	0500-0600	0.049526358	1.50587E-07	5.38287E-06	0.046050741	1.40019E-07	5.00512E-06	0.296351605	9.01069E-07	3.22096E-05	0.273784568	8.32453E-07	2.97568E-05	0.319835309	9.72472E-07	3.47619E-05
Road 6	6	0600-0700	0.053746103	2.92537E-07	1.0457E-05	0.048767379	2.65438E-07	9.48833E-06	0.336534552	1.83174E-06	6.54772E-05	0.303183759	1.65021E-06	5.89884E-05	0.351951138	1.91565E-06	6.84767E-05
Road 6	6	0700-0800	0.052178268	4.52447E-07	1.61731E-05	0.045515931	3.94676E-07	1.41081E-05	0.298477208	2.58815E-06	9.25158E-05	0.257557965	2.23333E-06	7.98325E-05	0.303073896	2.62801E-06	9.39405E-05
Road 6	6	0800-0900	0.045147009	5.60948E-07	2.00516E-05	0.039197387	4.87025E-07	1.74092E-05	0.265021254	3.29287E-06	0.000117707	0.22708574	2.82152E-06	0.000100858	0.266283127	3.30855E-06	0.000118267
Road 6	6	0900-1000	0.048227662	5.72975E-07	2.04815E-05	0.041521706	4.93304E-07	1.76336E-05	0.27207278	3.2324E-06	0.000115545	0.231763112	2.75349E-06	9.84262E-05	0.273284818	3.2468E-06	0.00011606
Road 6	6	1000-1100	0.065431626	6.57018E-07	2.34857E-05	0.056314318	5.65468E-07	2.02132E-05	0.357472748	3.58949E-06	0.00012831	0.305604991	3.06867E-06	0.000109692	0.361919308	3.63414E-06	0.000129906
Road 6	6	1100-1200	0.075280489	7.51675E-07	2.68693E-05	0.063702895	6.36072E-07	2.2737E-05	0.393229662	3.92639E-06	0.000140353	0.330820977	3.30324E-06	0.000118078	0.394523872	3.93931E-06	0.000140815
Road 6	6	1200-1300	0.072565182	7.12305E-07	2.5462E-05	0.061559771	6.04275E-07	2.16004E-05	0.363697553	3.57008E-06	0.000127616	0.307089216	3.01441E-06	0.000107753	0.368648987	3.61868E-06	0.000129353
Road 6	6	1300-1400	0.084178714	8.23144E-07	2.94241E-05	0.071822534	7.02319E-07	2.5105E-05	0.429357159	4.19848E-06	0.000150079	0.364626372	3.56551E-06	0.000127453	0.436448906	4.26783E-06	0.000152558
Road 6	6	1400-1500	0.08039676	8.66136E-07	3.09609E-05	0.068306132	7.35881E-07	2.63047E-05	0.403663432	4.34878E-06	0.000155451	0.341361707	3.67758E-06	0.000131459	0.40966784	4.41346E-06	0.000157763
Road 6	6	1500-1600	0.071182242	7.50834E-07	2.68393E-05	0.059824537	6.31032E-07	2.25568E-05	0.370178327	3.90466E-06	0.000139576	0.309039146	3.25976E-06	0.000116523	0.368863683	3.89079E-06	0.00013908
Road 6	6	1600-1700	0.073689653	7.96645E-07	2.84768E-05	0.063091076	6.82066E-07	2.43811E-05	0.365983299	3.95658E-06	0.000141432	0.311504271	3.36761E-06	0.000120379	0.374595347	4.04968E-06	0.00014476
Road 6	6	1700-1800	0.053944721	6.1761E-07	2.20771E-05	0.046269574	5.29738E-07	1.8936E-05	0.277348311	3.17535E-06	0.000113506	0.235888426	2.70067E-06	9.65382E-05	0.282158	3.23041E-06	0.000115474
Road 6	6	1800-1900	0.052547562	6.79528E-07	2.42904E-05	0.045697576	5.90947E-07	2.11239E-05	0.275401147	3.5614E-06	0.000127306	0.237402235	3.07001E-06	0.00010974	0.283099811	3.66096E-06	0.000130864
Road 6	6	1900-2000	0.06100521	5.99976E-07	2.14467E-05	0.054026011	5.31337E-07	1.89931E-05	0.319639332	3.1436E-06	0.000112371	0.280963263	2.76323E-06	9.87742E-05	0.334989275	3.29456E-06	0.000117767
Road 6	6	2000-2100	0.047526364	3.72861E-07	1.33283E-05	0.042059665	3.29973E-07	1.17952E-05	0.276682727	2.17067E-06	7.75927E-05	0.242942081	1.90596E-06	6.81305E-05	0.285001746	2.23594E-06	7.99257E-05
Road 6	6	2100-2200	0.067346139	4.55041E-07	1.62659E-05	0.060074222	4.05907E-07	1.45095E-05	0.358450417	2.42196E-06	8.65753E-05	0.31775975	2.14703E-06	7.67475E-05	0.377833972	2.55293E-06	9.1257E-05
Road 6	6	2200-2300	0.05168937	3.69626E-07	1.32126E-05	0.044805328	3.20398E-07	1.14529E-05	0.291633281	2.08544E-06	7.45461E-05	0.24888084	1.77972E-06	6.36179E-05	0.293686168	2.10012E-06	7.50708E-05
Road 6	6	2300-0000	0.033648627	2.25461E-07	8.05932E-06	0.030113361	2.01773E-07	7.21257E-06	0.20975563	1.40546E-06	5.02394E-05	0.185476303	1.24277E-06	4.44242E-05	0.215589664	1.44455E-06	5.16367E-05
Road 7	7	0000-0100	0.061567066	1.66259E-07	4.15037E-06	0.055848506	1.50816E-07	3.76487E-06	0.362394446	9.78631E-07	2.44298E-05	0.327018521	8.83099E-07	2.2045E-05	0.382867028	1.03392E-06	2.58099E-05
Road 7	7	0100-0200	0.073524098	1.54783E-07	3.86388E-06	0.068390007	1.43974E-07	3.59407E-06	0.400482486	8.43094E-07	2.10464E-05	0.371319506	7.817E-07	1.95138E-05	0.439709513	9.25674E-07	2.31078E-05
Road 7	7	0200-0300	0.061965727	8.45675E-08	2.11108E-06	0.058170981	7.93887E-08	1.9818E-06	0.348751772	4.75958E-07	1.18815E-05	0.326319214	4.45343E-07	1.11172E-05	0.384490195	5.24732E-07	1.3099E-05
Road 7	7	0300-0400	0.062509983	6.89743E-08	1.72182E-06	0.059209605	6.53326E-08	1.63092E-06	0.374579312	4.13316E-07	1.03177E-05	0.353909868	3.90509E-07	9.74837E-06	0.413119474	4.55841E-07	1.13793E-05
Road 7	7	0400-0500	0.070106252	1.12981E-07	2.82037E-06	0.065484368	1.05532E-07	2.63443E-06	0.388328844	6.25816E-07	1.56224E-05	0.361563566	5.82682E-07	1.45457E-05	0.427047934	6.88215E-07	1.71801E-05
Road 7	7	0500-0600	0.064831644	1.8637E-07	4.65241E-06	0.059711262	1.71651E-07	4.28496E-06	0.363464867	1.04485E-06	2.60827E-05	0.333133279	9.57652E-07	2.39061E-05	0.392844541	1.1293E-06	2.81911E-05
Road 7	7	0600-0700	0.06905195	3.54898E-07	8.85941E-06	0.063009294	3.23841E-07	8.08413E-06	0.398292944	2.04706E-06	5.11012E-05	0.36150274	1.85797E-06	4.6381E-05	0.424512034	2.18181E-06	5.44652E-05
Road 7	7	0700-0800	0.068913056	5.65294E-07	1.41116E-05	0.060138177	4.93314E-07	1.23147E-05	0.374677755	3.07348E-06	7.67241E-05	0.324586254	2.66258E-06	6.64667E-05	0.384724431	3.15589E-06	7.87814E-05
Road 7	7	0800-0900	0.069816834	8.66664E-07	2.16348E-05	0.060245145	7.47847E-07	1.86687E-05	0.378166481	4.69433E-06	0.000117186	0.323961486	4.02146E-06	0.000100389	0.384206631	4.76931E-06	0.000119057
Road 7	7	0900-1000	0.071744432	8.24969E-07	2.05939E-05	0.061883341	7.11579E-07	1.77633E-05	0.374818258	4.30993E-06	0.00010759	0.321386775	3.69554E-06	9.22526E-05	0.383270117	4.40712E-06	0.000110016
Road 7	7	1000-1100	0.086265081	8.70451E-07	2.17293E-05	0.073815184	7.44826E-07	1.85933E-05	0.453072789	4.57169E-06	0.000114124	0.385976065	3.89466E-06	9.72234E-05	0.459791249	4.63949E-06	0.000115817
Road 7	7	1100-1200	0.095422896	9.61471E-07	2.40015E-05	0.081264332	8.18811E-07	2.04402E-05	0.48832621	4.92033E-06	0.000122827	0.414370313	4.17515E-06	0.000104225	0.495634645	4.99396E-06	0.000124666
Road 7	7	1200-1300	0.093469157	9.40429E-07	2.34762E-05	0.079579422	8.00679E-07	1.99876E-05	0.471624306	4.74519E-06	0.000118455	0.400440753	4.02899E-06	0.000100577	0.480020176	4.82967E-06	0.000120564
Road 7	7	1300-1400	0.099845024	9.88633E-07	2.46795E-05	0.08542624	8.45863E-07	2.11155E-05	0.504767808	4.99805E-06	0.000124768	0.4304845	4.26252E-06	0.000106406	0.51591074	5.10838E-06	0.000127522
Road 7	7	1400-1500	0.093453286	9.68762E-07	2.41835E-05	0.079644684	8.25618E-07	2.06101E-05	0.4749996	4.92397E-06	0.000122918	0.403387641	4.18163E-06	0.000104387	0.483032326	5.00724E-06	0.000124997
Road 7	7	1500-1600	0.087298088	8.88479E-07	2.21793E-05	0.073496191	7.4801E-07	1.86728E-05	0.450165906	4.58158E-06	0.000114371	0.377265403	3.83963E-06	9.58497E-05	0.450761594	4.58764E-06	0.000114522
Road 7	7	1600-1700	0.089973716	9.47061E-07	2.36417E-05	0.07644683	8.04677E-07	2.00874E-05	0.44796883	4.71531E-06	0.000117709	0.378928675	3.98859E-06	9.95683E-05	0.455375505	4.79327E-06	0.000119656
Road 7	7	1700-1800	0.067601252	7.52791E-07	1.87921E-05	0.058077697	6.46739E-07	1.61447E-05	0.349138018	3.88792E-06	9.70551E-05	0.298225423	3.32097E-06	8.29021E-05	0.35630312	3.9677E-06	9.90468E-05
Road 7	7	1800-1900	0.062064194	7.18164E-07	1.79277E-05	0.054396379	6.29438E-07	1.57128E-05	0.325976326	3.77197E-06	9.41608E-05	0.283899512	3.28509E-06	8.20066E-05	0.338295891	3.91453E-06	9.77194E-05
Road 7	7	1900-2000	0.070871182	6.19428E-07	1.54629E-05	0.062817388	5.49036E-07	1.37057E-05	0.374703627	3.27498E-06	8.17542E-05	0.330248782	2.88644E-06	7.20549E-05	0.39306617	3.43547E-06	8.57606E-05
Road 7	7	2000-2100	0.064428807	4.63966E-07	1.15821E-05	0.057085619	4.11086E-07	1.0262E-05	0.351163116	2.5288E-06	6.31272E-05	0.309286386	2.22724E-06	5.55991E-05	0.366372005	2.63832E-06	6.58612E-05
Road 7	7	2100-2200	0.075073136	4.51242E-07	1.12645E-05	0.066366352	3.98908E-07	9.95804E-06	0.400734914	2.4087E-06	6.01289E-05	0.352372044	2.118E-06	5.28722E-05	0.418738396	2.51691E-06	6.28302E-05
Road 7	7	2200-2300	0.064523627	4.18746E-07	1.04533E-05	0.055993128	3.63385E-07	9.07127E-06	0.354481974	2.30052E-06	5.74285E-05	0.304118024	1.97367E-06	4.92692E-05	0.360111152	2.33705E-06	5.83404E-05
Road 7	7	2300-0000	0.044028759	2.62726E-07	6.55849E-06	0.039424213	2.3525E-07	5.8726E-06	0.260239804	1.55289E-06	3.87651E-05	0.231014576	1.3785E-06	3.44118E-05	0.270438789	1.61375E-06	4.02844E-05
Road 8	8	0000-0100	0.194997222	1.41816E-07	2.33779E-06	0.176817222	1.28594E-07	2.11983E-06	0.965381667	7.02096E-07	1.15738E-05	0.875095	6.36433E-07	1.04914E-05	1.051912222	7.65027E-07	1.26112E-05
Road 8	8	0100-0200	0.19635	0.000000119	1.96167E-06	0.182535333	1.10627E-07	1.82365E-06	0.96955	5.87606E-07	9.68647E-06	0.901290333	5.46237E-07	9.0045E-06	1.083825667	6.56864E-07	1.08282E-05
Road 8	8	0200-0300	0.182619333	5.53392E-08	9.12246E-07	0.171402	5.194E-08	8.56211E-07	0.948212667	2.87337E-07	4.73665E-06	0.889771333	2.69628E-07	4.44471E-06	1.061173333	3.21568E-07	5.30092E-06
Road 8	8	0300-0400	0.16434	4.648E-08	7.66205E-07	0.155854286	4.408E-08	7.26642E-07	0.835321429	2.36253E-07	3.89453E-06	0.792160714	2.24045E-07	3.69331E-06	0.948015	2.68125E-07	4.41995E-06
Road 8	8	0400-0500	0.188631905	8.00257E-08	1.31919E-06	0.17612	7.47176E-08	1.23169E-06	0.904587143	3.83764E-07	6.32621E-06	0.844482381	3.58265E-07	5.90587E-06	1.020602381	4.32983E-07	7.13756E-06
Road 8	8	0500-0600	0.184247647	1.26554E-07	2.08619E-06	0.171235294	1.17616E-07	1.93886E-06	0.867870588	5.96113E-07	9.8267E-06	0.806258235	5.53794E-07	9.12908E-06	0.977493529	6.7141E-07	1.10679E-05
Road 8	8	0600-0700	0.209073548	2.6187E-07	4.31683E-06	0.189666935	2.37563E-07	3.91613E-06	0.972940323	1.21863E-06	2.00887E-05	0.882237097	1.10502E-06	1.82159E-05	1.071904032	1.34259E-06	2.2132E-05
Road 8	8	0700-0800	0.215327059	4.43704E-07	7.3143E-06	0.187741078	3.8686E-07	6.37725E-06	1.012513725	2.08639E-06	3.43934E-05	0.882034412	1.81753E-06	2.99612E-05	1.06977549	2.20439E-06	3.63385E-05
Road 8	8	0800-0900	0.2441925	9.47171E-07	1.56138E-05	0.212193073	8.23052E-07	1.35677E-05	1.152653333	4.4709E-06	7.37011E-05	1.000979219	3.88259E-06	6.4003E-05	1.213172292	4.70564E-06	7.75707E-05
Road 8	8	0900-1000	0.262973101	8.39389E-07	1.3837E-05	0.226192468	7.21988E-07	1.19017E-05	1.180670127	3.7686E-06	6.2124E-05	1.015451392	3.24124E-06	5.34306E-05	1.241643861	3.96323E-06	6.53323E-05
Road 8	8	1000-1100	0.251767125	8.13793E-07	1.34151E-05	0.216511313	6.99835E-07	1.15365E-05	1.163813688	3.76182E-06	6.20122E-05	1.000311938	3.23333E-06	5.33003E-05	1.21682325	3.93317E-06	6.48368E-05
Road 8	8	1100-1200	0.260622264	8.3715E-07	1.38001E-05	0.219979811	7.06602E-07	1.16481E-05	1.216605723	3.90789E-06	6.442E-05	1.026802642	3.29821E-06	5.43698E-05	1.246782453	4.00482E-06	6.60179E-05
Road 8	8	1200-1300	0.263669118	9.0553E-07	1.49273E-05	0.223085118	7.66151E-07	1.26297E-05	1.241149882	4.26253E-06	7.02663E-05	1.049765235	3.60525E-06	5.94313E-05	1.272850353	4.37141E-06	7.2061E-05
Road 8	8	1300-1400	0.241555926	7.90547E-07	1.30319E-05	0.205842593	6.73667E-07	1.11051E-05	1.121894506	3.67165E-06	6.05258E-05	0.955568272	3.12731E-06	5.15526E-05	1.161410864	3.80098E-06	6.26577E-05
Road 8	8	1400-1500	0.237078201	6.65735E-07	1.09744E-05	0.201121942	5.64767E-07	9.30997E-06	1.146441871	3.2193E-06	5.3069E-05	0.972211799	2.73005E-06	4.50038E-05	1.173333741	3.29482E-06	5.43138E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (July) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 8	8	1500-1600	0.246379568	6.91854E-07	1.14049E-05	0.206696547	5.80421E-07	9.56802E-06	1.161516475	3.26163E-06	5.37668E-05	0.973565755	2.73385E-06	4.50665E-05	1.180262302	3.31427E-06	5.46345E-05
Road 8	8	1600-1700	0.243394362	7.32642E-07	1.20773E-05	0.207986913	6.26062E-07	1.03204E-05	1.137087718	3.42275E-06	5.64227E-05	0.971286577	2.92367E-06	4.81956E-05	1.17927349	3.54973E-06	5.8516E-05
Road 8	8	1700-1800	0.194734295	6.13708E-07	1.01167E-05	0.166789615	5.2564E-07	8.66498E-06	0.944975	2.9781E-06	4.90929E-05	0.807990705	2.54639E-06	4.19764E-05	0.974780321	3.07203E-06	5.06413E-05
Road 8	8	1800-1900	0.195340935	4.22252E-07	6.96067E-06	0.169974673	3.6742E-07	6.05678E-06	0.972128318	2.10137E-06	3.46403E-05	0.844973458	1.82651E-06	3.01093E-05	1.014948131	2.19393E-06	3.61661E-05
Road 8	8	1900-2000	0.189495065	2.9477E-07	4.85917E-06	0.167990519	2.61319E-07	4.30774E-06	0.966533636	1.5035E-06	2.47846E-05	0.856345065	1.33209E-06	2.1959E-05	1.024335584	1.59341E-06	2.62668E-05
Road 8	8	2000-2100	0.204916234	3.18759E-07	5.25462E-06	0.181454675	2.82263E-07	4.653E-06	0.952787792	1.48211E-06	2.44321E-05	0.842996623	1.31133E-06	2.16168E-05	1.024451299	1.59359E-06	2.62697E-05
Road 8	8	2100-2200	0.171905185	1.87533E-07	3.09141E-06	0.153450926	1.67401E-07	2.75954E-06	0.872129444	9.51414E-07	1.56837E-05	0.777367222	8.48037E-07	1.39796E-05	0.930818148	1.01544E-06	1.67391E-05
Road 8	8	2200-2300	0.211675781	2.73682E-07	4.51154E-06	0.183807344	2.3765E-07	3.91757E-06	1.016986563	1.31489E-06	2.16755E-05	0.882079219	1.14047E-06	1.88002E-05	1.065886563	1.37812E-06	2.27177E-05
Road 8	8	2300-0000	0.160529245	1.7188E-07	2.83337E-06	0.143693585	1.53854E-07	2.53622E-06	0.802723396	8.59482E-07	1.41682E-05	0.717944717	7.68708E-07	1.26719E-05	0.861638302	9.22562E-07	1.52081E-05
Road 9	9	0000-0100	0.175265603	4.65464E-08	1.38949E-06	0.162184285	4.30723E-08	1.28578E-06	0.777660746	2.06528E-07	6.16522E-06	0.716157171	1.90194E-07	5.67763E-06	0.878341456	2.33267E-07	6.96341E-06
Road 9	9	0100-0200	0.186985671	3.90178E-08	1.16475E-06	0.176770314	3.68862E-08	1.10112E-06	0.783091023	1.63405E-07	4.87793E-06	0.737608098	1.53915E-07	4.59461E-06	0.914378412	1.90801E-07	5.69573E-06
Road 9	9	0200-0300	0.069860875	6.62621E-09	1.97804E-07	0.065839952	6.24483E-09	1.86419E-07	0.492766449	4.67383E-08	1.39522E-06	0.466265344	4.42247E-08	1.32018E-06	0.532105296	5.04695E-08	1.5066E-06
Road 9	9	0300-0400	0.083520764	6.33747E-09	1.89184E-07	0.07933557	6.0199E-09	1.79704E-07	0.505457658	3.83536E-08	1.14492E-06	0.480852863	3.64866E-08	1.08919E-06	0.560188433	4.25065E-08	1.26889E-06
Road 9	9	0400-0500	0.199020469	3.77537E-08	1.12701E-06	0.18879533	3.5814E-08	1.06911E-06	0.799620243	1.51686E-07	4.52808E-06	0.756196026	1.43448E-07	4.28218E-06	0.944991356	1.79262E-07	5.35129E-06
Road 9	9	0500-0600	0.145212249	4.68289E-08	1.39792E-06	0.136392593	4.39846E-08	1.31302E-06	0.71619443	2.30962E-07	6.89462E-06	0.674050348	2.17372E-07	6.48891E-06	0.810442942	2.61356E-07	7.80193E-06
Road 9	9	0600-0700	0.17413377	1.05705E-07	3.15547E-06	0.162635853	9.87251E-08	2.94711E-06	0.879686333	5.33997E-07	1.59407E-05	0.822619319	4.99356E-07	1.49066E-05	0.985255172	5.98081E-07	1.78537E-05
Road 9	9	0700-0800	0.153330902	1.42524E-07	4.25458E-06	0.139849578	1.29993E-07	3.8805E-06	0.84691841	7.87225E-07	2.35E-05	0.775408085	7.20755E-07	2.15158E-05	0.915257663	8.50748E-07	2.53963E-05
Road 9	9	0800-0900	0.239676758	5.2286E-07	1.56083E-05	0.214067087	4.66992E-07	1.39405E-05	1.127183799	2.45897E-06	7.34046E-05	1.001566913	2.18494E-06	6.52242E-05	1.215634	2.65193E-06	7.91647E-05
Road 9	9	0900-1000	0.251163733	4.14512E-07	1.23739E-05	0.225954065	3.72907E-07	1.11319E-05	1.069805692	1.76557E-06	5.27054E-05	0.957101323	1.57957E-06	4.71528E-05	1.183055388	1.95248E-06	5.82848E-05
Road 9	9	1000-1100	0.257496316	3.56579E-07	1.06445E-05	0.226609198	3.13806E-07	9.36766E-06	1.080270519	1.49595E-06	4.46566E-05	0.947064086	1.31149E-06	3.91501E-05	1.173673284	1.62529E-06	4.85178E-05
Road 9	9	1100-1200	0.17842421	2.57234E-07	7.67888E-06	0.153583128	2.21421E-07	6.60979E-06	0.933534699	1.34588E-06	4.01767E-05	0.813360449	1.17262E-06	3.50048E-05	0.966943577	1.39404E-06	4.16146E-05
Road 9	9	1200-1300	0.27025226	3.7937E-07	1.13248E-05	0.240590508	3.37732E-07	1.00819E-05	1.201533929	1.68667E-06	5.03499E-05	1.0687353	1.50025E-06	4.4785E-05	1.309325808	1.83798E-06	5.48669E-05
Road 9	9	1300-1400	0.308294141	3.56744E-07	1.06494E-05	0.274907786	3.18111E-07	9.49615E-06	1.168417869	1.35204E-06	4.03607E-05	1.034539587	1.19712E-06	3.57361E-05	1.309447373	1.51523E-06	4.52323E-05
Road 9	9	1400-1500	0.200870854	2.59112E-07	7.73493E-06	0.18025196	2.32515E-07	6.94096E-06	0.960294193	1.23872E-06	3.6978E-05	0.855107091	1.10304E-06	3.29276E-05	1.03535905	1.33555E-06	3.98686E-05
Road 9	9	1500-1600	0.167207245	1.80797E-07	5.3971E-06	0.146755263	1.58683E-07	4.73695E-06	0.849288942	9.18315E-07	2.74133E-05	0.748360538	8.09184E-07	2.41555E-05	0.895115801	9.67866E-07	2.88925E-05
Road 9	9	1600-1700	0.176464604	2.67799E-07	7.99426E-06	0.158577189	2.40653E-07	7.18392E-06	0.948841317	1.43994E-06	4.29847E-05	0.84930007	1.28888E-06	3.84753E-05	1.007877259	1.52953E-06	4.56592E-05
Road 9	9	1700-1800	0.150156412	1.96542E-07	5.8671E-06	0.137331102	1.79754E-07	5.36598E-06	0.879305968	1.15093E-06	3.43574E-05	0.807693611	1.0572E-06	3.15592E-05	0.945024713	1.23695E-06	3.69252E-05
Road 9	9	1800-1900	0.150389318	1.25525E-07	3.74714E-06	0.139754747	1.16649E-07	3.48217E-06	0.857678943	7.15878E-07	2.13702E-05	0.800434098	6.68097E-07	1.99438E-05	0.940188845	7.84746E-07	2.3426E-05
Road 9	9	1900-2000	0.153201319	1.24966E-07	3.73045E-06	0.142581541	1.16304E-07	3.47186E-06	0.801047185	6.53413E-07	1.95055E-05	0.744196004	6.0704E-07	1.81212E-05	0.886777545	7.23343E-07	2.1593E-05
Road 9	9	2000-2100	0.156804952	8.62619E-08	2.57507E-06	0.143008027	7.86719E-08	2.34849E-06	0.691680592	3.80509E-07	1.13588E-05	0.636951005	3.50401E-07	1.04601E-05	0.779959032	4.29073E-07	1.28086E-05
Road 9	9	2100-2200	0.019173148	1.01839E-08	3.04006E-07	0.017710644	9.40706E-09	2.80817E-07	0.27157757	1.44249E-07	4.30609E-06	0.248682384	1.32088E-07	3.94306E-06	0.266393028	1.41495E-07	4.22388E-06
Road 9	9	2200-2300	0.155261706	9.7194E-08	2.90141E-06	0.138867609	8.69313E-08	2.59505E-06	0.743241973	4.65271E-07	1.38891E-05	0.66464484	4.16069E-07	1.24204E-05	0.803512449	5.03E-07	1.50154E-05
Road 9	9	2300-0000	0.123342045	7.0193E-08	2.09538E-06	0.113974696	6.48621E-08	1.93625E-06	0.621688665	3.53798E-07	1.05615E-05	0.573213272	3.26211E-07	9.73796E-06	0.687187969	3.91073E-07	1.16742E-05
Road 10	10	0000-0100	0.24006503	1.84575E-07	4.10398E-06	0.218830808	1.68249E-07	3.74097E-06	1.186925319	9.12575E-07	2.02908E-05	1.082479631	8.32271E-07	1.85053E-05	1.301310439	1.00052E-06	2.22463E-05
Road 10	10	0100-0200	0.229921133	1.33564E-07	2.96976E-06	0.214787309	1.24773E-07	2.77429E-06	1.127358352	6.54898E-07	1.45615E-05	1.05365114	6.1208E-07	1.36094E-05	1.26843845	7.36853E-07	1.63837E-05
Road 10	10	0200-0300	0.22222527	7.21406E-08	1.60402E-06	0.208568428	6.77072E-08	1.50545E-06	1.0778439	3.49898E-07	7.77989E-06	1.012427162	3.28662E-07	7.30771E-06	1.22099559	3.96369E-07	8.81316E-06
Road 10	10	0300-0400	0.199198249	4.08413E-08	9.08093E-07	0.188914082	3.87327E-08	8.61211E-07	1.042307748	2.13703E-07	4.75161E-06	0.989382377	2.02851E-07	4.51034E-06	1.178296459	2.41584E-07	5.37155E-06
Road 10	10	0400-0500	0.240676316	9.45788E-08	2.10293E-06	0.226009795	8.88153E-08	1.97478E-06	1.115885889	4.38511E-07	9.75015E-06	1.045966409	4.11034E-07	9.13922E-06	1.271976204	4.9985E-07	1.1114E-05
Road 10	10	0500-0600	0.225437654	1.57922E-07	3.51135E-06	0.211164971	1.47924E-07	3.28904E-06	1.051663889	7.36704E-07	1.63804E-05	0.984359676	6.89557E-07	1.53321E-05	1.195524646	8.37481E-07	1.86211E-05
Road 10	10	0600-0700	0.281240043	3.94025E-07	8.76102E-06	0.259383458	3.63403E-07	8.08016E-06	1.340575148	1.87818E-06	4.17608E-05	1.238331584	1.73494E-06	3.85758E-05	1.497715042	2.09834E-06	4.66559E-05
Road 10	10	0700-0800	0.286596155	6.31673E-07	1.40451E-05	0.254908142	5.61831E-07	1.24921E-05	1.381747356	3.04545E-06	6.77146E-05	1.231665908	2.71466E-06	6.03596E-05	1.48657405	3.27649E-06	7.28518E-05
Road 10	10	0800-0900	0.307106827	1.30129E-06	2.89338E-05	0.26861803	1.1382E-06	2.53076E-05	1.465595729	6.2101E-06	0.00013808	1.282590464	5.43466E-06	0.000120838	1.551208494	6.57286E-06	0.000146146
Road 10	10	0900-1000	0.344867102	1.16667E-06	2.59406E-05	0.303052747	1.02522E-06	2.27954E-05	1.59358221	5.39104E-06	0.000119868	1.399491542	4.73443E-06	0.000105269	1.702544289	5.75965E-06	0.000128064
Road 10	10	1000-1100	0.346791545	1.27391E-06	2.83251E-05	0.302962273	1.11291E-06	2.47452E-05	1.515832472	5.56829E-06	0.000123809	1.320230138	4.84976E-06	0.000107833	1.623192411	5.96267E-06	0.000132578
Road 10	10	1100-1200	0.334368245	1.22828E-06	2.73103E-05	0.285377251	1.04831E-06	2.33089E-05	1.51651729	5.57081E-06	0.000123865	1.292680118	4.74856E-06	0.000105583	1.578057369	5.79687E-06	0.000128892
Road 10	10	1200-1300	0.352492615	1.33701E-06	2.97281E-05	0.303880753	1.15263E-06	2.56283E-05	1.610806964	6.10983E-06	0.00013585	1.388685373	5.26732E-06	0.000117117	1.692566127	6.41994E-06	0.000142745
Road 10	10	1300-1400	0.344529726	1.13021E-06	2.513E-05	0.299448827	9.82328E-07	2.18418E-05	1.54102758	5.05527E-06	0.000112402	1.336253778	4.38352E-06	9.74662E-05	1.635702605	5.36584E-06	0.000119308
Road 10	10	1400-1500	0.32292969	9.98663E-07	2.2205E-05	0.281090115	8.69274E-07	1.9328E-05	1.542735363	4.77092E-06	0.00010608	1.341861564	4.14972E-06	9.22678E-05	1.622951679	5.01899E-06	0.000111596
Road 10	10	1500-1600	0.319110062	1.00866E-06	2.24272E-05	0.272215285	8.60432E-07	1.91315E-05	1.4792893	4.67582E-06	0.000103965	1.261983668	3.98894E-06	8.8693E-05	1.534198952	4.84938E-06	0.000107824
Road 10	10	1600-1700	0.306149794	1.07754E-06	2.39588E-05	0.267335989	9.4093E-07	2.09213E-05	1.438685456	5.06367E-06	0.000112589	1.253309596	4.41121E-06	9.8082E-05	1.520645585	5.35214E-06	0.000119003
Road 10	10	1700-1800	0.279265032	9.3043E-07	2.06878E-05	0.245616283	8.18322E-07	1.81951E-05	1.378696323	4.59342E-06	0.000102133	1.216794134	4.054E-06	9.01396E-05	1.462410417	4.87233E-06	0.000108335
Road 10	10	1800-1900	0.28218598	5.83382E-07	1.29713E-05	0.249941438	5.16721E-07	1.14891E-05	1.364325442	2.82056E-06	6.27144E-05	1.210139356	2.5018E-06	5.56269E-05	1.460080794	3.01852E-06	6.7116E-05
Road 10	10	1900-2000	0.242189591	4.51039E-07	1.00287E-05	0.218910992	4.07687E-07	9.06479E-06	1.225656336	2.28259E-06	5.07527E-05	1.110200413	2.06757E-06	4.59718E-05	1.329111406	2.47526E-06	5.50366E-05
Road 10	10	2000-2100	0.270943156	3.33306E-07	7.41096E-06	0.24143981	2.97012E-07	6.60397E-06	1.266682542	1.55823E-06	3.46469E-05	1.12882378	1.38864E-06	3.08761E-05	1.37026359	1.68566E-06	3.74801E-05
Road 10	10	2100-2200	0.235097433	2.97243E-07	6.60912E-06	0.21625946	2.73426E-07	6.07954E-06	1.229291044	1.55424E-06	3.45581E-05	1.132403999	1.43174E-06	3.18344E-05	1.348663459	1.70517E-06	3.7914E-05
Road 10	10	2200-2300	0.247111349	3.25099E-07	7.22848E-06	0.218761869	2.87803E-07	6.39921E-06	1.210742245	1.59285E-06	3.54165E-05	1.074782133	1.41398E-06	3.14394E-05	1.293544002	1.70178E-06	3.78387E-05
Road 10	10	2300-0000	0.217856224	2.68E-07	5.9589E-06	0.196450946	2.41668E-07	5.37341E-06	1.06528433	1.31048E-06	2.91381E-05	0.96053538	1.18162E-06	2.6273E-05	1.156986327	1.42329E-06	3.16464E-05
Road 11	11	0000-0100	0.268230146	2.04898E-07	1.69965E-06	0.244228782	1.86564E-07	1.54756E-06	1.296617626	9.90472E-07	8.21604E-06	1.179100257	9.00702E-07	7.47139E-06	1.423329039	1.08727E-06	9.01895E-06
Road 11	11	0100-0200	0.261375332	1.40671E-07	1.16688E-06	0.243950815	1.31293E-07	1.08909E-06	1.240791788	6.67787E-07	5.53935E-06	1.156613142	6.22483E-07	5.16355E-06	1.400563958	7.53776E-07	6.25263E-06
Road 11	11	0200-0300	0.221799266	5.77602E-08	4.79126E-07	0.208195266	5.42175E-08	4.49739E-07	1.144400199	2.98021E-07	2.47211E-06	1.074928568	2.79929E-07	2.32204E-06	1.283123834	3.34147E-07	2.77178E-06
Road 11	11	0300-0400	0.23440802	5.69742E-08	4.72605E-07	0.22225302	5.40198E-08	4.48099E-07	1.183831329	2.87737E-07	2.3868E-06	1.122807961	2.72905E-07	2.26377E-06	1.345060981	3.26925E-07	2.71187E-06

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (July) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 11	11	0400-0500	0.249051264	8.64761E-08	7.17327E-07	0.233994264	8.1248E-08	6.73959E-07	1.138369455	3.95267E-07	3.27877E-06	1.067401053	3.70625E-07	3.07437E-06	1.301395317	4.51873E-07	3.74833E-06
Road 11	11	0500-0600	0.205190606	9.61831E-08	7.97847E-07	0.192059125	9.00277E-08	7.46787E-07	1.012711964	4.74709E-07	3.93775E-06	0.948632708	4.44672E-07	3.68859E-06	1.140691832	5.34699E-07	4.43537E-06
Road 11	11	0600-0700	0.227377448	2.05271E-07	1.70274E-06	0.208779756	1.88482E-07	1.56347E-06	1.134990441	1.02464E-06	8.49951E-06	1.042992658	9.41591E-07	7.81057E-06	1.251772414	1.13007E-06	9.37404E-06
Road 11	11	0700-0800	0.281075177	5.31896E-07	4.41212E-06	0.247701958	4.68742E-07	3.88825E-06	1.403412129	2.65576E-06	2.20298E-05	1.239366819	2.34533E-06	1.94547E-05	1.487068776	2.81407E-06	2.33429E-05
Road 11	11	0800-0900	0.305136874	1.08599E-06	9.00838E-06	0.26870134	9.56316E-07	7.93272E-06	1.450083966	5.16089E-06	4.281E-05	1.273905868	4.53387E-06	3.76088E-05	1.542607208	5.49018E-06	4.55415E-05
Road 11	11	0900-1000	0.31141357	7.94753E-07	6.59254E-06	0.27345804	6.97888E-07	5.78904E-06	1.415431872	3.6123E-06	2.99643E-05	1.238094824	3.15972E-06	2.62101E-05	1.511552864	3.85761E-06	3.19992E-05
Road 11	11	1000-1100	0.320101551	6.72436E-07	5.57791E-06	0.278766079	5.85602E-07	4.85762E-06	1.439175045	3.02327E-06	2.50782E-05	1.250113707	2.62611E-06	2.17838E-05	1.528879785	3.21171E-06	2.66414E-05
Road 11	11	1100-1200	0.279801103	6.60641E-07	5.48007E-06	0.237325494	5.60352E-07	4.64816E-06	1.3884977	3.2784E-06	2.71946E-05	1.183656387	2.79474E-06	2.31826E-05	1.420981881	3.3551E-06	2.78308E-05
Road 11	11	1200-1300	0.345528855	9.83797E-07	8.16068E-06	0.297351648	8.46626E-07	7.02283E-06	1.610951348	4.58674E-06	3.80474E-05	1.384933635	3.94321E-06	3.27093E-05	1.682285282	4.78984E-06	3.97321E-05
Road 11	11	1300-1400	0.359077997	7.54313E-07	6.25709E-06	0.31172518	6.54839E-07	5.43195E-06	1.565449045	3.28853E-06	2.72786E-05	1.351811758	2.83974E-06	2.35559E-05	1.663536938	3.49458E-06	2.89878E-05
Road 11	11	1400-1500	0.287582878	5.7916E-07	4.80418E-06	0.249447769	5.0236E-07	4.16712E-06	1.382000435	2.7832E-06	2.30868E-05	1.19461447	2.40582E-06	1.99565E-05	1.444062239	2.90818E-06	2.41236E-05
Road 11	11	1500-1600	0.256731735	5.21486E-07	4.32577E-06	0.218375214	4.43575E-07	3.67949E-06	1.279238203	2.59845E-06	2.15544E-05	1.089726844	2.21351E-06	1.83612E-05	1.308102058	2.65708E-06	2.20407E-05
Road 11	11	1600-1700	0.245314521	5.96251E-07	4.94595E-06	0.214330785	5.20943E-07	4.32126E-06	1.255480869	3.05152E-06	2.53126E-05	1.096227272	2.66444E-06	2.21018E-05	1.310558057	3.18538E-06	2.6423E-05
Road 11	11	1700-1800	0.23885297	5.92986E-07	4.91886E-06	0.208597138	5.17871E-07	4.29579E-06	1.246542006	3.09471E-06	2.56709E-05	1.093297679	2.71426E-06	2.2515E-05	1.301894817	3.23213E-06	2.68108E-05
Road 11	11	1800-1900	0.257507956	5.27534E-07	4.37593E-06	0.227073053	4.65184E-07	3.85874E-06	1.315542887	2.69504E-06	2.23555E-05	1.163249378	2.38305E-06	1.97676E-05	1.390322432	2.84823E-06	2.36263E-05
Road 11	11	1900-2000	0.242074296	3.82444E-07	3.1724E-06	0.217644825	3.43849E-07	2.85225E-06	1.216139358	1.92133E-06	1.59376E-05	1.093537553	1.72764E-06	1.43309E-05	1.311182378	2.07149E-06	1.71831E-05
Road 11	11	2000-2100	0.243529487	3.42463E-07	2.84076E-06	0.217144346	3.05359E-07	2.53298E-06	1.175713638	1.65335E-06	1.37147E-05	1.050175615	1.47681E-06	1.22503E-05	1.267319962	1.78217E-06	1.47832E-05
Road 11	11	2100-2200	0.174915605	1.7613E-07	1.46102E-06	0.156461811	1.57548E-07	1.30688E-06	0.949027876	9.55618E-07	7.92693E-06	0.850555861	8.56462E-07	7.10443E-06	1.007017672	1.01401E-06	8.4113E-06
Road 11	11	2200-2300	0.237198212	2.59436E-07	2.15204E-06	0.207988688	2.27488E-07	1.88703E-06	1.158904164	1.26755E-06	1.05144E-05	1.016090853	1.11135E-06	9.21873E-06	1.224079541	1.33884E-06	1.11058E-05
Road 11	11	2300-0000	0.219609529	2.2876E-07	1.89758E-06	0.198230363	2.0649E-07	1.71285E-06	1.090739083	1.13619E-06	9.42476E-06	0.984066509	1.02507E-06	8.50303E-06	1.182296872	1.23156E-06	1.02159E-05
Haul Road 1	HR1	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0700-0800	1.17583	2.21021E-06	3.32426E-06	1.02443	1.92562E-06	2.89623E-06	5.15163	9.68352E-06	1.45645E-05	4.48826	8.43658E-06	1.2689E-05	5.51269	1.03622E-05	1.55853E-05
Haul Road 1	HR1	0800-0900	1.20191	2.25923E-06	3.39799E-06	1.04312	1.96075E-06	2.94907E-06	5.26566	9.89786E-06	1.48869E-05	4.5703	8.59079E-06	1.2921E-05	5.61342	1.05515E-05	1.587E-05
Haul Road 1	HR1	0900-1000	1.21231	2.27878E-06	3.4274E-06	1.04202	1.95868E-06	2.94596E-06	5.31132	9.98368E-06	1.5016E-05	4.56511	8.58103E-06	1.29063E-05	5.60713	1.05397E-05	1.58523E-05
Haul Road 1	HR1	1000-1100	1.2279	2.30808E-06	3.47147E-06	1.05521	1.98348E-06	2.98325E-06	5.37987	1.01125E-05	1.52098E-05	4.62317	8.69017E-06	1.30704E-05	5.67838	1.06736E-05	1.60537E-05
Haul Road 1	HR1	1100-1200	1.2275	2.30733E-06	3.47034E-06	1.03562	1.94665E-06	2.92786E-06	5.37807	1.01092E-05	1.52047E-05	4.53743	8.529E-06	1.2828E-05	5.57305	1.04757E-05	1.57559E-05
Haul Road 1	HR1	1200-1300	1.23309	2.31784E-06	3.48614E-06	1.04262	1.95981E-06	2.94765E-06	5.40276	1.01556E-05	1.52745E-05	4.56811	8.58667E-06	1.29148E-05	5.61073	1.05465E-05	1.58624E-05
Haul Road 1	HR1	1300-1400	1.23309	2.31784E-06	3.48614E-06	1.04971	1.97314E-06	2.9677E-06	5.40227	1.01546E-05	1.52731E-05	4.59879	8.64434E-06	1.30015E-05	5.6485	1.06175E-05	1.59692E-05
Haul Road 1	HR1	1400-1500	1.23829	2.32761E-06	3.50084E-06	1.04971	1.97314E-06	2.9677E-06	5.42555	1.01984E-05	1.53389E-05	4.59879	8.64434E-06	1.30015E-05	5.6485	1.06175E-05	1.59692E-05
Haul Road 1	HR1	1500-1600	1.24359	2.33758E-06	3.51583E-06	1.04262	1.95981E-06	2.94765E-06	5.44833	1.02412E-05	1.54033E-05	4.56811	8.58667E-06	1.29148E-05	5.61073	1.05465E-05	1.58624E-05
Haul Road 1	HR1	1600-1700	1.2279	2.30808E-06	3.47147E-06	1.04861	1.97107E-06	2.96459E-06	5.37987	1.01125E-05	1.52098E-05	4.5942	8.63571E-06	1.29885E-05	5.64281	1.06068E-05	1.59531E-05
Haul Road 1	HR1	1700-1800	1.20191	2.25923E-06	3.39799E-06	1.02873	1.9337E-06	2.90838E-06	5.26566	9.89786E-06	1.48869E-05	4.50715	8.47209E-06	1.27424E-05	5.53588	1.04058E-05	1.56508E-05
Haul Road 1	HR1	1800-1900	1.20001	2.25566E-06	3.39262E-06	1.04312	1.96075E-06	2.94907E-06	5.25756	9.88263E-06	1.4864E-05	4.5703	8.59079E-06	1.2921E-05	5.61342	1.05515E-05	1.587E-05
Haul Road 1	HR1	1900-2000	1.17063	2.20043E-06	3.30956E-06	1.03692	1.9491E-06	2.93154E-06	5.12875	9.64051E-06	1.44998E-05	4.54293	8.53934E-06	1.28436E-05	5.57985	1.04884E-05	1.57751E-05
Haul Road 1	HR1	2000-2100	1.14975	2.16118E-06	3.25053E-06	1.01813	1.91378E-06	2.87842E-06	5.0375	9.46898E-06	1.42418E-05	4.46098	8.3853E-06	1.26119E-05	5.47911	1.02991E-05	1.54903E-05
Haul Road 1	HR1	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0700-0800	1.17583	1.5231E-06	4.05433E-06	1.02443	1.32698E-06	3.5323E-06	5.15163	6.6731E-06	1.77631E-05	4.48826	5.81381E-06	1.54758E-05	5.51269	7.14079E-06	1.90081E-05
Haul Road 2	HR2	0800-0900	1.20191	1.55688E-06	4.14426E-06	1.04312	1.35119E-06	3.59674E-06	5.26566	6.8208E-06	1.81563E-05	4.5703	5.92008E-06	1.57587E-05	5.61342	7.27127E-06	1.93554E-05
Haul Road 2	HR2	0900-1000	1.21231	1.57035E-06	4.18012E-06	1.04202	1.34977E-06	3.59295E-06	5.31132	6.87995E-06	1.83138E-05	4.56511	5.91335E-06	1.57408E-05	5.60713	7.26312E-06	1.93337E-05
Haul Road 2	HR2	1000-1100	1.2279	1.59054E-06	4.23387E-06	1.05521	1.36685E-06	3.63843E-06	5.37987	6.96874E-06	1.85501E-05	4.62317	5.98856E-06	1.5941E-05	5.67838	7.35541E-06	1.95794E-05
Haul Road 2	HR2	1100-1200	1.2275	1.59003E-06	4.23249E-06	1.03562	1.34148E-06	3.57088E-06	5.37807	6.96641E-06	1.85439E-05	4.53743	5.8775E-06	1.56453E-05	5.57305	7.21898E-06	1.92162E-05
Haul Road 2	HR2	1200-1300	1.23309	1.59727E-06	4.25177E-06	1.04262	1.35054E-06	3.59502E-06	5.40276	6.99839E-06	1.8629E-05	4.56811	5.91724E-06	1.57511E-05	5.61073	7.26778E-06	1.93461E-05
Haul Road 2	HR2	1300-1400	1.23309	1.59727E-06	4.25177E-06	1.04971	1.35973E-06	3.61946E-06	5.40227	6.99776E-06	1.86274E-05	4.59879	5.95698E-06	1.58569E-05	5.6485	7.31671E-06	1.94764E-05
Haul Road 2	HR2	1400-1500	1.23829	1.604E-06	4.2697E-06	1.04971	1.35973E-06	3.61946E-06	5.42555	7.02791E-06	1.87076E-05	4.59879	5.95698E-06	1.58569E-05	5.6485	7.31671E-06	1.94764E-05
Haul Road 2	HR2	1500-1600	1.24359	1.61087E-06	4.28797E-06	1.04262	1.35054E-06	3.59502E-06	5.44833	7.05742E-06	1.87862E-05	4.56811	5.91724E-06	1.57511E-05	5.61073	7.26778E-06	1.93461E-05
Haul Road 2	HR2	1600-1700	1.2279	1.59054E-06	4.23387E-06	1.04861	1.3583E-06	3.61567E-06	5.37987	6.96874E-06	1.85501E-05	4.5942	5.95104E-06	1.58411E-05	5.64281	7.30934E-06	1.94567E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (July) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Haul Road 2	HR2	1700-1800	1.20191	1.55688E-06	4.14426E-06	1.02873	1.33255E-06	3.54712E-06	5.26566	6.8208E-06	1.81563E-05	4.50715	5.83828E-06	1.55409E-05	5.53588	7.17083E-06	1.9088E-05
Haul Road 2	HR2	1800-1900	1.20001	1.55442E-06	4.13771E-06	1.04312	1.35119E-06	3.59674E-06	5.25756	6.81031E-06	1.81284E-05	4.5703	5.92008E-06	1.57587E-05	5.61342	7.27127E-06	1.93554E-05
Haul Road 2	HR2	1900-2000	1.17063	1.51636E-06	4.0364E-06	1.03692	1.34316E-06	3.57536E-06	5.12875	6.64346E-06	1.76842E-05	4.54293	5.88462E-06	1.56643E-05	5.57985	7.22778E-06	1.92397E-05
Haul Road 2	HR2	2000-2100	1.14975	1.48931E-06	3.96441E-06	1.01813	1.31882E-06	3.51057E-06	5.0375	6.52526E-06	1.73696E-05	4.46098	5.77847E-06	1.53817E-05	5.47911	7.09729E-06	1.88923E-05
Haul Road 2	HR2	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0700-0800	1.17583	1.5231E-06	4.04868E-06	1.02443	1.32698E-06	3.52737E-06	5.15163	6.6731E-06	1.77384E-05	4.48826	5.81381E-06	1.54542E-05	5.51269	7.14079E-06	1.89816E-05
Haul Road 3	HR3	0800-0900	1.20191	1.55688E-06	4.13848E-06	1.04312	1.35119E-06	3.59173E-06	5.26566	6.8208E-06	1.8131E-05	4.5703	5.92008E-06	1.57367E-05	5.61342	7.27127E-06	1.93284E-05
Haul Road 3	HR3	0900-1000	1.21231	1.57035E-06	4.17429E-06	1.04202	1.34977E-06	3.58794E-06	5.31132	6.87995E-06	1.82882E-05	4.56511	5.91335E-06	1.57188E-05	5.60713	7.26312E-06	1.93068E-05
Haul Road 3	HR3	1000-1100	1.2279	1.59054E-06	4.22797E-06	1.05521	1.36685E-06	3.63335E-06	5.37987	6.96874E-06	1.85243E-05	4.62317	5.98856E-06	1.59187E-05	5.67838	7.35541E-06	1.95521E-05
Haul Road 3	HR3	1100-1200	1.2275	1.59003E-06	4.22659E-06	1.03562	1.34148E-06	3.5659E-06	5.37807	6.96641E-06	1.85181E-05	4.53743	5.8775E-06	1.56235E-05	5.57305	7.21898E-06	1.91894E-05
Haul Road 3	HR3	1200-1300	1.23309	1.59727E-06	4.24584E-06	1.04262	1.35054E-06	3.59E-06	5.40276	6.99839E-06	1.86031E-05	4.56811	5.91724E-06	1.57292E-05	5.61073	7.26778E-06	1.93192E-05
Haul Road 3	HR3	1300-1400	1.23309	1.59727E-06	4.24584E-06	1.04971	1.35973E-06	3.61442E-06	5.40227	6.99776E-06	1.86014E-05	4.59879	5.95698E-06	1.58348E-05	5.6485	7.31671E-06	1.94492E-05
Haul Road 3	HR3	1400-1500	1.23829	1.604E-06	4.26375E-06	1.04971	1.35973E-06	3.61442E-06	5.42555	7.02791E-06	1.86815E-05	4.59879	5.95698E-06	1.58348E-05	5.6485	7.31671E-06	1.94492E-05
Haul Road 3	HR3	1500-1600	1.24359	1.61087E-06	4.28199E-06	1.04262	1.35054E-06	3.59E-06	5.44833	7.05742E-06	1.876E-05	4.56811	5.91724E-06	1.57292E-05	5.61073	7.26778E-06	1.93192E-05
Haul Road 3	HR3	1600-1700	1.2279	1.59054E-06	4.22797E-06	1.04861	1.3583E-06	3.61063E-06	5.37987	6.96874E-06	1.85243E-05	4.5942	5.95104E-06	1.5819E-05	5.64281	7.30934E-06	1.94296E-05
Haul Road 3	HR3	1700-1800	1.20191	1.55688E-06	4.13848E-06	1.02873	1.33255E-06	3.54218E-06	5.26566	6.8208E-06	1.8131E-05	4.50715	5.83828E-06	1.55193E-05	5.53588	7.17083E-06	1.90614E-05
Haul Road 3	HR3	1800-1900	1.20001	1.55442E-06	4.13194E-06	1.04312	1.35119E-06	3.59173E-06	5.25756	6.81031E-06	1.81031E-05	4.5703	5.92008E-06	1.57367E-05	5.61342	7.27127E-06	1.93284E-05
Haul Road 3	HR3	1900-2000	1.17063	1.51636E-06	4.03078E-06	1.03692	1.34316E-06	3.57038E-06	5.12875	6.64346E-06	1.76596E-05	4.54293	5.88462E-06	1.56425E-05	5.57985	7.22778E-06	1.92128E-05
Haul Road 3	HR3	2000-2100	1.14975	1.48931E-06	3.95888E-06	1.01813	1.31882E-06	3.50568E-06	5.0375	6.52526E-06	1.73454E-05	4.46098	5.77847E-06	1.53603E-05	5.47911	7.09729E-06	1.8866E-05
Haul Road 3	HR3	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (August) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 1	1	0000-0100	0.094082123	3.16079E-07	2.57135E-06	0.078376536	2.63315E-07	2.1421E-06	0.557257263	1.87217E-06	1.52304E-05	0.461557654	1.55065E-06	1.26148E-05	0.53993419	1.81397E-06	1.47569E-05
Road 1	1	0100-0200	0.072384404	1.48084E-07	1.20468E-06	0.061957706	1.26753E-07	1.03115E-06	0.436882752	8.93773E-07	7.27097E-06	0.371813303	7.60654E-07	6.18803E-06	0.433771009	8.87407E-07	7.21919E-06
Road 1	1	0200-0300	0.069354156	1.0023E-07	8.15388E-07	0.059326104	8.57378E-08	6.9749E-07	0.44314	6.40424E-07	5.20994E-06	0.375562078	5.42761E-07	4.41544E-06	0.434888182	6.28498E-07	5.11293E-06
Road 1	1	0300-0400	0.059367273	6.12838E-08	4.98553E-07	0.049660545	5.12637E-08	4.17038E-07	0.364305091	3.76066E-07	3.05935E-06	0.301934545	3.11682E-07	2.53558E-06	0.351595091	3.62945E-07	2.95261E-06
Road 1	1	0400-0500	0.077206977	1.24621E-07	1.01381E-06	0.064503023	1.04115E-07	8.46993E-07	0.44295	7.14972E-07	5.8164E-06	0.36756314	5.93289E-07	4.82649E-06	0.432066163	6.97404E-07	5.67349E-06
Road 1	1	0500-0600	0.063467287	2.23946E-07	1.82183E-06	0.053106489	1.87388E-07	1.52443E-06	0.375581596	1.32525E-06	1.07811E-05	0.31144484	1.09894E-06	8.94006E-06	0.36455133	1.28633E-06	1.04645E-05
Road 1	1	0600-0700	0.084456914	5.34196E-07	4.34577E-06	0.071551988	4.52572E-07	3.68174E-06	0.449842433	2.84529E-06	2.31468E-05	0.378742789	2.39558E-06	1.94884E-05	0.450294777	2.84815E-06	2.31701E-05
Road 1	1	0700-0800	0.070714413	7.45899E-07	6.068E-06	0.060432153	6.37441E-07	5.18568E-06	0.389990658	4.11364E-06	3.34651E-05	0.330494662	3.48607E-06	2.83597E-05	0.390926815	4.12351E-06	3.35454E-05
Road 1	1	0800-0900	0.076883588	1.00145E-06	8.14694E-06	0.065841383	8.57619E-07	6.97685E-06	0.413062695	5.38036E-06	4.377E-05	0.351686744	4.5809E-06	3.72663E-05	0.417528127	5.43852E-06	4.42432E-05
Road 1	1	0900-1000	0.082493796	1.10549E-06	8.99333E-06	0.070773529	9.48429E-07	7.71561E-06	0.458075896	6.13863E-06	4.99387E-05	0.391215154	5.24264E-06	4.26496E-05	0.461988683	6.19106E-06	5.03652E-05
Road 1	1	1000-1100	0.096249439	1.25551E-06	1.02137E-05	0.081675683	1.0654E-06	8.6672E-06	0.515893453	6.72947E-06	5.47452E-05	0.436286072	5.69104E-06	4.62975E-05	0.517961755	6.75645E-06	5.49647E-05
Road 1	1	1100-1200	0.086798309	1.09801E-06	8.93249E-06	0.073871944	9.34491E-07	7.60222E-06	0.498769362	6.30951E-06	5.13288E-05	0.422948783	5.35037E-06	4.3526E-05	0.496820727	6.28486E-06	5.11282E-05
Road 1	1	1200-1300	0.087818516	1.09938E-06	8.94362E-06	0.076581439	9.58705E-07	7.79921E-06	0.498262024	6.23763E-06	5.0744E-05	0.432854738	5.41881E-06	4.40828E-05	0.509436177	6.37751E-06	5.1882E-05
Road 1	1	1300-1400	0.09162598	1.21927E-06	9.91896E-06	0.079917362	1.06346E-06	8.65144E-06	0.509158829	6.77541E-06	5.51189E-05	0.442520155	5.88864E-06	4.7905E-05	0.522437518	6.95211E-06	5.65564E-05
Road 1	1	1400-1500	0.087253875	1.25935E-06	1.0245E-05	0.075480988	1.08943E-06	8.86268E-06	0.474580286	6.8497E-06	5.57234E-05	0.409006047	5.90326E-06	4.80239E-05	0.484487035	6.99269E-06	5.68866E-05
Road 1	1	1500-1600	0.095543631	1.28396E-06	1.04452E-05	0.079666844	1.0706E-06	8.70947E-06	0.518095196	6.96239E-06	5.66401E-05	0.429809316	5.77597E-06	4.69883E-05	0.509476159	6.84656E-06	5.56978E-05
Road 1	1	1600-1700	0.090983285	1.28927E-06	1.04884E-05	0.076183656	1.07955E-06	8.78234E-06	0.499823219	7.08271E-06	5.76189E-05	0.415977126	5.89457E-06	4.79532E-05	0.492160781	6.97413E-06	5.67355E-05
Road 1	1	1700-1800	0.073398232	1.04422E-06	8.49486E-06	0.060641372	8.62728E-07	7.01842E-06	0.41253314	5.869E-06	4.77452E-05	0.337933549	4.80769E-06	3.91113E-05	0.398574921	5.67042E-06	4.61297E-05
Road 1	1	1800-1900	0.064758282	9.40745E-07	7.6531E-06	0.053205388	7.72916E-07	6.28779E-06	0.389943928	5.66473E-06	4.60834E-05	0.316471111	4.59738E-06	3.74004E-05	0.369676499	5.3703E-06	4.36882E-05
Road 1	1	1900-2000	0.077973272	8.67833E-07	7.05995E-06	0.065139528	7.24995E-07	5.89794E-06	0.448951535	4.99678E-06	4.06495E-05	0.371506863	4.13483E-06	3.36374E-05	0.436646391	4.85982E-06	3.95354E-05
Road 1	1	2000-2100	0.070526024	6.65814E-07	5.4165E-06	0.058843559	5.55524E-07	4.51927E-06	0.418528708	3.9512E-06	3.21436E-05	0.346027078	3.26673E-06	2.65754E-05	0.404870636	3.82226E-06	3.10946E-05
Road 1	1	2100-2200	0.07471342	6.43646E-07	5.23616E-06	0.060921656	5.24832E-07	4.26958E-06	0.4472378	3.85289E-06	3.13439E-05	0.361273181	3.11232E-06	2.53192E-05	0.422194837	3.63715E-06	2.95888E-05
Road 1	1	2200-2300	0.071839057	5.86524E-07	4.77146E-06	0.060047471	4.90252E-07	3.98828E-06	0.429471908	3.50639E-06	2.8525E-05	0.355751103	2.9045E-06	2.36285E-05	0.415798575	3.39475E-06	2.76168E-05
Road 1	1	2300-0000	0.062878641	4.6026E-07	3.74429E-06	0.052582256	3.84893E-07	3.13116E-06	0.386854487	2.83171E-06	2.30363E-05	0.319764615	2.34062E-06	1.90413E-05	0.372346872	2.72551E-06	2.21724E-05
Road 2	2	0000-0100	0.155797692	1.87534E-07	1.21108E-06	0.129785962	1.56224E-07	1.00888E-06	0.659751923	7.94146E-07	5.12852E-06	0.547104231	6.58551E-07	4.25286E-06	0.676890192	8.14775E-07	5.26174E-06
Road 2	2	0100-0200	0.109231176	8.5969E-08	5.55179E-07	0.093394412	7.35049E-08	4.74687E-07	0.539548824	4.24645E-07	2.74232E-06	0.459355588	3.6153E-07	2.33472E-06	0.55275	4.35035E-07	2.80941E-06
Road 2	2	0200-0300	0.112727826	6.00171E-08	3.87585E-07	0.096573913	5.14167E-08	3.32044E-07	0.61526913	3.27574E-07	2.11544E-06	0.523745652	2.78846E-07	1.80076E-06	0.620319565	3.30263E-07	2.1328E-06
Road 2	2	0300-0400	0.099046667	3.43912E-08	2.22095E-07	0.08288	2.87778E-08	1.85844E-07	0.360391333	1.25136E-07	8.08115E-07	0.299074	1.03845E-07	6.70622E-07	0.381954	1.32623E-07	8.56466E-07
Road 2	2	0400-0500	0.134462593	8.40391E-08	5.42716E-07	0.112342222	7.02139E-08	4.53434E-07	0.647945556	4.04966E-07	2.61523E-06	0.539184074	3.3699E-07	2.17625E-06	0.651526296	4.07204E-07	2.62968E-06
Road 2	2	0500-0600	0.106187193	1.40108E-07	9.04804E-07	0.088972281	1.17394E-07	7.58119E-07	0.470265789	6.2049E-07	4.00706E-06	0.390906667	5.1578E-07	3.33085E-06	0.479878947	6.33174E-07	4.08897E-06
Road 2	2	0600-0700	0.147971346	3.56227E-07	2.30048E-06	0.125398077	3.01884E-07	1.94954E-06	0.598357019	1.44049E-06	9.30254E-06	0.504689519	1.21499E-06	7.84631E-06	0.630087596	1.51688E-06	9.79585E-06
Road 2	2	0700-0800	0.12095825	4.47994E-07	2.8931E-06	0.103360438	3.82816E-07	2.47219E-06	0.50287075	1.86248E-06	1.20277E-05	0.426763813	1.58061E-06	1.02074E-05	0.53012425	1.96342E-06	1.26796E-05
Road 2	2	0800-0900	0.138001316	9.7112E-07	6.2714E-06	0.118099868	8.31073E-07	5.36699E-06	0.580248289	4.08323E-06	2.63691E-05	0.493961645	3.47603E-06	2.24478E-05	0.612061513	4.3071E-06	2.78148E-05
Road 2	2	0900-1000	0.162779008	9.49544E-07	6.13206E-06	0.139532262	8.13938E-07	5.25633E-06	0.693559802	4.04577E-06	2.61272E-05	0.592811746	3.45807E-06	2.23319E-05	0.732344008	4.27201E-06	2.75882E-05
Road 2	2	1000-1100	0.182515615	7.90056E-07	5.1021E-06	0.154793262	6.70054E-07	4.32714E-06	0.769736471	3.33196E-06	2.15175E-05	0.651605615	2.82061E-06	1.82152E-05	0.806398877	3.49066E-06	2.25424E-05
Road 2	2	1100-1200	0.215599508	9.13303E-07	5.89802E-06	0.183335246	7.76628E-07	5.01539E-06	0.880766066	3.73102E-06	2.40946E-05	0.748085191	3.16897E-06	2.04649E-05	0.931420437	3.9456E-06	2.54803E-05
Road 2	2	1200-1300	0.162955947	7.16704E-07	4.62841E-06	0.142054579	6.24777E-07	4.03475E-06	0.714417	3.14211E-06	2.02915E-05	0.621039316	2.73142E-06	1.76393E-05	0.763093895	3.3562E-06	2.1674E-05
Road 2	2	1300-1400	0.17966278	9.27426E-07	5.98923E-06	0.156534126	8.08035E-07	5.21821E-06	0.735359776	3.79595E-06	2.45139E-05	0.639038969	3.29874E-06	2.1303E-05	0.795573094	4.10678E-06	2.65212E-05
Road 2	2	1400-1500	0.154970788	5.91902E-07	3.82245E-06	0.134004545	5.11823E-07	3.3053E-06	0.670448788	2.56074E-06	1.6537E-05	0.578465818	2.20942E-06	1.42682E-05	0.712470364	2.72124E-06	1.75735E-05
Road 2	2	1500-1600	0.197251257	8.35578E-07	5.39608E-06	0.164208852	6.95607E-07	4.49216E-06	0.777849672	3.29506E-06	2.12792E-05	0.645958142	2.73635E-06	1.76711E-05	0.810166995	3.43196E-06	2.21632E-05
Road 2	2	1600-1700	0.164834344	8.4325E-07	5.44562E-06	0.138053394	7.06245E-07	4.56086E-06	0.694171403	3.5512E-06	2.29333E-05	0.578863167	2.96131E-06	1.91239E-05	0.716916561	3.66756E-06	2.36847E-05
Road 2	2	1700-1800	0.128574144	6.60728E-07	4.26692E-06	0.106294144	5.46234E-07	3.52752E-06	0.511240315	2.62721E-06	1.69662E-05	0.420196441	2.15934E-06	1.39448E-05	0.526490586	2.70558E-06	1.74723E-05
Road 2	2	1800-1900	0.140371	8.12332E-07	5.24596E-06	0.11542804	6.67986E-07	4.31379E-06	0.63339216	3.66546E-06	2.36712E-05	0.51741456	2.9943E-06	1.93369E-05	0.6328426	3.66228E-06	2.36507E-05
Road 2	2	1900-2000	0.119661361	4.6812E-07	3.02307E-06	0.099946982	3.90996E-07	2.52502E-06	0.544467692	2.12998E-06	1.37552E-05	0.451152485	1.76493E-06	1.13977E-05	0.551099467	2.15592E-06	1.39227E-05
Road 2	2	2000-2100	0.113316259	3.8559E-07	2.4901E-06	0.094459048	3.21423E-07	2.07572E-06	0.484933061	1.65012E-06	1.06563E-05	0.400494694	1.36279E-06	8.80079E-06	0.494953741	1.68422E-06	1.08765E-05
Road 2	2	2100-2200	0.088749935	3.14323E-07	2.02987E-06	0.072300784	2.56065E-07	1.65364E-06	0.40940366	1.44997E-06	9.36377E-06	0.328845359	1.16466E-06	7.52126E-06	0.401146144	1.42073E-06	9.17491E-06
Road 2	2	2200-2300	0.12721528	3.681E-07	2.37715E-06	0.10638976	3.07841E-07	1.98801E-06	0.54327528	1.57198E-06	1.01517E-05	0.45081296	1.30444E-06	8.42392E-06	0.55720272	1.61228E-06	1.04119E-05
Road 2	2	2300-0000	0.113571892	2.91817E-07	1.88452E-06	0.095014414	2.44134E-07	1.5766E-06	0.514373243	1.32165E-06	8.53511E-06	0.42631036	1.09538E-06	7.07386E-06	0.521324775	1.33952E-06	8.65046E-06
Road 3	3	0000-0100	0.097783609	3.60733E-07	1.40208E-05	0.083028304	3.06299E-07	1.19051E-05	0.539515043	1.99032E-06	7.73589E-05	0.455492565	1.68036E-06	6.53112E-05	0.53852087	1.98666E-06	7.72163E-05
Road 3	3	0100-0200	0.072950986	1.66154E-07	6.458E-06	0.062343944	1.41996E-07	5.51901E-06	0.425444085	9.68998E-07	3.76625E-05	0.361569648	8.23517E-07	3.2008E-05	0.423913592	9.65513E-07	3.7527E-05
Road 3	3	0200-0300	0.071849697	1.14091E-07	4.43444E-06	0.060716465	9.64126E-08	3.74732E-06	0.448786667	7.12635E-07	2.76983E-05	0.375676263	5.96542E-07	2.31861E-05	0.436392727	6.92955E-07	2.69334E-05
Road 3	3	0300-0400	0.060316143	6.77211E-08	2.63215E-06	0.050604143	5.68167E-08	2.20832E-06	0.333081429	3.73973E-07	1.45354E-05	0.276735571	3.1071E-07	1.20765E-05	0.327339714	3.67527E-07	1.42848E-05
Road 3	3	0400-0500	0.080292743	1.45528E-07	5.65631E-06	0.067500885	1.22343E-07	4.75518E-06	0.444444336	8.05542E-07	3.13094E-05	0.371480973	6.73298E-07	2.61694E-05	0.438981858	7.95641E-07	3.09246E-05
Road 3	3	0500-0600	0.065020122	2.56552E-07	9.97153E-06	0.05459122	2.15402E-07	8.37214E-06	0.362294837	1.42952E-06	5.55618E-05	0.301492602	1.18961E-06	4.62371E-05	0.356083821	1.40501E-06	5.46092E-05
Road 3	3	0600-0700	0.089791419	6.39455E-07	2.4854E-05	0.075985	5.41132E-07	2.10324E-05	0.448423986	3.19348E-06	0.000124122	0.377227635	2.68645E-06	0.000104416	0.453212635	3.22758E-06	0.000125448
Road 3	3	0700-0800	0.073696506	8.59357E-07	3.3401E-05	0.062613521	7.30121E-07	2.8378E-05	0.386756135	4.50987E-06	0.000175287	0.325818047	3.79928E-06	0.000147669	0.388431568	4.5294E-06	0.000176047
Road 3	3	0800-0900	0.082387763	1.3175E-06	5.12079E-05	0.070164092	1.12202E-06	4.36103E-05	0.407875356	6.52251E-06	0.000253514	0.345527222	5.52548E-06	0.000214761	0.415691314	6.6475E-06	0.000258372
Road 3	3	0900-1000	0.090101523	1.39461E-06	5.42049E-05	0.076955772	1.19113E-06	4.62964E-05	0.464976052	7.19698E-06	0.000279728	0.39552656	6.12203E-06	0.000237948	0.472482332	7.31316E-06	0.000284244
Road 3	3	1000-1100	0.102499716	1.44512E-06	5.61682E-05	0.08709041	1.22787E-06	4.77241E-05	0.517561786	7.29698E-06	0.000283615	0.438435654	6.1814E-06	0.000240256	0.525526064	7.40927E-06	0.00028798
Road 3	3	1100-1200	0.100500925	1.37664E-06	5.35065E-05	0.086575984	1.1859E-06	4.60929E-05	0.52197103	7.14984E-06	0.000277896	0.448184742	6.13913E-06	0.000238613	0.534760726	7.32503E-06	0.000284706
Road 3	3	1200-1300	0.093148244	1.27592E-06	4.9592E-05	0.081121628	1.11119E-06	4.3189E-05	0.495269251	6.78409E-06	0.00026368	0.429638782	5.8851E-06	0.000228739	0.51076041	6.99628E-06	0.000271928

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (August) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 3	3	1300-1400	0.099157745	1.47434E-06	5.7304E-05	0.086347335	1.28387E-06	4.99008E-05	0.506300205	7.52801E-06	0.000292595	0.439322621	6.53214E-06	0.000253888	0.525669957	7.81601E-06	0.000303789
Road 3	3	1400-1500	0.091601478	1.37228E-06	5.33369E-05	0.078622666	1.17784E-06	4.57797E-05	0.475110021	7.1176E-06	0.000276643	0.406252527	6.08605E-06	0.000236549	0.484875193	7.26389E-06	0.000282329
Road 3	3	1500-1600	0.103400212	1.48435E-06	5.7693E-05	0.087588268	1.25736E-06	4.88706E-05	0.522313598	7.49802E-06	0.000291429	0.440492067	6.32344E-06	0.000245776	0.528080335	7.5808E-06	0.000294647
Road 3	3	1600-1700	0.09827166	1.5384E-06	5.97939E-05	0.081318555	1.27301E-06	4.94787E-05	0.504520502	7.89807E-06	0.000306978	0.415199672	6.49979E-06	0.00025263	0.496518227	7.7728E-06	0.000302109
Road 3	3	1700-1800	0.078138131	1.22698E-06	4.76897E-05	0.064456721	1.01215E-06	3.93396E-05	0.403471032	6.33559E-06	0.000246249	0.330176956	5.18468E-06	0.000201515	0.394633677	6.19682E-06	0.000240855
Road 3	3	1800-1900	0.073457595	1.21004E-06	4.70312E-05	0.061109825	1.00664E-06	3.91255E-05	0.406678753	6.69906E-06	0.000260376	0.334707926	5.51352E-06	0.000214297	0.395817751	6.52016E-06	0.000253422
Road 3	3	1900-2000	0.077809987	9.48508E-07	3.68661E-05	0.06491175	7.91278E-07	3.0755E-05	0.430737447	5.25071E-06	0.000204082	0.35593225	4.33884E-06	0.00016864	0.420844	5.13011E-06	0.000199395
Road 3	3	2000-2100	0.072741772	7.57218E-07	2.94312E-05	0.060369122	6.28423E-07	2.44252E-05	0.400928398	4.17353E-06	0.000162215	0.32949923	3.42998E-06	0.000133315	0.389868351	4.0584E-06	0.00015774
Road 3	3	2100-2200	0.071610992	7.06394E-07	2.74558E-05	0.059789512	5.89783E-07	2.29234E-05	0.406436211	4.00922E-06	0.000155828	0.336069837	3.3151E-06	0.00012885	0.39585935	3.90488E-06	0.000151773
Road 3	3	2200-2300	0.076307034	6.89073E-07	2.67825E-05	0.063813801	5.76256E-07	2.23976E-05	0.41985929	3.79144E-06	0.000147364	0.347845009	3.14113E-06	0.000122088	0.41165881	3.71739E-06	0.000144486
Road 3	3	2300-0000	0.067011394	5.39566E-07	2.09716E-05	0.055574203	4.47475E-07	1.73922E-05	0.387104741	3.11691E-06	0.000121147	0.317463805	2.55617E-06	9.9352E-05	0.373038008	3.00365E-06	0.000116744
Road 4	4	0000-0100	0.262188	2.12421E-07	2.27451E-06	0.222369429	1.8016E-07	1.92908E-06	1.294973143	1.04917E-06	1.1234E-05	1.097667143	8.89314E-07	9.5224E-06	1.320036571	1.06947E-06	1.14515E-05
Road 4	4	0100-0200	0.245862	1.13825E-07	1.21879E-06	0.2099875	9.72164E-08	1.04095E-06	1.216629	5.63254E-07	6.03109E-06	1.038889	4.80967E-07	5.14999E-06	1.2488765	5.78184E-07	6.19095E-06
Road 4	4	0200-0300	0.26669	8.02539E-08	8.59325E-07	0.22558	6.78829E-08	7.26861E-07	1.275833077	3.83931E-07	4.11097E-06	1.079219231	3.24765E-07	3.47745E-06	1.304799231	3.92648E-07	4.20431E-06
Road 4	4	0300-0400	0.24307	3.93863E-08	4.21732E-07	0.204258571	3.30975E-08	3.54394E-07	1.247755714	2.02183E-07	2.16489E-06	1.048655714	1.69921E-07	1.81944E-06	1.252914286	2.03019E-07	2.17384E-06
Road 4	4	0400-0500	0.249306429	8.07938E-08	8.65105E-07	0.209500714	6.78938E-08	7.26978E-07	1.193101429	3.86653E-07	4.14012E-06	1.002712143	3.24953E-07	3.47946E-06	1.212212857	3.92847E-07	4.20644E-06
Road 4	4	0500-0600	0.230044583	1.27803E-07	1.36846E-06	0.193295	1.07386E-07	1.14985E-06	1.05931125	5.88506E-07	6.30148E-06	0.88950875	4.94172E-07	5.29138E-06	1.08280375	6.01558E-07	6.44123E-06
Road 4	4	0600-0700	0.255430566	3.13375E-07	3.35549E-06	0.216135472	2.65166E-07	2.83929E-06	1.182654906	1.45094E-06	1.55361E-05	1.000007358	1.22686E-06	1.31367E-05	1.21614283	1.49203E-06	1.5976E-05
Road 4	4	0700-0800	0.255562174	5.44253E-07	5.82763E-06	0.217136957	4.62421E-07	4.95141E-06	1.227002174	2.61306E-06	2.79795E-05	1.041320652	2.21763E-06	2.37454E-05	1.258457609	2.68005E-06	2.86968E-05
Road 4	4	0800-0900	0.264726129	9.49828E-07	1.01704E-05	0.225294065	8.08347E-07	8.65544E-06	1.275386129	4.57604E-06	4.89983E-05	1.085064516	3.89317E-06	4.16864E-05	1.310358581	4.70152E-06	5.03419E-05
Road 4	4	0900-1000	0.272107703	9.32221E-07	9.98183E-06	0.231859257	7.94333E-07	8.50538E-06	1.244706149	4.26427E-06	4.566E-05	1.059860811	3.631E-06	3.88793E-05	1.291720068	4.42534E-06	4.73846E-05
Road 4	4	1000-1100	0.303785069	1.01262E-06	1.08427E-05	0.25778625	8.59288E-07	9.20089E-06	1.393476667	4.64492E-06	4.97359E-05	1.181989861	3.93997E-06	4.21875E-05	1.439776111	4.79925E-06	5.13884E-05
Road 4	4	1100-1200	0.280785935	1.00745E-06	1.07873E-05	0.241531097	8.66605E-07	9.27924E-06	1.279662323	4.59138E-06	4.91626E-05	1.100597419	3.9489E-06	4.22832E-05	1.342128516	4.81551E-06	5.15624E-05
Road 4	4	1200-1300	0.282831554	9.6896E-07	1.03752E-05	0.246016757	8.42835E-07	9.02472E-06	1.345526351	4.60967E-06	4.93584E-05	1.169996149	4.00832E-06	4.29194E-05	1.416012905	4.85116E-06	5.19441E-05
Road 4	4	1300-1400	0.290462333	1.00855E-06	1.07991E-05	0.2526624	8.773E-07	9.39376E-06	1.3496156	4.68617E-06	5.01775E-05	1.173575733	4.07492E-06	4.36325E-05	1.426238133	4.95222E-06	5.30262E-05
Road 4	4	1400-1500	0.265039857	8.58925E-07	9.19701E-06	0.227183143	7.36242E-07	7.88337E-06	1.271272929	4.11987E-06	4.41138E-05	1.089000071	3.52917E-06	3.77888E-05	1.316183214	4.26541E-06	4.56722E-05
Road 4	4	1500-1600	0.302568	8.75486E-07	9.37434E-06	0.25591144	7.40484E-07	7.9288E-06	1.40585152	4.06786E-06	4.35569E-05	1.18895968	3.44028E-06	3.6837E-05	1.44487112	4.18076E-06	4.47658E-05
Road 4	4	1600-1700	0.285162742	8.18523E-07	8.7644E-06	0.235749516	6.76688E-07	7.24569E-06	1.338474194	3.84192E-06	4.11376E-05	1.10586379	3.17424E-06	3.39884E-05	1.341613306	3.85093E-06	4.12341E-05
Road 4	4	1700-1800	0.27434126	8.06513E-07	8.6358E-06	0.226335197	6.65384E-07	7.12465E-06	1.308874646	3.84785E-06	4.12011E-05	1.079046457	3.1722E-06	3.39665E-05	1.305381654	3.83758E-06	4.10912E-05
Road 4	4	1800-1900	0.301238208	7.39149E-07	7.9145E-06	0.250647547	6.15015E-07	6.58532E-06	1.450289434	3.55858E-06	3.81038E-05	1.206454906	2.96028E-06	3.16975E-05	1.457102453	3.5753E-06	3.82828E-05
Road 4	4	1900-2000	0.269673919	4.61941E-07	4.94627E-06	0.225040541	3.85486E-07	4.12762E-06	1.301560946	2.22953E-06	2.38728E-05	1.085367162	1.85919E-06	1.99075E-05	1.310407703	2.24468E-06	2.40351E-05
Road 4	4	2000-2100	0.235856939	2.67523E-07	2.86452E-06	0.195618571	2.21882E-07	2.37582E-06	1.142921633	1.29637E-06	1.3881E-05	0.946773061	1.07389E-06	1.14987E-05	1.142391633	1.29577E-06	1.38745E-05
Road 4	4	2100-2200	0.197604865	1.69245E-07	1.8122E-06	0.165248378	1.41532E-07	1.51547E-06	0.978216757	8.37825E-07	8.97107E-06	0.816434865	6.99261E-07	7.4874E-06	0.981683243	8.40794E-07	9.00286E-06
Road 4	4	2200-2300	0.26321619	3.83857E-07	4.11018E-06	0.220203968	3.21131E-07	3.43853E-06	1.2515	1.8251E-06	1.95424E-05	1.046219683	1.52574E-06	1.63369E-05	1.266423651	1.84687E-06	1.97755E-05
Road 4	4	2300-0000	0.246251633	2.79313E-07	2.99077E-06	0.204266327	2.31691E-07	2.48085E-06	1.202991224	1.3645E-06	1.46105E-05	0.997049796	1.13091E-06	1.21093E-05	1.201316122	1.3626E-06	1.45902E-05
Road 5	5	0000-0100	0.082780829	2.99863E-07	4.0551E-06	0.070287306	2.54607E-07	3.4431E-06	0.463160933	1.67774E-06	2.26884E-05	0.390425855	1.41427E-06	1.91254E-05	0.460713161	1.66887E-06	2.25685E-05
Road 5	5	0100-0200	0.055346311	1.26731E-07	1.71381E-06	0.047313934	1.08339E-07	1.46509E-06	0.340207869	7.79005E-07	1.05346E-05	0.288492131	6.60586E-07	8.93323E-06	0.335806066	7.68925E-07	1.03983E-05
Road 5	5	0200-0300	0.053029767	8.55961E-08	1.15753E-06	0.044787442	7.2292E-08	9.77619E-07	0.366421395	5.91446E-07	7.99823E-06	0.305404651	4.92958E-07	6.66636E-06	0.350192093	5.6525E-07	7.64398E-06
Road 5	5	0300-0400	0.047420476	5.60715E-08	7.58266E-07	0.039759048	4.70124E-08	6.35757E-07	0.262241111	3.10082E-07	4.1933E-06	0.21686746	2.56431E-07	3.46777E-06	0.256626508	3.03444E-07	4.10352E-06
Road 5	5	0400-0500	0.06569202	1.22063E-07	1.65068E-06	0.055232626	1.02628E-07	1.38786E-06	0.375880202	6.98426E-07	9.44495E-06	0.313571515	5.8265E-07	7.87928E-06	0.368804141	6.85278E-07	9.26714E-06
Road 5	5	0500-0600	0.053199773	2.19669E-07	2.97062E-06	0.044652864	1.84377E-07	2.49337E-06	0.310137773	1.2806E-06	1.73178E-05	0.257376682	1.06274E-06	1.43717E-05	0.302029545	1.24712E-06	1.6865E-05
Road 5	5	0600-0700	0.077788582	5.66478E-07	7.66059E-06	0.065830851	4.79399E-07	6.483E-06	0.391175438	2.84865E-06	3.85228E-05	0.328549665	2.39259E-06	3.23555E-05	0.394380515	2.87199E-06	3.88385E-05
Road 5	5	0700-0800	0.060239415	7.15682E-07	9.67831E-06	0.051169242	6.07923E-07	8.22105E-06	0.318727409	3.78668E-06	5.1208E-05	0.267746793	3.181E-06	4.30173E-05	0.318916035	3.78892E-06	5.12383E-05
Road 5	5	0800-0900	0.065171898	1.03115E-06	1.39445E-05	0.055529786	8.78596E-07	1.18814E-05	0.319183333	5.05014E-06	6.8294E-05	0.269818849	4.26909E-06	5.77317E-05	0.325348636	5.14769E-06	6.96132E-05
Road 5	5	0900-1000	0.07270614	1.11352E-06	1.50583E-05	0.062166789	9.52104E-07	1.28755E-05	0.387936691	5.94137E-06	8.03463E-05	0.329933358	5.05303E-06	6.83331E-05	0.392100147	6.00514E-06	8.12086E-05
Road 5	5	1000-1100	0.083042929	1.14402E-06	1.54708E-05	0.070595695	9.72546E-07	1.31519E-05	0.430496621	5.93064E-06	8.02012E-05	0.364470436	5.02105E-06	6.79005E-05	0.435066131	5.99359E-06	8.10525E-05
Road 5	5	1100-1200	0.081478612	1.06895E-06	1.44556E-05	0.070230458	9.21379E-07	1.246E-05	0.441534421	5.79265E-06	7.83351E-05	0.378838999	4.97013E-06	6.7212E-05	0.449069456	5.89151E-06	7.9672E-05
Road 5	5	1200-1300	0.074455728	9.87992E-07	1.33608E-05	0.064869745	8.6079E-07	1.16406E-05	0.407077355	5.40172E-06	7.30485E-05	0.352810736	4.68163E-06	6.33105E-05	0.417680481	5.54242E-06	7.49512E-05
Road 5	5	1300-1400	0.081493037	1.18844E-06	1.60715E-05	0.071011892	1.03559E-06	1.40045E-05	0.425497375	6.20517E-06	8.39137E-05	0.368913707	5.37999E-06	7.27546E-05	0.439925598	6.41558E-06	8.67591E-05
Road 5	5	1400-1500	0.076990756	1.14735E-06	1.55158E-05	0.066109723	9.85194E-07	1.3323E-05	0.403903098	6.01913E-06	8.13978E-05	0.345159899	5.14371E-06	6.95594E-05	0.411269622	6.12891E-06	8.28823E-05
Road 5	5	1500-1600	0.087414974	1.26332E-06	1.70841E-05	0.074104156	1.07095E-06	1.44827E-05	0.447415065	6.46602E-06	8.74412E-05	0.376936571	5.44747E-06	7.36671E-05	0.451040727	6.51842E-06	8.81498E-05
Road 5	5	1600-1700	0.083678898	1.33968E-06	1.81167E-05	0.069264267	1.1089E-06	1.49959E-05	0.436772145	6.99262E-06	9.45625E-05	0.358997948	5.74747E-06	7.77241E-05	0.428622216	6.85638E-06	9.272E-05
Road 5	5	1700-1800	0.061788425	9.86898E-07	1.3346E-05	0.050981081	8.14281E-07	1.10117E-05	0.323573114	5.16818E-06	6.98903E-05	0.263968707	4.21617E-06	5.7016E-05	0.314949788	5.03045E-06	6.80277E-05
Road 5	5	1800-1900	0.057448411	9.90899E-07	1.34001E-05	0.047789782	8.24302E-07	1.11472E-05	0.329246159	5.679E-06	7.67982E-05	0.269952905	4.65628E-06	6.29678E-05	0.317742688	5.48058E-06	7.4115E-05
Road 5	5	1900-2000	0.066244738	8.52926E-07	1.15343E-05	0.055252653	7.11399E-07	9.62038E-06	0.375727157	4.83763E-06	6.54202E-05	0.309728061	3.98787E-06	5.39286E-05	0.364980714	4.69926E-06	6.3549E-05
Road 5	5	2000-2100	0.064388767	7.25099E-07	9.80565E-06	0.053441033	6.01813E-07	8.13844E-06	0.36028995	4.05732E-06	5.48679E-05	0.295676283	3.32969E-06	4.5028E-05	0.349117317	3.9315E-06	5.31664E-05
Road 5	5	2100-2200	0.066777249	7.24423E-07	9.79651E-06	0.055742439	6.04713E-07	8.17765E-06	0.383303529	4.15821E-06	5.62323E-05	0.316566869	3.43423E-06	4.64417E-05	0.372309308	4.03894E-06	5.46194E-05
Road 5	5	2200-2300	0.063819699	5.97711E-07	8.08295E-06	0.053361844	4.99767E-07	6.75844E-06	0.361142024	3.38232E-06	4.57397E-05	0.298356854	2.7943E-06	3.77878E-05	0.351718697	3.29406E-06	4.45462E-05
Road 5	5	2300-0000	0.056278543	4.78494E-07	6.47077E-06	0.0466783	3.96871E-07	5.36696E-06	0.334554967	2.84447E-06	3.84663E-05	0.273546424	2.32576E-06	3.14517E-05	0.320224724	2.72263E-06	3.68187E-05
Road 6	6	0000-0100	0.049570333	1.39556E-07	4.98857E-06	0.0419684	1.18154E-07	4.22354E-06	0.321231533	9.04368E-07	3.23275E-05	0.2685548	7.56066E-07	2.70263E-05	0.3105232	8.74221E-07	3.12498E-05
Road 6	6	0100-0200	0.065267281	1.39648E-07	4.99187E-06	0.05578	1.19349E-07	4.26625E-06	0.369394474	7.90371E-07	2.82526E-05	0.312676491	6.69015E-07	2.39146E-05	0.368456491	7.88364E-07	2.81808E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (August) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 6	6	0200-0300	0.059658481	8.84576E-08	3.162E-06	0.0505	7.4878E-08	2.67659E-06	0.342787722	5.08263E-07	1.81683E-05	0.287008861	4.25557E-07	1.5212E-05	0.337508861	5.00435E-07	1.78885E-05
Road 6	6	0300-0400	0.061427903	7.14814E-08	2.55517E-06	0.051802258	6.02804E-08	2.15478E-06	0.393989355	4.58471E-07	1.63885E-05	0.328997903	3.82843E-07	1.36851E-05	0.380800161	4.43123E-07	1.58399E-05
Road 6	6	0400-0500	0.066428889	1.12211E-07	4.01109E-06	0.055870556	9.43759E-08	3.37356E-06	0.391551889	6.61405E-07	2.36426E-05	0.326081556	5.50813E-07	1.96893E-05	0.381952111	6.45189E-07	2.30629E-05
Road 6	6	0500-0600	0.059450062	1.8076E-07	6.46145E-06	0.049984074	1.51979E-07	5.43262E-06	0.360327963	1.09559E-06	3.9163E-05	0.299363519	9.10227E-07	3.25369E-05	0.349347593	1.06221E-06	3.79695E-05
Road 6	6	0600-0700	0.063472828	3.45479E-07	1.23495E-05	0.053746103	2.92537E-07	1.0457E-05	0.401879483	2.18741E-06	7.81909E-05	0.336534552	1.83174E-06	6.54772E-05	0.390280655	2.12428E-06	7.59342E-05
Road 6	6	0700-0800	0.059204242	5.1337E-07	1.83509E-05	0.050325779	4.36383E-07	1.55989E-05	0.341587727	2.96197E-06	0.000105878	0.287057273	2.48912E-06	8.8976E-05	0.337383052	2.92551E-06	0.000104575
Road 6	6	0800-0900	0.050601103	6.28715E-07	2.2474E-05	0.04304852	5.34875E-07	1.91196E-05	0.300080559	3.72848E-06	0.000133278	0.252083822	3.13212E-06	0.000111961	0.295132341	3.667E-06	0.00013108
Road 6	6	0900-1000	0.053942686	6.40873E-07	2.29086E-05	0.046021438	5.46764E-07	1.95446E-05	0.307424092	3.65239E-06	0.000130558	0.259442291	3.08234E-06	0.000110181	0.305463728	3.6291E-06	0.000129726
Road 6	6	1000-1100	0.072498972	7.27983E-07	2.60225E-05	0.061581346	6.18356E-07	2.21037E-05	0.398713009	4.00359E-06	0.000143112	0.336630168	3.3802E-06	0.000120829	0.398211514	3.99856E-06	0.000142932
Road 6	6	1100-1200	0.083139154	8.30143E-07	2.96743E-05	0.071681805	7.15742E-07	2.55849E-05	0.436528703	4.35873E-06	0.000155807	0.374605526	3.74043E-06	0.000133705	0.446287331	4.45617E-06	0.00015929
Road 6	6	1200-1300	0.078588222	7.71427E-07	2.75754E-05	0.068486272	6.72266E-07	2.40308E-05	0.396051644	3.88767E-06	0.000138968	0.34363088	3.3731E-06	0.000120575	0.412117151	4.04537E-06	0.000144606
Road 6	6	1300-1400	0.091184683	8.91652E-07	3.18729E-05	0.079425086	7.7666E-07	2.77625E-05	0.467469117	4.57116E-06	0.0001634	0.405356603	3.96379E-06	0.000141689	0.484781689	4.74045E-06	0.000169452
Road 6	6	1400-1500	0.086925627	9.36474E-07	3.34751E-05	0.074634111	8.04054E-07	2.87417E-05	0.438954286	4.72897E-06	0.000169042	0.374945592	4.03939E-06	0.000144392	0.449579704	4.84345E-06	0.000173134
Road 6	6	1500-1600	0.077663256	8.19196E-07	2.92829E-05	0.065792046	6.93978E-07	2.48069E-05	0.406562811	4.28844E-06	0.000153294	0.341743505	3.60473E-06	0.000128854	0.407535552	4.2987E-06	0.000153661
Road 6	6	1600-1700	0.081861684	8.84991E-07	3.16348E-05	0.067796354	7.32934E-07	2.61994E-05	0.40905092	4.42217E-06	0.000158075	0.33625599	3.6352E-06	0.000129944	0.404052344	4.36813E-06	0.000156143
Road 6	6	1700-1800	0.061504344	7.0416E-07	2.51709E-05	0.050807246	5.8169E-07	2.0793E-05	0.319265213	3.65525E-06	0.00013066	0.260656803	2.98425E-06	0.000106675	0.311464049	3.56594E-06	0.000127468
Road 6	6	1800-1900	0.059738113	7.72514E-07	2.76143E-05	0.049699231	6.42695E-07	2.29737E-05	0.316233643	4.08943E-06	0.000146181	0.25976103	3.35915E-06	0.000120076	0.309460261	4.00184E-06	0.00014305
Road 6	6	1900-2000	0.070556317	6.9391E-07	2.48045E-05	0.058822538	5.7851E-07	2.06794E-05	0.373619179	3.67448E-06	0.000131348	0.307723225	3.02641E-06	0.000108182	0.366545763	3.60492E-06	0.000128861
Road 6	6	2000-2100	0.055959139	4.39019E-07	1.56931E-05	0.046411507	3.64114E-07	1.30156E-05	0.33033323	2.59158E-06	9.26384E-05	0.270157751	2.11948E-06	7.57628E-05	0.316569258	2.4836E-06	8.87785E-05
Road 6	6	2100-2200	0.078454278	5.30096E-07	1.89488E-05	0.065491333	4.42509E-07	1.58179E-05	0.421085972	2.84518E-06	0.000101703	0.348224972	2.35287E-06	8.41056E-05	0.413716306	2.79538E-06	9.99235E-05
Road 6	6	2200-2300	0.058280525	4.16758E-07	1.48974E-05	0.048645696	3.47861E-07	1.24346E-05	0.332852572	2.3802E-06	8.50824E-05	0.272982887	1.95207E-06	6.97787E-05	0.321628583	2.29993E-06	8.22133E-05
Road 6	6	2300-0000	0.039378095	2.63851E-07	9.4316E-06	0.032667759	2.18889E-07	7.82438E-06	0.249504706	1.67179E-06	5.97599E-05	0.203365098	1.36264E-06	4.87088E-05	0.236032857	1.58153E-06	5.65332E-05
Road 7	7	0000-0100	0.072625083	1.96121E-07	4.89582E-06	0.061121033	1.65055E-07	4.1203E-06	0.430953779	1.16377E-06	2.90515E-05	0.359790521	9.71599E-07	2.42543E-05	0.420911554	1.13665E-06	2.83746E-05
Road 7	7	0100-0200	0.08863221	1.86588E-07	4.65785E-06	0.075773977	1.59519E-07	3.98211E-06	0.48599942	1.02312E-06	2.55405E-05	0.413038861	8.69527E-07	2.17062E-05	0.488812838	1.02905E-06	2.56884E-05
Road 7	7	0200-0300	0.075881474	1.03559E-07	2.58517E-06	0.064521332	8.80553E-08	2.19815E-06	0.431010708	5.88221E-07	1.46839E-05	0.363841784	4.96552E-07	1.23956E-05	0.428363116	5.84607E-07	1.45937E-05
Road 7	7	0300-0400	0.077935813	8.59954E-08	2.14672E-06	0.065602763	7.23869E-08	1.80701E-06	0.471239039	5.19971E-07	1.29802E-05	0.394031184	4.34779E-07	1.08535E-05	0.459633947	5.07166E-07	1.26605E-05
Road 7	7	0400-0500	0.086419387	1.3927E-07	3.47664E-06	0.072519009	1.16869E-07	2.91743E-06	0.482533228	7.77633E-07	1.94122E-05	0.402213604	6.48193E-07	1.6181E-05	0.474732613	7.65062E-07	1.90984E-05
Road 7	7	0500-0600	0.077785942	2.2361E-07	5.58203E-06	0.065329091	1.878E-07	4.68811E-06	0.439907457	1.26459E-06	3.15684E-05	0.366412828	1.05332E-06	2.62943E-05	0.431741919	1.24112E-06	3.09824E-05
Road 7	7	0600-0700	0.081961335	4.21247E-07	1.05157E-05	0.069424237	3.56811E-07	8.90718E-06	0.476527126	2.44915E-06	6.11387E-05	0.400482203	2.05831E-06	5.13821E-05	0.469906441	2.41512E-06	6.02893E-05
Road 7	7	0700-0800	0.078022016	6.40015E-07	1.59769E-05	0.066457335	5.4515E-07	1.36087E-05	0.42676684	3.50077E-06	8.73906E-05	0.360675962	2.95863E-06	7.38569E-05	0.427133297	3.50377E-06	8.74656E-05
Road 7	7	0800-0900	0.078071003	9.69126E-07	2.41925E-05	0.066603226	8.26772E-07	2.06389E-05	0.425585754	5.28296E-06	0.00013188	0.360251352	4.47194E-06	0.000111634	0.426854578	5.29871E-06	0.000132273
Road 7	7	0900-1000	0.08026299	9.22922E-07	2.30391E-05	0.068545082	7.88181E-07	1.96756E-05	0.422054754	4.85309E-06	0.000121149	0.358152446	4.11829E-06	0.000102806	0.426697528	4.90648E-06	0.000122482
Road 7	7	1000-1100	0.095687541	9.65527E-07	2.41027E-05	0.081226998	8.19614E-07	2.04602E-05	0.50474046	5.09304E-06	0.000127139	0.426662002	4.3052E-06	0.000107472	0.507889001	5.12481E-06	0.000127932
Road 7	7	1100-1200	0.105741432	1.06544E-06	2.65969E-05	0.090690353	9.13787E-07	2.28111E-05	0.542882868	5.47003E-06	0.00013655	0.464287869	4.67812E-06	0.000116781	0.554978222	5.5919E-06	0.000139592
Road 7	7	1200-1300	0.101407869	1.0203E-06	2.54701E-05	0.088347378	8.88897E-07	2.21898E-05	0.513399508	5.16551E-06	0.000128948	0.446113942	4.48852E-06	0.000112048	0.534461321	5.37742E-06	0.000134238
Road 7	7	1300-1400	0.108162858	1.07099E-06	2.67355E-05	0.094223769	9.32973E-07	2.32901E-05	0.548741339	5.43346E-06	0.000135637	0.476581373	4.71895E-06	0.0001178	0.570805142	5.65193E-06	0.000141091
Road 7	7	1400-1500	0.101077106	1.04779E-06	2.61563E-05	0.086981623	9.01675E-07	2.25087E-05	0.515723557	5.34613E-06	0.000133457	0.442271692	4.58471E-06	0.000114449	0.529253315	5.48638E-06	0.000136958
Road 7	7	1500-1600	0.095399307	9.70929E-07	2.42376E-05	0.080310154	8.17359E-07	2.04039E-05	0.494269197	5.03044E-06	0.000125576	0.413839245	4.21186E-06	0.000105142	0.4941494	5.02922E-06	0.000125546
Road 7	7	1600-1700	0.099484804	1.04717E-06	2.61409E-05	0.082694129	8.70436E-07	2.17289E-05	0.497302949	5.2346E-06	0.000130673	0.411180881	4.32808E-06	0.000108043	0.49387501	5.19852E-06	0.000129772
Road 7	7	1700-1800	0.077179446	8.59451E-07	2.14547E-05	0.063745405	7.09853E-07	1.77203E-05	0.401427347	4.4702E-06	0.000111591	0.328884098	3.66237E-06	9.14248E-05	0.392629503	4.37223E-06	0.000109145
Road 7	7	1800-1900	0.070879999	8.20175E-07	2.04742E-05	0.058725361	6.7953E-07	1.69633E-05	0.375172951	4.34124E-06	0.000108372	0.307868348	3.56244E-06	8.89301E-05	0.366593709	4.24197E-06	0.000105893
Road 7	7	1900-2000	0.081916463	7.15965E-07	1.78728E-05	0.068351848	5.97408E-07	1.49133E-05	0.436600244	3.81597E-06	9.5259E-05	0.360959704	3.15486E-06	7.87555E-05	0.429311553	3.75226E-06	9.36687E-05
Road 7	7	2000-2100	0.075736754	5.45397E-07	1.36149E-05	0.06293271	4.53192E-07	1.13132E-05	0.416693004	3.0007E-06	7.49072E-05	0.342933206	2.46954E-06	6.16477E-05	0.405865917	2.92273E-06	7.29609E-05
Road 7	7	2100-2200	0.087411775	5.25405E-07	1.31158E-05	0.072373504	4.35015E-07	1.08594E-05	0.469871475	2.82425E-06	7.05026E-05	0.385901282	2.31953E-06	5.79032E-05	0.458274786	2.75455E-06	6.87625E-05
Road 7	7	2200-2300	0.072614251	4.71253E-07	1.1764E-05	0.060653221	3.93628E-07	9.82623E-06	0.402436644	2.61174E-06	6.51975E-05	0.33182877	2.15351E-06	5.37585E-05	0.392481991	2.54713E-06	6.35847E-05
Road 7	7	2300-0000	0.051382959	3.06609E-07	7.65397E-06	0.042761499	2.55164E-07	6.36972E-06	0.307280096	1.83358E-06	4.57722E-05	0.252503107	1.50672E-06	3.76127E-05	0.295264606	1.76188E-06	4.39824E-05
Road 8	8	0000-0100	0.229983333	1.67261E-07	2.75723E-06	0.194997222	1.41816E-07	2.33779E-06	1.139095	8.28433E-07	1.36564E-05	0.965381667	7.02096E-07	1.15738E-05	1.160378889	8.43912E-07	1.39116E-05
Road 8	8	0100-0200	0.236900333	1.43576E-07	2.3668E-06	0.202366333	1.22646E-07	2.02178E-06	1.170255	7.09245E-07	1.16916E-05	0.999436	6.05719E-07	9.98505E-06	1.201802333	7.28365E-07	1.20068E-05
Road 8	8	0200-0300	0.224740667	6.81032E-08	1.12266E-06	0.190224	5.76436E-08	9.50234E-07	1.167248667	3.53712E-07	5.8308E-06	0.987836	2.99344E-07	4.93458E-06	1.17806	3.56988E-07	5.88481E-06
Road 8	8	0300-0400	0.205355	5.80802E-08	9.5743E-07	0.17286	4.88897E-08	8.05928E-07	1.04455	2.95428E-07	4.87002E-06	0.878995714	2.48605E-07	4.09816E-06	1.051855714	2.97495E-07	4.90409E-06
Road 8	8	0400-0500	0.23251381	9.86422E-08	1.62608E-06	0.195487619	8.29341E-08	1.36714E-06	1.115255238	4.73139E-07	7.79951E-06	0.937660476	3.97795E-07	6.55751E-06	1.133148095	4.80729E-07	7.92465E-06
Road 8	8	0500-0600	0.221135	1.51891E-07	2.50386E-06	0.185921765	1.27704E-07	2.10515E-06	1.042458529	7.16032E-07	1.18035E-05	0.876013824	6.01706E-07	9.9189E-06	1.061935588	7.2941E-07	1.20241E-05
Road 8	8	0600-0700	0.24692871	3.09284E-07	5.09844E-06	0.209073548	2.6187E-07	4.31683E-06	1.149955	1.44035E-06	2.37436E-05	0.972940323	1.21863E-06	2.00887E-05	1.182013871	1.4805E-06	2.44055E-05
Road 8	8	0700-0800	0.244293922	5.03394E-07	8.29825E-06	0.207618529	4.2782E-07	7.05245E-06	1.149252549	2.36816E-06	3.90382E-05	0.975917647	2.01098E-06	3.31503E-05	1.183536176	2.4388E-06	4.02027E-05
Road 8	8	0800-0900	0.273438177	1.06061E-06	1.74837E-05	0.232939219	9.03522E-07	1.48942E-05	1.29129724	5.00867E-06	8.2566E-05	1.09925276	4.26377E-06	7.02866E-05	1.332191979	5.16729E-06	8.51808E-05
Road 8	8	0900-1000	0.294150506	9.38905E-07	1.54775E-05	0.250715063	8.00262E-07	1.3192E-05	1.320871772	4.21612E-06	6.95011E-05	1.12560462	3.59284E-06	5.92266E-05	1.376319684	4.3931E-06	7.24186E-05
Road 8	8	1000-1100	0.278997375	9.0181E-07	1.4866E-05	0.236802125	7.65421E-07	1.26177E-05	1.29050775	4.17134E-06	6.87629E-05	1.094365813	3.53734E-06	5.83118E-05	1.331167938	4.30277E-06	7.09295E-05
Road 8	8	1100-1200	0.288246792	9.25884E-07	1.52628E-05	0.247937547	7.96405E-07	1.31284E-05	1.345962138	4.32339E-06	7.12695E-05	1.157589371	3.71832E-06	6.12951E-05	1.405526918	4.51472E-06	7.44235E-05
Road 8	8	1200-1300	0.285688294	9.81152E-07	1.61739E-05	0.248525294	8.53521E-07	1.407E-05	1.345338706	4.62036E-06	7.61648E-05	1.169823706	4.01758E-06	6.62282E-05	1.418349	4.8711E-06	8.02982E-05
Road 8	8	1300-1400	0.261723827	8.56551E-07	1.41199E-05	0.227717654	7.45258E-07	1.22853E-05	1.215913765	3.97935E-06	6.55982E-05	1.057524383	3.46099E-06	5.70531E-05	1.285242037	4.20625E-06	6.93384E-05
Road 8	8	1400-1500	0.256452158	7.20138E-07	1.18712E-05	0.219860144	6.17385E-07	1.01774E-05	1.24054295	3.48354E-06	5.74249E-05	1.063073094	2.9852E-06	4.92098E-05	1.282933237	3.60258E-06	5.93872E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (August) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 8	8	1500-1600	0.268937986	7.552E-07	1.24492E-05	0.227461583	6.38731E-07	1.05292E-05	1.268503813	3.56206E-06	5.87192E-05	1.072197482	3.01082E-06	4.96322E-05	1.299659065	3.64955E-06	6.01614E-05
Road 8	8	1600-1700	0.270635101	8.14639E-07	1.3429E-05	0.223695638	6.73346E-07	1.10999E-05	1.264771879	3.80709E-06	6.27585E-05	1.044779396	3.14489E-06	5.18424E-05	1.268475034	3.81824E-06	6.29422E-05
Road 8	8	1700-1800	0.222136603	7.00067E-07	1.15403E-05	0.183214103	5.77402E-07	9.51826E-06	1.079297564	3.40142E-06	5.60712E-05	0.888605321	2.80045E-06	4.61644E-05	1.071819423	3.37786E-06	5.56827E-05
Road 8	8	1800-1900	0.221811869	4.79472E-07	7.90392E-06	0.184715794	3.99285E-07	6.58206E-06	1.10477271	2.38809E-06	3.93668E-05	0.918841589	1.98618E-06	3.27415E-05	1.103557383	2.38547E-06	3.93235E-05
Road 8	8	1900-2000	0.218917792	3.40539E-07	5.61365E-06	0.182697143	2.84196E-07	4.68486E-06	1.11682	1.73728E-06	2.86383E-05	0.931710779	1.44933E-06	2.38916E-05	1.114407922	1.73352E-06	2.85765E-05
Road 8	8	2000-2100	0.24116013	3.75138E-07	6.18401E-06	0.200020779	3.11143E-07	5.12908E-06	1.122555844	1.7462E-06	2.87854E-05	0.930100779	1.44682E-06	2.38503E-05	1.130121558	1.75797E-06	2.89794E-05
Road 8	8	2100-2200	0.200093889	2.18284E-07	3.59833E-06	0.167190741	1.8239E-07	3.00663E-06	1.017180185	1.10965E-06	1.82922E-05	0.848007963	9.251E-07	1.52499E-05	1.015198704	1.10749E-06	1.82565E-05
Road 8	8	2200-2300	0.23838875	3.0822E-07	5.08089E-06	0.199442344	2.57865E-07	4.25081E-06	1.146203438	1.48196E-06	2.44296E-05	0.957663594	1.23819E-06	2.04111E-05	1.157105938	1.49606E-06	2.46619E-05
Road 8	8	2300-0000	0.187841321	2.01123E-07	3.31544E-06	0.155938679	1.66965E-07	2.75235E-06	0.940401887	1.00689E-06	1.65983E-05	0.779718491	8.3485E-07	1.37622E-05	0.93565717	1.00181E-06	1.65145E-05
Road 9	9	0000-0100	0.200555582	5.32628E-08	1.58999E-06	0.174490408	4.63405E-08	1.38334E-06	0.896896046	2.38194E-07	7.11051E-06	0.774027816	2.05563E-07	6.13642E-06	0.948518224	2.51904E-07	7.51977E-06
Road 9	9	0100-0200	0.216994747	4.52797E-08	1.35168E-06	0.191413111	3.99416E-08	1.19233E-06	0.917634277	1.9148E-07	5.71601E-06	0.802957138	1.67551E-07	5.00168E-06	0.994370249	2.07492E-07	6.194E-06
Road 9	9	0200-0300	0.08468742	8.03249E-09	2.39784E-07	0.072557337	6.88197E-09	2.05439E-07	0.592972313	5.62427E-08	1.67894E-06	0.510817726	4.84504E-08	1.44633E-06	0.583375062	5.53324E-08	1.65177E-06
Road 9	9	0300-0400	0.103308005	7.8389E-09	2.34005E-07	0.08754807	6.64306E-09	1.98307E-07	0.62263418	4.72448E-08	1.41034E-06	0.529130363	4.01499E-08	1.19854E-06	0.616678433	4.67929E-08	1.39685E-06
Road 9	9	0400-0500	0.235088998	4.45958E-08	1.33126E-06	0.204443528	3.87824E-08	1.15772E-06	0.953990158	1.80969E-07	5.40225E-06	0.822608529	1.56047E-07	4.65826E-06	1.027052057	1.94829E-07	5.81598E-06
Road 9	9	0500-0600	0.168038219	5.41899E-08	1.61766E-06	0.146133316	4.71259E-08	1.40679E-06	0.826368045	2.66492E-07	7.95524E-06	0.720573707	2.32375E-07	6.93678E-06	0.866707023	2.79501E-07	8.34357E-06
Road 9	9	0600-0700	0.198267425	1.20355E-07	3.59279E-06	0.174675853	1.06034E-07	3.16529E-06	1.001407467	6.07886E-07	1.81464E-05	0.882365717	5.35624E-07	1.59893E-05	1.05704157	6.41658E-07	1.91546E-05
Road 9	9	0700-0800	0.167351947	1.55557E-07	4.64363E-06	0.14954883	1.39008E-07	4.14963E-06	0.922586755	8.5756E-07	2.55996E-05	0.82681156	7.68536E-07	2.29421E-05	0.97636039	9.07544E-07	2.70917E-05
Road 9	9	0800-0900	0.262149638	5.71885E-07	1.70717E-05	0.2310106	5.03954E-07	1.50439E-05	1.238029777	2.70079E-06	8.06231E-05	1.08465774	2.3662E-06	7.06352E-05	1.31566834	2.87016E-06	8.56791E-05
Road 9	9	0900-1000	0.272907369	4.50397E-07	1.34451E-05	0.24293638	4.00934E-07	1.19686E-05	1.167862826	1.9274E-06	5.75363E-05	1.033395848	1.70548E-06	5.09116E-05	1.276332228	2.10642E-06	6.28802E-05
Road 9	9	1000-1100	0.281020516	3.89155E-07	1.16169E-05	0.244830132	3.39039E-07	1.01209E-05	1.182592964	1.63764E-06	4.88865E-05	1.026234409	1.42112E-06	4.24229E-05	1.271064541	1.76016E-06	5.25438E-05
Road 9	9	1100-1200	0.196306575	2.83015E-07	8.44849E-06	0.170280187	2.45493E-07	7.32839E-06	1.020667924	1.4715E-06	4.39267E-05	0.894501749	1.2896E-06	3.84969E-05	1.064781936	1.5351E-06	4.58253E-05
Road 9	9	1200-1300	0.287047305	4.02946E-07	1.20286E-05	0.259301983	3.63998E-07	1.0866E-05	1.278751099	1.79506E-06	5.35856E-05	1.153958506	1.61988E-06	4.83563E-05	1.413260489	1.98388E-06	5.92222E-05
Road 9	9	1300-1400	0.327418571	3.78874E-07	1.131E-05	0.295259053	3.4166E-07	1.01991E-05	1.245533484	1.44127E-06	4.30245E-05	1.116437406	1.29189E-06	3.85651E-05	1.411696459	1.63355E-06	4.87643E-05
Road 9	9	1400-1500	0.212224441	2.73757E-07	8.17213E-06	0.191185982	2.46619E-07	7.362E-06	1.019949251	1.31568E-06	3.92752E-05	0.912207095	1.17669E-06	3.51264E-05	1.103393078	1.42331E-06	4.24884E-05
Road 9	9	1500-1600	0.17916373	1.93725E-07	5.78303E-06	0.157014538	1.69776E-07	5.0681E-06	0.909814011	9.83759E-07	2.93669E-05	0.799456809	8.64433E-07	2.58048E-05	0.956471347	1.03421E-06	3.08729E-05
Road 9	9	1600-1700	0.189273667	2.87238E-07	8.57454E-06	0.166773624	2.53092E-07	7.55524E-06	1.021075472	1.54956E-06	4.62571E-05	0.895225662	1.35858E-06	4.05558E-05	1.061999286	1.61167E-06	4.81111E-05
Road 9	9	1700-1800	0.163034975	2.13398E-07	6.37031E-06	0.144948077	1.89724E-07	5.6636E-06	0.95206275	1.24617E-06	3.72002E-05	0.850471423	1.11319E-06	3.32307E-05	0.9954195	1.30292E-06	3.88943E-05
Road 9	9	1800-1900	0.162316621	1.35481E-07	4.04433E-06	0.145761941	1.21663E-07	3.63185E-06	0.922968437	7.70373E-07	2.29969E-05	0.833048597	6.95319E-07	2.07565E-05	0.978810539	8.16982E-07	2.43883E-05
Road 9	9	1900-2000	0.167757526	1.3684E-07	4.0849E-06	0.149847147	1.2223E-07	3.64878E-06	0.881063861	7.18683E-07	2.14539E-05	0.783450169	6.39059E-07	1.9077E-05	0.933297316	7.6129E-07	2.27258E-05
Road 9	9	2000-2100	0.178084616	9.79683E-08	2.92452E-06	0.153969849	8.47023E-08	2.52851E-06	0.778492569	4.28266E-07	1.27845E-05	0.68094354	3.74602E-07	1.11825E-05	0.834913389	4.59305E-07	1.3711E-05
Road 9	9	2100-2200	0.02133775	1.13336E-08	3.38328E-07	0.018719894	9.94312E-09	2.96819E-07	0.305883636	1.62471E-07	4.85004E-06	0.264812305	1.40656E-07	4.19882E-06	0.283532199	1.50599E-07	4.49564E-06
Road 9	9	2200-2300	0.170882225	1.06973E-07	3.19331E-06	0.147898707	9.25848E-08	2.76382E-06	0.818521703	5.12396E-07	1.52959E-05	0.707868169	4.43126E-07	1.32281E-05	0.855766876	5.35711E-07	1.59919E-05
Road 9	9	2300-0000	0.1384373	7.87836E-08	2.35183E-06	0.120802876	6.8748E-08	2.05225E-06	0.700525264	3.98663E-07	1.19008E-05	0.608593629	3.46346E-07	1.0339E-05	0.729396505	4.15094E-07	1.23913E-05
Road 10	10	0000-0100	0.280999201	2.16048E-07	4.80376E-06	0.24006503	1.84575E-07	4.10398E-06	1.388298759	1.0674E-06	2.37334E-05	1.186925319	9.12575E-07	2.02908E-05	1.42699035	1.09715E-06	2.43948E-05
Road 10	10	0100-0200	0.274319767	1.59356E-07	3.54323E-06	0.236489956	1.3738E-07	3.05461E-06	1.344342283	7.80946E-07	1.73641E-05	1.159599427	6.73627E-07	1.49779E-05	1.396089384	8.11007E-07	1.80325E-05
Road 10	10	0200-0300	0.273380511	8.8747E-08	1.97326E-06	0.231476849	7.51439E-08	1.6708E-06	1.323799698	4.29743E-07	9.5552E-06	1.122182647	3.64292E-07	8.09992E-06	1.353659496	4.39436E-07	9.77072E-06
Road 10	10	0300-0400	0.248979059	5.10477E-08	1.13503E-06	0.209574915	4.29688E-08	9.55398E-07	1.30002413	2.66542E-07	5.92647E-06	1.095891062	2.24689E-07	4.99588E-06	1.305465978	2.67657E-07	5.95128E-06
Road 10	10	0400-0500	0.292161951	1.14811E-07	2.55279E-06	0.248774142	9.7761E-08	2.17369E-06	1.361516765	5.35036E-07	1.18964E-05	1.154300941	4.53607E-07	1.00858E-05	1.403075083	5.51368E-07	1.22595E-05
Road 10	10	0500-0600	0.265952993	1.86304E-07	4.1424E-06	0.227332532	1.59249E-07	3.54086E-06	1.242959622	8.7071E-07	1.936E-05	1.060511694	7.42903E-07	1.65182E-05	1.287844226	9.02152E-07	2.00591E-05
Road 10	10	0600-0700	0.323976846	4.539E-07	1.00923E-05	0.281240043	3.94025E-07	8.76102E-06	1.541730849	2.16001E-06	4.80271E-05	1.340575148	1.87818E-06	4.17608E-05	1.621815191	2.27221E-06	5.05218E-05
Road 10	10	0700-0800	0.319791715	7.04838E-07	1.56719E-05	0.277682744	6.12028E-07	1.36083E-05	1.539888502	3.394E-06	7.54645E-05	1.339673243	2.95271E-06	6.56527E-05	1.617355987	3.56474E-06	7.92609E-05
Road 10	10	0800-0900	0.342334812	1.45056E-06	3.22527E-05	0.293581505	1.24398E-06	2.76595E-05	1.633216761	6.92035E-06	0.000153872	1.401171296	5.93711E-06	0.00013201	1.694752801	7.18109E-06	0.000159669
Road 10	10	0900-1000	0.380347743	1.2867E-06	2.86095E-05	0.330927777	1.11952E-06	2.48921E-05	1.758770471	5.94986E-06	0.000132293	1.529098966	5.17289E-06	0.000115018	1.860026743	6.29241E-06	0.00013991
Road 10	10	1000-1100	0.38073979	1.39862E-06	3.10979E-05	0.328154831	1.20545E-06	2.68029E-05	1.667759866	6.12639E-06	0.000136218	1.433061207	5.26424E-06	0.000117049	1.761216039	6.46969E-06	0.000143852
Road 10	10	1100-1200	0.367753129	1.35091E-06	3.00371E-05	0.319146554	1.17236E-06	2.60671E-05	1.669202258	6.13169E-06	0.000136336	1.446994757	5.31542E-06	0.000118187	1.766141311	6.48778E-06	0.000144254
Road 10	10	1200-1300	0.378851313	1.43699E-06	3.19511E-05	0.334348231	1.26819E-06	2.81978E-05	1.732406472	6.57106E-06	0.000146105	1.528549247	5.79782E-06	0.000128913	1.862897478	7.06601E-06	0.000157111
Road 10	10	1300-1400	0.369954243	1.21362E-06	2.69844E-05	0.327050233	1.07287E-06	2.3855E-05	1.656989213	5.43567E-06	0.000120861	1.461936226	4.79581E-06	0.000106633	1.788986459	5.86868E-06	0.000130488
Road 10	10	1400-1500	0.345506707	1.06848E-06	2.37574E-05	0.302900722	9.36723E-07	2.08278E-05	1.652004254	5.10884E-06	0.000113594	1.447204216	4.47549E-06	9.95112E-05	1.750104938	5.41222E-06	0.000120339
Road 10	10	1500-1600	0.345789738	1.09299E-06	2.43023E-05	0.296800204	9.38142E-07	2.08593E-05	1.603506418	5.06845E-06	0.000112695	1.376088277	4.34961E-06	9.67123E-05	1.672888481	5.28775E-06	0.000117572
Road 10	10	1600-1700	0.336017658	1.18267E-06	2.62962E-05	0.284536717	1.00147E-06	2.22674E-05	1.58170891	5.56706E-06	0.000123782	1.33565746	4.70105E-06	0.000104526	1.620194177	5.70252E-06	0.000126794
Road 10	10	1700-1800	0.312239494	1.04029E-06	2.31306E-05	0.265385004	8.84186E-07	1.96596E-05	1.537898762	5.12383E-06	0.000113927	1.312122351	4.37161E-06	9.72014E-05	1.577507356	5.2558E-06	0.000116861
Road 10	10	1800-1900	0.315751671	6.52775E-07	1.45143E-05	0.268641588	5.55381E-07	1.23487E-05	1.525194667	3.15314E-06	7.01091E-05	1.299620053	2.68679E-06	5.974E-05	1.568261641	3.24217E-06	7.20888E-05
Road 10	10	1900-2000	0.273954821	5.10197E-07	1.13441E-05	0.234804546	4.37286E-07	9.72292E-06	1.384304776	2.57805E-06	5.73221E-05	1.189356507	2.21499E-06	4.92496E-05	1.424161052	2.65227E-06	5.89725E-05
Road 10	10	2000-2100	0.31654385	3.89403E-07	8.65825E-06	0.264839267	3.25797E-07	7.244E-06	1.480269486	1.82098E-06	4.0489E-05	1.238207342	1.52321E-06	3.3868E-05	1.503046609	1.849E-06	4.1112E-05
Road 10	10	2100-2200	0.263923784	3.3369E-07	7.41949E-06	0.230264595	2.91133E-07	6.47325E-06	1.377934351	1.74218E-06	3.87368E-05	1.204594886	1.52302E-06	3.38639E-05	1.434859481	1.81415E-06	4.03371E-05
Road 10	10	2200-2300	0.27426155	3.60818E-07	8.02268E-06	0.234659401	3.08717E-07	6.86424E-06	1.341284497	1.76459E-06	3.92352E-05	1.150915948	1.51414E-06	3.36665E-05	1.385575349	1.82286E-06	4.05307E-05
Road 10	10	2300-0000	0.252673928	3.10832E-07	6.91125E-06	0.212057752	2.60867E-07	5.8003E-06	1.235924489	1.5204E-06	3.38056E-05	1.036851074	1.2755E-06	2.83604E-05	1.248908826	1.53637E-06	3.41607E-05
Road 11	11	0000-0100	0.314438866	2.40196E-07	1.99245E-06	0.268230146	2.04898E-07	1.69965E-06	1.522919732	1.16334E-06	9.65001E-06	1.296617626	9.90472E-07	8.21604E-06	1.564847772	1.19537E-06	9.91569E-06
Road 11	11	0100-0200	0.312524488	1.68199E-07	1.39522E-06	0.268948235	1.44746E-07	1.20068E-06	1.488523634	8.01115E-07	6.64532E-06	1.277645214	6.87622E-07	5.70388E-06	1.546593449	8.32368E-07	6.90456E-06
Road 11	11	0200-0300	0.272795914	7.10406E-08	5.89288E-07	0.231026599	6.01632E-08	4.99058E-07	1.405580637	3.66037E-07	3.0363E-06	1.191468183	3.10278E-07	2.57378E-06	1.422494782	3.70441E-07	3.07284E-06
Road 11	11	0300-0400	0.293176573	7.12582E-08	5.91093E-07	0.246656591	5.99513E-08	4.97301E-07	1.479821127	3.59679E-07	2.98356E-06	1.245530104	3.02733E-07	2.51119E-06	1.492186695	3.62684E-07	3.0085E-06

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (August) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 11	11	0400-0500	0.301954743	1.04845E-07	8.69701E-07	0.257371764	8.93652E-08	7.41292E-07	1.387723963	4.81849E-07	3.99697E-06	1.177349264	4.08802E-07	3.39104E-06	1.434721028	4.98167E-07	4.13234E-06
Road 11	11	0500-0600	0.242450946	1.13649E-07	9.42727E-07	0.206935791	9.70012E-08	8.04632E-07	1.195089027	5.60198E-07	4.64689E-06	1.021135297	4.78657E-07	3.9705E-06	1.228071088	5.75658E-07	4.77513E-06
Road 11	11	0600-0700	0.263767952	2.38124E-07	1.97526E-06	0.227377448	2.05271E-07	1.70274E-06	1.316497958	1.18851E-06	9.85875E-06	1.134990441	1.02464E-06	8.49951E-06	1.36236789	1.22992E-06	1.02022E-05
Road 11	11	0700-0800	0.316044699	5.98071E-07	4.96105E-06	0.271671416	5.141E-07	4.2645E-06	1.576114942	2.98258E-06	2.47407E-05	1.357446221	2.56878E-06	2.13082E-05	1.629117636	3.08288E-06	2.55727E-05
Road 11	11	0800-0900	0.338476118	1.20465E-06	9.99264E-06	0.292289996	1.04027E-06	8.62911E-06	1.611538893	5.73551E-06	4.75765E-05	1.388133767	4.94041E-06	4.09811E-05	1.680423764	5.98067E-06	4.96102E-05
Road 11	11	0900-1000	0.343639044	8.76995E-07	7.27475E-06	0.298778239	7.62507E-07	6.32506E-06	1.566607459	3.99811E-06	3.31647E-05	1.356549494	3.46203E-06	2.87178E-05	1.655327733	4.22453E-06	3.50429E-05
Road 11	11	1000-1100	0.352135302	7.39729E-07	6.13611E-06	0.302537649	6.35539E-07	5.27185E-06	1.586185259	3.33209E-06	2.764E-05	1.359324864	2.85553E-06	2.36868E-05	1.661862513	3.49107E-06	2.89587E-05
Road 11	11	1100-1200	0.308710662	7.289E-07	6.04629E-06	0.266567627	6.29396E-07	5.22089E-06	1.528425915	3.60878E-06	2.99352E-05	1.324996877	3.12846E-06	2.59509E-05	1.591564503	3.75786E-06	3.11718E-05
Road 11	11	1200-1300	0.371695141	1.0583E-06	8.77867E-06	0.327538965	9.32576E-07	7.7358E-06	1.734833851	4.93946E-06	4.09732E-05	1.527347233	4.3487E-06	3.60728E-05	1.854886197	5.28127E-06	4.38086E-05
Road 11	11	1300-1400	0.385783865	8.10414E-07	6.72245E-06	0.340692618	7.15691E-07	5.93672E-06	1.686280245	3.54236E-06	2.93842E-05	1.482809775	3.11493E-06	2.58386E-05	1.823502392	3.83062E-06	3.17753E-05
Road 11	11	1400-1500	0.308148654	6.20577E-07	5.14774E-06	0.269299062	5.42338E-07	4.49874E-06	1.48428622	2.98919E-06	2.47956E-05	1.293204125	2.60437E-06	2.16035E-05	1.562503187	3.14671E-06	2.61022E-05
Road 11	11	1500-1600	0.278567718	5.65841E-07	4.69369E-06	0.23847641	4.84405E-07	4.01818E-06	1.387748478	2.81886E-06	2.33827E-05	1.189263012	2.41569E-06	2.00383E-05	1.427739422	2.9001E-06	2.40565E-05
Road 11	11	1600-1700	0.269188378	6.54277E-07	5.42728E-06	0.228094714	5.54397E-07	4.59877E-06	1.378585998	3.35073E-06	2.77946E-05	1.1670462	2.83657E-06	2.35296E-05	1.395140914	3.39097E-06	2.81284E-05
Road 11	11	1700-1800	0.268466047	6.66504E-07	5.52871E-06	0.226367566	5.61989E-07	4.66174E-06	1.39728768	3.46896E-06	2.87753E-05	1.183554682	2.93834E-06	2.43738E-05	1.409922248	3.50033E-06	2.90355E-05
Road 11	11	1800-1900	0.289275372	5.92613E-07	4.91577E-06	0.244722915	5.01342E-07	4.15867E-06	1.474483075	3.02064E-06	2.50565E-05	1.251679438	2.5642E-06	2.12703E-05	1.496402353	3.06555E-06	2.5429E-05
Road 11	11	1900-2000	0.27536001	4.35031E-07	3.60861E-06	0.234317483	3.70189E-07	3.07075E-06	1.384516171	2.18734E-06	1.81442E-05	1.177577254	1.86041E-06	1.54322E-05	1.411894737	2.2306E-06	1.8503E-05
Road 11	11	2000-2100	0.284321215	3.99827E-07	3.3166E-06	0.238070598	3.34787E-07	2.77708E-06	1.370545614	1.92733E-06	1.59874E-05	1.149858078	1.61699E-06	1.3413E-05	1.387928676	1.95177E-06	1.61901E-05
Road 11	11	2100-2200	0.203206362	2.04618E-07	1.69732E-06	0.170187673	1.7137E-07	1.42152E-06	1.099894937	1.10753E-06	9.18708E-06	0.923877695	9.30294E-07	7.71686E-06	1.094065369	1.10166E-06	9.13838E-06
Road 11	11	2200-2300	0.265157356	2.90016E-07	2.40571E-06	0.224375513	2.45411E-07	2.0357E-06	1.29603994	1.41754E-06	1.17586E-05	1.096073803	1.19883E-06	9.9444E-06	1.320449316	1.44424E-06	1.19801E-05
Road 11	11	2300-0000	0.254399285	2.64999E-07	2.19819E-06	0.213841529	2.22752E-07	1.84774E-06	1.264521363	1.31721E-06	1.09264E-05	1.061742211	1.10598E-06	9.17421E-06	1.27558374	1.32873E-06	1.10219E-05
Haul Road 1	HR1	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0700-0800	1.33453	2.50852E-06	3.77293E-06	1.13336	2.13038E-06	3.20419E-06	5.84707	1.09907E-05	1.65306E-05	4.96565	9.33393E-06	1.40387E-05	6.09901	1.14643E-05	1.72429E-05
Haul Road 1	HR1	0800-0900	1.34692	2.5318E-06	3.80796E-06	1.14595	2.15404E-06	3.23978E-06	5.90123	1.10925E-05	1.66837E-05	5.02081	9.43761E-06	1.41946E-05	6.16676	1.15917E-05	1.74344E-05
Haul Road 1	HR1	0900-1000	1.35681	2.55039E-06	3.83592E-06	1.15554	2.17207E-06	3.2669E-06	5.94441	1.11737E-05	1.68058E-05	5.06259	9.51615E-06	1.43128E-05	6.21813	1.16882E-05	1.75797E-05
Haul Road 1	HR1	1000-1100	1.36171	2.55961E-06	3.84977E-06	1.15454	2.17019E-06	3.26407E-06	5.96579	1.12139E-05	1.68662E-05	5.05829	9.50806E-06	1.43006E-05	6.21283	1.16783E-05	1.75647E-05
Haul Road 1	HR1	1100-1200	1.35821	2.55303E-06	3.83988E-06	1.16774	0.000002195	3.30139E-06	5.9505	1.11852E-05	1.6823E-05	5.11635	9.6172E-06	1.44647E-05	6.28409	1.18122E-05	1.77661E-05
Haul Road 1	HR1	1200-1300	1.33652	2.51226E-06	3.77856E-06	1.16194	2.1841E-06	3.28499E-06	5.85577	1.10071E-05	1.65552E-05	5.09087	9.5693E-06	1.43927E-05	6.25281	1.17534E-05	1.76777E-05
Haul Road 1	HR1	1300-1400	1.33652	2.51226E-06	3.77856E-06	1.16194	2.1841E-06	3.28499E-06	5.85577	1.10071E-05	1.65552E-05	5.09087	9.5693E-06	1.43927E-05	6.25281	1.17534E-05	1.76777E-05
Haul Road 1	HR1	1400-1500	1.34002	2.51883E-06	3.78845E-06	1.14795	2.1578E-06	3.24544E-06	5.87116	1.1036E-05	1.65987E-05	5.02931	9.45359E-06	1.42187E-05	6.17726	1.16114E-05	1.74641E-05
Haul Road 1	HR1	1500-1600	1.35771	2.55209E-06	3.83846E-06	1.14795	2.1578E-06	3.24544E-06	5.94841	1.11812E-05	1.68171E-05	5.02931	9.45359E-06	1.42187E-05	6.17726	1.16114E-05	1.74641E-05
Haul Road 1	HR1	1600-1700	1.36591	2.5675E-06	3.86165E-06	1.12806	2.12041E-06	3.18921E-06	5.98468	1.12494E-05	1.69197E-05	4.94227	9.28998E-06	1.39726E-05	6.07033	1.14104E-05	1.71618E-05
Haul Road 1	HR1	1700-1800	1.3715	2.57801E-06	3.87745E-06	1.13056	2.12511E-06	3.19627E-06	6.00887	1.12949E-05	1.6988E-05	4.95316	9.31045E-06	1.40034E-05	6.08372	1.14356E-05	1.71997E-05
Haul Road 1	HR1	1800-1900	1.36341	2.5628E-06	3.85458E-06	1.13416	2.13188E-06	3.20645E-06	5.97339	1.12282E-05	1.68877E-05	4.96934	9.34086E-06	1.40491E-05	6.1035	1.14727E-05	1.72556E-05
Haul Road 1	HR1	1900-2000	1.35291	2.54306E-06	3.82489E-06	1.12836	2.12098E-06	3.19005E-06	5.92772	1.11423E-05	1.67586E-05	4.94346	9.29222E-06	1.3976E-05	6.07182	1.14132E-05	1.7166E-05
Haul Road 1	HR1	2000-2100	1.35291	2.54306E-06	3.82489E-06	1.12247	2.10991E-06	3.1734E-06	5.92772	1.11423E-05	1.67586E-05	4.91767	9.24374E-06	1.3903E-05	6.04014	1.13536E-05	1.70764E-05
Haul Road 1	HR1	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0700-0800	1.33453	1.72867E-06	4.60154E-06	1.13336	1.46808E-06	3.90789E-06	5.84707	7.57392E-06	2.0161E-05	4.96565	6.43219E-06	1.71219E-05	6.09901	7.90027E-06	2.10298E-05
Haul Road 2	HR2	0800-0900	1.34692	1.74472E-06	4.64426E-06	1.14595	1.48439E-06	3.9513E-06	5.90123	7.64408E-06	2.03478E-05	5.02081	6.50364E-06	1.73121E-05	6.16676	7.98803E-06	2.12634E-05
Haul Road 2	HR2	0900-1000	1.35681	1.75753E-06	4.67836E-06	1.15554	1.49681E-06	3.98437E-06	5.94441	7.70001E-06	2.04967E-05	5.06259	6.55776E-06	1.74561E-05	6.21813	8.05457E-06	2.14405E-05
Haul Road 2	HR2	1000-1100	1.36171	1.76387E-06	4.69526E-06	1.15454	1.49552E-06	3.98092E-06	5.96579	7.72771E-06	2.05704E-05	5.05829	6.55219E-06	1.74413E-05	6.21283	8.04771E-06	2.14222E-05
Haul Road 2	HR2	1100-1200	1.35821	1.75934E-06	4.68319E-06	1.16774	1.51262E-06	4.02644E-06	5.9505	7.7079E-06	2.05177E-05	5.11635	6.6274E-06	1.76415E-05	6.28409	8.14001E-06	2.16679E-05
Haul Road 2	HR2	1200-1300	1.33652	1.73124E-06	4.6084E-06	1.16194	1.5051E-06	4.00644E-06	5.85577	7.58519E-06	2.0191E-05	5.09087	6.59439E-06	1.75536E-05	6.25281	8.09949E-06	2.15601E-05
Haul Road 2	HR2	1300-1400	1.33652	1.73124E-06	4.6084E-06	1.16194	1.5051E-06	4.00644E-06	5.85577	7.58519E-06	2.0191E-05	5.09087	6.59439E-06	1.75536E-05	6.25281	8.09949E-06	2.15601E-05
Haul Road 2	HR2	1400-1500	1.34002	1.73578E-06	4.62047E-06	1.14795	1.48698E-06	3.9582E-06	5.87116	7.60513E-06	2.02441E-05	5.02931	6.51465E-06	1.73414E-05	6.17726	8.00163E-06	2.12996E-05
Haul Road 2	HR2	1500-1600	1.35771	1.75869E-06	4.68147E-06	1.14795	1.48698E-06	3.9582E-06	5.94841	7.70519E-06	2.05105E-05	5.02931	6.51465E-06	1.73414E-05	6.17726	8.00163E-06	2.12996E-05
Haul Road 2	HR2	1600-1700	1.36591	1.76931E-06	4.70974E-06	1.12806	1.46122E-06	3.88962E-06	5.98468	7.75218E-06	2.06355E-05	4.94227	6.4019E-06	1.70412E-05	6.07033	7.86312E-06	2.09309E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (August) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Haul Road 2	HR2	1700-1800	1.3715	1.77655E-06	4.72901E-06	1.13056	1.46446E-06	3.89824E-06	6.00887	7.78351E-06	2.07189E-05	4.95316	6.41601E-06	1.70788E-05	6.08372	7.88047E-06	2.0977E-05
Haul Road 2	HR2	1800-1900	1.36341	1.76608E-06	4.70112E-06	1.13416	1.46912E-06	3.91065E-06	5.97339	7.73755E-06	2.05966E-05	4.96934	6.43697E-06	1.71346E-05	6.1035	7.90609E-06	2.10452E-05
Haul Road 2	HR2	1900-2000	1.35291	1.75247E-06	4.66492E-06	1.12836	1.46161E-06	3.89065E-06	5.92772	7.67839E-06	2.04391E-05	4.94346	6.40345E-06	1.70453E-05	6.07182	7.86505E-06	2.0936E-05
Haul Road 2	HR2	2000-2100	1.35291	1.75247E-06	4.66492E-06	1.12247	1.45398E-06	3.87034E-06	5.92772	7.67839E-06	2.04391E-05	4.91767	6.37004E-06	1.69564E-05	6.04014	7.82402E-06	2.08268E-05
Haul Road 2	HR2	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0700-0800	1.33453	1.72867E-06	4.59512E-06	1.13336	1.46808E-06	3.90245E-06	5.84707	7.57392E-06	2.01329E-05	4.96565	6.43219E-06	1.7098E-05	6.09901	7.90027E-06	2.10004E-05
Haul Road 3	HR3	0800-0900	1.34692	1.74472E-06	4.63779E-06	1.14595	1.48439E-06	3.9458E-06	5.90123	7.64408E-06	2.03194E-05	5.02081	6.50364E-06	1.72879E-05	6.16676	7.98803E-06	2.12337E-05
Haul Road 3	HR3	0900-1000	1.35681	1.75753E-06	4.67184E-06	1.15554	1.49681E-06	3.97882E-06	5.94441	7.70001E-06	2.04681E-05	5.06259	6.55776E-06	1.74318E-05	6.21813	8.05457E-06	2.14106E-05
Haul Road 3	HR3	1000-1100	1.36171	1.76387E-06	4.68871E-06	1.15454	1.49552E-06	3.97537E-06	5.96579	7.72771E-06	2.05417E-05	5.05829	6.55219E-06	1.7417E-05	6.21283	8.04771E-06	2.13923E-05
Haul Road 3	HR3	1100-1200	1.35821	1.75934E-06	4.67666E-06	1.16774	1.51262E-06	4.02082E-06	5.9505	7.7079E-06	2.04891E-05	5.11635	6.6274E-06	1.76169E-05	6.28409	8.14001E-06	2.16377E-05
Haul Road 3	HR3	1200-1300	1.33652	1.73124E-06	4.60198E-06	1.16194	1.5051E-06	4.00085E-06	5.85577	7.58519E-06	2.01629E-05	5.09087	6.59439E-06	1.75292E-05	6.25281	8.09949E-06	2.153E-05
Haul Road 3	HR3	1300-1400	1.33652	1.73124E-06	4.60198E-06	1.16194	1.5051E-06	4.00085E-06	5.85577	7.58519E-06	2.01629E-05	5.09087	6.59439E-06	1.75292E-05	6.25281	8.09949E-06	2.153E-05
Haul Road 3	HR3	1400-1500	1.34002	1.73578E-06	4.61403E-06	1.14795	1.48698E-06	3.95268E-06	5.87116	7.60513E-06	2.02159E-05	5.02931	6.51465E-06	1.73172E-05	6.17726	8.00163E-06	2.12699E-05
Haul Road 3	HR3	1500-1600	1.35771	1.75869E-06	4.67494E-06	1.14795	1.48698E-06	3.95268E-06	5.94841	7.70519E-06	2.04819E-05	5.02931	6.51465E-06	1.73172E-05	6.17726	8.00163E-06	2.12699E-05
Haul Road 3	HR3	1600-1700	1.36591	1.76931E-06	4.70317E-06	1.12806	1.46122E-06	3.8842E-06	5.98468	7.75218E-06	2.06068E-05	4.94227	6.4019E-06	1.70175E-05	6.07033	7.86312E-06	2.09017E-05
Haul Road 3	HR3	1700-1800	1.3715	1.77655E-06	4.72242E-06	1.13056	1.46446E-06	3.8928E-06	6.00887	7.78351E-06	2.06901E-05	4.95316	6.41601E-06	1.7055E-05	6.08372	7.88047E-06	2.09478E-05
Haul Road 3	HR3	1800-1900	1.36341	1.76608E-06	4.69457E-06	1.13416	1.46912E-06	3.9052E-06	5.97339	7.73755E-06	2.05679E-05	4.96934	6.43697E-06	1.71107E-05	6.1035	7.90609E-06	2.10159E-05
Haul Road 3	HR3	1900-2000	1.35291	1.75247E-06	4.65841E-06	1.12836	1.46161E-06	3.88523E-06	5.92772	7.67839E-06	2.04106E-05	4.94346	6.40345E-06	1.70216E-05	6.07182	7.86505E-06	2.09068E-05
Haul Road 3	HR3	2000-2100	1.35291	1.75247E-06	4.65841E-06	1.12247	1.45398E-06	3.86495E-06	5.92772	7.67839E-06	2.04106E-05	4.91767	6.37004E-06	1.69328E-05	6.04014	7.82402E-06	2.07977E-05
Haul Road 3	HR3	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (September) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 1	1	0000-0100	0.094082123	3.16079E-07	2.57135E-06	0.078376536	2.63315E-07	2.1421E-06	0.557257263	1.87217E-06	1.52304E-05	0.461557654	1.55065E-06	1.26148E-05	0.53993419	1.81397E-06	1.47569E-05
Road 1	1	0100-0200	0.072384404	1.48084E-07	1.20468E-06	0.061957706	1.26753E-07	1.03115E-06	0.436882752	8.93773E-07	7.27097E-06	0.371813303	7.60654E-07	6.18803E-06	0.433771009	8.87407E-07	7.21919E-06
Road 1	1	0200-0300	0.069354156	1.0023E-07	8.15388E-07	0.059326104	8.57378E-08	6.9749E-07	0.44314	6.40424E-07	5.20994E-06	0.375562078	5.42761E-07	4.41544E-06	0.434888182	6.28498E-07	5.11293E-06
Road 1	1	0300-0400	0.059367273	6.12838E-08	4.98553E-07	0.049660545	5.12637E-08	4.17038E-07	0.364305091	3.76066E-07	3.05935E-06	0.301934545	3.11682E-07	2.53558E-06	0.351595091	3.62945E-07	2.95261E-06
Road 1	1	0400-0500	0.077206977	1.24621E-07	1.01381E-06	0.064503023	1.04115E-07	8.46993E-07	0.44295	7.14972E-07	5.8164E-06	0.36756314	5.93289E-07	4.82649E-06	0.432066163	6.97404E-07	5.67349E-06
Road 1	1	0500-0600	0.063467287	2.23946E-07	1.82183E-06	0.053106489	1.87388E-07	1.52443E-06	0.375581596	1.32525E-06	1.07811E-05	0.31144484	1.09894E-06	8.94006E-06	0.36455133	1.28633E-06	1.04645E-05
Road 1	1	0600-0700	0.084456914	5.34196E-07	4.34577E-06	0.071551988	4.52572E-07	3.68174E-06	0.449842433	2.84529E-06	2.31468E-05	0.378742789	2.39558E-06	1.94884E-05	0.450294777	2.84815E-06	2.31701E-05
Road 1	1	0700-0800	0.070714413	7.45899E-07	6.068E-06	0.060432153	6.37441E-07	5.18568E-06	0.389990658	4.11364E-06	3.34651E-05	0.330494662	3.48607E-06	2.83597E-05	0.390926815	4.12351E-06	3.35454E-05
Road 1	1	0800-0900	0.076883588	1.00145E-06	8.14694E-06	0.065841383	8.57619E-07	6.97685E-06	0.413062695	5.38036E-06	4.377E-05	0.351686744	4.5809E-06	3.72663E-05	0.417528127	5.43852E-06	4.42432E-05
Road 1	1	0900-1000	0.082493796	1.10549E-06	8.99333E-06	0.070773529	9.48429E-07	7.71561E-06	0.458075896	6.13863E-06	4.99387E-05	0.391215154	5.24264E-06	4.26496E-05	0.461988683	6.19106E-06	5.03652E-05
Road 1	1	1000-1100	0.096249439	1.25551E-06	1.02137E-05	0.081675683	1.0654E-06	8.6672E-06	0.515893453	6.72947E-06	5.47452E-05	0.436286072	5.69104E-06	4.62975E-05	0.517961755	6.75645E-06	5.49647E-05
Road 1	1	1100-1200	0.086798309	1.09801E-06	8.93249E-06	0.073871944	9.34491E-07	7.60222E-06	0.498769362	6.30951E-06	5.13288E-05	0.422948783	5.35037E-06	4.3526E-05	0.496820727	6.28486E-06	5.11282E-05
Road 1	1	1200-1300	0.087818516	1.09938E-06	8.94362E-06	0.076581439	9.58705E-07	7.79921E-06	0.498262024	6.23763E-06	5.0744E-05	0.432854738	5.41881E-06	4.40828E-05	0.509436177	6.37751E-06	5.1882E-05
Road 1	1	1300-1400	0.09162598	1.21927E-06	9.91896E-06	0.079917362	1.06346E-06	8.65144E-06	0.509158829	6.77541E-06	5.51189E-05	0.442520155	5.88864E-06	4.7905E-05	0.522437518	6.95211E-06	5.65564E-05
Road 1	1	1400-1500	0.087253875	1.25935E-06	1.0245E-05	0.075480988	1.08943E-06	8.86268E-06	0.474580286	6.8497E-06	5.57234E-05	0.409006047	5.90326E-06	4.80239E-05	0.484487035	6.99269E-06	5.68866E-05
Road 1	1	1500-1600	0.095543631	1.28396E-06	1.04452E-05	0.079666844	1.0706E-06	8.70947E-06	0.518095196	6.96239E-06	5.66401E-05	0.429809316	5.77597E-06	4.69883E-05	0.509476159	6.84656E-06	5.56978E-05
Road 1	1	1600-1700	0.090983285	1.28927E-06	1.04884E-05	0.076183656	1.07955E-06	8.78234E-06	0.499823219	7.08271E-06	5.76189E-05	0.415977126	5.89457E-06	4.79532E-05	0.492160781	6.97413E-06	5.67355E-05
Road 1	1	1700-1800	0.073398232	1.04422E-06	8.49486E-06	0.060641372	8.62728E-07	7.01842E-06	0.41253314	5.869E-06	4.77452E-05	0.337933549	4.80769E-06	3.91113E-05	0.398574921	5.67042E-06	4.61297E-05
Road 1	1	1800-1900	0.064758282	9.40745E-07	7.6531E-06	0.053205388	7.72916E-07	6.28779E-06	0.389943928	5.66473E-06	4.60834E-05	0.316471111	4.59738E-06	3.74004E-05	0.369676499	5.3703E-06	4.36882E-05
Road 1	1	1900-2000	0.077973272	8.67833E-07	7.05995E-06	0.065139528	7.24995E-07	5.89794E-06	0.448951535	4.99678E-06	4.06495E-05	0.371506863	4.13483E-06	3.36374E-05	0.436646391	4.85982E-06	3.95354E-05
Road 1	1	2000-2100	0.070526024	6.65814E-07	5.4165E-06	0.058843559	5.55524E-07	4.51927E-06	0.418528708	3.9512E-06	3.21436E-05	0.346027078	3.26673E-06	2.65754E-05	0.404870636	3.82226E-06	3.10946E-05
Road 1	1	2100-2200	0.07471342	6.43646E-07	5.23616E-06	0.060921656	5.24832E-07	4.26958E-06	0.4472378	3.85289E-06	3.13439E-05	0.361273181	3.11232E-06	2.53192E-05	0.422194837	3.63715E-06	2.95888E-05
Road 1	1	2200-2300	0.071839057	5.86524E-07	4.77146E-06	0.060047471	4.90252E-07	3.98828E-06	0.429471908	3.50639E-06	2.8525E-05	0.355751103	2.9045E-06	2.36285E-05	0.415798575	3.39475E-06	2.76168E-05
Road 1	1	2300-0000	0.062878641	4.6026E-07	3.74429E-06	0.052582256	3.84893E-07	3.13116E-06	0.386854487	2.83171E-06	2.30363E-05	0.319764615	2.34062E-06	1.90413E-05	0.372346872	2.72551E-06	2.21724E-05
Road 2	2	0000-0100	0.155797692	1.87534E-07	1.21108E-06	0.129785962	1.56224E-07	1.00888E-06	0.659751923	7.94146E-07	5.12852E-06	0.547104231	6.58551E-07	4.25286E-06	0.676890192	8.14775E-07	5.26174E-06
Road 2	2	0100-0200	0.109231176	8.5969E-08	5.55179E-07	0.093394412	7.35049E-08	4.74687E-07	0.539548824	4.24645E-07	2.74232E-06	0.459355588	3.6153E-07	2.33472E-06	0.55275	4.35035E-07	2.80941E-06
Road 2	2	0200-0300	0.112727826	6.00171E-08	3.87585E-07	0.096573913	5.14167E-08	3.32044E-07	0.61526913	3.27574E-07	2.11544E-06	0.523745652	2.78846E-07	1.80076E-06	0.620319565	3.30263E-07	2.1328E-06
Road 2	2	0300-0400	0.099046667	3.43912E-08	2.22095E-07	0.08288	2.87778E-08	1.85844E-07	0.360391333	1.25136E-07	8.08115E-07	0.299074	1.03845E-07	6.70622E-07	0.381954	1.32623E-07	8.56466E-07
Road 2	2	0400-0500	0.134462593	8.40391E-08	5.42716E-07	0.112342222	7.02139E-08	4.53434E-07	0.647945556	4.04966E-07	2.61523E-06	0.539184074	3.3699E-07	2.17625E-06	0.651526296	4.07204E-07	2.62968E-06
Road 2	2	0500-0600	0.106187193	1.40108E-07	9.04804E-07	0.088972281	1.17394E-07	7.58119E-07	0.470265789	6.2049E-07	4.00706E-06	0.390906667	5.1578E-07	3.33085E-06	0.479878947	6.33174E-07	4.08897E-06
Road 2	2	0600-0700	0.147971346	3.56227E-07	2.30048E-06	0.125398077	3.01884E-07	1.94954E-06	0.598357019	1.44049E-06	9.30254E-06	0.504689519	1.21499E-06	7.84631E-06	0.630087596	1.51688E-06	9.79585E-06
Road 2	2	0700-0800	0.12095825	4.47994E-07	2.8931E-06	0.103360438	3.82816E-07	2.47219E-06	0.50287075	1.86248E-06	1.20277E-05	0.426763813	1.58061E-06	1.02074E-05	0.53012425	1.96342E-06	1.26796E-05
Road 2	2	0800-0900	0.138001316	9.7112E-07	6.2714E-06	0.118099868	8.31073E-07	5.36699E-06	0.580248289	4.08323E-06	2.63691E-05	0.493961645	3.47603E-06	2.24478E-05	0.612061513	4.3071E-06	2.78148E-05
Road 2	2	0900-1000	0.162779008	9.49544E-07	6.13206E-06	0.139532262	8.13938E-07	5.25633E-06	0.693559802	4.04577E-06	2.61272E-05	0.592811746	3.45807E-06	2.23319E-05	0.732344008	4.27201E-06	2.75882E-05
Road 2	2	1000-1100	0.182515615	7.90056E-07	5.1021E-06	0.154793262	6.70054E-07	4.32714E-06	0.769736471	3.33196E-06	2.15175E-05	0.651605615	2.82061E-06	1.82152E-05	0.806398877	3.49066E-06	2.25424E-05
Road 2	2	1100-1200	0.215599508	9.13303E-07	5.89802E-06	0.183335246	7.76628E-07	5.01539E-06	0.880766066	3.73102E-06	2.40946E-05	0.748085191	3.16897E-06	2.04649E-05	0.931420437	3.9456E-06	2.54803E-05
Road 2	2	1200-1300	0.162955947	7.16704E-07	4.62841E-06	0.142054579	6.24777E-07	4.03475E-06	0.714417	3.14211E-06	2.02915E-05	0.621039316	2.73142E-06	1.76393E-05	0.763093895	3.3562E-06	2.1674E-05
Road 2	2	1300-1400	0.17966278	9.27426E-07	5.98923E-06	0.156534126	8.08035E-07	5.21821E-06	0.735359776	3.79595E-06	2.45139E-05	0.639038969	3.29874E-06	2.1303E-05	0.795573094	4.10678E-06	2.65212E-05
Road 2	2	1400-1500	0.154970788	5.91902E-07	3.82245E-06	0.134004545	5.11823E-07	3.3053E-06	0.670448788	2.56074E-06	1.6537E-05	0.578465818	2.20942E-06	1.42682E-05	0.712470364	2.72124E-06	1.75735E-05
Road 2	2	1500-1600	0.197251257	8.35578E-07	5.39608E-06	0.164208852	6.95607E-07	4.49216E-06	0.777849672	3.29506E-06	2.12792E-05	0.645958142	2.73635E-06	1.76711E-05	0.810166995	3.43196E-06	2.21632E-05
Road 2	2	1600-1700	0.164834344	8.4325E-07	5.44562E-06	0.138053394	7.06245E-07	4.56086E-06	0.694171403	3.5512E-06	2.29333E-05	0.578863167	2.96131E-06	1.91239E-05	0.716916561	3.66756E-06	2.36847E-05
Road 2	2	1700-1800	0.128574144	6.60728E-07	4.26692E-06	0.106294144	5.46234E-07	3.52752E-06	0.511240315	2.62721E-06	1.69662E-05	0.420196441	2.15934E-06	1.39448E-05	0.526490586	2.70558E-06	1.74723E-05
Road 2	2	1800-1900	0.140371	8.12332E-07	5.24596E-06	0.11542804	6.67986E-07	4.31379E-06	0.63339216	3.66546E-06	2.36712E-05	0.51741456	2.9943E-06	1.93369E-05	0.6328426	3.66228E-06	2.36507E-05
Road 2	2	1900-2000	0.119661361	4.6812E-07	3.02307E-06	0.11542804	6.67986E-07	2.52502E-06	0.544467692	2.12998E-06	1.37552E-05	0.451152485	1.76493E-06	1.13977E-05	0.551099467	2.15592E-06	1.39227E-05
Road 2	2	2000-2100	0.113316259	3.8559E-07	2.4901E-06	0.094459048	3.21423E-07	2.07572E-06	0.484933061	1.65012E-06	1.06563E-05	0.400494694	1.36279E-06	8.80079E-06	0.494953741	1.68422E-06	1.08765E-05
Road 2	2	2100-2200	0.088749935	3.14323E-07	2.02987E-06	0.072300784	2.56065E-07	1.65364E-06	0.40940366	1.44997E-06	9.36377E-06	0.328845359	1.16466E-06	7.52126E-06	0.401146144	1.42073E-06	9.17491E-06
Road 2	2	2200-2300	0.12721528	3.681E-07	2.37715E-06	0.10638976	3.07841E-07	1.98801E-06	0.54327528	1.57198E-06	1.01517E-05	0.45081296	1.30444E-06	8.42392E-06	0.55720272	1.61228E-06	1.04119E-05
Road 2	2	2300-0000	0.113571892	2.91817E-07	1.88452E-06	0.095014414	2.44134E-07	1.5766E-06	0.514373243	1.32165E-06	8.53511E-06	0.42631036	1.09538E-06	7.07386E-06	0.521324775	1.33952E-06	8.65046E-06
Road 3	3	0000-0100	0.097783609	3.60733E-07	1.40208E-05	0.083028304	3.06299E-07	1.19051E-05	0.539515043	1.99032E-06	7.73589E-05	0.455492565	1.68036E-06	6.53112E-05	0.53852087	1.98666E-06	7.72163E-05
Road 3	3	0100-0200	0.072950986	1.66154E-07	6.458E-06	0.062343944	1.41996E-07	5.51901E-06	0.425444085	9.68998E-07	3.76625E-05	0.361569648	8.23517E-07	3.2008E-05	0.423913592	9.65513E-07	3.7527E-05
Road 3	3	0200-0300	0.071849697	1.14091E-07	4.43444E-06	0.060716465	9.64126E-08	3.74732E-06	0.448786667	7.12635E-07	2.76983E-05	0.375676263	5.96542E-07	2.31861E-05	0.436392727	6.92955E-07	2.69334E-05
Road 3	3	0300-0400	0.060316143	6.77211E-08	2.63215E-06	0.050604143	5.68167E-08	2.20832E-06	0.333081429	3.73973E-07	1.45354E-05	0.276735571	3.1071E-07	1.20765E-05	0.327339714	3.67527E-07	1.42848E-05
Road 3	3	0400-0500	0.080292743	1.45528E-07	5.65631E-06	0.067500885	1.22343E-07	4.75518E-06	0.444444336	8.05542E-07	3.13094E-05	0.371480973	6.73298E-07	2.61694E-05	0.438981858	7.95641E-07	3.09246E-05
Road 3	3	0500-0600	0.065020122	2.56552E-07	9.97153E-06	0.05459122	2.15402E-07	8.37214E-06	0.362294837	1.42952E-06	5.55618E-05	0.301492602	1.18961E-06	4.62371E-05	0.356083821	1.40501E-06	5.46092E-05
Road 3	3	0600-0700	0.089791419	6.39455E-07	2.4854E-05	0.075985	5.41132E-07	2.10324E-05	0.448423986	3.19348E-06	0.000124122	0.377227635	2.68645E-06	0.000104416	0.453212635	3.22758E-06	0.000125448
Road 3	3	0700-0800	0.073696506	8.59357E-07	3.3401E-05	0.062613521	7.30121E-07	2.8378E-05	0.386756135	4.50987E-06	0.000175287	0.325818047	3.79928E-06	0.000147669	0.388431568	4.5294E-06	0.000176047
Road 3	3	0800-0900	0.082387763	1.3175E-06	5.12079E-05	0.070164092	1.12202E-06	4.36103E-05	0.407875356	6.52251E-06	0.000253514	0.345527222	5.52548E-06	0.000214761	0.415691314	6.6475E-06	0.000258372
Road 3	3	0900-1000	0.090101523	1.39461E-06	5.42049E-05	0.076955772	1.19113E-06	4.62964E-05	0.464976052	7.19698E-06	0.000279728	0.39552656	6.12203E-06	0.000237948	0.472482332	7.31316E-06	0.000284244
Road 3	3	1000-1100	0.102499716	1.44512E-06	5.61682E-05	0.08709041	1.22787E-06	4.77241E-05	0.517561786	7.29698E-06	0.000283615	0.438435654	6.1814E-06	0.000240256	0.525526064	7.40927E-06	0.00028798
Road 3	3	1100-1200	0.100500925	1.37664E-06	5.35065E-05	0.086575984	1.1859E-06	4.60929E-05	0.52197103	7.14984E-06	0.000277896	0.448184742	6.13913E-06	0.000238613	0.534760726	7.32503E-06	0.000284706
Road 3	3	1200-1300	0.093148244	1.27592E-06	4.9592E-05	0.081121628	1.11119E-06	4.3189E-05	0.495269251	6.78409E-06	0.00026368	0.429638782	5.8851E-06	0.000228739	0.51076041	6.99628E-06	0.000271928
Road 3	3	1300-1400	0.099157745	1.47434E-06	5.7304E-05	0.086347335	1.28387E-06	4.99008E-05	0.506300205	7.52801E-06	0.000292595	0.439322621	6.53214E-06	0.000253888	0.525669957	7.81601E-06	0.000303789

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (September) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 3	3	1400-1500	0.091601478	1.37228E-06	5.33369E-05	0.078622666	1.17784E-06	4.57797E-05	0.475110021	7.1176E-06	0.000276643	0.406252527	6.08605E-06	0.000236549	0.484875193	7.26389E-06	0.000282329
Road 3	3	1500-1600	0.103400212	1.48435E-06	5.7693E-05	0.087588268	1.25736E-06	4.88706E-05	0.522313598	7.49802E-06	0.000291429	0.440492067	6.32344E-06	0.000245776	0.528080335	7.5808E-06	0.000294647
Road 3	3	1600-1700	0.09827166	1.5384E-06	5.97939E-05	0.081318555	1.27301E-06	4.94787E-05	0.504520502	7.89807E-06	0.000306978	0.415199672	6.49979E-06	0.00025263	0.496518227	7.7728E-06	0.000302109
Road 3	3	1700-1800	0.078138131	1.22698E-06	4.76897E-05	0.064456721	1.01215E-06	3.93396E-05	0.403471032	6.33559E-06	0.000246249	0.330176956	5.18468E-06	0.000201515	0.394633677	6.19682E-06	0.000240855
Road 3	3	1800-1900	0.073457595	1.21004E-06	4.70312E-05	0.061109825	1.00664E-06	3.91255E-05	0.406678773	6.69906E-06	0.000260376	0.334707926	5.51352E-06	0.000214297	0.395817751	6.52016E-06	0.000253422
Road 3	3	1900-2000	0.077809987	9.48508E-07	3.68661E-05	0.06491175	7.91278E-07	3.0755E-05	0.430737447	5.25071E-06	0.000204082	0.35593225	4.33884E-06	0.00016864	0.420844	5.13011E-06	0.000199395
Road 3	3	2000-2100	0.072741772	7.57218E-07	2.94312E-05	0.060369122	6.28423E-07	2.44252E-05	0.400928398	4.17353E-06	0.000162215	0.32949923	3.42998E-06	0.000133315	0.389868351	4.0584E-06	0.00015774
Road 3	3	2100-2200	0.071610992	7.06394E-07	2.74558E-05	0.059789512	5.89783E-07	2.29234E-05	0.406436211	4.00922E-06	0.000155828	0.336069837	3.3151E-06	0.00012885	0.39585935	3.90488E-06	0.000151773
Road 3	3	2200-2300	0.076307034	6.89073E-07	2.67825E-05	0.063813801	5.76256E-07	2.23976E-05	0.41985929	3.79144E-06	0.000147364	0.347845009	3.14113E-06	0.000122088	0.41165881	3.71739E-06	0.000144486
Road 3	3	2300-0000	0.067011394	5.39566E-07	2.09716E-05	0.055574203	4.47475E-07	1.73922E-05	0.387104741	3.11691E-06	0.000121147	0.317463805	2.55617E-06	9.9352E-05	0.373038008	3.00365E-06	0.000116744
Road 4	4	0000-0100	0.262188	2.12421E-07	2.27451E-06	0.222369429	1.8016E-07	1.92908E-06	1.294973143	1.04917E-06	1.1234E-05	1.097667143	8.89314E-07	9.5224E-06	1.320036571	1.06947E-06	1.14515E-05
Road 4	4	0100-0200	0.245862	1.13825E-07	1.21879E-06	0.2099875	9.72164E-08	1.04095E-06	1.216629	5.63254E-07	6.03109E-06	1.038889	4.80967E-07	5.14999E-06	1.2488765	5.78184E-07	6.19095E-06
Road 4	4	0200-0300	0.26669	8.02539E-08	8.59325E-07	0.22558	6.78829E-08	7.26861E-07	1.275833077	3.83931E-07	4.11097E-06	1.079219231	3.24765E-07	3.47745E-06	1.304799231	3.92648E-07	4.20431E-06
Road 4	4	0300-0400	0.24307	3.93863E-08	4.21732E-07	0.204258571	3.30975E-08	3.54394E-07	1.247755714	2.02183E-07	2.16489E-06	1.048655714	1.69921E-07	1.81944E-06	1.252914286	2.03019E-07	2.17384E-06
Road 4	4	0400-0500	0.249306429	8.07938E-08	8.65105E-07	0.209500714	6.78938E-08	7.26978E-07	1.193101429	3.86653E-07	4.14012E-06	1.002712143	3.24953E-07	3.47946E-06	1.212212857	3.92847E-07	4.20644E-06
Road 4	4	0500-0600	0.230044583	1.27803E-07	1.36846E-06	0.193295	1.07386E-07	1.14985E-06	1.05931125	5.88506E-07	6.30148E-06	0.88950875	4.94172E-07	5.29138E-06	1.08280375	6.01558E-07	6.44123E-06
Road 4	4	0600-0700	0.255430566	3.13375E-07	3.35549E-06	0.216135472	2.65166E-07	2.83929E-06	1.182654906	1.45094E-06	1.55361E-05	1.000007358	1.22686E-06	1.31367E-05	1.21614283	1.49203E-06	1.5976E-05
Road 4	4	0700-0800	0.255562174	5.44253E-07	5.82763E-06	0.217136957	4.62421E-07	4.95141E-06	1.227002174	2.61306E-06	2.79795E-05	1.041320652	2.21763E-06	2.37454E-05	1.258457609	2.68005E-06	2.86968E-05
Road 4	4	0800-0900	0.264726129	9.49828E-07	1.01704E-05	0.225294065	8.08347E-07	8.65544E-06	1.275386129	4.57604E-06	4.89983E-05	1.085064516	3.89317E-06	4.16864E-05	1.310358581	4.70152E-06	5.03419E-05
Road 4	4	0900-1000	0.272107703	9.32221E-07	9.98183E-06	0.231859257	7.94333E-07	8.50538E-06	1.244706149	4.26427E-06	4.566E-05	1.059860811	3.631E-06	3.88793E-05	1.291720068	4.42534E-06	4.73846E-05
Road 4	4	1000-1100	0.303785069	1.01262E-06	1.08427E-05	0.25778625	8.59288E-07	9.20089E-06	1.393476667	4.64492E-06	4.97359E-05	1.181989861	3.93997E-06	4.21875E-05	1.439776111	4.79925E-06	5.13884E-05
Road 4	4	1100-1200	0.280785935	1.00745E-06	1.07873E-05	0.241531097	8.66605E-07	9.27924E-06	1.279662323	4.59138E-06	4.91626E-05	1.100597419	3.9489E-06	4.22832E-05	1.342128516	4.81551E-06	5.15624E-05
Road 4	4	1200-1300	0.282831554	9.6896E-07	1.03752E-05	0.246016757	8.42835E-07	9.02472E-06	1.345526351	4.60967E-06	4.93584E-05	1.169996149	4.00832E-06	4.29194E-05	1.416012905	4.85116E-06	5.19441E-05
Road 4	4	1300-1400	0.290462333	1.00855E-06	1.07991E-05	0.2526624	8.773E-07	9.39376E-06	1.3496156	4.68617E-06	5.01775E-05	1.173575733	4.07492E-06	4.36325E-05	1.426238133	4.95222E-06	5.30262E-05
Road 4	4	1400-1500	0.265039857	8.58925E-07	9.19701E-06	0.227183143	7.36242E-07	7.88337E-06	1.271272929	4.11987E-06	4.41138E-05	1.089000071	3.52917E-06	3.77888E-05	1.316183214	4.26541E-06	4.56722E-05
Road 4	4	1500-1600	0.302568	8.75486E-07	9.37434E-06	0.25591144	7.40484E-07	7.9288E-06	1.40585152	4.06786E-06	4.35569E-05	1.18895968	3.44028E-06	3.6837E-05	1.44487112	4.18076E-06	4.47658E-05
Road 4	4	1600-1700	0.285162742	8.18523E-07	8.7644E-06	0.235749516	6.76688E-07	7.24569E-06	1.338474194	3.84192E-06	4.11376E-05	1.10586379	3.17424E-06	3.39884E-05	1.341613306	3.85093E-06	4.12341E-05
Road 4	4	1700-1800	0.27434126	8.06513E-07	8.6358E-06	0.226335197	6.65384E-07	7.12465E-06	1.308874646	3.84785E-06	4.12011E-05	1.079046457	3.1722E-06	3.39665E-05	1.305381654	3.83758E-06	4.10912E-05
Road 4	4	1800-1900	0.301238208	7.39149E-07	7.9145E-06	0.250647547	6.15015E-07	6.58532E-06	1.450289434	3.55858E-06	3.81038E-05	1.206454906	2.96028E-06	3.16975E-05	1.457102453	3.5753E-06	3.82828E-05
Road 4	4	1900-2000	0.269673919	4.61941E-07	4.94627E-06	0.225040541	3.85486E-07	4.12762E-06	1.301560946	2.22953E-06	2.38728E-05	1.085367162	1.85919E-06	1.99075E-05	1.310407703	2.24468E-06	2.40351E-05
Road 4	4	2000-2100	0.235856939	2.67523E-07	2.86452E-06	0.195618571	2.21882E-07	2.37582E-06	1.142921633	1.29637E-06	1.3881E-05	0.946773061	1.07389E-06	1.14987E-05	1.142391633	1.29577E-06	1.38745E-05
Road 4	4	2100-2200	0.197604865	1.69245E-07	1.8122E-06	0.165248378	1.41532E-07	1.51547E-06	0.978216757	8.37825E-07	8.97107E-06	0.816434865	6.99261E-07	7.4874E-06	0.981683243	8.40794E-07	9.00286E-06
Road 4	4	2200-2300	0.26321619	3.83857E-07	4.11018E-06	0.220203968	3.21131E-07	3.43853E-06	1.2515	1.8251E-06	1.95424E-05	1.046219683	1.52574E-06	1.63369E-05	1.266423651	1.84687E-06	1.97755E-05
Road 4	4	2300-0000	0.246251633	2.79313E-07	2.99077E-06	0.204266327	2.31691E-07	2.48085E-06	1.202991224	1.3645E-06	1.46105E-05	0.997049796	1.13091E-06	1.21093E-05	1.201316122	1.3626E-06	1.45902E-05
Road 5	5	0000-0100	0.082780829	2.99863E-07	4.0551E-06	0.070287306	2.54607E-07	3.4431E-06	0.463160933	1.67774E-06	2.26884E-05	0.390425855	1.41427E-06	1.91254E-05	0.460713161	1.66887E-06	2.25685E-05
Road 5	5	0100-0200	0.055346311	1.26731E-07	1.71381E-06	0.047313934	1.08339E-07	1.46509E-06	0.340207869	7.79005E-07	1.05346E-05	0.288492131	6.60586E-07	8.93323E-06	0.335806066	7.68925E-07	1.03983E-05
Road 5	5	0200-0300	0.053029767	8.55961E-08	1.15753E-06	0.044787442	7.2292E-08	9.77619E-07	0.366421395	5.91446E-07	7.99823E-06	0.305404651	4.92958E-07	6.66636E-06	0.350192093	5.6525E-07	7.64398E-06
Road 5	5	0300-0400	0.047420476	5.60715E-08	7.58266E-07	0.039759048	4.70124E-08	6.35757E-07	0.262241111	3.10082E-07	4.1933E-06	0.21686746	2.56431E-07	3.46777E-06	0.256626508	3.03444E-07	4.10352E-06
Road 5	5	0400-0500	0.06569202	1.22063E-07	1.65068E-06	0.055232626	1.02628E-07	1.38786E-06	0.375880202	6.98426E-07	9.44495E-06	0.313571515	5.8265E-07	7.87928E-06	0.368804141	6.85278E-07	9.26714E-06
Road 5	5	0500-0600	0.053199773	2.19669E-07	2.97062E-06	0.044652864	1.84377E-07	2.49337E-06	0.310137773	1.2806E-06	1.73178E-05	0.257376682	1.06274E-06	1.43717E-05	0.302029545	1.24712E-06	1.6865E-05
Road 5	5	0600-0700	0.077788582	5.66478E-07	7.66059E-06	0.065830851	4.79399E-07	6.483E-06	0.391175438	2.84865E-06	3.85228E-05	0.328549665	2.39259E-06	3.23555E-05	0.394380515	2.87199E-06	3.88385E-05
Road 5	5	0700-0800	0.060239415	7.15682E-07	9.67831E-06	0.051169242	6.07923E-07	8.22105E-06	0.318727409	3.78668E-06	5.1208E-05	0.267746793	3.181E-06	4.30173E-05	0.318916035	3.78892E-06	5.12383E-05
Road 5	5	0800-0900	0.065171898	1.03115E-06	1.39445E-05	0.055529786	8.78596E-07	1.18814E-05	0.319183333	5.05014E-06	6.8294E-05	0.269818849	4.26909E-06	5.77317E-05	0.325348636	5.14769E-06	6.96132E-05
Road 5	5	0900-1000	0.07270614	1.11352E-06	1.50583E-05	0.062166789	9.52104E-07	1.28755E-05	0.387936691	5.94137E-06	8.03463E-05	0.329933358	5.05303E-06	6.83331E-05	0.392100147	6.00514E-06	8.12086E-05
Road 5	5	1000-1100	0.083042929	1.14402E-06	1.54708E-05	0.070595695	9.72546E-07	1.31519E-05	0.430496621	5.93064E-06	8.02012E-05	0.364470436	5.02105E-06	6.79005E-05	0.435066131	5.99359E-06	8.10525E-05
Road 5	5	1100-1200	0.081478612	1.06895E-06	1.44556E-05	0.070230458	9.21379E-07	1.246E-05	0.441534421	5.79265E-06	7.83351E-05	0.378838999	4.97013E-06	6.7212E-05	0.449069456	5.89151E-06	7.9672E-05
Road 5	5	1200-1300	0.074455728	9.87992E-07	1.33608E-05	0.064869745	8.6079E-07	1.16406E-05	0.407077355	5.40172E-06	7.30485E-05	0.352810736	4.68163E-06	6.33105E-05	0.417680481	5.54242E-06	7.49512E-05
Road 5	5	1300-1400	0.081493037	1.18844E-06	1.60715E-05	0.071011892	1.03559E-06	1.40045E-05	0.425497375	6.20517E-06	8.39137E-05	0.368913707	5.37999E-06	7.27546E-05	0.439925598	6.41558E-06	8.67591E-05
Road 5	5	1400-1500	0.076990756	1.14735E-06	1.55158E-05	0.066109723	9.85194E-07	1.3323E-05	0.403903098	6.01913E-06	8.13978E-05	0.345159899	5.14371E-06	6.95594E-05	0.411269622	6.12891E-06	8.28823E-05
Road 5	5	1500-1600	0.087414974	1.26332E-06	1.70841E-05	0.074104156	1.07095E-06	1.44827E-05	0.447415065	6.46602E-06	8.74412E-05	0.376936571	5.44747E-06	7.36671E-05	0.451040727	6.51842E-06	8.81498E-05
Road 5	5	1600-1700	0.083678898	1.33968E-06	1.81167E-05	0.069264267	1.1089E-06	1.49959E-05	0.436772145	6.99262E-06	9.45625E-05	0.358997948	5.74747E-06	7.77241E-05	0.428262216	6.85638E-06	9.272E-05
Road 5	5	1700-1800	0.061788425	9.86898E-07	1.3346E-05	0.050981081	8.14281E-07	1.10117E-05	0.323573114	5.16818E-06	6.98903E-05	0.263968707	4.21617E-06	5.7016E-05	0.314949788	5.03045E-06	6.80277E-05
Road 5	5	1800-1900	0.057448411	9.90899E-07	1.34001E-05	0.047789782	8.24302E-07	1.11472E-05	0.329246159	5.679E-06	7.67982E-05	0.269952905	4.65628E-06	6.29678E-05	0.317742688	5.48058E-06	7.4115E-05
Road 5	5	1900-2000	0.066244738	8.52926E-07	1.15343E-05	0.055252653	7.11399E-07	9.62038E-06	0.375727157	4.83763E-06	6.54202E-05	0.309728061	3.98787E-06	5.39286E-05	0.364980714	4.69926E-06	6.3549E-05
Road 5	5	2000-2100	0.064388767	7.25099E-07	9.80565E-06	0.053441033	6.01813E-07	8.13844E-06	0.36028995	4.05732E-06	5.48679E-05	0.295676283	3.32969E-06	4.5028E-05	0.349117317	3.9315E-06	5.31664E-05
Road 5	5	2100-2200	0.066777249	7.24423E-07	9.79651E-06	0.055742439	6.04713E-07	8.17765E-06	0.383303529	4.15821E-06	5.62323E-05	0.316566869	3.43423E-06	4.64417E-05	0.372309308	4.03894E-06	5.46194E-05
Road 5	5	2200-2300	0.063819699	5.97711E-07	8.08295E-06	0.053361844	4.99767E-07	6.75844E-06	0.361142024	3.38232E-06	4.57397E-05	0.298356854	2.7943E-06	3.77878E-05	0.351718697	3.29406E-06	4.45462E-05
Road 5	5	2300-0000	0.056278543	4.78494E-07	6.47077E-06	0.0466783	3.96871E-07	5.36696E-06	0.334554967	2.84447E-06	3.84663E-05	0.273546424	2.32576E-06	3.14517E-05	0.320224724	2.72263E-06	3.68187E-05
Road 6	6	0000-0100	0.049570333	1.39556E-07	4.98857E-06	0.0419684	1.18154E-07	4.22354E-06	0.321231533	9.04368E-07	3.23275E-05	0.2685548	7.56066E-07	2.70263E-05	0.3105232	8.74221E-07	3.12498E-05
Road 6	6	0100-0200	0.065267281	1.39648E-07	4.99187E-06	0.05578	1.19349E-07	4.26625E-06	0.369394474	7.90371E-07	2.82526E-05	0.312676491	6.69015E-07	2.39146E-05	0.368456491	7.88364E-07	2.81808E-05
Road 6	6	0200-0300	0.059658481	8.84576E-08	3.162E-06	0.0505	7.4878E-08	2.67659E-06	0.342787722	5.08263E-07	1.81683E-05	0.287008861	4.25557E-07	1.5212E-05	0.337508861	5.00435E-07	1.78885E-05
Road 6	6	0300-0400	0.061427903	7.14814E-08	2.55517E-06	0.051802258	6.02804E-08	2.15478E-06	0.393989355	4.58471E-07	1.63885E-05	0.328997903	3.82843E-07	1.36851E-05	0.380800161	4.43123E-07	1.58399E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (September) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 6	6	0400-0500	0.066428889	1.12211E-07	4.01109E-06	0.055870556	9.43759E-08	3.37356E-06	0.391551889	6.61405E-07	2.36426E-05	0.326081556	5.50813E-07	1.96893E-05	0.381952111	6.45189E-07	2.30629E-05
Road 6	6	0500-0600	0.059450062	1.8076E-07	6.46145E-06	0.049984074	1.51979E-07	5.43262E-06	0.360327963	1.09559E-06	3.9163E-05	0.299363519	9.10227E-07	3.25369E-05	0.349347593	1.06221E-06	3.79695E-05
Road 6	6	0600-0700	0.063472828	3.45479E-07	1.23495E-05	0.053746103	2.92537E-07	1.0457E-05	0.401879483	2.18741E-06	7.81909E-05	0.336534552	1.83174E-06	6.54772E-05	0.390280655	2.12428E-06	7.59342E-05
Road 6	6	0700-0800	0.059204242	5.1337E-07	1.83509E-05	0.050325779	4.36383E-07	1.55989E-05	0.341587727	2.96197E-06	0.000105878	0.287057273	2.48912E-06	8.8976E-05	0.337383052	2.92551E-06	0.000104575
Road 6	6	0800-0900	0.050601103	6.28715E-07	2.2474E-05	0.04304852	5.34875E-07	1.91196E-05	0.300080559	3.72848E-06	0.000133278	0.252083822	3.13212E-06	0.000111961	0.295132341	3.667E-06	0.00013108
Road 6	6	0900-1000	0.053942686	6.40873E-07	2.29086E-05	0.046021438	5.46764E-07	1.95446E-05	0.307424092	3.65239E-06	0.000130558	0.259442291	3.08234E-06	0.000110181	0.305463728	3.6291E-06	0.000129726
Road 6	6	1000-1100	0.072498972	7.27983E-07	2.60225E-05	0.061581346	6.18356E-07	2.21037E-05	0.398713009	4.00359E-06	0.000143112	0.336630168	3.3802E-06	0.000120829	0.398211514	3.99856E-06	0.000142932
Road 6	6	1100-1200	0.083139154	8.30143E-07	2.96743E-05	0.071681805	7.15742E-07	2.55849E-05	0.436528703	4.35873E-06	0.000155807	0.374605526	3.74043E-06	0.000133705	0.446287331	4.45617E-06	0.00015929
Road 6	6	1200-1300	0.078588222	7.71427E-07	2.75754E-05	0.068486272	6.72266E-07	2.40308E-05	0.396051644	3.88767E-06	0.000138968	0.34363088	3.3731E-06	0.000120575	0.412117151	4.04537E-06	0.000144606
Road 6	6	1300-1400	0.091184683	8.91652E-07	3.18729E-05	0.079425086	7.7666E-07	2.77625E-05	0.467469117	4.57116E-06	0.0001634	0.405356603	3.96379E-06	0.000141689	0.484781689	4.74045E-06	0.000169452
Road 6	6	1400-1500	0.086925627	9.36474E-07	3.34751E-05	0.074634111	8.04054E-07	2.87417E-05	0.438954286	4.72897E-06	0.000169042	0.374945592	4.03939E-06	0.000144392	0.449579704	4.84345E-06	0.000173134
Road 6	6	1500-1600	0.077663256	8.19196E-07	2.92829E-05	0.065792046	6.93978E-07	2.48069E-05	0.406562811	4.28844E-06	0.000153294	0.341743505	3.60473E-06	0.000128854	0.407535552	4.2987E-06	0.000153661
Road 6	6	1600-1700	0.081861684	8.84991E-07	3.16348E-05	0.067796354	7.32934E-07	2.61994E-05	0.40905092	4.42217E-06	0.000158075	0.33625599	3.6352E-06	0.000129944	0.404052344	4.36813E-06	0.000156143
Road 6	6	1700-1800	0.061504344	7.0416E-07	2.51709E-05	0.050807246	5.8169E-07	2.0793E-05	0.319265213	3.65525E-06	0.00013066	0.260656803	2.98425E-06	0.000106675	0.311464049	3.56594E-06	0.000127468
Road 6	6	1800-1900	0.059738113	7.72514E-07	2.76143E-05	0.049699231	6.42695E-07	2.29737E-05	0.316233643	4.08943E-06	0.000146181	0.25976103	3.35915E-06	0.000120076	0.309460261	4.00184E-06	0.00014305
Road 6	6	1900-2000	0.070556317	6.9391E-07	2.48045E-05	0.058822538	5.7851E-07	2.06794E-05	0.373619179	3.67448E-06	0.000131348	0.307723225	3.02641E-06	0.000108182	0.366545763	3.60492E-06	0.000128861
Road 6	6	2000-2100	0.055959139	4.39019E-07	1.56931E-05	0.046411507	3.64114E-07	1.30156E-05	0.33033323	2.59158E-06	9.26384E-05	0.270157751	2.11948E-06	7.57628E-05	0.316569258	2.4836E-06	8.87785E-05
Road 6	6	2100-2200	0.078454278	5.30096E-07	1.89488E-05	0.065491333	4.42509E-07	1.58179E-05	0.421085972	2.84518E-06	0.000101703	0.348224972	2.35287E-06	8.41056E-05	0.413716306	2.79538E-06	9.99235E-05
Road 6	6	2200-2300	0.058280525	4.16758E-07	1.48974E-05	0.048645696	3.47861E-07	1.24346E-05	0.332852572	2.3802E-06	8.50824E-05	0.272982887	1.95207E-06	6.97787E-05	0.321628583	2.29993E-06	8.22133E-05
Road 6	6	2300-0000	0.039378095	2.63851E-07	9.4316E-06	0.032667759	2.18889E-07	7.82438E-06	0.249504706	1.67179E-06	5.97599E-05	0.203365098	1.36264E-06	4.87088E-05	0.236032857	1.58153E-06	5.65332E-05
Road 7	7	0000-0100	0.072625083	1.96121E-07	4.89582E-06	0.061121033	1.65055E-07	4.1203E-06	0.430953779	1.16377E-06	2.90515E-05	0.359790521	9.71599E-07	2.42543E-05	0.420911554	1.13665E-06	2.83746E-05
Road 7	7	0100-0200	0.08863221	1.86588E-07	4.65785E-06	0.075773977	1.59519E-07	3.98211E-06	0.48599942	1.02312E-06	2.55405E-05	0.413038861	8.69527E-07	2.17062E-05	0.488812838	1.02905E-06	2.56884E-05
Road 7	7	0200-0300	0.075881474	1.03559E-07	2.58517E-06	0.064521332	8.80553E-08	2.19815E-06	0.431010708	5.88221E-07	1.46839E-05	0.363841784	4.96552E-07	1.23956E-05	0.428363116	5.84607E-07	1.45937E-05
Road 7	7	0300-0400	0.077935813	8.59954E-08	2.14672E-06	0.065602763	7.23869E-08	1.80701E-06	0.471239039	5.19971E-07	1.29802E-05	0.394031184	4.34779E-07	1.08535E-05	0.459633947	5.07166E-07	1.26605E-05
Road 7	7	0400-0500	0.086419387	1.3927E-07	3.47664E-06	0.072519009	1.16869E-07	2.91743E-06	0.482533228	7.77633E-07	1.94122E-05	0.402213604	6.48193E-07	1.6181E-05	0.474732613	7.65062E-07	1.90984E-05
Road 7	7	0500-0600	0.077785942	2.2361E-07	5.58203E-06	0.065329091	1.878E-07	4.68811E-06	0.439907457	1.26459E-06	3.15684E-05	0.366412828	1.05332E-06	2.62943E-05	0.431741919	1.24112E-06	3.09824E-05
Road 7	7	0600-0700	0.081961335	4.21247E-07	1.05157E-05	0.069424237	3.56811E-07	8.90718E-06	0.476527126	2.44915E-06	6.11387E-05	0.400482203	2.05831E-06	5.13821E-05	0.469906441	2.41512E-06	6.02893E-05
Road 7	7	0700-0800	0.078022016	6.40015E-07	1.59769E-05	0.066457335	5.4515E-07	1.36087E-05	0.42676684	3.50077E-06	8.73906E-05	0.360675962	2.95863E-06	7.38569E-05	0.427133297	3.50377E-06	8.74656E-05
Road 7	7	0800-0900	0.078071003	9.69126E-07	2.41925E-05	0.066603226	8.26772E-07	2.06389E-05	0.425585754	5.28296E-06	0.00013188	0.360251352	4.47194E-06	0.000111634	0.426854578	5.29871E-06	0.000132273
Road 7	7	0900-1000	0.08026299	9.22922E-07	2.30391E-05	0.068545082	7.88181E-07	1.96756E-05	0.422054754	4.85309E-06	0.000121149	0.358152446	4.11829E-06	0.000102806	0.426697528	4.90648E-06	0.000122482
Road 7	7	1000-1100	0.095687541	9.65527E-07	2.41027E-05	0.081226998	8.19614E-07	2.04602E-05	0.50474046	5.09304E-06	0.000127139	0.426662002	4.3052E-06	0.000107472	0.507889001	5.12481E-06	0.000127932
Road 7	7	1100-1200	0.105741432	1.06544E-06	2.65969E-05	0.090690353	9.13787E-07	2.28111E-05	0.542882868	5.47003E-06	0.00013655	0.464287869	4.67812E-06	0.000116781	0.554978222	5.5919E-06	0.000139592
Road 7	7	1200-1300	0.101407869	1.0203E-06	2.54701E-05	0.088347378	8.88897E-07	2.21898E-05	0.513399508	5.16551E-06	0.000128948	0.446113942	4.48852E-06	0.000112048	0.534461321	5.37742E-06	0.000134238
Road 7	7	1300-1400	0.108162858	1.07099E-06	2.67355E-05	0.094223769	9.32973E-07	2.32901E-05	0.548741339	5.43346E-06	0.000135637	0.476581373	4.71895E-06	0.0001178	0.570805142	5.65193E-06	0.000141091
Road 7	7	1400-1500	0.101077106	1.04779E-06	2.61563E-05	0.086981623	9.01675E-07	2.25087E-05	0.515723557	5.34613E-06	0.000133457	0.442271692	4.58471E-06	0.000114449	0.529253315	5.48638E-06	0.000136958
Road 7	7	1500-1600	0.095399307	9.70929E-07	2.42376E-05	0.080310154	8.17359E-07	2.04039E-05	0.494269197	5.03044E-06	0.000125576	0.413839245	4.21186E-06	0.000105142	0.4941494	5.02922E-06	0.000125546
Road 7	7	1600-1700	0.099484804	1.04717E-06	2.61409E-05	0.082694129	8.70436E-07	2.17289E-05	0.497302949	5.2346E-06	0.000130673	0.411180881	4.32808E-06	0.000108043	0.49387501	5.19852E-06	0.000129772
Road 7	7	1700-1800	0.077179446	8.59451E-07	2.14547E-05	0.063745405	7.09853E-07	1.77203E-05	0.401427347	4.4702E-06	0.000111591	0.328884098	3.66237E-06	9.14248E-05	0.392629503	4.37223E-06	0.000109145
Road 7	7	1800-1900	0.070879999	8.20175E-07	2.04742E-05	0.058725361	6.7953E-07	1.69633E-05	0.375172951	4.34124E-06	0.000108372	0.307868348	3.56244E-06	8.89301E-05	0.366593709	4.24197E-06	0.000105893
Road 7	7	1900-2000	0.081916463	7.15965E-07	1.78728E-05	0.068351848	5.97408E-07	1.49133E-05	0.436600244	3.81597E-06	9.5259E-05	0.360959704	3.15486E-06	7.87555E-05	0.429311553	3.75226E-06	9.36687E-05
Road 7	7	2000-2100	0.075736754	5.45397E-07	1.36149E-05	0.06293271	4.53192E-07	1.13132E-05	0.416693004	3.0007E-06	7.49072E-05	0.342933206	2.46954E-06	6.16477E-05	0.405865917	2.92273E-06	7.29609E-05
Road 7	7	2100-2200	0.087411775	5.25405E-07	1.31158E-05	0.072373504	4.35015E-07	1.08594E-05	0.469871475	2.82425E-06	7.05026E-05	0.385901282	2.31953E-06	5.79032E-05	0.458274786	2.75455E-06	6.87625E-05
Road 7	7	2200-2300	0.072614251	4.71253E-07	1.1764E-05	0.060653221	3.93628E-07	9.82623E-06	0.402436644	2.61174E-06	6.51975E-05	0.33182877	2.15351E-06	5.37585E-05	0.392481991	2.54713E-06	6.35847E-05
Road 7	7	2300-0000	0.051382959	3.06609E-07	7.65397E-06	0.042761499	2.55164E-07	6.36972E-06	0.307280096	1.83358E-06	4.57722E-05	0.252503107	1.50672E-06	3.76127E-05	0.295264606	1.76188E-06	4.39824E-05
Road 8	8	0000-0100	0.229983333	1.67261E-07	2.75723E-06	0.194997222	1.41816E-07	2.33779E-06	1.139095	8.28433E-07	1.36564E-05	0.965381667	7.02096E-07	1.15738E-05	1.160378889	8.43912E-07	1.39116E-05
Road 8	8	0100-0200	0.236900333	1.43576E-07	2.3668E-06	0.202366333	1.22646E-07	2.02178E-06	1.170255	7.09245E-07	1.16916E-05	0.999436	6.05719E-07	9.98505E-06	1.201802333	7.28365E-07	1.20068E-05
Road 8	8	0200-0300	0.224740667	6.81032E-08	1.12266E-06	0.190224	5.76436E-08	9.50234E-07	1.167248667	3.53712E-07	5.8308E-06	0.987836	2.99344E-07	4.93458E-06	1.17806	3.56988E-07	5.88481E-06
Road 8	8	0300-0400	0.205355	5.80802E-08	9.5743E-07	0.17286	4.88897E-08	8.05928E-07	1.04455	2.95428E-07	4.87002E-06	0.878995714	2.48605E-07	4.09816E-06	1.051855714	2.97495E-07	4.90409E-06
Road 8	8	0400-0500	0.23251381	9.86422E-08	1.62608E-06	0.195487619	8.29341E-08	1.36714E-06	1.115255238	4.73139E-07	7.79951E-06	0.937660476	3.97795E-07	6.55751E-06	1.133148095	4.80729E-07	7.92465E-06
Road 8	8	0500-0600	0.221135	1.51891E-07	2.50386E-06	0.185921765	1.27704E-07	2.10515E-06	1.042458529	7.16032E-07	1.18035E-05	0.876013824	6.01706E-07	9.9189E-06	1.061935588	7.2941E-07	1.20241E-05
Road 8	8	0600-0700	0.24692871	3.09284E-07	5.09844E-06	0.209073548	2.6187E-07	4.31683E-06	1.149955	1.44035E-06	2.37436E-05	0.972940323	1.21863E-06	2.00887E-05	1.182013871	1.4805E-06	2.44055E-05
Road 8	8	0700-0800	0.244293922	5.03394E-07	8.29825E-06	0.207618529	4.2782E-07	7.05245E-06	1.149252549	2.36816E-06	3.90382E-05	0.975917647	2.01098E-06	3.31503E-05	1.183536176	2.4388E-06	4.02027E-05
Road 8	8	0800-0900	0.273438177	1.06061E-06	1.74837E-05	0.232939219	9.03522E-07	1.48942E-05	1.29129724	5.00867E-06	8.2566E-05	1.09925276	4.26377E-06	7.02866E-05	1.332191979	5.16729E-06	8.51808E-05
Road 8	8	0900-1000	0.294150506	9.38905E-07	1.54775E-05	0.250715063	8.00262E-07	1.3192E-05	1.320871772	4.21612E-06	6.95011E-05	1.12560462	3.59284E-06	5.92266E-05	1.376319684	4.3931E-06	7.24186E-05
Road 8	8	1000-1100	0.278997375	9.0181E-07	1.4866E-05	0.236802125	7.65421E-07	1.26177E-05	1.29050775	4.17134E-06	6.87629E-05	1.094365813	3.53734E-06	5.83118E-05	1.331167938	4.30277E-06	7.09295E-05
Road 8	8	1100-1200	0.288246792	9.25884E-07	1.52628E-05	0.247937547	7.96405E-07	1.31284E-05	1.345962138	4.32339E-06	7.12695E-05	1.157589371	3.71832E-06	6.12951E-05	1.405526918	4.51472E-06	7.44235E-05
Road 8	8	1200-1300	0.285688294	9.81152E-07	1.61739E-05	0.248525294	8.53521E-07	1.407E-05	1.345338706	4.62036E-06	7.61648E-05	1.169823706	4.01758E-06	6.62282E-05	1.418349	4.8711E-06	8.02982E-05
Road 8	8	1300-1400	0.261723827	8.56551E-07	1.41199E-05	0.227717654	7.45258E-07	1.22853E-05	1.215913765	3.97935E-06	6.55982E-05	1.057524383	3.46099E-06	5.70531E-05	1.285242037	4.20625E-06	6.93384E-05
Road 8	8	1400-1500	0.256452158	7.20138E-07	1.18712E-05	0.219860144	6.17385E-07	1.01774E-05	1.24054295	3.48354E-06	5.74249E-05	1.063073094	2.9852E-06	4.92098E-05	1.282933237	3.60258E-06	5.93872E-05
Road 8	8	1500-1600	0.268937986	7.552E-07	1.24492E-05	0.227461583	6.38731E-07	1.05292E-05	1.268503813	3.56206E-06	5.87192E-05	1.072197482	3.01082E-06	4.96322E-05	1.299659065	3.64955E-06	6.01614E-05
Road 8	8	1600-1700	0.270635101	8.14639E-07	1.3429E-05	0.223695638	6.73346E-07	1.10999E-05	1.264771879	3.80709E-06	6.27585E-05	1.044779396	3.14489E-06	5.18424E-05	1.268475034	3.81824E-06	6.29422E-05
Road 8	8	1700-1800	0.222136603	7.00067E-07	1.15403E-05	0.183214103	5.77402E-07	9.51826E-06	1.079297564	3.40142E-06	5.60712E-05	0.888605321	2.80045E-06	4.61644E-05	1.071819423	3.37786E-06	5.56827E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (September) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 8	8	1800-1900	0.221811869	4.79472E-07	7.90392E-06	0.184715794	3.99285E-07	6.58206E-06	1.10477271	2.38809E-06	3.93668E-05	0.918841589	1.98618E-06	3.27415E-05	1.103557383	2.38547E-06	3.93235E-05
Road 8	8	1900-2000	0.218917792	3.40539E-07	5.61365E-06	0.182697143	2.84196E-07	4.68486E-06	1.11682	1.73728E-06	2.86383E-05	0.931710779	1.44933E-06	2.38916E-05	1.114407922	1.73352E-06	2.85765E-05
Road 8	8	2000-2100	0.24116013	3.75138E-07	6.18401E-06	0.200020779	3.11143E-07	5.12908E-06	1.122555844	1.7462E-06	2.87854E-05	0.930100779	1.44682E-06	2.38503E-05	1.130121558	1.75797E-06	2.89794E-05
Road 8	8	2100-2200	0.200093889	2.18284E-07	3.59833E-06	0.167190741	1.8239E-07	3.00663E-06	1.017180185	1.10965E-06	1.82922E-05	0.848007963	9.251E-07	1.52499E-05	1.015198704	1.10749E-06	1.82565E-05
Road 8	8	2200-2300	0.23838875	3.0822E-07	5.08089E-06	0.199442344	2.57865E-07	4.25081E-06	1.146203438	1.48196E-06	2.44296E-05	0.957663594	1.23819E-06	2.04111E-05	1.157105938	1.49606E-06	2.46619E-05
Road 8	8	2300-0000	0.187841321	2.01123E-07	3.31544E-06	0.155938679	1.66965E-07	2.75235E-06	0.940401887	1.00689E-06	1.65983E-05	0.779718491	8.3485E-07	1.37622E-05	0.93565717	1.00181E-06	1.65145E-05
Road 9	9	0000-0100	0.662191111	1.73164E-07	5.24992E-06	0.636125955	1.66348E-07	5.04327E-06	3.62156864	9.47045E-07	2.87122E-05	3.498700498	9.14915E-07	2.77381E-05	4.134826453	1.08126E-06	3.27813E-05
Road 9	9	0100-0200	0.686990404	1.41153E-07	4.27942E-06	0.661408768	1.35897E-07	4.12006E-06	3.585608889	7.36719E-07	2.23356E-05	3.470931746	7.13156E-07	2.16212E-05	4.132340514	8.49053E-07	2.57413E-05
Road 9	9	0200-0300	0.343276461	3.20597E-08	9.71976E-07	0.331146371	3.09269E-08	9.3763E-07	2.352511477	2.19709E-07	6.66106E-06	2.270356841	2.12036E-07	6.42844E-06	2.601503212	2.42963E-07	7.36607E-06
Road 9	9	0300-0400	0.426544298	3.18691E-08	9.66197E-07	0.410784365	3.06916E-08	9.30498E-07	2.822058081	2.10849E-07	6.39245E-06	2.728554276	2.03863E-07	6.18065E-06	3.139338641	2.34555E-07	7.11115E-06
Road 9	9	0400-0500	0.752084217	1.40479E-07	4.259E-06	0.721438755	1.34755E-07	4.08546E-06	3.888762215	7.26369E-07	2.20218E-05	3.757380622	7.01829E-07	2.12778E-05	4.478819377	8.36584E-07	2.53633E-05
Road 9	9	0500-0600	0.548208654	1.74077E-07	5.2776E-06	0.526303754	1.67121E-07	5.06672E-06	3.070216064	9.74909E-07	2.95569E-05	2.964421741	9.41315E-07	2.85384E-05	3.490725495	1.10844E-06	3.36052E-05
Road 9	9	0600-0700	0.602198518	3.59945E-07	1.09127E-05	0.578606945	3.45844E-07	1.04852E-05	3.385496024	2.02357E-06	6.13499E-05	3.266454253	1.95242E-06	5.91927E-05	3.845061198	2.29826E-06	6.96778E-05
Road 9	9	0700-0800	0.431143681	3.94606E-07	1.19635E-05	0.41334056	3.78312E-07	1.14695E-05	2.47954254	2.26941E-06	6.88033E-05	2.383767321	2.18175E-06	6.61457E-05	2.797107881	2.56007E-06	7.76152E-05
Road 9	9	0800-0900	0.756930625	1.62592E-06	4.92941E-05	0.72579158	1.55903E-06	4.72663E-05	4.401266521	9.45413E-06	0.000286627	4.247894453	9.12468E-06	0.000276639	4.973686034	1.06837E-05	0.000323905
Road 9	9	0900-1000	0.733687474	1.19227E-06	3.6147E-05	0.70371648	1.14357E-06	3.46704E-05	3.900231312	6.33805E-06	0.000192155	3.765764311	6.11953E-06	0.00018553	4.469480791	7.26311E-06	0.0002202
Road 9	9	1000-1100	0.900700303	1.22814E-06	3.72344E-05	0.864509923	1.1788E-06	3.57383E-05	4.680288703	6.38178E-06	0.00019348	4.523930165	6.16857E-06	0.000187017	5.388440088	7.34737E-06	0.000222755
Road 9	9	1100-1200	0.706434327	1.00284E-06	3.04037E-05	0.680407954	9.65893E-07	2.92836E-05	3.955064587	5.61453E-06	0.000170219	3.82889848	5.43542E-06	0.000164789	4.509306434	6.40132E-06	0.000194073
Road 9	9	1200-1300	0.793253047	1.09645E-06	3.32418E-05	0.765507724	1.0581E-06	3.20791E-05	4.172948239	5.76794E-06	0.00017487	4.048155641	5.59545E-06	0.000169641	4.813663365	6.65355E-06	0.00020172
Road 9	9	1300-1400	0.856631011	9.76045E-07	2.95914E-05	0.824471492	9.39402E-07	2.84805E-05	3.892264976	4.43484E-06	0.000134454	3.763168894	4.28775E-06	0.000129994	4.587640386	5.22715E-06	0.000158475
Road 9	9	1400-1500	0.535890616	6.80661E-07	2.0636E-05	0.514852151	6.53939E-07	1.98259E-05	3.22049725	4.09051E-06	0.000124015	3.112755062	3.95367E-06	0.000119866	3.627607213	4.6076E-06	0.000139692
Road 9	9	1500-1600	0.564919937	6.01461E-07	1.82349E-05	0.542770759	5.7788E-07	1.75199E-05	3.329204841	3.54455E-06	0.000107462	3.218847704	3.42706E-06	0.0001039	3.761618463	4.00494E-06	0.00012142
Road 9	9	1600-1700	0.512706354	7.66134E-07	2.32274E-05	0.490206301	7.32512E-07	2.2208E-05	3.148034439	4.70409E-06	0.000142617	3.022184575	4.51603E-06	0.000136915	3.512390876	5.24854E-06	0.000159123
Road 9	9	1700-1800	0.388096198	5.00189E-07	1.51646E-05	0.370009299	4.76879E-07	1.44578E-05	2.313397344	2.98157E-06	9.03942E-05	2.211806015	2.85064E-06	8.64246E-05	2.581815315	3.32752E-06	0.000100882
Road 9	9	1800-1900	0.367796462	3.02278E-07	9.16435E-06	0.351241789	2.88672E-07	8.75186E-06	2.056660678	1.69029E-06	5.12456E-05	1.96674087	1.61639E-06	4.90051E-05	2.317982659	1.90506E-06	5.77569E-05
Road 9	9	1900-2000	0.408262942	3.2791E-07	9.94145E-06	0.390352562	3.13525E-07	9.50532E-06	2.381959276	1.91315E-06	5.80022E-05	2.284345583	1.83475E-06	5.56252E-05	2.674698145	2.14827E-06	6.51305E-05
Road 9	9	2000-2100	0.534103747	2.89314E-07	8.77132E-06	0.509988976	2.76252E-07	8.3753E-06	2.398449214	1.2992E-06	3.93885E-05	2.300900168	1.24636E-06	3.77865E-05	2.810889144	1.52261E-06	4.61618E-05
Road 9	9	2100-2200	0.02133775	1.11597E-08	3.38336E-07	0.018719896	9.79056E-09	2.96827E-07	0.30588363	1.59978E-07	4.85016E-06	0.264812329	1.38498E-07	4.19892E-06	0.283532225	1.48288E-07	4.49575E-06
Road 9	9	2200-2300	0.56257298	3.46768E-07	1.05132E-05	0.539589462	3.32601E-07	1.00837E-05	3.130365132	1.92955E-06	5.84993E-05	3.019711597	1.86134E-06	5.64314E-05	3.55930106	2.19394E-06	6.65151E-05
Road 9	9	2300-0000	0.39696539	2.22444E-07	6.74396E-06	0.379330961	2.12562E-07	6.44438E-06	2.265295687	1.26938E-06	3.84846E-05	2.173364022	1.21787E-06	3.69228E-05	2.552694982	1.43043E-06	4.33672E-05
Road 10	10	0000-0100	1.202854746	9.26362E-07	2.0563E-05	1.161920575	8.94837E-07	1.98633E-05	7.52104696	5.79223E-06	0.000128574	7.31967352	5.63714E-06	0.000125131	8.481594095	6.53198E-06	0.000144994
Road 10	10	0100-0200	1.151140777	6.69826E-07	1.48686E-05	1.113310966	6.47814E-07	1.43799E-05	7.129715249	4.14864E-06	9.209E-05	6.944972393	4.04114E-06	8.97038E-05	8.058283359	4.68896E-06	0.000104084
Road 10	10	0200-0300	1.227826968	3.99251E-07	8.86242E-06	1.185923305	3.85625E-07	8.55996E-06	7.503610476	2.43994E-06	5.41608E-05	7.301993424	2.37438E-06	5.27056E-05	8.487916729	2.76E-06	6.12655E-05
Road 10	10	0300-0400	1.113865728	2.28754E-07	5.0778E-06	1.074461585	2.20662E-07	4.89817E-06	7.172798508	1.47307E-06	3.26988E-05	6.96866544	1.43115E-06	3.17682E-05	8.043127025	1.65181E-06	3.66664E-05
Road 10	10	0400-0500	1.193301927	4.69713E-07	1.04265E-05	1.149914119	4.52635E-07	1.00474E-05	7.232259546	2.8468E-06	6.31922E-05	7.025043721	2.76523E-06	6.13816E-05	8.17495784	3.21787E-06	7.1429E-05
Road 10	10	0500-0600	1.055385775	7.40542E-07	1.64383E-05	1.016765314	7.13443E-07	1.58368E-05	6.325363793	4.43838E-06	9.85215E-05	6.142915866	4.31036E-06	9.56797E-05	7.15968118	5.0238E-06	0.000111516
Road 10	10	0600-0700	1.129083656	1.58451E-06	3.51724E-05	1.086346853	1.52453E-06	3.38411E-05	6.659980704	9.34634E-06	0.000207467	6.458825004	9.06405E-06	0.0002012	7.545171857	1.05886E-05	0.000235041
Road 10	10	0700-0800	1.083028057	2.39103E-06	5.30751E-05	1.040919086	2.29806E-06	5.10115E-05	6.455404591	1.42517E-05	0.000316355	6.255189332	1.38097E-05	0.000306543	7.296108419	1.61078E-05	0.000357555
Road 10	10	0800-0900	1.219722855	5.17688E-06	0.000114914	1.170969548	4.96995E-06	0.000110321	7.337969855	3.11446E-05	0.000691336	7.10592439	3.01597E-05	0.000669474	8.276893938	3.51297E-05	0.000779795
Road 10	10	0900-1000	1.250334124	4.23688E-06	9.40487E-05	1.200914158	4.06942E-06	9.03314E-05	7.347888597	2.4899E-05	0.0005527	7.118217092	2.41208E-05	0.000535424	8.31913125	2.81902E-05	0.000625755
Road 10	10	1000-1100	1.253704905	4.61306E-06	0.000102399	1.201119946	4.41957E-06	9.81039E-05	7.169172359	2.63792E-05	0.000585557	6.9344737	2.55157E-05	0.000566387	8.135593647	2.99352E-05	0.000664491
Road 10	10	1100-1200	1.283075876	4.72113E-06	0.000104798	1.234469301	4.54228E-06	0.000100828	7.512045374	2.76409E-05	0.000613562	7.289837873	2.68232E-05	0.000595412	8.524307175	3.13655E-05	0.00069624
Road 10	10	1200-1300	1.271197516	4.82971E-06	0.000107208	1.226694435	4.66063E-06	0.000103455	7.457102882	2.8332E-05	0.000628904	7.253245657	2.75575E-05	0.000611712	8.479940092	3.22182E-05	0.000715167
Road 10	10	1300-1400	1.233164153	4.05207E-06	8.99464E-05	1.190260143	3.91109E-06	8.6817E-05	7.130078778	2.34288E-05	0.000520064	6.935025791	2.27879E-05	0.000505837	8.125285934	2.6699E-05	0.000592654
Road 10	10	1400-1500	1.125738082	3.48715E-06	7.74065E-05	1.083132097	3.35517E-06	7.44769E-05	6.825243268	2.11423E-05	0.000469308	6.62044323	2.05079E-05	0.000455226	7.703575327	2.3863E-05	0.000529703
Road 10	10	1500-1600	1.199726335	3.79847E-06	8.43171E-05	1.150736802	3.64336E-06	8.08741E-05	7.093024903	2.24573E-05	0.000498499	6.865606762	2.17373E-05	0.000482516	8.016343563	2.53807E-05	0.000563391
Road 10	10	1600-1700	1.096604776	3.86609E-06	8.58181E-05	1.045123835	3.6846E-06	8.17893E-05	6.582218109	2.32057E-05	0.000515111	6.336166659	2.23382E-05	0.000495856	7.381290494	2.60228E-05	0.000577645
Road 10	10	1700-1800	0.996433327	3.32535E-06	7.3815E-05	0.949578837	3.16899E-06	7.0344E-05	5.978585364	1.99521E-05	0.000442889	5.752808953	1.91986E-05	0.000426163	6.702387791	2.23676E-05	0.000496507
Road 10	10	1800-1900	1.076294244	2.2288E-06	4.94741E-05	1.029184161	2.13124E-06	4.73086E-05	6.499373675	1.3459E-05	0.000298757	6.273799061	1.29918E-05	0.000288388	7.302983222	1.51231E-05	0.000335697
Road 10	10	1900-2000	1.046552736	1.95228E-06	4.3336E-05	1.007402461	1.87925E-06	4.17149E-05	6.52763258	1.21769E-05	0.000270299	6.33268431	1.18132E-05	0.000262226	7.340086771	1.36925E-05	0.000303941
Road 10	10	2000-2100	1.342378684	1.6541E-06	3.67172E-05	1.2906741	1.59039E-06	3.53029E-05	8.126654961	1.00138E-05	0.000222283	7.884592816	9.71553E-06	0.000215662	9.175266916	1.13059E-05	0.000250965
Road 10	10	2100-2200	0.894163526	1.13241E-06	2.51368E-05	0.860504337	1.08978E-06	2.41906E-05	5.582239593	7.0696E-06	0.000156928	5.408900129	6.85008E-06	0.000152056	6.269404466	7.93986E-06	0.000176246
Road 10	10	2200-2300	1.065113207	1.40359E-06	3.11565E-05	1.025511059	1.35141E-06	2.9998E-05	6.412337358	8.4501E-06	0.000187572	6.221968809	8.19924E-06	0.000182004	7.247479868	9.55064E-06	0.000212002
Road 10	10	2300-0000	0.972550025	1.19839E-06	2.66015E-05	0.931933849	1.14835E-06	2.54905E-05	5.965472551	7.35076E-06	0.000163169	5.766399136	7.10546E-06	0.000157724	6.698332985	8.2538E-06	0.000183215
Road 11	11	0000-0100	1.346862635	1.02885E-06	8.53442E-06	1.300653914	9.93555E-07	8.24162E-06	8.398713431	6.41568E-06	5.32186E-05	8.172411324	6.24281E-06	5.17847E-05	9.473065239	7.23637E-06	6.00263E-05
Road 11	11	0100-0200	1.317227214	7.08924E-07	5.88059E-06	1.273650961	6.85472E-07	5.68604E-06	8.12102014	4.37069E-06	3.62552E-05	7.91014172	4.25719E-06	3.53138E-05	9.183792681	4.94267E-06	4.09998E-05
Road 11	11	0200-0300	1.224853334	3.18972E-07	2.6459E-06	1.183084019	3.08095E-07	2.55567E-06	7.86741604	2.04881E-06	1.6995E-05	7.653303586	1.99305E-06	1.65325E-05	8.836387605	2.30114E-06	1.90882E-05
Road 11	11	0300-0400	1.313238094	3.1919E-07	2.64771E-06	1.266718113	3.07883E-07	2.55391E-06	8.403216201	2.04245E-06	1.69423E-05	8.168925178	1.9855E-06	1.64699E-05	9.435643291	2.29339E-06	1.90238E-05
Road 11	11	0400-0500	1.209848163	4.20086E-07	3.48465E-06	1.165265184	4.04606E-07	3.35624E-06	7.261601779	2.52139E-06	2.09151E-05	7.05122708	2.44834E-06	2.03092E-05	8.216492264	2.85295E-06	2.36654E-05
Road 11	11	0500-0600	0.962851449	4.51337E-07	3.74387E-06	0.927336294	4.34689E-07	3.60578E-06	5.871950211	2.75248E-06	2.2832E-05	5.697996481	2.67094E-06	2.21556E-05	6.625332775	3.10562E-06	2.57614E-05
Road 11	11	0600-0700	1.011876166	9.13499E-07	7.57755E-06	0.975485663	8.80647E-07	7.30504E-06	6.173238418	5.57306E-06	4.6229E-05	5.991730901	5.4092E-06	4.48698E-05	6.967216564	6.28985E-06	5.21748E-05
Road 11	11	0700-0800	1.149561136	2.17538E-06	1.8045E-05	1.105187852	2.09141E-06	1.73485E-05	7.127214442	1.34873E-05	0.000111878	6.90854572	1.30735E-05	0.000108445	8.013733573	1.51649E-05	0.000125794

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (September) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 11	11	0800-0900	1.160895104	4.13166E-06	3.42724E-05	1.114708982	3.96728E-06	3.29089E-05	7.083191625	2.52093E-05	0.000209113	6.859786499	2.44142E-05	0.000202518	7.974495481	2.83815E-05	0.000235426
Road 11	11	0900-1000	1.146464662	2.92587E-06	2.42704E-05	1.101603858	2.81138E-06	2.33207E-05	6.780859643	1.73053E-05	0.000143549	6.570801678	1.67692E-05	0.000139102	7.672405535	1.95806E-05	0.000162423
Road 11	11	1000-1100	1.241214829	2.60741E-06	2.16287E-05	1.191617175	2.50322E-06	2.07644E-05	7.192424949	1.51091E-05	0.000125331	6.965564554	1.46325E-05	0.000121378	8.157181729	1.71357E-05	0.000142142
Road 11	11	1100-1200	1.166778357	2.75489E-06	2.28521E-05	1.124635322	2.65539E-06	2.20267E-05	7.056316813	1.66607E-05	0.000138202	6.852887775	1.61804E-05	0.000134218	7.977523097	1.88358E-05	0.000156245
Road 11	11	1200-1300	1.281178702	3.6478E-06	3.02588E-05	1.237022526	3.52208E-06	2.92159E-05	7.662194674	2.1816E-05	0.000180965	7.454708055	2.12252E-05	0.000176065	8.691730581	2.47473E-05	0.000205281
Road 11	11	1300-1400	1.296605816	2.72377E-06	2.25939E-05	1.251514568	2.62905E-06	2.18082E-05	7.390657396	1.55255E-05	0.000128785	7.187186926	1.50981E-05	0.00012524	8.438701494	1.77271E-05	0.000147048
Road 11	11	1400-1500	1.035315012	2.08501E-06	1.72953E-05	0.996465421	2.00677E-06	1.66463E-05	6.421014456	1.29312E-05	0.000107265	6.229932361	1.25464E-05	0.000104073	7.226397782	1.45532E-05	0.00012072
Road 11	11	1500-1600	1.132547211	2.30049E-06	1.90827E-05	1.092455904	2.21905E-06	1.84072E-05	7.085904809	1.43932E-05	0.000119393	6.887419343	1.39901E-05	0.000116049	7.979875247	1.62091E-05	0.000134456
Road 11	11	1600-1700	1.01063203	2.4564E-06	2.0376E-05	0.969538365	2.35652E-06	1.95475E-05	6.370984051	1.5485E-05	0.00012845	6.159444253	1.49709E-05	0.000124185	7.128982618	1.73274E-05	0.000143732
Road 11	11	1700-1800	1.030999058	2.5596E-06	2.12321E-05	0.988900577	2.45508E-06	2.03651E-05	6.491461826	1.6116E-05	0.000133683	6.277728828	1.55853E-05	0.000129282	7.266629405	1.80404E-05	0.000149647
Road 11	11	1800-1900	1.158377991	2.37307E-06	1.96848E-05	1.113825533	2.2818E-06	1.89277E-05	7.274629458	1.49029E-05	0.000123621	7.05182582	1.44464E-05	0.000119834	8.165651354	1.67282E-05	0.000138762
Road 11	11	1900-2000	1.074082322	1.6969E-06	1.40759E-05	1.033039795	1.63206E-06	1.35381E-05	6.742337197	1.0652E-05	8.83588E-05	6.535398281	1.0325E-05	8.56469E-05	7.568438075	1.19571E-05	9.9185E-05
Road 11	11	2000-2100	1.181439143	1.6614E-06	1.37814E-05	1.135188526	1.59636E-06	1.32419E-05	7.173038855	1.00871E-05	8.36732E-05	6.95235132	9.77674E-06	8.10989E-05	8.087539846	1.13731E-05	9.43408E-05
Road 11	11	2100-2200	0.874995127	8.81071E-07	7.30856E-06	0.841976438	8.47823E-07	7.03276E-06	5.658334698	5.69763E-06	4.72623E-05	5.482317457	5.52039E-06	4.57921E-05	6.324293895	6.36821E-06	5.28248E-05
Road 11	11	2200-2300	1.0888009	1.19088E-06	9.87841E-06	1.048019057	1.14627E-06	9.50841E-06	6.703664373	7.33213E-06	6.08206E-05	6.503698236	7.11342E-06	5.90064E-05	7.551717293	8.25969E-06	6.85148E-05
Road 11	11	2300-0000	1.033059135	1.0761E-06	8.92636E-06	0.992501379	1.03386E-06	8.57592E-06	6.453398336	6.72229E-06	5.57619E-05	6.250619184	6.51106E-06	5.40098E-05	7.243120563	7.54492E-06	6.25857E-05
Haul Road 1	HR1	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0700-0800	2.633321612	4.94985E-06	7.44482E-06	2.432151612	4.57171E-06	6.87608E-06	14.66005354	2.75565E-05	4.14463E-05	13.77863354	2.58997E-05	3.89544E-05	16.21078515	3.04714E-05	4.58305E-05
Haul Road 1	HR1	0800-0900	2.645711612	4.97314E-06	7.47985E-06	2.444741612	4.59538E-06	6.91168E-06	14.71421354	2.76583E-05	4.15994E-05	13.83379354	2.60034E-05	3.91104E-05	16.27853515	3.05988E-05	4.6022E-05
Haul Road 1	HR1	0900-1000	2.655601612	4.99173E-06	7.50781E-06	2.454331612	4.61341E-06	6.93879E-06	14.75739354	2.77395E-05	4.17215E-05	13.87557354	2.60819E-05	3.92285E-05	16.32990515	3.06953E-05	4.61673E-05
Haul Road 1	HR1	1000-1100	2.660501612	5.00094E-06	7.52167E-06	2.453331612	4.61153E-06	6.93596E-06	14.77877354	2.77796E-05	4.1782E-05	13.87127354	2.60738E-05	3.92163E-05	16.32460515	3.06853E-05	4.61523E-05
Haul Road 1	HR1	1100-1200	2.657001612	4.99436E-06	7.51177E-06	2.466531612	4.63634E-06	6.97328E-06	14.76348354	2.77509E-05	4.17387E-05	13.92933354	2.6183E-05	3.93805E-05	16.39586515	3.08193E-05	4.63537E-05
Haul Road 1	HR1	1200-1300	2.635311612	4.95359E-06	7.45045E-06	2.460731612	4.62544E-06	6.95688E-06	14.66875354	2.75728E-05	4.14709E-05	13.90385354	2.61351E-05	3.93084E-05	16.36458515	3.07605E-05	4.62653E-05
Haul Road 1	HR1	1300-1400	2.635311612	4.95359E-06	7.45045E-06	2.460731612	4.62544E-06	6.95688E-06	14.66875354	2.75728E-05	4.14709E-05	13.90385354	2.61351E-05	3.93084E-05	16.36458515	3.07605E-05	4.62653E-05
Haul Road 1	HR1	1400-1500	2.638811612	4.96017E-06	7.46034E-06	2.446741612	4.59914E-06	6.91733E-06	14.68414354	2.76018E-05	4.15144E-05	13.84229354	2.60193E-05	3.91344E-05	16.28903515	3.06185E-05	4.60517E-05
Haul Road 1	HR1	1500-1600	2.656501612	4.99342E-06	7.51036E-06	2.446741612	4.59914E-06	6.91733E-06	14.76139354	2.7747E-05	4.17328E-05	13.84229354	2.60193E-05	3.91344E-05	16.28903515	3.06185E-05	4.60517E-05
Haul Road 1	HR1	1600-1700	2.664701612	5.00884E-06	7.53354E-06	2.426851612	4.56175E-06	6.8611E-06	14.79766354	2.78152E-05	4.18354E-05	13.75525354	2.58557E-05	3.88883E-05	16.18210515	3.04175E-05	4.57494E-05
Haul Road 1	HR1	1700-1800	2.670291612	5.01935E-06	7.54934E-06	2.429351612	4.56645E-06	6.86817E-06	14.82185354	2.78606E-05	4.19038E-05	13.76614354	2.58762E-05	3.89191E-05	16.19549515	3.04427E-05	4.57873E-05
Haul Road 1	HR1	1800-1900	2.662201612	5.00414E-06	7.52647E-06	2.432951612	4.57322E-06	6.87834E-06	14.78637354	2.77939E-05	4.18035E-05	13.78232354	2.59066E-05	3.89648E-05	16.21527515	3.04798E-05	4.58432E-05
Haul Road 1	HR1	1900-2000	2.651701612	4.9844E-06	7.49679E-06	2.427151612	4.56232E-06	6.86195E-06	14.74070354	2.77081E-05	4.16743E-05	13.75644354	2.5858E-05	3.88917E-05	16.18359515	3.04203E-05	4.57536E-05
Haul Road 1	HR1	2000-2100	2.651701612	4.9844E-06	7.49679E-06	2.421261612	4.55124E-06	6.8453E-06	14.74070354	2.77081E-05	4.16743E-05	13.73065354	2.58095E-05	3.88188E-05	16.15191515	3.03607E-05	4.56641E-05
Haul Road 1	HR1	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0700-0800	2.633321612	3.41104E-06	6.79151E-06	2.432151612	3.15046E-06	6.27268E-06	14.66005354	1.89897E-05	3.78092E-05	13.77863354	1.7848E-05	3.5536E-05	16.21078515	2.09984E-05	4.18087E-05
Haul Road 2	HR2	0800-0900	2.645711612	3.42709E-06	6.82346E-06	2.444741612	3.16676E-06	6.30515E-06	14.71421354	1.90599E-05	3.79489E-05	13.83379354	1.79194E-05	3.56783E-05	16.27853515	2.10862E-05	4.19834E-05
Haul Road 2	HR2	0900-1000	2.655601612	3.4399E-06	6.84897E-06	2.454331612	3.17919E-06	6.32988E-06	14.75739354	1.91158E-05	3.80603E-05	13.87557354	1.79735E-05	3.5786E-05	16.32990515	2.11527E-05	4.21159E-05
Haul Road 2	HR2	1000-1100	2.660501612	3.44625E-06	6.86161E-06	2.453331612	3.17789E-06	6.3273E-06	14.77877354	1.91435E-05	3.81154E-05	13.87127354	1.7968E-05	3.57749E-05	16.32460515	2.11459E-05	4.21022E-05
Haul Road 2	HR2	1100-1200	2.657001612	3.44171E-06	6.85258E-06	2.466531612	3.19499E-06	6.36135E-06	14.76348354	1.91237E-05	3.8076E-05	13.92933354	1.80432E-05	3.59247E-05	16.39586515	2.12382E-05	4.2286E-05
Haul Road 2	HR2	1200-1300	2.635311612	3.41362E-06	6.79664E-06	2.460731612	3.18748E-06	6.34639E-06	14.66875354	1.9001E-05	3.78317E-05	13.90385354	1.80102E-05	3.58589E-05	16.36458515	2.11976E-05	4.22053E-05
Haul Road 2	HR2	1300-1400	2.635311612	3.41362E-06	6.79664E-06	2.460731612	3.18748E-06	6.34639E-06	14.66875354	1.9001E-05	3.78317E-05	13.90385354	1.80102E-05	3.58589E-05	16.36458515	2.11976E-05	4.22053E-05
Haul Road 2	HR2	1400-1500	2.638811612	3.41815E-06	6.80567E-06	2.446741612	3.16935E-06	6.31031E-06	14.68414354	1.90209E-05	3.78714E-05	13.84229354	1.79304E-05	3.57002E-05	16.28903515	2.10998E-05	4.20105E-05
Haul Road 2	HR2	1500-1600	2.656501612	3.44106E-06	6.85129E-06	2.446741612	3.16935E-06	6.31031E-06	14.76139354	1.9121E-05	3.80706E-05	13.84229354	1.79304E-05	3.57002E-05	16.28903515	2.10998E-05	4.20105E-05
Haul Road 2	HR2	1600-1700	2.664701612	3.45169E-06	6.87244E-06	2.426851612	3.14359E-06	6.25901E-06	14.79766354	1.9168E-05	3.81641E-05	13.75525354	1.78177E-05	3.54757E-05	16.18210515	2.09613E-05	4.17347E-05
Haul Road 2	HR2	1700-1800	2.670291612	3.45893E-06	6.88686E-06	2.429351612	3.14683E-06	6.26546E-06	14.82185354	1.91993E-05	3.82265E-05	13.76614354	1.78318E-05	3.55038E-05	16.19549515	2.09786E-05	4.17692E-05
Haul Road 2	HR2	1800-1900	2.662201612	3.44845E-06	6.86599E-06	2.432951612	3.15149E-06	6.27474E-06	14.78637354	1.91533E-05	3.8135E-05	13.78232354	1.78528E-05	3.55455E-05	16.21527515	2.10042E-05	4.18203E-05
Haul Road 2	HR2	1900-2000	2.651701612	3.43485E-06	6.83891E-06	2.427151612	3.14398E-06	6.25978E-06	14.74070354	1.90942E-05	3.80172E-05	13.75644354	1.78192E-05	3.54788E-05	16.18359515	2.09632E-05	4.17386E-05
Haul Road 2	HR2	2000-2100	2.651701612	3.43485E-06	6.83891E-06	2.421261612	3.13635E-06	6.24459E-06	14.74070354	1.90942E-05	3.80172E-05	13.73065354	1.77858E-05	3.54123E-05	16.15191515	2.09222E-05	4.16568E-05
Haul Road 2	HR2	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (September) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Haul Road 2	HR2	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0700-0800	2.633321612	3.41104E-06	6.28208E-06	2.432151612	3.15046E-06	5.80217E-06	14.66005354	1.89897E-05	3.49732E-05	13.77863354	1.7848E-05	3.28705E-05	16.21078515	2.09984E-05	3.86726E-05
Haul Road 3	HR3	0800-0900	2.645711612	3.42709E-06	6.31164E-06	2.444741612	3.16676E-06	5.8322E-06	14.71421354	1.90599E-05	3.51024E-05	13.83379354	1.79194E-05	3.30021E-05	16.27853515	2.10862E-05	3.88343E-05
Haul Road 3	HR3	0900-1000	2.655601612	3.4399E-06	6.33523E-06	2.454331612	3.17919E-06	5.85508E-06	14.75739354	1.91158E-05	3.52054E-05	13.87557354	1.79735E-05	3.31017E-05	16.32990515	2.11527E-05	3.89568E-05
Haul Road 3	HR3	1000-1100	2.660501612	3.44625E-06	6.34692E-06	2.453331612	3.17789E-06	5.8527E-06	14.77877354	1.91435E-05	3.52564E-05	13.87127354	1.7968E-05	3.30915E-05	16.32460515	2.11459E-05	3.89442E-05
Haul Road 3	HR3	1100-1200	2.657001612	3.44171E-06	6.33857E-06	2.466531612	3.19499E-06	5.88419E-06	14.76348354	1.91237E-05	3.52199E-05	13.92933354	1.80432E-05	3.323E-05	16.39586515	2.12382E-05	3.91142E-05
Haul Road 3	HR3	1200-1300	2.635311612	3.41362E-06	6.28683E-06	2.460731612	3.18748E-06	5.87035E-06	14.66875354	1.9001E-05	3.49939E-05	13.90385354	1.80102E-05	3.31692E-05	16.36458515	2.11976E-05	3.90395E-05
Haul Road 3	HR3	1300-1400	2.635311612	3.41362E-06	6.28683E-06	2.460731612	3.18748E-06	5.87035E-06	14.66875354	1.9001E-05	3.49939E-05	13.90385354	1.80102E-05	3.31692E-05	16.36458515	2.11976E-05	3.90395E-05
Haul Road 3	HR3	1400-1500	2.638811612	3.41815E-06	6.29518E-06	2.446741612	3.16935E-06	5.83697E-06	14.68414354	1.90209E-05	3.50307E-05	13.84229354	1.79304E-05	3.30223E-05	16.28903515	2.10998E-05	3.88593E-05
Haul Road 3	HR3	1500-1600	2.656501612	3.44106E-06	6.33738E-06	2.446741612	3.16935E-06	5.83697E-06	14.76139354	1.9121E-05	3.52149E-05	13.84229354	1.79304E-05	3.30223E-05	16.28903515	2.10998E-05	3.88593E-05
Haul Road 3	HR3	1600-1700	2.664701612	3.45169E-06	6.35694E-06	2.426851612	3.14359E-06	5.78952E-06	14.79766354	1.9168E-05	3.53015E-05	13.75525354	1.78177E-05	3.28147E-05	16.18210515	2.09613E-05	3.86042E-05
Haul Road 3	HR3	1700-1800	2.670291612	3.45893E-06	6.37028E-06	2.429351612	3.14683E-06	5.79549E-06	14.82185354	1.91993E-05	3.53592E-05	13.76614354	1.78318E-05	3.28407E-05	16.19549515	2.09786E-05	3.86362E-05
Haul Road 3	HR3	1800-1900	2.662201612	3.44845E-06	6.35098E-06	2.432951612	3.15149E-06	5.80408E-06	14.78637354	1.91533E-05	3.52745E-05	13.78232354	1.78528E-05	3.28793E-05	16.21527515	2.10042E-05	3.86833E-05
Haul Road 3	HR3	1900-2000	2.651701612	3.43485E-06	6.32593E-06	2.427151612	3.14398E-06	5.79024E-06	14.74070354	1.90942E-05	3.51656E-05	13.75644354	1.78192E-05	3.28175E-05	16.18359515	2.09632E-05	3.86078E-05
Haul Road 3	HR3	2000-2100	2.651701612	3.43485E-06	6.32593E-06	2.421261612	3.13635E-06	5.77619E-06	14.74070354	1.90942E-05	3.51656E-05	13.73065354	1.77858E-05	3.2756E-05	16.15191515	2.09222E-05	3.85322E-05
Haul Road 3	HR3	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (October) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 1	1	0000-0100	0.093660279	3.14662E-07	2.55982E-06	0.08144419	2.73621E-07	2.22594E-06	0.554607207	1.86326E-06	1.51579E-05	0.479922905	1.61235E-06	1.31167E-05	0.561367095	1.88597E-06	1.53427E-05
Road 1	1	0100-0200	0.070372294	1.43967E-07	1.1712E-06	0.063953119	1.30835E-07	1.06436E-06	0.424183578	8.67793E-07	7.05962E-06	0.384120459	7.85832E-07	6.39286E-06	0.448073578	9.16667E-07	7.45722E-06
Road 1	1	0200-0300	0.068328831	9.87485E-08	8.03334E-07	0.061586364	8.90043E-08	7.24063E-07	0.435905195	6.29968E-07	5.12488E-06	0.39024987	5.63987E-07	4.58812E-06	0.451836234	6.52992E-07	5.31218E-06
Road 1	1	0300-0400	0.057450545	5.93052E-08	4.82456E-07	0.051771818	5.34431E-08	4.34768E-07	0.351859273	3.63218E-07	2.95483E-06	0.315269091	3.25447E-07	2.64756E-06	0.367040909	3.7889E-07	3.08232E-06
Road 1	1	0400-0500	0.074515349	1.20276E-07	9.78465E-07	0.067490465	1.08937E-07	8.86221E-07	0.42681186	6.88923E-07	5.60449E-06	0.385019186	6.21465E-07	5.05571E-06	0.452509651	7.30402E-07	5.94193E-06
Road 1	1	0500-0600	0.062665904	2.21118E-07	1.79883E-06	0.055589468	1.96149E-07	1.5957E-06	0.370618564	1.30774E-06	1.06386E-05	0.326522819	1.15215E-06	9.37287E-06	0.382112287	1.34829E-06	1.09686E-05
Road 1	1	0600-0700	0.085086647	5.38179E-07	4.37817E-06	0.074796795	4.73095E-07	3.8487E-06	0.453339941	2.86741E-06	2.33268E-05	0.396527389	2.50807E-06	2.04035E-05	0.471324184	2.98116E-06	2.42522E-05
Road 1	1	0700-0800	0.071428238	7.53428E-07	6.12925E-06	0.062611566	6.6043E-07	5.37269E-06	0.393934253	4.15524E-06	3.38035E-05	0.342886815	3.61679E-06	2.94231E-05	0.405498381	4.27722E-06	3.47958E-05
Road 1	1	0800-0900	0.076181225	9.923E-07	8.07251E-06	0.068058401	8.86496E-07	7.21178E-06	0.408815303	5.32503E-06	4.33199E-05	0.363868862	4.73958E-06	3.85572E-05	0.431927262	5.62608E-06	4.5769E-05
Road 1	1	0900-1000	0.080992955	1.08538E-06	8.82972E-06	0.073041639	9.78824E-07	7.96288E-06	0.449093039	6.01825E-06	4.89594E-05	0.403810826	5.41143E-06	4.40228E-05	0.476852465	6.39025E-06	5.19857E-05
Road 1	1	1000-1100	0.093899094	1.22485E-06	9.96432E-06	0.085501525	1.11531E-06	9.07319E-06	0.50281564	6.55888E-06	5.33574E-05	0.456739827	5.95785E-06	4.8468E-05	0.542241353	7.07316E-06	5.75412E-05
Road 1	1	1100-1200	0.084216068	1.06535E-06	8.66675E-06	0.076915104	9.72988E-07	7.9154E-06	0.483055801	6.11073E-06	4.97117E-05	0.440041602	5.56659E-06	4.52851E-05	0.516956706	6.53958E-06	5.32005E-05
Road 1	1	1200-1300	0.086455592	1.08232E-06	8.80481E-06	0.079641574	9.97014E-07	8.11086E-06	0.489452354	6.12734E-06	4.98468E-05	0.44993907	5.63268E-06	4.58227E-05	0.529580645	6.6297E-06	5.39336E-05
Road 1	1	1300-1400	0.0901711	1.19991E-06	9.76146E-06	0.082369154	1.09609E-06	8.91686E-06	0.500140155	6.65539E-06	5.41426E-05	0.455872285	6.06632E-06	4.93504E-05	0.538241439	7.16241E-06	5.82673E-05
Road 1	1	1400-1500	0.085685657	1.23672E-06	1.00609E-05	0.077840182	1.12348E-06	9.13969E-06	0.465290403	6.71562E-06	5.46326E-05	0.421748856	6.08718E-06	4.95201E-05	0.499589038	7.21066E-06	5.86598E-05
Road 1	1	1500-1600	0.09155257	1.23032E-06	1.00089E-05	0.08456683	1.13645E-06	9.24516E-06	0.495242402	6.65528E-06	5.41417E-05	0.456345964	6.13258E-06	4.98894E-05	0.540912793	7.26902E-06	5.91346E-05
Road 1	1	1600-1700	0.08764547	1.24197E-06	1.01036E-05	0.080042755	1.13424E-06	9.22721E-06	0.479969815	6.80137E-06	5.53302E-05	0.437330795	6.19716E-06	5.04148E-05	0.51737355	7.3314E-06	5.9642E-05
Road 1	1	1700-1800	0.069328047	9.86311E-07	8.02379E-06	0.063077533	8.97387E-07	7.30037E-06	0.388031412	5.52042E-06	4.49094E-05	0.351872216	5.00599E-06	4.07245E-05	0.414949749	5.90338E-06	4.80248E-05
Road 1	1	1800-1900	0.060773398	8.82857E-07	7.18217E-06	0.056172532	8.1602E-07	6.63844E-06	0.36373646	5.28401E-06	4.29862E-05	0.334699819	4.86219E-06	3.95547E-05	0.390872351	5.67821E-06	4.61931E-05
Road 1	1	1900-2000	0.073381282	8.16725E-07	6.64418E-06	0.066908786	7.44687E-07	6.05814E-06	0.420307723	4.67797E-06	3.8056E-05	0.381744233	4.24877E-06	3.45644E-05	0.448653019	4.99345E-06	4.06225E-05
Road 1	1	2000-2100	0.066620537	6.28944E-07	5.11655E-06	0.061256998	5.78308E-07	4.70462E-06	0.393463201	3.71456E-06	3.02185E-05	0.360524751	3.4036E-06	2.76888E-05	0.42178175	3.98191E-06	3.23934E-05
Road 1	1	2100-2200	0.069874052	6.01956E-07	4.897E-06	0.063912745	5.506E-07	4.47921E-06	0.41644146	3.58759E-06	2.91856E-05	0.379452113	3.26893E-06	2.65932E-05	0.443364858	3.81953E-06	3.10724E-05
Road 1	1	2200-2300	0.069767057	5.69607E-07	4.63384E-06	0.062110621	5.07097E-07	4.12531E-06	0.416042046	3.39674E-06	2.7633E-05	0.368140322	3.00565E-06	2.44514E-05	0.430250943	3.51275E-06	2.85767E-05
Road 1	1	2300-0000	0.062606103	4.58265E-07	3.72806E-06	0.054381359	3.98062E-07	3.23829E-06	0.384487256	2.81438E-06	2.28954E-05	0.330916872	2.42225E-06	1.97054E-05	0.385298231	2.82031E-06	2.29437E-05
Road 2	2	0000-0100	0.155135769	1.86738E-07	1.20593E-06	0.134864615	1.62337E-07	1.04836E-06	0.656649615	7.90412E-07	5.1044E-06	0.568813654	6.84683E-07	4.42162E-06	0.703678269	8.4702E-07	5.46997E-06
Road 2	2	0100-0200	0.106174118	8.3563E-08	5.39641E-07	0.096453824	7.59127E-08	4.90237E-07	0.52395	4.12368E-07	2.66303E-06	0.474545588	3.73485E-07	2.41193E-06	0.570999412	4.49398E-07	2.90217E-06
Road 2	2	0200-0300	0.111055217	5.91266E-08	3.81834E-07	0.10018	5.33366E-08	3.44442E-07	0.605757826	3.2251E-07	2.08274E-06	0.54389	2.89571E-07	1.87002E-06	0.64407	3.42908E-07	2.21446E-06
Road 2	2	0300-0400	0.095866	3.32868E-08	2.14963E-07	0.086410667	3.00037E-08	1.93761E-07	0.348166667	1.20891E-07	7.80704E-07	0.312198	1.08402E-07	7.0005E-07	0.398608667	1.38406E-07	8.93811E-07
Road 2	2	0400-0500	0.129761481	8.11009E-08	5.23742E-07	0.117545185	7.34657E-08	4.74435E-07	0.624765926	3.90479E-07	2.52167E-06	0.564481852	3.52801E-07	2.27836E-06	0.682027037	4.26267E-07	2.75279E-06
Road 2	2	0500-0600	0.104890702	1.38397E-07	8.93757E-07	0.093070702	1.22802E-07	7.93041E-07	0.464140877	6.12408E-07	3.95487E-06	0.409660877	5.40525E-07	3.49066E-06	0.502731579	6.63326E-07	4.2837E-06
Road 2	2	0600-0700	0.149108462	3.58965E-07	2.31816E-06	0.131093942	3.15597E-07	2.03809E-06	0.60292625	1.45149E-06	9.37358E-06	0.528143365	1.27146E-06	8.21094E-06	0.659237308	1.58705E-06	1.0249E-05
Road 2	2	0700-0800	0.122187125	4.52545E-07	2.92249E-06	0.107118125	3.96734E-07	2.56207E-06	0.50796875	1.88137E-06	1.21497E-05	0.442663	1.63949E-06	1.05877E-05	0.549781125	2.03623E-06	1.31498E-05
Road 2	2	0800-0900	0.136739507	9.62241E-07	6.21406E-06	0.122134868	8.59468E-07	5.55036E-06	0.574375987	4.04191E-06	2.61022E-05	0.51115352	3.59701E-06	2.32291E-05	0.633288388	4.45647E-06	2.87795E-05
Road 2	2	0900-1000	0.159807183	9.32209E-07	6.02011E-06	0.144029643	8.40173E-07	5.42575E-06	0.680197817	3.96782E-06	2.56238E-05	0.611922619	3.56955E-06	2.30518E-05	0.755952262	4.40972E-06	2.84776E-05
Road 2	2	1000-1100	0.178040107	7.70683E-07	4.97699E-06	0.162059893	7.01509E-07	4.53028E-06	0.750405401	3.24828E-06	2.09771E-05	0.682047326	2.95238E-06	1.90662E-05	0.844107219	3.65389E-06	2.35965E-05
Road 2	2	1100-1200	0.209159891	8.86025E-07	5.72186E-06	0.190913552	8.08731E-07	5.22271E-06	0.853883607	3.61715E-06	2.33592E-05	0.778788087	3.29903E-06	2.13048E-05	0.969701639	4.10776E-06	2.65275E-05
Road 2	2	1200-1300	0.160401842	7.05471E-07	4.55586E-06	0.147758316	6.49863E-07	4.19675E-06	0.701898368	3.08705E-06	1.99359E-05	0.645434526	2.83872E-06	1.83322E-05	0.793192842	3.48858E-06	2.25289E-05
Road 2	2	1300-1400	0.17681852	9.12744E-07	5.89441E-06	0.161368565	8.32991E-07	5.37937E-06	0.72267574	3.73048E-06	2.40911E-05	0.658569058	3.39956E-06	2.1954E-05	0.819937623	4.23255E-06	2.73334E-05
Road 2	2	1400-1500	0.152198485	5.81314E-07	3.75407E-06	0.138248061	5.28031E-07	3.40997E-06	0.657724	2.51214E-06	1.62232E-05	0.596588667	2.27864E-06	1.47152E-05	0.734836727	2.80667E-06	1.81252E-05
Road 2	2	1500-1600	0.18897459	8.00517E-07	5.16966E-06	0.174374317	7.38669E-07	4.77025E-06	0.744134863	3.15224E-06	2.03568E-05	0.686049945	2.90618E-06	1.87679E-05	0.860424262	3.64485E-06	2.35381E-05
Road 2	2	1600-1700	0.158806652	8.12414E-07	5.24649E-06	0.145020407	7.41887E-07	4.79103E-06	0.667402443	3.41426E-06	2.20489E-05	0.608532081	3.11309E-06	2.0104E-05	0.753552489	3.85498E-06	2.48951E-05
Road 2	2	1700-1800	0.121509505	6.24424E-07	4.03247E-06	0.110582207	5.6827E-07	3.66983E-06	0.481672523	2.47526E-06	1.5985E-05	0.437407432	2.24779E-06	1.4516E-05	0.54798964	2.81606E-06	1.81858E-05
Road 2	2	1800-1900	0.1318444	7.62988E-07	4.9273E-06	0.12188852	7.05373E-07	4.55523E-06	0.5926804	3.42986E-06	2.21497E-05	0.54666464	3.16357E-06	2.043E-05	0.66855316	3.86894E-06	2.49852E-05
Road 2	2	1900-2000	0.112611006	4.40538E-07	2.84495E-06	0.102688462	4.01721E-07	2.59428E-06	0.51007503	1.99543E-06	1.28863E-05	0.463528935	1.81334E-06	1.17104E-05	0.566217396	2.21506E-06	1.43047E-05
Road 2	2	2000-2100	0.107026395	3.64187E-07	2.35188E-06	0.098406259	3.34855E-07	2.16246E-06	0.45576483	1.55087E-06	1.00153E-05	0.41739	1.42029E-06	9.17206E-06	0.515796259	1.75514E-06	1.13345E-05
Road 2	2	2100-2200	0.082972026	2.93859E-07	1.89771E-06	0.07587719	2.68732E-07	1.73544E-06	0.380277386	1.34682E-06	8.6976E-06	0.345636471	1.22413E-06	7.90531E-06	0.42151366	1.49286E-06	9.64075E-06
Road 2	2	2200-2300	0.12357976	3.5758E-07	2.30922E-06	0.1100068	3.18307E-07	2.05559E-06	0.52659608	1.52372E-06	9.84001E-06	0.46650992	1.34986E-06	8.71723E-06	0.57651672	1.66816E-06	1.07728E-05
Road 2	2	2300-0000	0.113078919	2.9055E-07	1.87634E-06	0.098232072	2.52402E-07	1.62999E-06	0.51147018	1.31419E-06	8.48694E-06	0.441154775	1.13352E-06	7.32018E-06	0.539386847	1.38592E-06	8.95017E-06
Road 3	3	0000-0100	0.097696174	3.60411E-07	1.40083E-05	0.086431826	3.18855E-07	1.23931E-05	0.538841304	1.98784E-06	7.72623E-05	0.474680609	1.75114E-06	6.80625E-05	0.561112435	2.07E-06	8.04556E-05
Road 3	3	0100-0200	0.071655352	1.63203E-07	6.34331E-06	0.064680423	1.47317E-07	5.72585E-06	0.417439859	9.50768E-07	3.6954E-05	0.375306408	8.54804E-07	3.32241E-05	0.439986831	1.00212E-06	3.89499E-05
Road 3	3	0200-0300	0.070020606	1.11187E-07	4.32155E-06	0.063041313	1.00104E-07	3.8908E-06	0.436575455	6.93245E-07	2.69447E-05	0.390667475	6.20347E-07	2.41113E-05	0.453708788	7.20451E-07	2.80021E-05
Road 3	3	0300-0400	0.058551714	6.574E-08	2.55515E-06	0.052558	5.90105E-08	2.29359E-06	0.322722857	3.62343E-07	1.40834E-05	0.287782143	3.23113E-07	1.25586E-05	0.340340143	3.82123E-07	1.48522E-05
Road 3	3	0400-0500	0.078193894	1.41724E-07	5.50846E-06	0.071510973	1.29611E-07	5.03767E-06	0.432489823	7.83875E-07	3.04672E-05	0.394095752	7.14286E-07	2.77625E-05	0.465606726	8.43898E-07	3.28002E-05
Road 3	3	0500-0600	0.064240366	2.53475E-07	9.85194E-06	0.058061829	2.29096E-07	8.9044E-06	0.357703496	1.4114E-06	5.48576E-05	0.321472805	1.26844E-06	4.93013E-05	0.379534634	1.49754E-06	5.82057E-05
Road 3	3	0600-0700	0.090117748	6.41779E-07	2.49443E-05	0.080411599	5.72656E-07	2.22577E-05	0.450090991	3.20535E-06	0.000124584	0.39989464	2.84787E-06	0.00011069	0.480306239	3.42053E-06	0.000132947
Road 3	3	0700-0800	0.074152902	8.64679E-07	3.36079E-05	0.065997593	7.69582E-07	2.99117E-05	0.389226011	4.53867E-06	0.000176407	0.34410696	4.01255E-06	0.000155958	0.410104553	4.78213E-06	0.000185869
Road 3	3	0800-0900	0.081993982	1.3112E-06	5.09631E-05	0.073749328	1.17936E-06	4.58387E-05	0.405753039	6.48857E-06	0.000252195	0.363479719	5.81256E-06	0.00022592	0.437229047	6.99192E-06	0.000271758
Road 3	3	0900-1000	0.088924642	1.37639E-06	5.34968E-05	0.080314694	1.24312E-06	4.83171E-05	0.45846144	7.09614E-06	0.000275809	0.412888031	6.39075E-06	0.000248392	0.493202725	7.63387E-06	0.00029671
Road 3	3	1000-1100	0.100366928	1.41505E-06	5.49994E-05	0.090866906	1.28111E-06	4.97936E-05	0.506369204	7.13918E-06	0.000277482	0.457356701	6.44817E-06	0.000250624	0.548223606	7.72928E-06	0.000300418
Road 3	3	1100-1200	0.098650831	1.3513E-06	5.25215E-05	0.088834614	1.21684E-06	4.72954E-05	0.511753536	7.00989E-06	0.000272457	0.459790843	6.29811E-06	0.000244792	0.548625457	7.51495E-06	0.000292087
Road 3	3	1200-1300	0.092104391	1.26163E-06	4.90362E-05	0.08445103	1.15679E-06	4.49616E-05	0.488806265	6.69556E-06	0.00026024	0.447135609	6.12476E-06	0.000238054	0.531586639	7.28156E-06	0.000283016
Road 3	3	1300-1400	0.097651802	1.45195E-06	5.64337E-05	0.089890108	1.33655E-06	5.19482E-05	0.497704099	7.4002E-06	0.000287627	0.457170431	6.79751E-06	0.000264202	0.547060539	8.13406E-06	0.00031615

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (October) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 3	3	1400-1500	0.089989968	1.34813E-06	5.23986E-05	0.082837495	1.24098E-06	4.82339E-05	0.466047516	6.98183E-06	0.000271366	0.428048448	6.41257E-06	0.00024924	0.510885942	7.65355E-06	0.000297474
Road 3	3	1500-1600	0.100358179	1.44068E-06	5.59957E-05	0.091419598	1.31236E-06	5.10083E-05	0.505886637	7.2622E-06	0.000282264	0.459916648	6.60229E-06	0.000256614	0.551336246	7.91465E-06	0.000307623
Road 3	3	1600-1700	0.093757541	1.46774E-06	5.70473E-05	0.086818893	1.35912E-06	5.28254E-05	0.480037961	7.5148E-06	0.000292082	0.443538074	6.94341E-06	0.000269873	0.530356967	8.30253E-06	0.000322698
Road 3	3	1700-1800	0.07409474	1.16349E-06	4.52219E-05	0.067446384	1.05909E-06	4.11642E-05	0.381189928	5.98572E-06	0.00023265	0.345753984	5.42928E-06	0.000211022	0.413200368	6.48837E-06	0.000252187
Road 3	3	1800-1900	0.069543661	1.14557E-06	4.45253E-05	0.063622863	1.04804E-06	4.07345E-05	0.383083866	6.31039E-06	0.000245269	0.348933496	5.74785E-06	0.000223404	0.412556358	6.79588E-06	0.000264139
Road 3	3	1900-2000	0.073241079	8.92813E-07	3.47014E-05	0.067003645	8.16778E-07	3.17461E-05	0.403486263	4.91852E-06	0.000191171	0.367795237	4.48345E-06	0.00017426	0.434798882	5.30022E-06	0.000206006
Road 3	3	2000-2100	0.068482589	7.12881E-07	2.77079E-05	0.062931448	6.55096E-07	2.54619E-05	0.375504145	3.90887E-06	0.000151928	0.343691926	3.57772E-06	0.000139057	0.406623374	4.23281E-06	0.000164519
Road 3	3	2100-2200	0.067222309	6.63103E-07	2.57731E-05	0.061489593	6.06553E-07	2.35752E-05	0.37967774	3.74526E-06	0.000145569	0.345782211	3.41091E-06	0.000132573	0.407271805	4.01746E-06	0.000156149
Road 3	3	2200-2300	0.074112611	6.69257E-07	2.60123E-05	0.065979787	5.95815E-07	2.31578E-05	0.406758277	3.67314E-06	0.000142766	0.360011226	3.251E-06	0.000126358	0.425991012	3.84681E-06	0.000149516
Road 3	3	2300-0000	0.066087331	5.32126E-07	2.06824E-05	0.058540896	4.71363E-07	1.83207E-05	0.381089502	3.06848E-06	0.000119264	0.334941454	2.6969E-06	0.000104822	0.393482351	3.16826E-06	0.000123142
Road 4	4	0000-0100	0.262005429	2.12273E-07	2.27293E-06	0.231598	1.87637E-07	2.00914E-06	1.293699143	1.04814E-06	1.1223E-05	1.143202	9.26205E-07	9.91742E-06	1.3748	1.11384E-06	1.19266E-05
Road 4	4	0100-0200	0.241509	1.1181E-07	1.19721E-06	0.217842	1.00853E-07	1.07989E-06	1.1947745	5.53136E-07	5.92275E-06	1.0776505	4.98912E-07	5.34214E-06	1.2954925	5.99765E-07	6.42203E-06
Road 4	4	0200-0300	0.259953846	7.82269E-08	8.3762E-07	0.234203077	7.04778E-08	7.54646E-07	1.243629231	3.7424E-07	4.00721E-06	1.120369231	3.37148E-07	3.61004E-06	1.354572308	4.07626E-07	4.36469E-06
Road 4	4	0300-0400	0.236112857	3.8259E-08	4.09662E-07	0.212058571	3.43613E-08	3.67927E-07	1.211964286	1.96383E-07	2.10279E-06	1.088661429	1.76403E-07	1.88885E-06	1.30072	2.10765E-07	2.25678E-06
Road 4	4	0400-0500	0.242876429	7.871E-08	8.42793E-07	0.222009286	7.19475E-08	7.70383E-07	1.162267857	3.76661E-07	4.03313E-06	1.062482143	3.44323E-07	3.68686E-06	1.284491429	4.1627E-07	4.45725E-06
Road 4	4	0500-0600	0.227338333	1.26299E-07	1.35236E-06	0.205590417	1.14217E-07	1.22299E-06	1.046860833	5.81589E-07	6.22741E-06	0.946118333	5.25621E-07	5.62813E-06	1.15170875	6.39838E-07	6.85112E-06
Road 4	4	0600-0700	0.25638566	3.14547E-07	3.36804E-06	0.228779434	2.80678E-07	3.00539E-06	1.186880943	1.45613E-06	1.55916E-05	1.058677547	1.29884E-06	1.39074E-05	1.287456981	1.57952E-06	1.69128E-05
Road 4	4	0700-0800	0.257120543	5.47572E-07	5.86316E-06	0.228893913	4.87459E-07	5.21951E-06	1.234662826	2.62937E-06	2.81542E-05	1.098157283	2.33867E-06	2.50415E-05	1.327051196	2.82613E-06	3.0261E-05
Road 4	4	0800-0900	0.263484452	9.45372E-07	1.01226E-05	0.236884839	8.49934E-07	9.10073E-06	1.269316194	4.55426E-06	4.87651E-05	1.140755355	4.09299E-06	4.3826E-05	1.377640194	4.94292E-06	5.29267E-05
Road 4	4	0900-1000	0.268527905	9.19957E-07	9.85051E-06	0.242145	8.29571E-07	8.88269E-06	1.228195473	4.20771E-06	4.50543E-05	1.107112365	3.79288E-06	4.06126E-05	1.349257365	4.62246E-06	4.94953E-05
Road 4	4	1000-1100	0.297463333	9.91544E-07	1.0617E-05	0.269080417	8.96935E-07	9.604E-06	1.364284583	4.54762E-06	4.86939E-05	1.233830347	4.11277E-06	4.40378E-05	1.502910764	5.0097E-06	5.36418E-05
Road 4	4	1100-1200	0.275626968	9.88939E-07	1.05891E-05	0.247963484	8.89684E-07	9.52636E-06	1.255986	4.50643E-06	4.8253E-05	1.129768645	4.05357E-06	4.34039E-05	1.377732129	4.94325E-06	5.29303E-05
Road 4	4	1200-1300	0.279691486	9.58202E-07	1.026E-05	0.256304459	8.7808E-07	9.40211E-06	1.330486757	4.55815E-06	4.88067E-05	1.218868514	4.17575E-06	4.47122E-05	1.475172973	5.05383E-06	5.41143E-05
Road 4	4	1300-1400	0.286122267	9.9348E-07	1.06378E-05	0.263224133	9.13973E-07	9.78643E-06	1.329299533	4.61562E-06	4.94221E-05	1.222592133	4.24511E-06	4.54549E-05	1.485816267	5.15908E-06	5.52413E-05
Road 4	4	1400-1500	0.260390429	8.43858E-07	9.03567E-06	0.239545143	7.76304E-07	8.31233E-06	1.248720857	4.04678E-06	4.33312E-05	1.148298714	3.72134E-06	3.98465E-05	1.387843857	4.49764E-06	4.81589E-05
Road 4	4	1500-1600	0.29362296	8.49603E-07	9.0972E-06	0.26728224	7.73386E-07	8.28109E-06	1.36426032	3.94751E-06	4.22683E-05	1.24154976	3.59245E-06	3.84664E-05	1.508832	4.36583E-06	4.67475E-05
Road 4	4	1600-1700	0.272087097	7.80991E-07	8.36252E-06	0.251822823	7.22825E-07	7.7397E-06	1.276753306	3.66475E-06	3.92406E-05	1.181452177	3.39121E-06	3.63116E-05	1.433275	4.11403E-06	4.40513E-05
Road 4	4	1700-1800	0.260270157	7.65146E-07	8.19286E-06	0.236827638	6.96229E-07	7.45493E-06	1.24148189	3.64973E-06	3.90797E-05	1.129267008	3.31984E-06	3.55474E-05	1.366094646	4.01607E-06	4.30023E-05
Road 4	4	1800-1900	0.285340566	7.00141E-07	7.49682E-06	0.260961981	6.40323E-07	6.85631E-06	1.373513396	3.37019E-06	3.60866E-05	1.256263491	3.0825E-06	3.30061E-05	1.517225472	3.72282E-06	3.98624E-05
Road 4	4	1900-2000	0.253971351	4.35044E-07	4.65826E-06	0.232390135	3.98076E-07	4.26243E-06	1.225414189	2.09909E-06	2.24762E-05	1.120982297	1.9202E-06	2.05607E-05	1.353372432	2.31828E-06	2.48231E-05
Road 4	4	2000-2100	0.222056939	2.5187E-07	2.69692E-06	0.20401102	2.31401E-07	2.47775E-06	1.075550408	1.21995E-06	1.30627E-05	0.987579592	1.12017E-06	1.19943E-05	1.191590612	1.35157E-06	1.44721E-05
Road 4	4	2100-2200	0.185601892	1.58965E-07	1.70213E-06	0.169939189	1.4555E-07	1.55849E-06	0.918004595	7.86254E-07	8.41888E-06	0.839605405	7.19106E-07	7.69989E-06	1.009544595	8.64656E-07	9.25837E-06
Road 4	4	2200-2300	0.255767937	3.72995E-07	3.99387E-06	0.227730952	3.32108E-07	3.55607E-06	1.215891111	1.77317E-06	1.89864E-05	1.082074603	1.57803E-06	1.68968E-05	1.309805556	1.91013E-06	2.04529E-05
Road 4	4	2300-0000	0.242905102	2.75517E-07	2.95012E-06	0.215205102	2.44098E-07	2.6137E-06	1.186323469	1.3456E-06	1.44081E-05	1.050406327	1.19143E-06	1.27574E-05	1.265611429	1.43553E-06	1.53711E-05
Road 5	5	0000-0100	0.082690622	2.99536E-07	4.05068E-06	0.07317772	2.65077E-07	3.58469E-06	0.462547668	1.67552E-06	2.26584E-05	0.406952073	1.47413E-06	1.9935E-05	0.480129793	1.73921E-06	2.35196E-05
Road 5	5	0100-0200	0.054367787	1.24491E-07	1.68351E-06	0.049088689	1.12403E-07	1.52004E-06	0.333662705	7.64017E-07	1.0332E-05	0.299540902	6.85886E-07	9.27536E-06	0.34862959	7.98288E-07	1.07954E-05
Road 5	5	0200-0300	0.051678605	8.34152E-08	1.12804E-06	0.046507326	7.50681E-08	1.01516E-06	0.356145698	5.7486E-07	7.77394E-06	0.317812442	5.12986E-07	6.9372E-06	0.364319767	5.88054E-07	7.95236E-06
Road 5	5	0300-0400	0.046026349	5.4423E-08	7.35973E-07	0.041298254	4.88324E-08	6.6037E-07	0.253844921	3.00154E-07	4.05905E-06	0.225674921	2.66845E-07	3.6086E-06	0.266973175	3.15678E-07	4.26897E-06
Road 5	5	0400-0500	0.063970303	1.18864E-07	1.60742E-06	0.058512828	1.08723E-07	1.47028E-06	0.365625051	6.79371E-07	9.18726E-06	0.332797475	6.18374E-07	8.36238E-06	0.391310303	7.27097E-07	9.83267E-06
Road 5	5	0500-0600	0.052557455	2.17017E-07	2.93476E-06	0.047495682	1.96116E-07	2.65211E-06	0.306124182	1.26403E-06	1.70937E-05	0.274637591	1.13401E-06	1.53355E-05	0.322133273	1.33013E-06	1.79876E-05
Road 5	5	0600-0700	0.078072088	5.68543E-07	7.68851E-06	0.069662139	5.07299E-07	6.8603E-06	0.392645825	2.85936E-06	3.86676E-05	0.348432912	2.53739E-06	3.43136E-05	0.418095052	3.04469E-06	4.11739E-05
Road 5	5	0700-0800	0.060604344	7.20018E-07	9.73694E-06	0.053921264	6.40619E-07	8.66321E-06	0.320771359	3.81097E-06	5.15364E-05	0.282977678	3.36195E-06	4.54643E-05	0.336898942	4.00257E-06	5.41275E-05
Road 5	5	0800-0900	0.064860403	1.02623E-06	1.38778E-05	0.058353155	9.23268E-07	1.24855E-05	0.317406192	5.02202E-06	6.79138E-05	0.283906856	4.49199E-06	6.07461E-05	0.342260012	5.41526E-06	7.32316E-05
Road 5	5	0900-1000	0.071755184	1.09895E-06	1.48614E-05	0.064862855	9.93395E-07	1.34339E-05	0.382435907	5.85713E-06	7.9207E-05	0.344280833	5.27277E-06	7.13047E-05	0.409143689	6.26616E-06	8.47385E-05
Road 5	5	1000-1100	0.081314441	1.12021E-06	1.51488E-05	0.073648351	1.0146E-06	1.37206E-05	0.421054142	5.80056E-06	7.8442E-05	0.380105518	5.23644E-06	7.08133E-05	0.453753869	6.25104E-06	8.4534E-05
Road 5	5	1100-1200	0.079984921	1.04935E-06	1.41906E-05	0.072057396	9.45348E-07	1.27841E-05	0.432653605	5.67614E-06	7.67595E-05	0.388531144	5.09728E-06	6.89315E-05	0.460588541	6.04263E-06	8.17156E-05
Road 5	5	1200-1300	0.07361802	9.76876E-07	1.32105E-05	0.067520622	8.95966E-07	1.21163E-05	0.401462405	5.32721E-06	7.20409E-05	0.366982744	4.86968E-06	6.58537E-05	0.434503366	5.76565E-06	7.797E-05
Road 5	5	1300-1400	0.080257722	1.17043E-06	1.58279E-05	0.073898005	1.07768E-06	1.45737E-05	0.417926036	6.09475E-06	8.24205E-05	0.383708327	5.59575E-06	7.56723E-05	0.457606332	6.67343E-06	9.0246E-05
Road 5	5	1400-1500	0.07564301	1.12726E-06	1.52442E-05	0.069646108	1.03789E-06	1.40356E-05	0.395988791	5.90118E-06	7.98028E-05	0.363571675	5.41809E-06	7.32699E-05	0.433217783	6.45599E-06	8.73055E-05
Road 5	5	1500-1600	0.084866481	1.22649E-06	1.6586E-05	0.077330909	1.11758E-06	1.51133E-05	0.433041675	6.2583E-06	8.46321E-05	0.393539844	5.68742E-06	7.6912E-05	0.470870753	6.805E-06	9.20253E-05
Road 5	5	1600-1700	0.079838453	1.27819E-06	1.72853E-05	0.073932286	1.18364E-06	1.60066E-05	0.4152332	6.64778E-06	8.98992E-05	0.383488699	6.13956E-06	8.30264E-05	0.457420985	7.3232E-06	9.9033E-05
Road 5	5	1700-1800	0.058601351	9.35994E-07	1.26576E-05	0.053305734	8.51411E-07	1.15138E-05	0.305223525	4.8751E-06	6.59269E-05	0.27657141	4.41746E-06	5.97381E-05	0.329877145	5.26887E-06	7.12519E-05
Road 5	5	1800-1900	0.054388292	9.38116E-07	1.26863E-05	0.049730098	8.5777E-07	1.15998E-05	0.309533776	5.33899E-06	7.22002E-05	0.28153864	4.85612E-06	6.56702E-05	0.331268738	5.71389E-06	7.727E-05
Road 5	5	1900-2000	0.062358411	8.02888E-07	1.08576E-05	0.057052478	7.34572E-07	9.93376E-06	0.351449898	4.52505E-06	6.11931E-05	0.320061297	4.12091E-06	5.57278E-05	0.377113776	4.85548E-06	6.56616E-05
Road 5	5	2000-2100	0.060601533	6.8245E-07	9.2289E-06	0.05569725	6.27221E-07	8.48203E-06	0.337175967	3.79703E-06	5.13479E-05	0.308411767	3.47311E-06	4.69675E-05	0.364109017	4.10033E-06	5.54495E-05
Road 5	5	2100-2200	0.062664083	6.79802E-07	9.19309E-06	0.057305952	6.21675E-07	8.40703E-06	0.35788218	3.88243E-06	5.25028E-05	0.325753201	3.53388E-06	4.77894E-05	0.383059152	4.15556E-06	5.61964E-05
Road 5	5	2200-2300	0.061972725	5.80413E-07	7.84903E-06	0.055172365	5.16723E-07	6.98774E-06	0.349567154	3.27391E-06	4.42737E-05	0.308854208	2.89261E-06	3.91173E-05	0.364026573	3.40933E-06	4.6105E-05
Road 5	5	2300-0000	0.055500309	4.71878E-07	6.38129E-06	0.049163466	4.18E-07	5.65269E-06	0.329225276	2.79916E-06	3.78535E-05	0.288742804	2.45496E-06	3.31989E-05	0.337906269	2.87296E-06	3.88516E-05
Road 6	6	0000-0100	0.049507067	1.39378E-07	4.9822E-06	0.04373	1.23114E-07	4.40082E-06	0.320642067	9.02709E-07	3.22682E-05	0.280337267	7.89238E-07	2.82121E-05	0.324067267	9.12352E-07	3.26129E-05
Road 6	6	0100-0200	0.064104825	1.37161E-07	4.90296E-06	0.057870965	1.23823E-07	4.42617E-06	0.362110351	7.74786E-07	2.76954E-05	0.324723509	6.94791E-07	2.4836E-05	0.382594474	8.18614E-07	2.92621E-05
Road 6	6	0200-0300	0.058150886	8.62222E-08	3.08209E-06	0.052416835	7.77202E-08	2.77818E-06	0.333367595	4.94295E-07	1.7669E-05	0.298380886	4.42419E-07	1.58147E-05	0.350797722	5.20139E-07	1.85929E-05
Road 6	6	0300-0400	0.059690161	6.94593E-08	2.48289E-06	0.053735323	6.25298E-08	2.23519E-06	0.382094355	4.44629E-07	1.58937E-05	0.341788548	3.97727E-07	1.42171E-05	0.395523871	4.60257E-07	1.64523E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (October) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 6	6	0400-0500	0.064692778	1.09278E-07	3.90626E-06	0.059181222	9.99683E-08	3.57346E-06	0.380822	6.4328E-07	2.29947E-05	0.346257556	5.84895E-07	2.09076E-05	0.405438778	6.84863E-07	2.44811E-05
Road 6	6	0500-0600	0.058729198	1.78569E-07	6.3831E-06	0.053138025	1.61568E-07	5.77541E-06	0.355725432	1.0816E-06	3.86627E-05	0.319315	9.7089E-07	3.47054E-05	0.372453025	1.13246E-06	4.04808E-05
Road 6	6	0600-0700	0.063698276	3.46706E-07	1.23933E-05	0.056844655	3.09402E-07	1.10599E-05	0.403268069	2.19497E-06	7.84611E-05	0.357124448	1.94381E-06	6.94833E-05	0.413969103	2.25321E-06	8.05431E-05
Road 6	6	0700-0800	0.059559697	5.16452E-07	1.84611E-05	0.05301513	4.59703E-07	1.64325E-05	0.343681472	2.98012E-06	0.000106527	0.303230281	2.62936E-06	9.3989E-05	0.356245411	3.08906E-06	0.000110422
Road 6	6	0800-0900	0.050348112	6.25572E-07	2.23616E-05	0.045234502	5.62035E-07	2.00905E-05	0.298155227	3.70456E-06	0.000132423	0.265476148	3.29852E-06	0.000117909	0.31071065	3.86056E-06	0.000137999
Road 6	6	0900-1000	0.053223728	6.32331E-07	2.26033E-05	0.048012101	5.70414E-07	2.039E-05	0.30248545	3.59372E-06	0.000128461	0.270811438	3.21741E-06	0.000115009	0.318823539	3.78782E-06	0.000135399
Road 6	6	1000-1100	0.070992093	7.12852E-07	2.54816E-05	0.064224093	6.44893E-07	2.30523E-05	0.389566112	3.91175E-06	0.000139829	0.350915832	3.52365E-06	0.000125956	0.415139925	4.16854E-06	0.000149008
Road 6	6	1100-1200	0.081625038	8.15025E-07	2.91338E-05	0.073537218	7.34268E-07	2.62471E-05	0.427672312	4.2703E-06	0.000152646	0.384112989	3.83536E-06	0.000137099	0.457650207	4.56963E-06	0.000163346
Road 6	6	1200-1300	0.077702294	7.62731E-07	2.72645E-05	0.071277113	6.99661E-07	2.501E-05	0.390680268	3.83494E-06	0.000137084	0.357371625	3.50798E-06	0.000125396	0.428648738	4.20764E-06	0.000150406
Road 6	6	1300-1400	0.089793186	8.78045E-07	3.13866E-05	0.082671478	8.08405E-07	2.88972E-05	0.459197044	4.49027E-06	0.000160509	0.421629789	4.12292E-06	0.000147378	0.504301267	4.93132E-06	0.000176275
Road 6	6	1400-1500	0.085399826	9.20036E-07	3.28875E-05	0.07862547	8.47054E-07	3.02787E-05	0.430258728	4.63529E-06	0.000165693	0.39494169	4.25481E-06	0.000152092	0.47356716	5.10187E-06	0.000182371
Road 6	6	1500-1600	0.075383007	7.95144E-07	2.84232E-05	0.068650605	7.2413E-07	2.58847E-05	0.393093683	4.14637E-06	0.000148216	0.356905285	3.76465E-06	0.000134571	0.42555589	4.48878E-06	0.000160456
Road 6	6	1600-1700	0.078113056	8.44465E-07	3.01862E-05	0.07233316	7.8198E-07	2.79526E-05	0.389003594	4.20544E-06	0.000150328	0.359295903	3.88428E-06	0.000138847	0.431629063	4.66626E-06	0.0001668
Road 6	6	1700-1800	0.058334443	6.67868E-07	2.38736E-05	0.053119148	6.08158E-07	2.17392E-05	0.301220902	3.44866E-06	0.000123276	0.273000098	3.12556E-06	0.000111726	0.326119246	3.73372E-06	0.000133465
Road 6	6	1800-1900	0.056549376	7.31279E-07	2.61402E-05	0.051723237	6.68868E-07	2.39093E-05	0.297657112	3.84921E-06	0.000137594	0.270931553	3.5036E-06	0.00012524	0.32265479	4.17247E-06	0.000149149
Road 6	6	1900-2000	0.06639437	6.52978E-07	2.33413E-05	0.06073584	5.97327E-07	2.1352E-05	0.349504542	3.43732E-06	0.00012287	0.318086927	3.12833E-06	0.000111825	0.378822767	3.72566E-06	0.000133177
Road 6	6	2000-2100	0.052646364	4.13029E-07	1.47641E-05	0.048377153	3.79535E-07	1.35669E-05	0.308700383	2.42186E-06	8.65717E-05	0.281924163	2.21179E-06	7.90626E-05	0.330301316	2.59133E-06	9.26295E-05
Road 6	6	2100-2200	0.073626944	4.97479E-07	1.77829E-05	0.067336889	4.54979E-07	1.62637E-05	0.393431139	2.65832E-06	9.50241E-05	0.358301111	2.42095E-06	8.65393E-05	0.425638	2.87593E-06	0.000102803
Road 6	6	2200-2300	0.056569344	4.04522E-07	1.446E-05	0.050329606	3.59902E-07	1.2865E-05	0.321535958	2.29927E-06	8.21896E-05	0.282721339	2.02171E-06	7.2268E-05	0.333050945	2.38161E-06	8.51331E-05
Road 6	6	2300-0000	0.038835546	2.60216E-07	9.30165E-06	0.034405266	2.30531E-07	8.24054E-06	0.245432605	1.64451E-06	5.87845E-05	0.214778992	1.43912E-06	5.14426E-05	0.249184258	1.66965E-06	5.96831E-05
Road 7	7	0000-0100	0.072461398	1.95679E-07	4.88478E-06	0.06363087	1.71832E-07	4.2895E-06	0.429767957	1.16057E-06	2.89716E-05	0.374922773	1.01246E-06	2.52744E-05	0.438553643	1.1843E-06	2.95639E-05
Road 7	7	0100-0200	0.086737736	1.826E-07	4.55829E-06	0.078471448	1.65198E-07	4.12387E-06	0.47499194	9.99951E-07	2.4962E-05	0.428025172	9.01076E-07	2.24938E-05	0.506496621	1.06627E-06	2.66177E-05
Road 7	7	0200-0300	0.074250368	1.01333E-07	2.5296E-06	0.066960319	9.13839E-08	2.28124E-06	0.421159061	5.74776E-07	1.43483E-05	0.377951568	5.15808E-07	1.28763E-05	0.444911887	6.07192E-07	1.51575E-05
Road 7	7	0300-0400	0.075629211	8.34502E-08	2.08319E-06	0.0681614	7.52101E-08	1.87749E-06	0.456741316	5.03974E-07	1.25808E-05	0.409795762	4.52174E-07	1.12877E-05	0.477957162	5.27384E-07	1.31652E-05
Road 7	7	0400-0500	0.083900968	1.35212E-07	3.37532E-06	0.076479357	1.23251E-07	3.07675E-06	0.467962092	7.5415E-07	1.88261E-05	0.424830142	6.84641E-07	1.70909E-05	0.501309499	8.07892E-07	2.01676E-05
Road 7	7	0500-0600	0.076842246	2.20897E-07	5.51431E-06	0.069060604	1.98527E-07	4.95588E-06	0.434374983	1.24869E-06	3.11714E-05	0.388145136	1.11579E-06	2.78538E-05	0.45720574	1.31432E-06	3.28097E-05
Road 7	7	0600-0700	0.082364556	4.23319E-07	1.05674E-05	0.073134921	3.75883E-07	9.38326E-06	0.478864285	2.46116E-06	6.14386E-05	0.422749426	2.17275E-06	5.4239E-05	0.495884346	2.54864E-06	6.36223E-05
Road 7	7	0700-0800	0.078600278	6.44758E-07	1.60953E-05	0.069598053	5.70913E-07	1.42518E-05	0.429947729	3.52686E-06	8.8042E-05	0.378396996	3.10399E-06	7.74857E-05	0.447995049	3.6749E-06	9.17376E-05
Road 7	7	0800-0900	0.077577578	9.63001E-07	2.40396E-05	0.069595864	8.63921E-07	2.15663E-05	0.422396144	5.24337E-06	0.000130892	0.376828947	4.67773E-06	0.000116771	0.446424811	5.54165E-06	0.000138338
Road 7	7	0900-1000	0.07904062	9.08866E-07	2.26883E-05	0.071282537	8.19658E-07	2.04613E-05	0.414899105	4.77081E-06	0.000119095	0.372402657	4.28215E-06	0.000106897	0.443685194	5.10181E-06	0.000127358
Road 7	7	1000-1100	0.093561433	9.44074E-07	2.35672E-05	0.084843196	8.56103E-07	2.13711E-05	0.492871935	4.97328E-06	0.000124149	0.445559355	4.49588E-06	0.000112232	0.530402552	5.35198E-06	0.000133603
Road 7	7	1100-1200	0.103365997	1.04151E-06	2.59994E-05	0.093556453	9.42665E-07	2.3532E-05	0.530000409	5.34023E-06	0.00013331	0.47867402	4.82307E-06	0.0001204	0.572230473	5.76574E-06	0.000143932
Road 7	7	1200-1300	0.100121198	1.00736E-06	2.51469E-05	0.091956577	9.2521E-07	2.30963E-05	0.506082684	5.09189E-06	0.00012711	0.464052072	4.669E-06	0.000116554	0.55600865	5.59421E-06	0.00013965
Road 7	7	1300-1400	0.106515925	1.05469E-06	2.63284E-05	0.097757119	9.67959E-07	2.41634E-05	0.539387024	5.34084E-06	0.000133325	0.49418943	4.8933E-06	0.000122153	0.591946549	5.86126E-06	0.000146316
Road 7	7	1400-1500	0.099287469	1.02924E-06	2.56932E-05	0.090961313	9.4293E-07	2.35386E-05	0.505804444	5.24331E-06	0.00013089	0.462436557	4.79374E-06	0.000119667	0.55339787	5.73667E-06	0.000143206
Road 7	7	1500-1600	0.092167691	9.38039E-07	2.34165E-05	0.084340669	8.5838E-07	2.1428E-05	0.476256327	4.84711E-06	0.000121	0.434765927	4.42484E-06	0.000110459	0.519106595	5.28322E-06	0.000131886
Road 7	7	1600-1700	0.095263185	1.00274E-06	2.50316E-05	0.087777749	9.23946E-07	2.30647E-05	0.475028295	5.00014E-06	0.00012482	0.436830463	4.59807E-06	0.000114783	0.524608212	5.52201E-06	0.000137847
Road 7	7	1700-1800	0.07311704	8.14213E-07	2.03254E-05	0.066543012	7.41007E-07	1.84979E-05	0.378829231	4.21855E-06	0.000105309	0.343697562	3.82733E-06	9.55427E-05	0.410240574	4.56834E-06	0.000114041
Road 7	7	1800-1900	0.066906994	7.74202E-07	1.93266E-05	0.061439235	7.10933E-07	1.77472E-05	0.352594554	4.07998E-06	0.00010185	0.322540866	3.73222E-06	9.31684E-05	0.3839801	4.44315E-06	0.000110916
Road 7	7	1900-2000	0.077098662	6.73857E-07	1.68217E-05	0.070447375	6.15723E-07	1.53705E-05	0.409027247	3.57498E-06	8.9243E-05	0.372296728	3.25394E-06	8.1229E-05	0.442744103	3.86967E-06	9.65995E-05
Road 7	7	2000-2100	0.071367537	5.13933E-07	1.28294E-05	0.06558232	4.72273E-07	1.17895E-05	0.390788503	2.81415E-06	7.02504E-05	0.357679099	2.57573E-06	6.42985E-05	0.423261418	3.048E-06	7.6088E-05
Road 7	7	2100-2200	0.081941039	4.92523E-07	1.2295E-05	0.074947585	4.50487E-07	1.12456E-05	0.438797005	2.63747E-06	6.584E-05	0.399947101	2.40396E-06	6.00107E-05	0.474894686	2.85445E-06	7.12563E-05
Road 7	7	2200-2300	0.070507808	4.57582E-07	1.14227E-05	0.062742394	4.07186E-07	1.01647E-05	0.389396376	2.52711E-06	6.30848E-05	0.343548881	2.22957E-06	5.56572E-05	0.406291275	2.63675E-06	6.58219E-05
Road 7	7	2300-0000	0.050849244	3.03425E-07	7.57447E-06	0.044748814	2.67022E-07	6.66575E-06	0.303525035	1.81118E-06	4.52129E-05	0.26462989	1.57908E-06	3.94191E-05	0.309378704	1.84611E-06	4.60848E-05
Road 8	8	0000-0100	0.229813889	1.67137E-07	2.7552E-06	0.203115556	1.4772E-07	2.43512E-06	1.138101667	8.2771E-07	1.36445E-05	1.005514444	7.31283E-07	1.20549E-05	1.20863	8.79004E-07	1.449E-05
Road 8	8	0100-0200	0.232692333	1.41026E-07	2.32475E-06	0.209918333	1.27223E-07	2.09723E-06	1.149273	6.96529E-07	1.1482E-05	1.036689333	6.28297E-07	1.03572E-05	1.246607667	7.5552E-07	1.24545E-05
Road 8	8	0200-0300	0.219086	6.63897E-08	1.09441E-06	0.197463333	5.98374E-08	9.86397E-07	1.137859333	3.44806E-07	5.68399E-06	1.025388	3.10724E-07	5.12216E-06	1.222851333	3.70561E-07	6.10856E-06
Road 8	8	0300-0400	0.199522143	5.64305E-08	9.30236E-07	0.179396429	5.07384E-08	8.36403E-07	1.014797143	2.87013E-07	4.73131E-06	0.912265	2.58014E-07	4.25327E-06	1.091661429	3.08753E-07	5.08967E-06
Road 8	8	0400-0500	0.226532381	9.61046E-08	1.58425E-06	0.207122857	8.78703E-08	1.44851E-06	1.086497619	4.60938E-07	7.5984E-06	0.993411429	4.21447E-07	6.9474E-06	1.200534286	5.09318E-07	8.39591E-06
Road 8	8	0500-0600	0.218555294	1.50119E-07	2.47465E-06	0.197705882	1.35798E-07	2.23858E-06	1.030410588	7.07757E-07	1.16671E-05	0.931584706	6.39876E-07	1.05481E-05	1.129290588	7.75674E-07	1.27867E-05
Road 8	8	0600-0700	0.247788871	3.10362E-07	5.1162E-06	0.221241774	2.77111E-07	4.56807E-06	1.154152097	1.4456E-06	2.38302E-05	1.029832581	1.28989E-06	2.12634E-05	1.251074355	1.567E-06	2.58314E-05
Road 8	8	0700-0800	0.245778922	5.06454E-07	8.3487E-06	0.218838431	4.5094E-07	7.43357E-06	1.156392647	2.38287E-06	3.92807E-05	1.02900402	2.12037E-06	3.49535E-05	1.247842451	2.57131E-06	4.23871E-05
Road 8	8	0800-0900	0.272159479	1.05565E-06	1.7402E-05	0.244789375	9.49486E-07	1.56519E-05	1.285231667	4.98514E-06	8.21782E-05	1.155561146	4.48218E-06	7.3887E-05	1.400350521	5.43166E-06	8.95389E-05
Road 8	8	0900-1000	0.290290506	9.26584E-07	1.52744E-05	0.261821646	8.35714E-07	1.37764E-05	1.303511203	4.1607E-06	6.85876E-05	1.175632911	3.75253E-06	6.1859E-05	1.437454557	4.58824E-06	7.56354E-05
Road 8	8	1000-1100	0.2731995	8.83069E-07	1.45571E-05	0.247164438	7.98915E-07	1.31698E-05	1.263445875	4.08387E-06	6.7321E-05	1.142469375	3.69283E-06	6.08749E-05	1.389633813	4.49175E-06	7.40447E-05
Road 8	8	1100-1200	0.282951321	9.08874E-07	1.49824E-05	0.25454283	8.17622E-07	1.34782E-05	1.321121006	4.2436E-06	6.99542E-05	1.188338239	3.81709E-06	6.29232E-05	1.442881069	4.63471E-06	7.64014E-05
Road 8	8	1200-1300	0.282557118	9.70398E-07	1.59966E-05	0.258887176	8.89107E-07	1.46566E-05	1.330287118	4.56866E-06	7.53127E-05	1.218649647	4.18526E-06	6.89925E-05	1.477536824	5.07437E-06	8.36491E-05
Road 8	8	1300-1400	0.25782179	8.4378E-07	1.39094E-05	0.237214074	7.76337E-07	1.27976E-05	1.197615309	3.91947E-06	6.4611E-05	1.101611543	3.60527E-06	5.94316E-05	1.338825617	4.38161E-06	7.22292E-05
Road 8	8	1400-1500	0.251967194	7.07544E-07	1.16636E-05	0.231810863	6.50944E-07	1.07306E-05	1.218679928	3.42215E-06	5.64129E-05	1.120925971	3.14765E-06	5.18878E-05	1.352736835	3.79859E-06	6.26184E-05
Road 8	8	1500-1600	0.261015971	7.32954E-07	1.20825E-05	0.237553237	6.67069E-07	1.09964E-05	1.230769856	3.4561E-06	5.69725E-05	1.119788849	3.14446E-06	5.18352E-05	1.357342086	3.81153E-06	6.28316E-05
Road 8	8	1600-1700	0.25817255	7.77125E-07	1.28106E-05	0.238941678	7.19239E-07	1.18564E-05	1.206443893	3.63152E-06	5.98642E-05	1.116238389	3.35999E-06	5.53882E-05	1.355180067	4.07923E-06	6.72446E-05
Road 8	8	1700-1800	0.210706987	6.64046E-07	1.09466E-05	0.191717628	6.04201E-07	9.96003E-06	1.023315321	3.22499E-06	5.31628E-05	0.930227628	2.93163E-06	4.83268E-05	1.121945256	3.53583E-06	5.82868E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (October) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 8	8	1800-1900	0.210151682	4.54267E-07	7.48843E-06	0.192272336	4.15619E-07	6.85132E-06	1.046128224	2.26133E-06	3.72771E-05	0.956772617	2.06818E-06	3.40931E-05	1.149044953	2.48379E-06	4.09444E-05
Road 8	8	1900-2000	0.206157922	3.2069E-07	5.28646E-06	0.18866961	2.93486E-07	4.83801E-06	1.051721558	1.63601E-06	2.6969E-05	0.962195584	1.49675E-06	2.46733E-05	1.150865195	1.79023E-06	2.95113E-05
Road 8	8	2000-2100	0.227049221	3.53188E-07	5.82217E-06	0.208595844	3.24482E-07	5.34897E-06	1.056523506	1.64348E-06	2.70922E-05	0.970202338	1.5092E-06	2.48787E-05	1.178798182	1.83369E-06	3.02276E-05
Road 8	8	2100-2200	0.187886667	2.04967E-07	3.37881E-06	0.171966296	1.876E-07	3.09251E-06	0.954181481	1.04093E-06	1.71593E-05	0.872218889	9.51512E-07	1.56853E-05	1.044185185	1.13911E-06	1.87778E-05
Road 8	8	2200-2300	0.231651406	2.99509E-07	4.93729E-06	0.206258438	2.66678E-07	4.39608E-06	1.113507188	1.43969E-06	2.37327E-05	0.990578906	1.28075E-06	2.11127E-05	1.196837344	1.54743E-06	2.55087E-05
Road 8	8	2300-0000	0.185297736	1.984E-07	3.27054E-06	0.164252264	1.75866E-07	2.89909E-06	0.927430566	9.93006E-07	1.63693E-05	0.821358679	8.79435E-07	1.44971E-05	0.985610943	1.0553E-06	1.73962E-05
Road 9	9	0000-0100	0.200285078	5.3191E-08	1.58784E-06	0.180259958	4.78728E-08	1.42908E-06	0.896106562	2.37985E-07	7.10425E-06	0.801324431	2.12813E-07	6.35283E-06	0.981584389	2.60686E-07	7.78191E-06
Road 9	9	0100-0200	0.21342501	4.45348E-08	1.32944E-06	0.196862647	4.10788E-08	1.22627E-06	0.902541756	1.88331E-07	5.622E-06	0.82746115	1.72664E-07	5.15432E-06	1.024323797	2.13743E-07	6.38059E-06
Road 9	9	0200-0300	0.083012139	7.87359E-09	2.3504E-07	0.075184007	7.13111E-09	2.12876E-07	0.582879667	5.52854E-08	1.65036E-06	0.528772519	5.01534E-08	1.49716E-06	0.603956526	5.72845E-08	1.71004E-06
Road 9	9	0300-0400	0.100502872	7.62605E-09	2.27651E-07	0.090829236	6.89203E-09	2.05739E-07	0.606345935	4.60089E-08	1.37344E-06	0.54864243	4.16304E-08	1.24274E-06	0.639471666	4.85224E-08	1.44848E-06
Road 9	9	0400-0500	0.229764764	4.35858E-08	1.30111E-06	0.213383474	4.04783E-08	1.20835E-06	0.932019023	1.76802E-07	5.27783E-06	0.861350891	1.63396E-07	4.87765E-06	1.074734365	2.03874E-07	6.086E-06
Road 9	9	0500-0600	0.166641081	5.37393E-08	1.60421E-06	0.152883091	4.93026E-08	1.47177E-06	0.823678972	2.65625E-07	7.92935E-06	0.753593901	2.43023E-07	7.25466E-06	0.906476992	2.92326E-07	8.72643E-06
Road 9	9	0600-0700	0.199091315	1.20855E-07	3.60772E-06	0.181828981	1.10376E-07	3.29491E-06	1.01055379	6.13438E-07	1.83122E-05	0.918156365	5.5735E-07	1.66379E-05	1.099985347	6.67726E-07	1.99328E-05
Road 9	9	0700-0800	0.168430907	1.56559E-07	4.67357E-06	0.154570823	1.43676E-07	4.28898E-06	0.932949562	8.67193E-07	2.58872E-05	0.853628375	7.93462E-07	2.36862E-05	1.008199197	9.37139E-07	2.79752E-05
Road 9	9	0800-0900	0.260920262	5.69203E-07	1.69917E-05	0.239369844	5.2219E-07	1.55883E-05	1.23283408	2.68945E-06	8.02848E-05	1.125586399	2.45549E-06	7.33006E-05	1.364956243	2.97768E-06	8.88888E-05
Road 9	9	0900-1000	0.269931539	4.45486E-07	1.32985E-05	0.25008173	4.12727E-07	1.23206E-05	1.154640022	1.90558E-06	5.68848E-05	1.064946758	1.75755E-06	5.2466E-05	1.315028488	2.17028E-06	6.47866E-05
Road 9	9	1000-1100	0.27581062	3.8194E-07	1.14016E-05	0.25385499	3.51536E-07	1.0494E-05	1.159979981	1.60633E-06	4.79517E-05	1.064534285	1.47416E-06	4.40061E-05	1.318389275	1.82569E-06	5.45001E-05
Road 9	9	1100-1200	0.192386484	2.77364E-07	8.27978E-06	0.175054825	2.52377E-07	7.53387E-06	1.001464397	1.44381E-06	4.31003E-05	0.917137643	1.32224E-06	3.94711E-05	1.092192468	1.57461E-06	4.70049E-05
Road 9	9	1200-1300	0.284377402	3.99198E-07	1.19167E-05	0.266957295	3.74744E-07	1.11868E-05	1.265661497	1.77669E-06	5.30371E-05	1.186931561	1.66617E-06	4.9738E-05	1.453888856	2.04091E-06	6.09247E-05
Road 9	9	1300-1400	0.323664875	3.7453E-07	1.11804E-05	0.303607018	3.5132E-07	1.04875E-05	1.230227122	1.42356E-06	4.24958E-05	1.149695606	1.33037E-06	3.9714E-05	1.453302624	1.6817E-06	5.02015E-05
Road 9	9	1400-1500	0.209568212	2.70331E-07	8.06984E-06	0.197303418	2.5451E-07	7.59756E-06	1.005578313	1.29714E-06	3.87218E-05	0.942336158	1.21556E-06	3.62865E-05	1.139639575	1.47007E-06	4.38841E-05
Road 9	9	1500-1600	0.174546438	1.88733E-07	5.634E-06	0.162776607	1.76006E-07	5.25409E-06	0.886076255	9.58092E-07	2.86007E-05	0.827448966	8.947E-07	2.67083E-05	0.990225573	1.07071E-06	3.19624E-05
Road 9	9	1600-1700	0.1835679	2.78579E-07	8.31606E-06	0.173668178	2.63555E-07	7.86758E-06	0.988740481	1.50049E-06	4.47923E-05	0.933388667	1.41649E-06	4.22847E-05	1.107056845	1.68005E-06	5.01523E-05
Road 9	9	1700-1800	0.157644245	2.06342E-07	6.15968E-06	0.148766412	1.94722E-07	5.81279E-06	0.921473876	1.20613E-06	3.6005E-05	0.871527189	1.14075E-06	3.40534E-05	1.0202936	1.33547E-06	3.98662E-05
Road 9	9	1800-1900	0.157009155	1.31051E-07	3.91209E-06	0.149400265	1.247E-07	3.7225E-06	0.894289116	7.46435E-07	2.22824E-05	0.852215859	7.11318E-07	2.12341E-05	1.001616124	8.36017E-07	2.49566E-05
Road 9	9	1900-2000	0.161469389	1.3171E-07	3.93178E-06	0.152673976	1.24536E-07	3.71761E-06	0.8469104	6.90824E-07	2.06223E-05	0.798116315	6.51023E-07	1.94341E-05	0.950790291	7.75558E-07	2.31518E-05
Road 9	9	2000-2100	0.169924696	9.34794E-08	2.79052E-06	0.159042969	8.74931E-08	2.61182E-06	0.745880598	4.10326E-07	1.22489E-05	0.700798969	3.85525E-07	1.15086E-05	0.859841939	4.73018E-07	1.41204E-05
Road 9	9	2100-2200	0.020385817	1.0828E-08	3.23234E-07	0.019198893	1.01975E-08	3.04414E-07	0.291829333	1.55006E-07	4.62719E-06	0.271638798	1.44282E-07	4.30706E-06	0.29083769	1.54479E-07	4.61147E-06
Road 9	9	2200-2300	0.166993502	1.04538E-07	3.12064E-06	0.151945559	9.51181E-08	2.83944E-06	0.801046952	5.01457E-07	1.49693E-05	0.727227157	4.55245E-07	1.35899E-05	0.879172716	5.50363E-07	1.64293E-05
Road 9	9	2300-0000	0.13736652	7.81742E-08	2.33363E-06	0.125024353	7.11504E-08	2.12396E-06	0.696091902	3.9614E-07	1.18255E-05	0.630577101	3.58857E-07	1.07125E-05	0.755601454	4.30007E-07	1.28364E-05
Road 10	10	0000-0100	0.280813749	2.15905E-07	4.80059E-06	0.249556756	1.91873E-07	4.26624E-06	1.387795842	1.06702E-06	2.37248E-05	1.233565648	9.48434E-07	2.10882E-05	1.483122404	1.14031E-06	2.53544E-05
Road 10	10	0100-0200	0.269779035	1.56718E-07	3.48458E-06	0.244791238	1.42203E-07	3.16183E-06	1.323199078	7.68664E-07	1.7091E-05	1.200030518	6.97114E-07	1.55001E-05	1.444821756	8.39316E-07	1.86619E-05
Road 10	10	0200-0300	0.26657393	8.65374E-08	1.92413E-06	0.240246524	7.79908E-08	1.7341E-06	1.291377907	4.19218E-07	9.32118E-06	1.16455849	3.78048E-07	8.40579E-06	1.404805015	4.56039E-07	1.01399E-05
Road 10	10	0300-0400	0.241941993	4.96049E-08	1.10295E-06	0.217486913	4.4591E-08	9.91467E-07	1.264155962	2.59188E-07	5.76296E-06	1.137113508	2.3314E-07	5.18381E-06	1.354600421	2.77731E-07	6.17527E-06
Road 10	10	0400-0500	0.285165209	1.12062E-07	2.49166E-06	0.262395429	1.03114E-07	2.2927E-06	1.328449199	5.22042E-07	1.16074E-05	1.219579809	4.79259E-07	1.06562E-05	1.481975238	5.82373E-07	1.29489E-05
Road 10	10	0500-0600	0.263209158	1.84382E-07	4.09967E-06	0.240238603	1.6829E-07	3.74188E-06	1.231881616	8.62949E-07	1.91874E-05	1.121764012	7.85811E-07	1.74723E-05	1.362002614	9.54101E-07	2.12141E-05
Road 10	10	0600-0700	0.324993165	4.55324E-07	1.0124E-05	0.294964659	4.13253E-07	9.18856E-06	1.548858059	2.16999E-06	4.82491E-05	1.405109891	1.9686E-06	4.37711E-05	1.70007455	2.38185E-06	5.29597E-05
Road 10	10	0700-0800	0.321635631	7.08902E-07	1.57622E-05	0.290577384	6.40448E-07	1.42402E-05	1.550531545	3.41746E-06	7.59861E-05	1.40094036	3.08775E-06	6.86551E-05	1.691517744	3.7282E-06	8.28953E-05
Road 10	10	0800-0900	0.340804234	1.44407E-06	3.21085E-05	0.307834361	1.30437E-06	2.90023E-05	1.626632419	6.89245E-06	0.000153252	1.469147437	6.22515E-06	0.000138414	1.776981798	7.52952E-06	0.000167417
Road 10	10	0900-1000	0.375954969	1.27184E-06	2.8279E-05	0.343562658	1.16226E-06	2.58425E-05	1.738384107	5.8809E-06	0.00013076	1.587649079	5.37096E-06	0.000119422	1.931211737	6.53322E-06	0.000145264
Road 10	10	1000-1100	0.373478631	1.37195E-06	3.05048E-05	0.341050661	1.25282E-06	2.78562E-05	1.635351248	6.00734E-06	0.000133571	1.490276468	5.47442E-06	0.000121722	1.831327129	6.72724E-06	0.000149578
Road 10	10	1100-1200	0.361375616	1.32749E-06	2.95162E-05	0.327103222	1.20159E-06	2.6717E-05	1.639951434	6.02424E-06	0.000133947	1.483091144	5.44802E-06	0.000121135	1.810194365	6.64961E-06	0.000147852
Road 10	10	1200-1300	0.375052209	1.42258E-06	3.16307E-05	0.346744282	1.31521E-06	2.92433E-05	1.714607279	6.50354E-06	0.000144604	1.584725938	6.0109E-06	0.000133651	1.93147022	7.32611E-06	0.000162894
Road 10	10	1300-1400	0.365057955	1.19756E-06	2.66273E-05	0.339008059	1.1121E-06	2.47272E-05	1.634345262	5.36139E-06	0.000119209	1.516077534	4.97342E-06	0.000110582	1.855085593	6.08552E-06	0.00013531
Road 10	10	1400-1500	0.34029516	1.05237E-06	2.3399E-05	0.316782231	9.79652E-07	2.17823E-05	1.626439893	5.02978E-06	0.000111836	1.513410553	4.68024E-06	0.000104064	1.830192784	5.65989E-06	0.000125846
Road 10	10	1500-1600	0.336414786	1.06336E-06	2.36434E-05	0.308662927	9.75638E-07	2.1693E-05	1.559748113	4.93013E-06	0.00010962	1.431008796	4.52321E-06	0.000100572	1.739671723	5.49885E-06	0.000122265
Road 10	10	1600-1700	0.322378868	1.13466E-06	2.52289E-05	0.301282901	1.06041E-06	2.35779E-05	1.516372108	5.3371E-06	0.000118669	1.415354783	4.98156E-06	0.000110763	1.716637684	6.04197E-06	0.000134341
Road 10	10	1700-1800	0.298554378	9.94696E-07	2.21168E-05	0.275645289	9.1837E-07	2.04197E-05	1.471702863	4.90329E-06	0.000109023	1.361224505	4.5352E-06	0.000100839	1.636869794	5.45357E-06	0.000121259
Road 10	10	1800-1900	0.300962388	6.222E-07	1.38344E-05	0.278289274	5.75326E-07	1.27922E-05	1.454452582	3.00689E-06	6.68573E-05	1.345538303	2.78172E-06	6.18508E-05	1.623827577	3.35705E-06	7.4643E-05
Road 10	10	1900-2000	0.2602281	4.84633E-07	1.07757E-05	0.241272711	4.49332E-07	9.99076E-06	1.315970322	2.45078E-06	5.44925E-05	1.221141565	2.27418E-06	5.05657E-05	1.462414276	2.72351E-06	6.05565E-05
Road 10	10	2000-2100	0.298861612	3.6765E-07	8.1746E-06	0.275672392	3.39124E-07	7.54032E-06	1.397535875	1.71921E-06	3.8226E-05	1.288606463	1.5852E-06	3.52465E-05	1.564278855	1.92433E-06	4.27869E-05
Road 10	10	2100-2200	0.251464835	3.17937E-07	7.06924E-06	0.235167027	2.97331E-07	6.61107E-06	1.31412425	1.6615E-06	3.6943E-05	1.22962327	1.55466E-06	3.45675E-05	1.464790296	1.85199E-06	4.11785E-05
Road 10	10	2200-2300	0.267470919	3.51884E-07	7.82404E-06	0.241612848	3.17865E-07	7.06764E-06	1.309196451	1.72238E-06	3.82965E-05	1.184267743	1.55802E-06	3.46421E-05	1.425880592	1.87589E-06	4.17098E-05
Road 10	10	2300-0000	0.249438459	3.06852E-07	6.82275E-06	0.222615734	2.73855E-07	6.08909E-06	1.220647708	1.5016E-06	3.33877E-05	1.088717823	1.33931E-06	2.97791E-05	1.311333556	1.61316E-06	3.58682E-05
Road 11	11	0000-0100	0.314199798	2.40014E-07	1.99093E-06	0.278957048	2.13092E-07	1.76762E-06	1.521813452	1.1625E-06	9.643E-06	1.348957232	1.03045E-06	8.5477E-06	1.62791428	1.24355E-06	1.03153E-05
Road 11	11	0100-0200	0.307185478	1.65326E-07	1.37139E-06	0.278493197	1.49883E-07	1.2433E-06	1.463167147	7.87468E-07	6.53211E-06	1.323776537	7.12449E-07	5.90982E-06	1.602269734	8.62333E-07	7.15312E-06
Road 11	11	0200-0300	0.266028928	6.92784E-08	5.7467E-07	0.239760864	6.24377E-08	5.17926E-07	1.371111436	3.5706E-07	2.96184E-06	1.236460807	3.21995E-07	2.67097E-06	1.47622167	3.84433E-07	3.1889E-06
Road 11	11	0300-0400	0.284836535	6.92311E-08	5.74278E-07	0.255988001	6.22193E-08	5.16114E-07	1.437984553	3.4951E-07	2.89921E-06	1.292713198	3.14201E-07	2.60632E-06	1.548701199	3.7642E-07	3.12244E-06
Road 11	11	0400-0500	0.294785491	1.02356E-07	8.49052E-07	0.271376743	9.4228E-08	7.81629E-07	1.354195761	4.70207E-07	3.9004E-06	1.243644963	4.31821E-07	3.58199E-06	1.515021706	5.26049E-07	4.36362E-06
Road 11	11	0500-0600	0.239989956	1.12495E-07	9.33158E-07	0.218818353	1.02571E-07	8.50836E-07	1.185578323	5.5574E-07	4.60991E-06	1.079617916	5.06071E-07	4.1979E-06	1.298436269	6.08642E-07	5.04873E-06
Road 11	11	0600-0700	0.264661915	2.38931E-07	1.98195E-06	0.239097812	2.15852E-07	1.79051E-06	1.323766796	1.19507E-06	9.91318E-06	1.193114255	1.07712E-06	8.93477E-06	1.432212067	1.29297E-06	1.07253E-05
Road 11	11	0700-0800	0.317983744	6.0174E-07	4.99148E-06	0.285273387	5.3984E-07	4.47802E-06	1.587531507	3.00418E-06	2.49199E-05	1.424330298	2.69535E-06	2.23581E-05	1.709603685	3.23519E-06	2.68361E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (October) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 11	11	0800-0900	0.337035906	1.19952E-06	9.95012E-06	0.305829121	1.08845E-06	9.02882E-06	1.605233559	5.71307E-06	4.73904E-05	1.453525902	5.17314E-06	4.29116E-05	1.759355023	6.26159E-06	5.19404E-05
Road 11	11	0900-1000	0.339623141	8.66747E-07	7.18973E-06	0.310231801	7.91737E-07	6.56753E-06	1.5480567	3.95077E-06	3.2772E-05	1.410023028	3.5985E-06	2.98498E-05	1.72025483	4.39023E-06	3.64173E-05
Road 11	11	1000-1100	0.345277954	7.25323E-07	6.01662E-06	0.314719898	6.6113E-07	5.48413E-06	1.554899121	3.26637E-06	2.70948E-05	1.414476906	2.97138E-06	2.46479E-05	1.729196804	3.63251E-06	3.0132E-05
Road 11	11	1100-1200	0.30317438	7.15828E-07	5.93785E-06	0.273440956	6.45624E-07	5.35551E-06	1.501644098	3.54555E-06	2.94106E-05	1.357942554	3.20625E-06	2.65961E-05	1.631383509	3.85188E-06	3.19516E-05
Road 11	11	1200-1300	0.367939099	1.0476E-06	8.68996E-06	0.339837819	9.67594E-07	8.02627E-06	1.716637018	4.88765E-06	4.05434E-05	1.584467444	4.51133E-06	3.74219E-05	1.924305263	5.47892E-06	4.54481E-05
Road 11	11	1300-1400	0.38062684	7.99581E-07	6.63259E-06	0.353299154	7.42174E-07	6.15639E-06	1.662745155	3.49292E-06	2.89741E-05	1.539378919	3.23376E-06	2.68243E-05	1.892678074	3.97594E-06	3.29807E-05
Road 11	11	1400-1500	0.30340124	6.11016E-07	5.06843E-06	0.281990464	5.67897E-07	4.71076E-06	1.4602894	2.94086E-06	2.43947E-05	1.354639151	2.72809E-06	2.26298E-05	1.636629615	3.29599E-06	2.73405E-05
Road 11	11	1500-1600	0.270923971	5.50314E-07	4.5649E-06	0.24817994	5.04116E-07	4.18168E-06	1.349431435	2.74103E-06	2.27371E-05	1.237090273	2.51284E-06	2.08442E-05	1.485270212	3.01696E-06	2.50259E-05
Road 11	11	1600-1700	0.258281603	6.27768E-07	5.20738E-06	0.241403521	5.86745E-07	4.86709E-06	1.322352646	3.21405E-06	2.66608E-05	1.235461784	3.00286E-06	2.4909E-05	1.476865305	3.5896E-06	2.9776E-05
Road 11	11	1700-1800	0.256158706	6.3595E-07	5.27525E-06	0.235569124	5.84833E-07	4.85124E-06	1.334590321	3.31331E-06	2.74841E-05	1.230051037	3.05377E-06	2.53313E-05	1.46562016	3.63861E-06	3.01825E-05
Road 11	11	1800-1900	0.275305434	5.63994E-07	4.67837E-06	0.253829779	5.19999E-07	4.31343E-06	1.404644813	2.87757E-06	2.38697E-05	1.297038923	2.65713E-06	2.20411E-05	1.550868702	3.17713E-06	2.63545E-05
Road 11	11	1900-2000	0.260959773	4.1228E-07	3.4199E-06	0.241086824	3.80884E-07	3.15946E-06	1.311925868	2.07266E-06	1.71929E-05	1.211361336	1.91378E-06	1.5875E-05	1.452448159	2.29467E-06	1.90344E-05
Road 11	11	2000-2100	0.268501932	3.77581E-07	3.13206E-06	0.247779946	3.48441E-07	2.89034E-06	1.295227598	1.82141E-06	1.51088E-05	1.195724692	1.68149E-06	1.39481E-05	1.443504638	2.02993E-06	1.68384E-05
Road 11	11	2100-2200	0.190963843	1.9229E-07	1.59506E-06	0.174987396	1.76203E-07	1.46161E-06	1.035177954	1.04237E-06	8.64652E-06	0.949391144	9.55984E-07	7.92997E-06	1.12437854	1.13219E-06	9.39158E-06
Road 11	11	2200-2300	0.258172787	2.82376E-07	2.34234E-06	0.23153815	2.53245E-07	2.10069E-06	1.262329356	1.38067E-06	1.14528E-05	1.131057082	1.23709E-06	1.02618E-05	1.362595232	1.49034E-06	1.23625E-05
Road 11	11	2300-0000	0.251175567	2.61641E-07	2.17034E-06	0.224377952	2.33727E-07	1.93878E-06	1.248949207	1.30099E-06	1.07918E-05	1.114587196	1.16103E-06	9.63082E-06	1.338965148	1.39476E-06	1.15696E-05
Haul Road 1	HR1	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0700-0800	1.34272	2.52391E-06	3.79609E-06	1.19502	2.24628E-06	3.37851E-06	5.88305	1.10584E-05	1.66323E-05	5.23567	9.84148E-06	1.48021E-05	6.43069	1.20878E-05	1.81806E-05
Haul Road 1	HR1	0800-0900	1.34062	2.51996E-06	3.79015E-06	1.20491	2.26487E-06	3.40647E-06	5.87346	1.10403E-05	1.66052E-05	5.27904	9.92301E-06	1.49247E-05	6.48395	1.21879E-05	1.83312E-05
Haul Road 1	HR1	0900-1000	1.33882	2.51658E-06	3.78506E-06	1.20711	2.269E-06	3.41269E-06	5.86606	1.10264E-05	1.65843E-05	5.28854	9.94086E-06	1.49516E-05	6.49565	1.22099E-05	1.83642E-05
Haul Road 1	HR1	1000-1100	1.33313	2.50588E-06	3.76897E-06	1.20541	2.26581E-06	3.40789E-06	5.84077	1.09789E-05	1.65128E-05	5.28104	9.92677E-06	1.49303E-05	6.48645	1.21926E-05	1.83382E-05
Haul Road 1	HR1	1100-1200	1.33313	2.50588E-06	3.76897E-06	1.19891	2.25359E-06	3.38951E-06	5.84077	1.09789E-05	1.65128E-05	5.25267	9.87344E-06	1.48501E-05	6.45158	1.2127E-05	1.82397E-05
Haul Road 1	HR1	1200-1300	1.32173	2.48445E-06	3.73674E-06	1.21061	2.27558E-06	3.42259E-06	5.79071	1.08848E-05	1.63713E-05	5.30432	9.97053E-06	1.49962E-05	6.51493	1.22461E-05	1.84188E-05
Haul Road 1	HR1	1300-1400	1.31654	2.4747E-06	3.72207E-06	1.21061	2.27558E-06	3.42259E-06	5.76792	1.0842E-05	1.63068E-05	5.30432	9.97053E-06	1.49962E-05	6.51493	1.22461E-05	1.84188E-05
Haul Road 1	HR1	1400-1500	1.31654	2.4747E-06	3.72207E-06	1.21061	2.27558E-06	3.42259E-06	5.76792	1.0842E-05	1.63068E-05	5.30432	9.97053E-06	1.49962E-05	6.51493	1.22461E-05	1.84188E-05
Haul Road 1	HR1	1500-1600	1.31754	2.47658E-06	3.7249E-06	1.19891	2.25359E-06	3.38951E-06	5.77272	1.0851E-05	1.63204E-05	5.25267	9.87344E-06	1.48501E-05	6.45158	1.2127E-05	1.82397E-05
Haul Road 1	HR1	1600-1700	1.30285	2.44897E-06	3.68337E-06	1.20541	2.26581E-06	3.40789E-06	5.70836	0.00001073	1.61385E-05	5.28104	9.92677E-06	1.49303E-05	6.48645	1.21926E-05	1.83382E-05
Haul Road 1	HR1	1700-1800	1.30085	2.44521E-06	3.67771E-06	1.18323	2.22412E-06	3.34518E-06	5.69957	1.07135E-05	1.61136E-05	5.184	9.74436E-06	1.4656E-05	6.36723	1.19685E-05	1.80012E-05
Haul Road 1	HR1	1800-1900	1.29135	2.42735E-06	3.65085E-06	1.18103	2.21998E-06	3.33896E-06	5.6576	1.06346E-05	1.59949E-05	5.17441	9.72633E-06	1.46289E-05	6.35544	1.19463E-05	1.79678E-05
Haul Road 1	HR1	1900-2000	1.27407	2.39487E-06	3.602E-06	1.16544	2.19068E-06	3.29489E-06	5.58184	1.04922E-05	1.57808E-05	5.10585	9.59746E-06	1.44351E-05	6.27129	1.17881E-05	1.77299E-05
Haul Road 1	HR1	2000-2100	1.27407	2.39487E-06	3.602E-06	1.17063	2.20043E-06	3.30956E-06	5.58184	1.04922E-05	1.57808E-05	5.12875	9.64051E-06	1.44998E-05	6.29938	1.18409E-05	1.78094E-05
Haul Road 1	HR1	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0700-0800	1.34272	1.73927E-06	4.62978E-06	1.19502	1.54795E-06	4.1205E-06	5.88305	7.62053E-06	2.02851E-05	5.23567	6.78196E-06	1.80529E-05	6.43069	8.32991E-06	2.21734E-05
Haul Road 2	HR2	0800-0900	1.34062	1.73655E-06	4.62254E-06	1.20491	1.56076E-06	4.1546E-06	5.87346	7.60811E-06	2.0252E-05	5.27904	6.83813E-06	1.82024E-05	6.48395	8.3989E-06	2.23571E-05
Haul Road 2	HR2	0900-1000	1.33882	1.73422E-06	4.61633E-06	1.20711	1.56361E-06	4.16219E-06	5.86606	7.59852E-06	2.02265E-05	5.28854	6.85044E-06	1.82352E-05	6.49565	8.41405E-06	2.23974E-05
Haul Road 2	HR2	1000-1100	1.33313	1.72685E-06	4.59671E-06	1.20541	1.56141E-06	4.15633E-06	5.84077	7.56576E-06	2.01393E-05	5.28104	6.84073E-06	1.82093E-05	6.48645	8.40214E-06	2.23657E-05
Haul Road 2	HR2	1100-1200	1.33313	1.72685E-06	4.59671E-06	1.19891	1.55299E-06	4.13391E-06	5.84077	7.56576E-06	2.01393E-05	5.25267	6.80398E-06	1.81115E-05	6.45158	8.35697E-06	2.22454E-05
Haul Road 2	HR2	1200-1300	1.32173	1.71209E-06	4.5574E-06	1.21061	1.56815E-06	4.17426E-06	5.79071	7.50092E-06	1.99667E-05	5.30432	6.87088E-06	1.82896E-05	6.51493	8.43903E-06	2.24639E-05
Haul Road 2	HR2	1300-1400	1.31654	1.70536E-06	4.53951E-06	1.21061	1.56815E-06	4.17426E-06	5.76792	7.4714E-06	1.98881E-05	5.30432	6.87088E-06	1.82896E-05	6.51493	8.43903E-06	2.24639E-05
Haul Road 2	HR2	1400-1500	1.31654	1.70536E-06	4.53951E-06	1.21061	1.56815E-06	4.17426E-06	5.76792	7.4714E-06	1.98881E-05	5.30432	6.87088E-06	1.82896E-05	6.51493	8.43903E-06	2.24639E-05
Haul Road 2	HR2	1500-1600	1.31754	1.70666E-06	4.54296E-06	1.19891	1.55299E-06	4.13391E-06	5.77272	7.47762E-06	1.99047E-05	5.25267	6.80398E-06	1.81115E-05	6.45158	8.35697E-06	2.22454E-05
Haul Road 2	HR2	1600-1700	1.30285	1.68763E-06	4.49231E-06	1.20541	1.56141E-06	4.15633E-06	5.70836	7.39425E-06	1.96828E-05	5.28104	6.84073E-06	1.82093E-05	6.48645	8.40214E-06	2.23657E-05
Haul Road 2	HR2	1700-1800	1.30085	1.68504E-06	4.48541E-06	1.18323	1.53268E-06	4.07985E-06	5.69957	7.38286E-06	1.96525E-05	5.184	6.71503E-06	1.78747E-05	6.36723	8.24771E-06	2.19546E-05
Haul Road 2	HR2	1800-1900	1.29135	1.67273E-06	4.45265E-06	1.18103	1.52983E-06	4.07226E-06	5.6576	7.3285E-06	1.95077E-05	5.17441	6.7026E-06	1.78417E-05	6.35544	8.23244E-06	2.19139E-05
Haul Road 2	HR2	1900-2000	1.27407	1.65035E-06	4.39307E-06	1.16544	1.50964E-06	4.01851E-06	5.58184	7.23036E-06	1.92465E-05	5.10585	6.6138E-06	1.76053E-05	6.27129	8.12343E-06	2.16238E-05
Haul Road 2	HR2	2000-2100	1.27407	1.65035E-06	4.39307E-06	1.17063	1.51636E-06	4.0364E-06	5.58184	7.23036E-06	1.92465E-05	5.12875	6.64346E-06	1.76842E-05	6.29938	8.15982E-06	2.17206E-05
Haul Road 2	HR2	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (October) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Haul Road 2	HR2	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0700-0800	1.34272	1.73927E-06	4.62332E-06	1.19502	1.54795E-06	4.11476E-06	5.88305	7.62053E-06	2.02568E-05	5.23567	6.78196E-06	1.80277E-05	6.43069	8.32991E-06	2.21425E-05
Haul Road 3	HR3	0800-0900	1.34062	1.73655E-06	4.61609E-06	1.20491	1.56076E-06	4.14881E-06	5.87346	7.60811E-06	2.02238E-05	5.27904	6.83813E-06	1.81771E-05	6.48395	8.3989E-06	2.23259E-05
Haul Road 3	HR3	0900-1000	1.33882	1.73422E-06	4.6099E-06	1.20711	1.56361E-06	4.15638E-06	5.86606	7.59852E-06	2.01983E-05	5.28854	6.85044E-06	1.82098E-05	6.49565	8.41405E-06	2.23662E-05
Haul Road 3	HR3	1000-1100	1.33313	1.72685E-06	4.5903E-06	1.20541	1.56141E-06	4.15053E-06	5.84077	7.56576E-06	2.01112E-05	5.28104	6.84073E-06	1.8184E-05	6.48645	8.40214E-06	2.23345E-05
Haul Road 3	HR3	1100-1200	1.33313	1.72685E-06	4.5903E-06	1.19891	1.55299E-06	4.12815E-06	5.84077	7.56576E-06	2.01112E-05	5.25267	6.80398E-06	1.80863E-05	6.45158	8.35697E-06	2.22144E-05
Haul Road 3	HR3	1200-1300	1.32173	1.71209E-06	4.55105E-06	1.21061	1.56815E-06	4.16844E-06	5.79071	7.50092E-06	1.99389E-05	5.30432	6.87088E-06	1.82641E-05	6.51493	8.43903E-06	2.24326E-05
Haul Road 3	HR3	1300-1400	1.31654	1.70536E-06	4.53318E-06	1.21061	1.56815E-06	4.16844E-06	5.76792	7.4714E-06	1.98604E-05	5.30432	6.87088E-06	1.82641E-05	6.51493	8.43903E-06	2.24326E-05
Haul Road 3	HR3	1400-1500	1.31654	1.70536E-06	4.53318E-06	1.21061	1.56815E-06	4.16844E-06	5.76792	7.4714E-06	1.98604E-05	5.30432	6.87088E-06	1.82641E-05	6.51493	8.43903E-06	2.24326E-05
Haul Road 3	HR3	1500-1600	1.31754	1.70666E-06	4.53662E-06	1.19891	1.55299E-06	4.12815E-06	5.77272	7.47762E-06	1.98769E-05	5.25267	6.80398E-06	1.80863E-05	6.45158	8.35697E-06	2.22144E-05
Haul Road 3	HR3	1600-1700	1.30285	1.68763E-06	4.48604E-06	1.20541	1.56141E-06	4.15053E-06	5.70836	7.39425E-06	1.96553E-05	5.28104	6.84073E-06	1.8184E-05	6.48645	8.40214E-06	2.23345E-05
Haul Road 3	HR3	1700-1800	1.30085	1.68504E-06	4.47916E-06	1.18323	1.53268E-06	4.07416E-06	5.69957	7.38286E-06	1.96251E-05	5.184	6.71503E-06	1.78498E-05	6.36723	8.24771E-06	2.1924E-05
Haul Road 3	HR3	1800-1900	1.29135	1.67273E-06	4.44644E-06	1.18103	1.52983E-06	4.06658E-06	5.6576	7.3285E-06	1.94805E-05	5.17441	6.7026E-06	1.78168E-05	6.35544	8.23244E-06	2.18834E-05
Haul Road 3	HR3	1900-2000	1.27407	1.65035E-06	4.38695E-06	1.16544	1.50964E-06	4.0129E-06	5.58184	7.23036E-06	1.92197E-05	5.10585	6.6138E-06	1.75807E-05	6.27129	8.12343E-06	2.15936E-05
Haul Road 3	HR3	2000-2100	1.27407	1.65035E-06	4.38695E-06	1.17063	1.51636E-06	4.03078E-06	5.58184	7.23036E-06	1.92197E-05	5.12875	6.64346E-06	1.76596E-05	6.29938	8.15982E-06	2.16904E-05
Haul Road 3	HR3	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (November) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 1	1	0000-0100	0.096615698	3.24591E-07	2.6406E-06	0.088273687	2.96565E-07	2.4126E-06	0.573864693	1.92796E-06	1.56843E-05	0.521479665	1.75197E-06	1.42525E-05	0.609753352	2.04853E-06	1.66651E-05
Road 1	1	0100-0200	0.074391193	1.52189E-07	1.23808E-06	0.069198991	1.41567E-07	1.15167E-06	0.450089541	9.20791E-07	7.49077E-06	0.416813945	8.52716E-07	6.93697E-06	0.486012936	9.94283E-07	8.08864E-06
Road 1	1	0200-0300	0.072150519	1.04272E-07	8.48265E-07	0.066719481	9.64227E-08	7.84413E-07	0.464167922	6.70813E-07	5.45717E-06	0.424853247	6.13996E-07	4.99495E-06	0.491572727	7.10419E-07	5.77936E-06
Road 1	1	0300-0400	0.060883455	6.28489E-08	5.11285E-07	0.056101818	5.79129E-08	4.7113E-07	0.376002909	3.88141E-07	3.15759E-06	0.342978	3.5405E-07	2.88025E-06	0.399079818	4.11963E-07	3.35138E-06
Road 1	1	0400-0500	0.078748605	1.27109E-07	1.03405E-06	0.07297407	1.17788E-07	9.58227E-07	0.453565814	7.32107E-07	5.9558E-06	0.41752407	6.73931E-07	5.48253E-06	0.49049814	7.9172E-07	6.44076E-06
Road 1	1	0500-0600	0.065346543	2.30577E-07	1.87578E-06	0.060805266	2.14553E-07	1.74542E-06	0.389191489	1.37327E-06	1.11718E-05	0.358998617	1.26674E-06	1.03051E-05	0.419803883	1.48129E-06	1.20505E-05
Road 1	1	0600-0700	0.087813798	5.55429E-07	4.5185E-06	0.081669407	5.16565E-07	4.20233E-06	0.470320119	2.97481E-06	2.42005E-05	0.434619228	2.749E-06	2.23635E-05	0.516288635	3.26556E-06	2.65658E-05
Road 1	1	0700-0800	0.074042082	7.80999E-07	6.35355E-06	0.068509911	7.22646E-07	5.87883E-06	0.411125374	4.33657E-06	3.52786E-05	0.377050534	3.97715E-06	3.23547E-05	0.445560445	4.69979E-06	3.82335E-05
Road 1	1	0800-0900	0.079539222	1.03604E-06	8.42834E-06	0.073826614	9.6163E-07	7.82301E-06	0.428540245	5.58196E-06	4.54101E-05	0.395629712	5.15328E-06	4.19227E-05	0.469456326	6.11492E-06	4.97457E-05
Road 1	1	0900-1000	0.084356919	1.13046E-06	9.19645E-06	0.078751751	1.05534E-06	8.58538E-06	0.468819314	6.2826E-06	5.11099E-05	0.43616084	5.84495E-06	4.75495E-05	0.514912591	6.90029E-06	5.61349E-05
Road 1	1	1000-1100	0.097723755	1.27474E-06	1.03702E-05	0.090970072	1.18664E-06	9.6535E-06	0.524216835	6.83804E-06	5.56285E-05	0.486553209	6.34674E-06	5.16317E-05	0.577523281	7.53338E-06	6.12852E-05
Road 1	1	1100-1200	0.087585401	1.10797E-06	9.01349E-06	0.082246499	1.04043E-06	8.46406E-06	0.502677611	6.35895E-06	5.1731E-05	0.471232003	5.96116E-06	4.84949E-05	0.553478501	7.00159E-06	5.69589E-05
Road 1	1	1200-1300	0.090284723	1.13025E-06	9.19478E-06	0.084563208	1.05863E-06	8.61209E-06	0.511413493	6.40227E-06	5.20834E-05	0.478368486	5.98858E-06	4.8718E-05	0.562931694	7.04721E-06	5.73301E-05
Road 1	1	1300-1400	0.094141594	1.25275E-06	1.01913E-05	0.088554076	1.17839E-06	9.58641E-06	0.522188759	6.9488E-06	5.65295E-05	0.490716573	6.52999E-06	5.31225E-05	0.579270649	7.70839E-06	6.27089E-05
Road 1	1	1400-1500	0.088686424	1.28003E-06	1.04132E-05	0.083835956	1.21002E-06	9.84369E-06	0.481732653	6.95294E-06	5.65632E-05	0.454684278	6.56254E-06	5.33872E-05	0.538520234	7.77256E-06	6.32309E-05
Road 1	1	1500-1600	0.096425363	1.29581E-06	1.05416E-05	0.089953799	1.20884E-06	9.83408E-06	0.522102542	7.01624E-06	5.70782E-05	0.486191313	6.53365E-06	5.31522E-05	0.576145112	7.74249E-06	6.29863E-05
Road 1	1	1600-1700	0.091957417	1.30308E-06	1.06007E-05	0.085638172	1.21353E-06	9.87224E-06	0.50411457	7.14352E-06	5.81136E-05	0.468464821	6.63834E-06	5.40039E-05	0.554102993	7.85187E-06	6.38761E-05
Road 1	1	1700-1800	0.073800277	1.04994E-06	8.54139E-06	0.067428417	9.59286E-07	7.80393E-06	0.414569182	5.89796E-06	4.79808E-05	0.376756082	5.36001E-06	4.36044E-05	0.444184499	6.31929E-06	5.14084E-05
Road 1	1	1800-1900	0.065762687	9.55336E-07	7.7718E-06	0.059560556	8.65238E-07	7.03884E-06	0.395790181	5.74965E-06	4.67743E-05	0.355809341	5.16885E-06	4.20494E-05	0.415369897	6.03409E-06	4.90882E-05
Road 1	1	1900-2000	0.07977425	8.87878E-07	7.22302E-06	0.072285447	8.04528E-07	6.54496E-06	0.459910776	5.11875E-06	4.16418E-05	0.413703693	4.60447E-06	3.74581E-05	0.48598914	5.409E-06	4.4003E-05
Road 1	1	2000-2100	0.072235209	6.8195E-07	5.54777E-06	0.065220755	6.15729E-07	5.00905E-06	0.429350179	4.05336E-06	3.29747E-05	0.384646461	3.63133E-06	2.95414E-05	0.449867217	4.24706E-06	3.45504E-05
Road 1	1	2100-2200	0.075728061	6.52387E-07	5.30726E-06	0.069258824	5.96655E-07	4.85388E-06	0.453858802	3.90993E-06	3.18079E-05	0.412479216	3.55345E-06	2.89079E-05	0.481738039	4.15011E-06	3.37617E-05
Road 1	1	2200-2300	0.07370554	6.01763E-07	4.89543E-06	0.06736577	5.50002E-07	4.47435E-06	0.441553218	3.60502E-06	2.93274E-05	0.400788092	3.2722E-06	2.66198E-05	0.468153862	3.8222E-06	3.10942E-05
Road 1	1	2300-0000	0.064509	4.72194E-07	3.84137E-06	0.058964128	4.31607E-07	3.51119E-06	0.397942205	2.91287E-06	2.36966E-05	0.360549795	2.63916E-06	2.147E-05	0.419513923	3.07077E-06	2.49811E-05
Road 2	2	0000-0100	0.160020192	1.92617E-07	1.2439E-06	0.146192692	1.75973E-07	1.13641E-06	0.678975769	8.17286E-07	5.27795E-06	0.617735769	7.43571E-07	4.80191E-06	0.763928462	9.19544E-07	5.93832E-06
Road 2	2	0100-0200	0.112254118	8.83481E-08	5.70544E-07	0.104396765	8.21641E-08	5.30608E-07	0.555701176	4.37357E-07	2.82441E-06	0.514847353	4.05204E-07	2.61677E-06	0.619244118	4.87368E-07	3.14738E-06
Road 2	2	0200-0300	0.117185652	6.23905E-08	4.02912E-07	0.10846087	5.77454E-08	3.72914E-07	0.64248087	3.42062E-07	2.209E-06	0.590823913	3.14559E-07	2.03139E-06	0.699284783	3.72304E-07	2.40431E-06
Road 2	2	0300-0400	0.101571333	3.52678E-08	2.27756E-07	0.093606	3.25021E-08	2.09895E-07	0.371504	1.28994E-07	8.33034E-07	0.339415333	1.17853E-07	7.6108E-07	0.433021333	1.50355E-07	9.70976E-07
Road 2	2	0400-0500	0.137117407	8.56984E-08	5.53432E-07	0.127080741	7.94255E-08	5.12922E-07	0.662173333	4.13858E-07	2.67266E-06	0.611373333	3.82108E-07	2.46762E-06	0.738454074	4.61534E-07	2.98054E-06
Road 2	2	0500-0600	0.109334035	1.4426E-07	9.31618E-07	0.101771579	1.34282E-07	8.6718E-07	0.486469474	6.41869E-07	4.14513E-06	0.449771754	5.93449E-07	3.83243E-06	0.551543333	7.27731E-07	4.69961E-06
Road 2	2	0600-0700	0.153811346	3.70287E-07	2.39127E-06	0.143136442	3.44588E-07	2.22531E-06	0.624440192	1.50328E-06	9.70805E-06	0.578232308	1.39204E-06	8.98966E-06	0.72136875	1.73663E-06	1.1215E-05
Road 2	2	0700-0800	0.126605375	4.68909E-07	3.02817E-06	0.11721825	4.34142E-07	2.80364E-06	0.529459438	1.96096E-06	1.26637E-05	0.486368375	1.80136E-06	1.1633E-05	0.603586625	2.23551E-06	1.44367E-05
Road 2	2	0800-0900	0.14276898	1.00467E-06	6.48806E-06	0.132507632	9.32461E-07	6.02174E-06	0.602059507	4.23672E-06	2.73603E-05	0.556019276	3.91273E-06	2.5268E-05	0.688526908	4.84519E-06	3.12898E-05
Road 2	2	0900-1000	0.166457937	9.71005E-07	6.27065E-06	0.155401627	9.06509E-07	5.85415E-06	0.70965246	4.13964E-06	2.67334E-05	0.660800952	3.85467E-06	2.48931E-05	0.816202579	4.76118E-06	3.07472E-05
Road 2	2	1000-1100	0.185253797	8.01909E-07	5.17865E-06	0.172482834	7.46627E-07	4.82164E-06	0.781894011	3.38459E-06	2.18573E-05	0.726335294	3.14409E-06	2.03042E-05	0.898818128	3.89072E-06	2.51259E-05
Road 2	2	1100-1200	0.217538743	9.21518E-07	5.95108E-06	0.204280492	8.65355E-07	5.58838E-06	0.888284044	3.76287E-06	2.43002E-05	0.833590492	3.53118E-06	2.2804E-05	1.037870984	4.39654E-06	2.83924E-05
Road 2	2	1200-1300	0.167506737	7.36719E-07	4.75766E-06	0.156926053	6.90184E-07	4.45714E-06	0.733273158	3.22504E-06	2.0827E-05	0.686077211	3.01747E-06	1.94865E-05	0.843003263	3.70765E-06	2.39437E-05
Road 2	2	1300-1400	0.184678117	9.53315E-07	6.15642E-06	0.173661614	8.96448E-07	5.78917E-06	0.754829865	3.89646E-06	2.5163E-05	0.709146682	3.66064E-06	2.36401E-05	0.882808296	4.55709E-06	2.94292E-05
Road 2	2	1400-1500	0.157567515	6.0182E-07	3.8865E-06	0.148915576	5.68775E-07	3.67309E-06	0.681030667	2.60116E-06	1.6798E-05	0.643075818	2.45619E-06	1.58619E-05	0.791991394	3.02497E-06	1.95349E-05
Road 2	2	1500-1600	0.199141639	8.43586E-07	5.4478E-06	0.185658907	7.86472E-07	5.07896E-06	0.784477486	3.32313E-06	2.14605E-05	0.730815137	3.09581E-06	1.99925E-05	0.916474044	3.88229E-06	2.50714E-05
Road 2	2	1600-1700	0.166661131	8.52595E-07	5.50598E-06	0.155197692	7.93951E-07	5.12726E-06	0.70083543	3.58529E-06	2.31535E-05	0.651694208	3.3339E-06	2.153E-05	0.8068919	4.12785E-06	2.66573E-05
Road 2	2	1700-1800	0.129320991	6.64566E-07	4.2917E-06	0.118182658	6.07328E-07	3.92206E-06	0.513907568	2.64091E-06	1.70548E-05	0.46805009	2.40526E-06	1.55329E-05	0.586232748	3.01258E-06	1.9455E-05
Road 2	2	1800-1900	0.14255556	8.24974E-07	5.3276E-06	0.12921724	7.47785E-07	4.82912E-06	0.64280236	3.71992E-06	2.40229E-05	0.58028536	3.35813E-06	2.16865E-05	0.7095026	4.10592E-06	2.65156E-05
Road 2	2	1900-2000	0.122417219	4.78901E-07	3.09269E-06	0.110944142	4.34018E-07	2.80284E-06	0.557580947	2.18128E-06	1.40865E-05	0.502096213	1.96422E-06	1.26847E-05	0.613040355	2.39824E-06	1.54876E-05
Road 2	2	2000-2100	0.116117687	3.95123E-07	2.55166E-06	0.104734626	3.56389E-07	2.30152E-06	0.497636395	1.69335E-06	1.09355E-05	0.445536939	1.51606E-06	9.79059E-06	0.550271565	1.87245E-06	1.20921E-05
Road 2	2	2100-2200	0.089977059	3.18669E-07	2.05793E-06	0.082246536	2.9129E-07	1.88112E-06	0.41593281	1.4731E-06	9.51311E-06	0.376561046	1.33365E-06	8.61261E-06	0.458807582	1.62494E-06	1.04937E-05
Road 2	2	2200-2300	0.13049192	3.77581E-07	2.43838E-06	0.11928848	3.45163E-07	2.22903E-06	0.5583352	1.61555E-06	1.04331E-05	0.50750872	1.46849E-06	9.48334E-06	0.6267972	1.81365E-06	1.17124E-05
Road 2	2	2300-0000	0.116491622	2.99319E-07	1.93297E-06	0.106496757	2.73638E-07	1.76712E-06	0.528786036	1.35869E-06	8.77426E-06	0.480127027	1.23366E-06	7.96685E-06	0.586623784	1.5073E-06	9.73398E-06
Road 3	3	0000-0100	0.10055913	3.70972E-07	1.44188E-05	0.091805609	3.3868E-07	1.31636E-05	0.556264609	2.05211E-06	7.97605E-05	0.505120696	1.86344E-06	7.24272E-05	0.596926304	2.20212E-06	8.55908E-05
Road 3	3	0100-0200	0.075084859	1.71015E-07	6.6469E-06	0.06998993	1.5941E-07	6.19587E-06	0.43893	9.99714E-07	3.88564E-05	0.407307394	9.2769E-07	3.6057E-05	0.477297324	1.0871E-06	4.22529E-05
Road 3	3	0200-0300	0.073985051	1.17482E-07	4.56623E-06	0.068573939	1.0889E-07	4.23227E-06	0.46503101	7.3843E-07	2.87009E-05	0.426908687	6.77895E-07	2.63481E-05	0.495482626	7.86785E-07	3.05803E-05
Road 3	3	0300-0400	0.061933857	6.95374E-08	2.70274E-06	0.057173714	6.41929E-08	2.49501E-06	0.344390714	3.86671E-07	1.50289E-05	0.314527714	3.53142E-07	1.37257E-05	0.371701429	4.17335E-07	1.62208E-05
Road 3	3	0400-0500	0.082236283	1.49051E-07	5.79323E-06	0.077000973	1.39562E-07	5.42442E-06	0.456985664	8.28272E-07	3.21929E-05	0.425516195	7.71235E-07	2.9976E-05	0.502517168	9.10797E-07	3.54004E-05
Road 3	3	0500-0600	0.067177886	2.65066E-07	1.03024E-05	0.062489878	2.46568E-07	9.58349E-06	0.376634959	1.4861E-06	5.7761E-05	0.347482195	1.37107E-06	5.32901E-05	0.409972073	1.61764E-06	6.28736E-05
Road 3	3	0600-0700	0.092897883	6.61578E-07	2.57139E-05	0.086503198	6.16038E-07	2.39438E-05	0.466218851	3.32021E-06	0.000129048	0.431558559	3.07337E-06	0.000119454	0.518061757	3.68941E-06	0.000143398
Road 3	3	0700-0800	0.077084017	8.98858E-07	3.49363E-05	0.071132407	8.29457E-07	3.22389E-05	0.40735542	4.75007E-06	0.000184623	0.372548074	4.34419E-06	0.000168848	0.443680481	5.17365E-06	0.000201087
Road 3	3	0800-0900	0.085065567	1.36032E-06	5.28722E-05	0.078899749	1.26172E-06	4.90399E-05	0.422526951	6.75681E-06	0.00026262	0.389667763	6.23135E-06	0.000242197	0.468567513	7.49307E-06	0.000291237
Road 3	3	0900-1000	0.092509295	1.43187E-06	5.56534E-05	0.085852518	1.32884E-06	5.16487E-05	0.47835401	7.40404E-06	0.000287777	0.441989617	6.84119E-06	0.0002659	0.527842135	8.17003E-06	0.000317549
Road 3	3	1000-1100	0.104574573	1.47437E-06	5.73052E-05	0.097234539	1.37089E-06	5.32829E-05	0.528508441	7.45132E-06	0.000289614	0.490083163	6.90957E-06	0.000268558	0.587317702	8.28045E-06	0.00032184
Road 3	3	1100-1200	0.102483735	1.4038E-06	5.45622E-05	0.095617459	1.30975E-06	5.09066E-05	0.532267131	7.29088E-06	0.000283378	0.495441276	6.78644E-06	0.000263772	0.591058735	8.09619E-06	0.000314679
Road 3	3	1200-1300	0.096182506	1.31749E-06	5.12074E-05	0.089792283	1.22995E-06	4.78053E-05	0.510726241	6.99581E-06	0.00027191	0.475886452	6.51859E-06	0.000253361	0.565678735	7.74854E-06	0.000301166
Road 3	3	1300-1400	0.102081726	1.51782E-06	5.89938E-05	0.095570151	1.421E-06	5.52307E-05	0.52035534	7.73699E-06	0.000300717	0.486501694	7.23363E-06	0.000281153	0.582071845	8.65463E-06	0.000336384

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (November) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 3	3	1400-1500	0.094069807	1.40925E-06	5.47742E-05	0.088072034	1.3194E-06	5.12818E-05	0.487255535	7.29955E-06	0.000283715	0.455529861	6.82427E-06	0.000265242	0.543601895	8.14367E-06	0.000316524
Road 3	3	1500-1600	0.104521754	1.50045E-06	5.83188E-05	0.097386793	1.39803E-06	5.43378E-05	0.527255251	7.56896E-06	0.000294186	0.490486927	7.04114E-06	0.000273671	0.587873721	8.43916E-06	0.000328009
Road 3	3	1600-1700	0.098749631	1.54589E-06	6.00847E-05	0.091624365	1.43434E-06	5.57493E-05	0.506114334	7.92302E-06	0.000307948	0.468613217	7.33595E-06	0.00028513	0.560237582	8.7703E-06	0.000340879
Road 3	3	1700-1800	0.078691011	1.23566E-06	4.80271E-05	0.072086701	1.13196E-06	4.39963E-05	0.406137773	6.37747E-06	0.000247876	0.370182165	5.81287E-06	0.000225932	0.442268866	6.94482E-06	0.000269928
Road 3	3	1800-1900	0.074274606	1.2235E-06	4.75543E-05	0.067428802	1.11073E-06	4.31712E-05	0.411038335	6.77088E-06	0.000263167	0.370828364	6.10851E-06	0.000237423	0.438257167	7.21924E-06	0.000280594
Road 3	3	1900-2000	0.079723026	9.71828E-07	3.77725E-05	0.072172408	8.79786E-07	3.41951E-05	0.441975737	5.38771E-06	0.000209407	0.397201447	4.84191E-06	0.000188193	0.469373855	5.7217E-06	0.000222388
Road 3	3	2000-2100	0.074524114	7.75771E-07	3.01523E-05	0.067264145	7.00197E-07	2.72149E-05	0.411299014	4.28149E-06	0.000166411	0.368388629	3.8348E-06	0.000149049	0.435652773	4.535E-06	0.000176264
Road 3	3	2100-2200	0.072689496	7.17033E-07	2.78693E-05	0.06641974	6.55186E-07	2.54654E-05	0.413130358	4.07525E-06	0.000158395	0.374868699	3.69783E-06	0.000143725	0.441288439	4.35301E-06	0.000169191
Road 3	3	2200-2300	0.078089716	7.05171E-07	2.74082E-05	0.071564298	6.46245E-07	2.51179E-05	0.430589734	3.88834E-06	0.00015113	0.391864458	3.53864E-06	0.000137538	0.463428757	4.18489E-06	0.000162656
Road 3	3	2300-0000	0.068333406	5.50211E-07	2.13853E-05	0.062629841	5.04286E-07	1.96003E-05	0.395963446	3.18824E-06	0.000123919	0.359782649	2.89692E-06	0.000112596	0.42241249	3.4012E-06	0.000132196
Road 4	4	0000-0100	0.269643714	2.18461E-07	2.33919E-06	0.246100571	1.99387E-07	2.13495E-06	1.331900571	1.07909E-06	1.15544E-05	1.214852857	9.84256E-07	1.0539E-05	1.460953429	1.18364E-06	1.26739E-05
Road 4	4	0100-0200	0.2529445	1.17104E-07	1.2539E-06	0.235819	1.09175E-07	1.169E-06	1.2516375	5.79462E-07	6.20463E-06	1.1667225	5.40149E-07	5.78369E-06	1.4025415	6.49325E-07	6.9527E-06
Road 4	4	0200-0300	0.274291538	8.25414E-08	8.83819E-07	0.254592308	7.66134E-08	8.20344E-07	1.312173077	3.94867E-07	4.22807E-06	1.217901538	3.66498E-07	3.92431E-06	1.472493846	4.43112E-07	4.74465E-06
Road 4	4	0300-0400	0.249362857	4.0406E-08	4.32651E-07	0.230527143	3.73539E-08	3.9997E-07	1.280221429	2.07443E-07	2.22122E-06	1.183444286	1.91762E-07	2.0533E-06	1.413971429	2.29116E-07	2.45327E-06
Road 4	4	0400-0500	0.255247857	8.27192E-08	8.85722E-07	0.239055	7.74715E-08	8.29532E-07	1.221715714	3.95926E-07	4.23941E-06	1.144199286	3.70805E-07	3.97043E-06	1.383254286	4.48277E-07	4.79996E-06
Road 4	4	0500-0600	0.237455833	1.3192E-07	1.41254E-06	0.221155833	1.22864E-07	1.31558E-06	1.09398125	6.07767E-07	6.50772E-06	1.01824125	5.6569E-07	6.05717E-06	1.239397083	6.88554E-07	7.37275E-06
Road 4	4	0600-0700	0.264061698	3.23965E-07	3.46888E-06	0.246101321	3.0193E-07	3.23294E-06	1.223275849	1.50078E-06	1.60697E-05	1.139208113	1.39764E-06	1.49653E-05	1.385309434	1.69957E-06	1.81983E-05
Road 4	4	0700-0800	0.267039674	5.68696E-07	6.08935E-06	0.246726304	5.25436E-07	5.62614E-06	1.28314587	2.73263E-06	2.92598E-05	1.18433087	2.52219E-06	2.70065E-05	1.431057174	3.04762E-06	3.26326E-05
Road 4	4	0800-0900	0.273229161	9.80336E-07	1.0497E-05	0.25346929	9.09438E-07	9.73788E-06	1.316733355	4.72439E-06	5.05868E-05	1.220864645	4.38042E-06	4.69037E-05	1.474333935	5.28986E-06	5.66415E-05
Road 4	4	0900-1000	0.279429257	9.57304E-07	1.02504E-05	0.259140608	8.87797E-07	9.50615E-06	1.278523378	4.38013E-06	4.69005E-05	1.184957635	4.05958E-06	4.34682E-05	1.444098243	4.94737E-06	5.29744E-05
Road 4	4	1000-1100	0.309926944	1.03309E-06	1.10619E-05	0.288159167	9.60531E-07	1.0285E-05	1.421622639	4.73874E-06	5.07405E-05	1.321589722	4.4053E-06	4.71701E-05	1.609748889	5.36583E-06	5.7455E-05
Road 4	4	1100-1200	0.286320645	1.02731E-06	1.1E-05	0.267069677	9.58236E-07	1.02604E-05	1.304965935	4.68217E-06	5.01347E-05	1.216959871	4.36641E-06	4.67536E-05	1.484029548	5.32464E-06	5.7014E-05
Road 4	4	1200-1300	0.292241892	1.0012E-06	1.07204E-05	0.272640608	9.34047E-07	1.00014E-05	1.390180405	4.76266E-06	5.09965E-05	1.296763446	4.44262E-06	4.75697E-05	1.569404054	5.37666E-06	5.7571E-05
Road 4	4	1300-1400	0.2992334	1.039E-06	1.11252E-05	0.280003267	9.72234E-07	1.04103E-05	1.390292533	4.8274E-06	5.16898E-05	1.300705667	4.51634E-06	4.83591E-05	1.580708933	5.48857E-06	5.87693E-05
Road 4	4	1400-1500	0.272322571	8.82527E-07	9.44973E-06	0.254816929	8.25796E-07	8.84227E-06	1.306017786	4.23247E-06	4.53195E-05	1.221737429	3.95933E-06	4.23949E-05	1.476554357	4.78513E-06	5.12372E-05
Road 4	4	1500-1600	0.3059712	8.85333E-07	9.47978E-06	0.2849216	8.24426E-07	8.8276E-06	1.42177328	4.11393E-06	4.40502E-05	1.32374888	3.83029E-06	4.10131E-05	1.60867048	4.65472E-06	4.98408E-05
Road 4	4	1600-1700	0.286687984	8.22901E-07	8.81127E-06	0.265938871	7.63343E-07	8.17356E-06	1.345568629	3.86228E-06	4.13557E-05	1.247797742	3.58164E-06	3.83507E-05	1.513736613	4.34498E-06	4.65243E-05
Road 4	4	1700-1800	0.276412677	8.12602E-07	8.701E-06	0.253199921	7.44361E-07	7.9703E-06	1.318778976	3.87697E-06	4.15129E-05	1.207578346	3.55006E-06	3.80125E-05	1.460778268	4.29442E-06	4.59828E-05
Road 4	4	1800-1900	0.304561698	7.47304E-07	8.00182E-06	0.276727358	6.79007E-07	7.27052E-06	1.466247642	3.59774E-06	3.85231E-05	1.332162642	3.26873E-06	3.50002E-05	1.60889	3.94774E-06	4.22707E-05
Road 4	4	1900-2000	0.276286892	4.73269E-07	5.06757E-06	0.250297027	4.2875E-07	4.59087E-06	1.333393243	2.28405E-06	2.44567E-05	1.207435405	2.06829E-06	2.21464E-05	1.457732432	2.49704E-06	2.67373E-05
Road 4	4	2000-2100	0.241612653	2.74051E-07	2.93443E-06	0.218129184	2.47415E-07	2.64922E-06	1.171461837	1.32874E-06	1.42276E-05	1.05619898	1.198E-06	1.28277E-05	1.274328163	1.44542E-06	1.54769E-05
Road 4	4	2100-2200	0.200466216	1.71696E-07	1.83844E-06	0.183443514	1.57116E-07	1.68233E-06	0.992780541	8.50298E-07	9.10463E-06	0.907054054	7.76875E-07	8.31845E-06	1.090497568	9.33991E-07	1.00008E-05
Road 4	4	2200-2300	0.269407619	3.92886E-07	4.20686E-06	0.246923175	3.60096E-07	3.85576E-06	1.280927778	1.86802E-06	2.0002E-05	1.173812857	1.71181E-06	1.83293E-05	1.420736032	2.07191E-06	2.21851E-05
Road 4	4	2300-0000	0.251122653	2.84838E-07	3.04993E-06	0.230234694	2.61146E-07	2.79624E-06	1.226969592	1.3917E-06	1.49018E-05	1.12417898	1.27511E-06	1.36533E-05	1.354413673	1.53626E-06	1.64496E-05
Road 5	5	0000-0100	0.085121295	3.08341E-07	4.16975E-06	0.077716218	2.81517E-07	3.80701E-06	0.478001554	1.7315E-06	2.34154E-05	0.433285337	1.56952E-06	2.12249E-05	0.511001554	1.85104E-06	2.50319E-05
Road 5	5	0100-0200	0.056974098	1.30459E-07	1.76422E-06	0.053105492	1.216E-07	1.64443E-06	0.351446721	8.04739E-07	1.08826E-05	0.325444836	7.452E-07	1.00775E-05	0.378550328	8.66801E-07	1.17219E-05
Road 5	5	0200-0300	0.054647791	8.82078E-08	1.19285E-06	0.050603953	8.16806E-08	1.10458E-06	0.380833721	6.14709E-07	8.31283E-06	0.348052907	5.61797E-07	7.59729E-06	0.39865686	6.43478E-07	8.70187E-06
Road 5	5	0300-0400	0.048711587	5.75982E-08	7.78911E-07	0.044939683	5.31381E-08	7.18597E-07	0.272010476	3.21634E-07	4.34952E-06	0.247204127	2.92302E-07	3.95286E-06	0.29214381	3.4544E-07	4.67145E-06
Road 5	5	0400-0500	0.067288586	1.25029E-07	1.6908E-06	0.062997576	1.17056E-07	1.58297E-06	0.387052929	7.19186E-07	9.72569E-06	0.359671313	6.68308E-07	9.03766E-06	0.422668889	7.85364E-07	1.06206E-05
Road 5	5	0500-0600	0.054987091	2.27049E-07	3.07042E-06	0.051121909	2.11089E-07	2.8546E-06	0.323059136	1.33395E-06	1.80393E-05	0.297257136	1.22741E-06	1.65985E-05	0.348379045	1.4385E-06	1.94531E-05
Road 5	5	0600-0700	0.080498067	5.8621E-07	7.92742E-06	0.07493683	5.45711E-07	7.37975E-06	0.407350593	2.96644E-06	4.01158E-05	0.376355979	2.74073E-06	3.70634E-05	0.451292809	3.28644E-06	4.44432E-05
Road 5	5	0700-0800	0.063026619	7.48796E-07	1.01261E-05	0.058140774	6.90749E-07	9.34113E-06	0.336600932	3.99903E-06	5.40797E-05	0.306781295	3.64476E-06	4.92887E-05	0.36492207	4.3355E-06	5.86298E-05
Road 5	5	0800-0900	0.067306868	1.06493E-06	1.44013E-05	0.062394259	9.87206E-07	1.33502E-05	0.33115796	5.23961E-06	7.08562E-05	0.30465866	4.82033E-06	6.51862E-05	0.367052918	5.80754E-06	7.85364E-05
Road 5	5	0900-1000	0.074651422	1.14331E-06	1.54612E-05	0.069272071	1.06092E-06	1.43471E-05	0.399352194	6.1162E-06	8.27106E-05	0.368596728	5.64518E-06	7.63408E-05	0.437868799	6.7061E-06	9.06878E-05
Road 5	5	1000-1100	0.084710763	1.167E-06	1.57815E-05	0.078786567	1.08539E-06	1.46779E-05	0.439792452	6.0587E-06	8.1933E-05	0.407372643	5.61208E-06	7.58932E-05	0.48615921	6.69746E-06	9.05711E-05
Road 5	5	1100-1200	0.083059041	1.08968E-06	1.4736E-05	0.077510844	1.01689E-06	1.37516E-05	0.450246152	5.90695E-06	7.98807E-05	0.418762976	5.49391E-06	7.42951E-05	0.49627382	6.5108E-06	8.80468E-05
Road 5	5	1200-1300	0.076868953	1.02001E-06	1.37938E-05	0.071760849	9.52232E-07	1.28772E-05	0.419452306	5.56593E-06	7.52691E-05	0.390644484	5.18366E-06	7.00997E-05	0.462405332	6.1359E-06	8.29769E-05
Road 5	5	1300-1400	0.083889447	1.22339E-06	1.65441E-05	0.078540386	1.14538E-06	1.54892E-05	0.436898211	6.37143E-06	8.61621E-05	0.408380837	5.95555E-06	8.05381E-05	0.486921223	7.10093E-06	9.60273E-05
Road 5	5	1400-1500	0.079062872	1.17823E-06	1.59334E-05	0.074021033	1.10309E-06	1.49173E-05	0.413971952	6.16918E-06	8.34269E-05	0.386952003	5.76651E-06	7.79817E-05	0.460973035	6.86961E-06	9.2899E-05
Road 5	5	1500-1600	0.088359571	1.27697E-06	1.72687E-05	0.082359714	1.19026E-06	1.60961E-05	0.451374662	6.52324E-06	8.82151E-05	0.419754506	6.06627E-06	8.20353E-05	0.502114221	7.25653E-06	9.81314E-05
Road 5	5	1600-1700	0.08406129	1.3458E-06	1.81995E-05	0.078031102	1.24926E-06	1.6894E-05	0.437855334	7.00996E-06	9.4797E-05	0.405226506	6.48758E-06	8.77327E-05	0.483257608	7.73684E-06	0.000104627
Road 5	5	1700-1800	0.062238731	9.94091E-07	1.34433E-05	0.056986475	9.10201E-07	1.23088E-05	0.32560832	5.20069E-06	7.03299E-05	0.296234407	4.73152E-06	6.39853E-05	0.353220881	5.64172E-06	7.62941E-05
Road 5	5	1800-1900	0.058076855	1.00174E-06	1.35467E-05	0.052719347	9.0933E-07	1.2297E-05	0.332763471	5.73967E-06	7.76186E-05	0.299434168	5.16479E-06	6.98444E-05	0.352153515	6.07412E-06	8.21415E-05
Road 5	5	1900-2000	0.067876224	8.73932E-07	1.18183E-05	0.061438382	7.91042E-07	1.06974E-05	0.385652915	4.96543E-06	6.71484E-05	0.345895379	4.45353E-06	6.0226E-05	0.407333761	5.24458E-06	7.09234E-05
Road 5	5	2000-2100	0.065949283	7.42672E-07	1.00433E-05	0.05953925	6.70487E-07	9.06712E-06	0.3697189	4.1635E-06	5.63038E-05	0.3307029	3.72413E-06	5.03621E-05	0.39024215	4.39462E-06	5.94293E-05
Road 5	5	2100-2200	0.067781557	7.35318E-07	9.94384E-06	0.061929619	6.71834E-07	9.08534E-06	0.389703547	4.22764E-06	5.71712E-05	0.353300727	3.83273E-06	5.18307E-05	0.415230346	4.50456E-06	6.09161E-05
Road 5	5	2200-2300	0.065309259	6.11661E-07	8.27161E-06	0.059841082	5.60449E-07	7.57905E-06	0.370599359	3.47089E-06	4.69375E-05	0.336553246	3.15203E-06	4.26255E-05	0.396394329	3.71248E-06	5.02045E-05
Road 5	5	2300-0000	0.057393267	4.87972E-07	6.59894E-06	0.052591589	4.47147E-07	6.04685E-06	0.342485143	2.9119E-06	3.93781E-05	0.310496777	2.63992E-06	3.57002E-05	0.363088366	3.08707E-06	4.1747E-05
Road 6	6	0000-0100	0.0510068	1.436E-07	5.13313E-06	0.046490267	1.30885E-07	4.6786E-06	0.3327342	9.36752E-07	3.34851E-05	0.2992866	8.42586E-07	3.0119E-05	0.345776867	9.73471E-07	3.47976E-05
Road 6	6	0100-0200	0.06718614	1.43754E-07	5.13863E-06	0.062612105	1.33967E-07	4.78879E-06	0.381920351	8.17172E-07	2.92106E-05	0.353061491	7.55424E-07	2.70034E-05	0.415673596	8.89392E-07	3.17921E-05
Road 6	6	0200-0300	0.061411266	9.10565E-08	3.2549E-06	0.05695557	8.44499E-08	3.01874E-06	0.355418861	5.26991E-07	1.88378E-05	0.325954937	4.83304E-07	1.72762E-05	0.382910506	5.67754E-07	2.02949E-05
Road 6	6	0300-0400	0.06304629	7.33647E-08	2.62249E-06	0.058318871	6.78636E-08	2.42585E-06	0.406647581	4.73201E-07	1.6915E-05	0.372661774	4.33653E-07	1.55013E-05	0.430980645	5.01517E-07	1.79272E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (November) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 6	6	0400-0500	0.068059667	1.14966E-07	4.10956E-06	0.063714333	1.07626E-07	3.84718E-06	0.403685778	6.81902E-07	2.43752E-05	0.374626444	6.32815E-07	2.26206E-05	0.438340778	7.40441E-07	2.64677E-05
Road 6	6	0500-0600	0.061407716	1.86713E-07	6.67422E-06	0.057156728	1.73787E-07	6.21219E-06	0.375305864	1.14113E-06	4.07909E-05	0.345465432	1.0504E-06	3.75476E-05	0.40262216	1.22419E-06	4.37598E-05
Road 6	6	0600-0700	0.065724897	3.57737E-07	1.27876E-05	0.06113731	3.32767E-07	1.18951E-05	0.420108862	2.28663E-06	8.17377E-05	0.386249828	2.10234E-06	7.515E-05	0.447387138	2.4351E-06	8.7045E-05
Road 6	6	0700-0800	0.061941039	5.37101E-07	1.91992E-05	0.057141883	4.95487E-07	1.77117E-05	0.360855887	3.12904E-06	0.000111851	0.32860671	2.84941E-06	0.000101855	0.385748593	3.34489E-06	0.000119566
Road 6	6	0800-0900	0.052302553	6.49855E-07	2.32297E-05	0.048405453	6.01434E-07	2.14988E-05	0.312547931	3.88338E-06	0.000138815	0.285552492	3.54797E-06	0.000126825	0.333957946	4.1494E-06	0.000148324
Road 6	6	0900-1000	0.055438799	6.58648E-07	2.3544E-05	0.051351675	6.1009E-07	2.18083E-05	0.31769346	3.7744E-06	0.000134919	0.290723428	3.45398E-06	0.000123466	0.342075103	4.06407E-06	0.000145274
Road 6	6	1000-1100	0.073975794	7.42813E-07	2.65525E-05	0.068762262	6.90462E-07	2.46812E-05	0.40761957	4.09303E-06	0.000146309	0.376363551	3.77918E-06	0.00013509	0.445125813	4.46964E-06	0.000159771
Road 6	6	1100-1200	0.08476015	8.46329E-07	3.02528E-05	0.079114605	7.89958E-07	2.82378E-05	0.444999117	4.44331E-06	0.00015883	0.413865263	4.13244E-06	0.000147718	0.492979868	4.9224E-06	0.000175956
Road 6	6	1200-1300	0.081114245	7.96223E-07	2.84617E-05	0.075745354	7.43521E-07	2.65779E-05	0.407990497	4.00486E-06	0.000143158	0.380229598	3.73236E-06	0.000133417	0.455974952	4.47588E-06	0.000159995
Road 6	6	1300-1400	0.093849098	9.17706E-07	3.28043E-05	0.087876065	8.59299E-07	3.07164E-05	0.480051631	4.6942E-06	0.000167799	0.448710441	4.38773E-06	0.000156843	0.536586507	5.24703E-06	0.00018756
Road 6	6	1400-1500	0.089258833	9.6161E-07	3.43737E-05	0.08357453	9.00371E-07	3.21846E-05	0.449815209	4.84598E-06	0.000173224	0.420360836	4.52866E-06	0.000161881	0.503935366	5.42903E-06	0.000194066
Road 6	6	1500-1600	0.078505534	8.2808E-07	2.96005E-05	0.073143434	7.7152E-07	2.75787E-05	0.409849893	4.32312E-06	0.000154534	0.380839413	4.01711E-06	0.000143595	0.453982847	4.78863E-06	0.000171174
Road 6	6	1600-1700	0.082265833	8.8936E-07	3.1791E-05	0.076365451	8.25572E-07	2.95109E-05	0.410242778	4.43506E-06	0.000158535	0.379646372	4.10429E-06	0.000146712	0.456011823	4.92986E-06	0.000176222
Road 6	6	1700-1800	0.06194382	7.09192E-07	2.53507E-05	0.05675759	6.49815E-07	2.32282E-05	0.321208066	3.67749E-06	0.000131456	0.292339525	3.34698E-06	0.000119641	0.349097115	3.9968E-06	0.000142869
Road 6	6	1800-1900	0.060391887	7.80969E-07	2.79165E-05	0.054849071	7.09291E-07	2.53543E-05	0.319693948	4.13418E-06	0.00014778	0.288024267	3.72464E-06	0.000133141	0.342873338	4.43393E-06	0.000158495
Road 6	6	1900-2000	0.072292786	7.10988E-07	2.54149E-05	0.065429408	6.43487E-07	2.30021E-05	0.383765687	3.77427E-06	0.000134915	0.343988378	3.38307E-06	0.000120931	0.409417786	4.02656E-06	0.000143933
Road 6	6	2000-2100	0.057328254	4.4976E-07	1.60771E-05	0.051724761	4.05799E-07	1.45057E-05	0.339262464	2.66163E-06	9.51425E-05	0.302669354	2.37455E-06	8.48804E-05	0.354394115	2.78034E-06	9.9386E-05
Road 6	6	2100-2200	0.079629528	5.38037E-07	1.92327E-05	0.072765278	4.91657E-07	1.75748E-05	0.428031361	2.8921E-06	0.000103381	0.388438722	2.62459E-06	9.38183E-05	0.461204	3.11624E-06	0.000111393
Road 6	6	2200-2300	0.059652861	4.26572E-07	1.52482E-05	0.054610184	3.90512E-07	1.39592E-05	0.342186509	2.44694E-06	8.74683E-05	0.309084331	2.21023E-06	7.90068E-05	0.363694514	2.60074E-06	9.2966E-05
Road 6	6	2300-0000	0.04016028	2.69092E-07	9.61895E-06	0.036801765	2.46588E-07	8.81454E-06	0.255694678	1.71327E-06	6.12424E-05	0.231238711	1.5494E-06	5.53849E-05	0.268040476	1.79599E-06	6.41994E-05
Road 7	7	0000-0100	0.074674768	2.01656E-07	5.03399E-06	0.06812405	1.83966E-07	4.59239E-06	0.444954509	1.20158E-06	2.99954E-05	0.40257014	1.08712E-06	2.71381E-05	0.47069419	1.27109E-06	3.17305E-05
Road 7	7	0100-0200	0.091176232	1.91944E-07	4.79154E-06	0.084919172	1.78771E-07	4.46272E-06	0.501235559	1.0552E-06	2.63412E-05	0.464561448	9.77992E-07	2.44139E-05	0.549480621	1.15676E-06	2.88766E-05
Road 7	7	0200-0300	0.078359845	1.06941E-07	2.66961E-06	0.072656064	9.91572E-08	2.47529E-06	0.447292247	6.10441E-07	1.52386E-05	0.411565426	5.61683E-07	1.40214E-05	0.484221489	6.6084E-07	1.64967E-05
Road 7	7	0300-0400	0.079923714	8.81888E-08	2.20148E-06	0.073885	8.15256E-08	2.03515E-06	0.485249808	5.35431E-07	1.33661E-05	0.445659211	4.91746E-07	1.22756E-05	0.519544211	5.73272E-07	1.43107E-05
Road 7	7	0400-0500	0.088386057	1.4244E-07	3.55576E-06	0.082463269	1.32895E-07	3.31749E-06	0.495514144	7.98552E-07	1.99345E-05	0.459520856	7.40547E-07	1.84865E-05	0.541984125	8.73442E-07	2.1804E-05
Road 7	7	0500-0600	0.08022697	2.30627E-07	5.7572E-06	0.074709192	2.14765E-07	5.36124E-06	0.456344697	1.31185E-06	3.27479E-05	0.421668535	1.21216E-06	3.02595E-05	0.496377727	1.42693E-06	3.56208E-05
Road 7	7	0600-0700	0.084964426	4.36681E-07	1.0901E-05	0.079068423	4.06378E-07	1.01445E-05	0.497408609	2.55647E-06	6.38179E-05	0.458960911	2.35887E-06	5.8885E-05	0.538029334	2.76524E-06	6.90295E-05
Road 7	7	0700-0800	0.081612938	6.69471E-07	1.67122E-05	0.075411051	6.18597E-07	1.54422E-05	0.44935531	3.68606E-06	9.20161E-05	0.411589465	3.37627E-06	8.42827E-05	0.487000516	3.99487E-06	9.97249E-05
Road 7	7	0800-0900	0.080698482	1.00174E-06	2.50067E-05	0.07481619	9.28723E-07	2.31839E-05	0.441760477	5.48375E-06	0.000136892	0.406434473	5.04523E-06	0.000125945	0.481250663	5.97395E-06	0.000149129
Road 7	7	0900-1000	0.082322767	9.46606E-07	2.36304E-05	0.07646385	8.79236E-07	2.19486E-05	0.434035624	4.99085E-06	0.000124588	0.400532248	4.60561E-06	0.000114971	0.476996097	5.48484E-06	0.00013692
Road 7	7	1000-1100	0.097456087	9.83373E-07	2.45482E-05	0.090632591	9.14521E-07	2.28294E-05	0.514708405	5.19362E-06	0.00012965	0.476644649	4.80954E-06	0.000120062	0.56727724	5.72406E-06	0.000142891
Road 7	7	1100-1200	0.107413078	1.08228E-06	2.70173E-05	0.100453258	1.01216E-06	2.52667E-05	0.551255819	5.5544E-06	0.000138656	0.514557527	5.18463E-06	0.000129425	0.615010785	6.19679E-06	0.000154692
Road 7	7	1200-1300	0.104551602	1.05193E-06	2.62597E-05	0.097711355	9.83111E-07	2.45417E-05	0.528618817	5.31863E-06	0.00013277	0.493532977	4.96562E-06	0.000123958	0.591244331	5.94873E-06	0.0001485
Road 7	7	1300-1400	0.111279428	1.10185E-06	2.75058E-05	0.104358916	1.03333E-06	2.57952E-05	0.563699474	5.58157E-06	0.000139334	0.528024564	5.22833E-06	0.000130516	0.63238348	6.26166E-06	0.000156311
Road 7	7	1400-1500	0.103422752	1.07211E-06	2.67633E-05	0.09715465	1.00713E-06	2.51413E-05	0.527024642	5.46328E-06	0.000136381	0.49439475	5.12503E-06	0.000127937	0.5915494	6.13216E-06	0.000153079
Road 7	7	1500-1600	0.096399848	9.81112E-07	2.44918E-05	0.089829925	9.14247E-07	2.28226E-05	0.498506482	5.07356E-06	0.000126653	0.463681864	4.71914E-06	0.000117805	0.553511789	5.63338E-06	0.000140628
Road 7	7	1600-1700	0.100212717	1.05484E-06	2.63322E-05	0.093105013	9.80021E-07	2.44645E-05	0.500161352	5.26469E-06	0.000131424	0.463800191	4.88195E-06	0.000121869	0.556905204	5.86197E-06	0.000146334
Road 7	7	1700-1800	0.07770443	8.65298E-07	2.16006E-05	0.071122399	7.92002E-07	1.97709E-05	0.403909503	4.49784E-06	0.000112281	0.36791352	4.097E-06	0.000102274	0.439035919	4.889E-06	0.000122045
Road 7	7	1800-1900	0.071779602	8.30584E-07	2.07341E-05	0.065140427	7.5376E-07	1.88163E-05	0.379871944	4.39562E-06	0.000109729	0.342688469	3.96536E-06	9.89882E-05	0.407828896	4.71912E-06	0.000117805
Road 7	7	1900-2000	0.083884128	7.33163E-07	1.83021E-05	0.075966696	6.63963E-07	1.65747E-05	0.447890949	3.91465E-06	9.77225E-05	0.402673888	3.51945E-06	8.78568E-05	0.478640584	4.18341E-06	0.000104432
Road 7	7	2000-2100	0.077588992	5.58735E-07	1.39479E-05	0.070021573	5.04241E-07	1.25875E-05	0.42766127	3.07968E-06	7.68789E-05	0.382886714	2.75725E-06	6.883E-05	0.452908286	3.26149E-06	8.14175E-05
Road 7	7	2100-2200	0.088675957	5.33004E-07	1.33055E-05	0.081066646	4.87267E-07	1.21638E-05	0.477237203	2.86853E-06	7.16078E-05	0.433789247	2.60737E-06	6.50886E-05	0.514855893	3.09464E-06	7.72523E-05
Road 7	7	2200-2300	0.0743919	4.82789E-07	1.2052E-05	0.068072506	4.41777E-07	1.10282E-05	0.413610185	2.68425E-06	6.70077E-05	0.374771029	2.43219E-06	6.07154E-05	0.442843535	2.87397E-06	7.17437E-05
Road 7	7	2300-0000	0.052508919	3.13328E-07	7.82169E-06	0.048090681	2.86964E-07	7.16355E-06	0.31508627	1.88016E-06	4.6935E-05	0.285806813	1.70545E-06	4.25736E-05	0.333897494	1.99241E-06	4.97371E-05
Road 8	8	0000-0100	0.236515	1.72011E-07	2.83554E-06	0.215820556	1.5696E-07	2.58743E-06	1.171743611	8.52177E-07	1.40478E-05	1.06873	7.77258E-07	1.28128E-05	1.284550556	9.34219E-07	1.54002E-05
Road 8	8	0100-0200	0.243711333	1.47704E-07	2.43484E-06	0.227224	1.37712E-07	2.27012E-06	1.203919333	7.29648E-07	1.2028E-05	1.122305667	6.80185E-07	1.12126E-05	1.349529667	8.17897E-07	1.34827E-05
Road 8	8	0200-0300	0.231124667	7.00378E-08	1.15455E-06	0.214579333	6.5024E-08	1.0719E-06	1.200438	3.63769E-07	5.9966E-06	1.114383333	3.37692E-07	5.56672E-06	1.328962667	4.02716E-07	6.63862E-06
Road 8	8	0300-0400	0.210648571	5.95774E-08	9.82111E-07	0.194861429	5.51123E-08	9.08506E-07	1.071534286	3.0306E-07	4.99583E-06	0.991072857	2.80303E-07	4.6207E-06	1.185934286	3.35416E-07	5.5292E-06
Road 8	8	0400-0500	0.238044762	1.00989E-07	1.66476E-06	0.222982381	9.45986E-08	1.55942E-06	1.141950476	4.84464E-07	7.9862E-06	1.069634286	4.53784E-07	7.48046E-06	1.292616667	5.48383E-07	9.03988E-06
Road 8	8	0500-0600	0.228241176	1.56772E-07	2.58432E-06	0.212633529	1.46051E-07	2.4076E-06	1.076264412	7.39252E-07	1.21863E-05	1.002393824	6.88513E-07	1.13499E-05	1.215027353	8.34564E-07	1.37575E-05
Road 8	8	0600-0700	0.255222903	3.19673E-07	5.26969E-06	0.23789871	2.97974E-07	4.91199E-06	1.18929129	1.48962E-06	2.45558E-05	1.107934032	1.38772E-06	2.2876E-05	1.345832742	1.68569E-06	2.7788E-05
Road 8	8	0700-0800	0.255245196	5.2596E-07	8.67025E-06	0.235859412	4.86013E-07	8.01175E-06	1.201445196	2.47571E-06	4.08111E-05	1.109413333	2.28606E-06	3.76849E-05	1.345272745	2.77208E-06	4.56967E-05
Road 8	8	0800-0900	0.282173906	1.09449E-06	1.80423E-05	0.261834323	1.0156E-06	1.67418E-05	1.332991302	5.17039E-06	8.52319E-05	1.236373385	4.79563E-06	7.90542E-05	1.498207708	5.81123E-06	9.57959E-05
Road 8	8	0900-1000	0.302032152	9.64062E-07	1.58922E-05	0.280161962	8.94254E-07	1.47414E-05	1.356243924	4.32902E-06	7.13623E-05	1.257874367	4.01503E-06	6.61863E-05	1.538036329	4.90929E-06	8.09278E-05
Road 8	8	1000-1100	0.284633938	9.20029E-07	1.51663E-05	0.264664688	8.55482E-07	1.41023E-05	1.316802438	4.25633E-06	7.0164E-05	1.223859438	3.95591E-06	6.52117E-05	1.488524125	4.81139E-06	7.9314E-05
Road 8	8	1100-1200	0.293935975	9.44158E-07	1.55641E-05	0.274163962	8.80648E-07	1.45171E-05	1.372643396	4.4091E-06	7.26823E-05	1.280100126	4.11184E-06	6.77821E-05	1.554264088	4.99248E-06	8.22992E-05
Road 8	8	1200-1300	0.295158059	1.01367E-06	1.671E-05	0.275389059	9.45781E-07	1.55908E-05	1.389908	4.77342E-06	7.86881E-05	1.296561941	4.45284E-06	7.34034E-05	1.571951	5.39862E-06	8.89942E-05
Road 8	8	1300-1400	0.269615679	8.82379E-07	1.45457E-05	0.252312654	8.25751E-07	1.36122E-05	1.252489198	4.09906E-06	6.75714E-05	1.171885617	3.83526E-06	6.32229E-05	1.424198272	4.66101E-06	7.6835E-05
Road 8	8	1400-1500	0.263496763	7.3992E-07	1.21973E-05	0.246572878	6.92397E-07	1.14139E-05	1.274538273	3.57901E-06	5.89986E-05	1.192482086	3.34859E-06	5.52002E-05	1.439054964	4.04098E-06	6.66141E-05
Road 8	8	1500-1600	0.271996978	7.63789E-07	1.25908E-05	0.253281439	7.11235E-07	1.17244E-05	1.282883165	3.60244E-06	5.93849E-05	1.194085252	3.35309E-06	5.52744E-05	1.447366691	4.06432E-06	6.69988E-05
Road 8	8	1600-1700	0.272049933	8.18898E-07	1.34992E-05	0.252335034	7.59554E-07	1.2521E-05	1.271543758	3.82748E-06	6.30945E-05	1.179029329	3.549E-06	5.85039E-05	1.431364362	4.30855E-06	7.10248E-05
Road 8	8	1700-1800	0.223815	7.05356E-07	1.16275E-05	0.204994615	6.46044E-07	1.06498E-05	1.087725641	3.42798E-06	5.6509E-05	0.995132051	3.13617E-06	5.16986E-05	1.200126667	3.78222E-06	6.23484E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (November) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 8	8	1800-1900	0.224248692	4.8474E-07	7.99075E-06	0.20382486	4.40591E-07	7.26298E-06	1.11705486	2.41464E-06	3.98045E-05	1.014594579	2.19316E-06	3.61535E-05	1.218419439	2.63376E-06	4.34165E-05
Road 8	8	1900-2000	0.224226753	3.48797E-07	5.74979E-06	0.203145974	3.16005E-07	5.20922E-06	1.144166234	1.77981E-06	2.93396E-05	1.036332338	1.61207E-06	2.65744E-05	1.239478312	1.92808E-06	3.17836E-05
Road 8	8	2000-2100	0.247053247	3.84305E-07	6.33512E-06	0.223026104	3.46929E-07	5.719E-06	1.150528961	1.78971E-06	2.95027E-05	1.037549221	1.61397E-06	2.66056E-05	1.260575325	1.96089E-06	3.23246E-05
Road 8	8	2100-2200	0.20302463	2.21481E-07	3.65104E-06	0.185708519	2.02591E-07	3.33964E-06	1.032515	1.12638E-06	1.8568E-05	0.942752037	1.02846E-06	1.69537E-05	1.128460556	1.23105E-06	2.02934E-05
Road 8	8	2200-2300	0.244010938	3.15489E-07	5.20072E-06	0.223639688	2.8915E-07	4.76653E-06	1.173448906	1.51719E-06	2.50102E-05	1.074895781	1.38976E-06	2.29097E-05	1.298535469	1.67891E-06	2.76763E-05
Road 8	8	2300-0000	0.191554151	2.05098E-07	3.38097E-06	0.175671887	1.88093E-07	3.10064E-06	0.959224151	1.02705E-06	1.69305E-05	0.878969434	9.41119E-07	1.5514E-05	1.054641321	1.12921E-06	1.86146E-05
Road 9	9	0000-0100	0.205386074	5.45457E-08	1.62828E-06	0.190345591	5.05513E-08	1.50904E-06	0.923653681	2.45301E-07	7.32264E-06	0.849684886	2.25656E-07	6.73623E-06	1.040030477	2.76208E-07	8.24527E-06
Road 9	9	0100-0200	0.222171734	4.63599E-08	1.38392E-06	0.209739459	4.37657E-08	1.30648E-06	0.945383003	1.9727E-07	5.88886E-06	0.886713411	1.85028E-07	5.5234E-06	1.09645287	2.28794E-07	6.82988E-06
Road 9	9	0200-0300	0.087633326	8.31191E-09	2.48125E-07	0.081355631	7.71648E-09	2.3035E-07	0.622404957	5.90343E-08	1.76228E-06	0.572907219	5.43395E-08	1.62213E-06	0.65426285	6.2056E-08	1.85248E-06
Road 9	9	0300-0400	0.106078145	8.0491E-09	2.40279E-07	0.098250372	7.45514E-09	2.22549E-07	0.641872598	4.87046E-08	1.45392E-06	0.593711632	4.50502E-08	1.34483E-06	0.691962004	5.25054E-08	1.56738E-06
Road 9	9	0400-0500	0.239671885	4.54651E-08	1.35721E-06	0.226656708	4.29962E-08	1.28351E-06	0.979487007	1.85806E-07	5.54663E-06	0.920031419	1.74528E-07	5.20995E-06	1.146688127	2.17524E-07	6.49346E-06
Road 9	9	0500-0600	0.173018791	5.57961E-08	1.66561E-06	0.163006409	5.25672E-08	1.56922E-06	0.862457984	2.7813E-07	8.30267E-06	0.80778276	2.60498E-07	7.77632E-06	0.970789169	3.13066E-07	9.34554E-06
Road 9	9	0600-0700	0.204203078	1.23958E-07	3.70035E-06	0.193012097	1.17164E-07	3.49756E-06	1.05031146	6.37572E-07	1.90326E-05	0.982623599	5.96484E-07	1.78061E-05	1.175635696	7.13648E-07	2.13036E-05
Road 9	9	0700-0800	0.173472898	1.61246E-07	4.81347E-06	0.163591163	1.52061E-07	4.53928E-06	0.976416744	9.07596E-07	2.70933E-05	0.909991477	8.45853E-07	2.52502E-05	1.073582639	9.97914E-07	2.97894E-05
Road 9	9	0800-0900	0.269320627	5.87528E-07	1.75387E-05	0.253411543	5.52822E-07	1.65027E-05	1.282157354	2.79705E-06	8.34968E-05	1.197156878	2.61162E-06	7.79614E-05	1.450568421	3.16444E-06	9.44641E-05
Road 9	9	0900-1000	0.2783989	4.5946E-07	1.37157E-05	0.263326826	4.34586E-07	1.29731E-05	1.202523308	1.98461E-06	5.92439E-05	1.126067548	1.85843E-06	5.54772E-05	1.389394374	2.29301E-06	6.84503E-05
Road 9	9	1000-1100	0.285630007	3.95538E-07	1.18075E-05	0.26851405	3.71836E-07	1.10999E-05	1.208020566	1.67286E-06	4.99376E-05	1.128440359	1.56265E-06	4.66479E-05	1.396954409	1.93449E-06	5.77478E-05
Road 9	9	1100-1200	0.199619208	2.87791E-07	8.59106E-06	0.187223913	2.69921E-07	8.0576E-06	1.042694589	1.50325E-06	4.48747E-05	0.976276386	1.4075E-06	4.20162E-05	1.163500299	1.67742E-06	5.00738E-05
Road 9	9	1200-1300	0.293944844	4.12628E-07	1.23177E-05	0.279279582	3.92042E-07	1.17031E-05	1.312020236	1.84176E-06	5.49798E-05	1.242341315	1.74395E-06	5.20599E-05	1.521620896	2.13599E-06	6.3763E-05
Road 9	9	1300-1400	0.334790264	3.87404E-07	1.15647E-05	0.318682568	3.68765E-07	1.10083E-05	1.276439855	1.47704E-06	4.40921E-05	1.210154818	1.40034E-06	4.18024E-05	1.528837385	1.7691E-06	5.28107E-05
Road 9	9	1400-1500	0.215985577	2.78609E-07	8.31696E-06	0.206437304	2.66292E-07	7.94928E-06	1.041322644	1.34325E-06	4.00982E-05	0.989143222	1.27594E-06	3.80889E-05	1.195580526	1.54223E-06	4.60382E-05
Road 9	9	1500-1600	0.18084501	1.95543E-07	5.8373E-06	0.170967591	1.84863E-07	5.51848E-06	0.921277104	9.96154E-07	2.97369E-05	0.86812113	9.38678E-07	2.80211E-05	1.039088721	1.12354E-06	3.35396E-05
Road 9	9	1600-1700	0.19029332	2.88785E-07	8.62073E-06	0.180696442	2.74221E-07	8.18597E-06	1.028802701	1.56129E-06	4.66072E-05	0.972754551	1.47623E-06	4.40681E-05	1.153450993	1.75045E-06	5.2254E-05
Road 9	9	1700-1800	0.164112255	2.14809E-07	6.4124E-06	0.154951575	2.02818E-07	6.05447E-06	0.967277688	1.26608E-06	3.77947E-05	0.906639818	1.18671E-06	3.54254E-05	1.061591393	1.38953E-06	4.14799E-05
Road 9	9	1800-1900	0.163869737	1.36777E-07	4.08303E-06	0.154524755	1.28977E-07	3.85018E-06	0.939424408	7.84108E-07	2.3407E-05	0.880727239	7.35115E-07	2.19445E-05	1.035251994	8.64092E-07	2.57946E-05
Road 9	9	1900-2000	0.171151553	1.39608E-07	4.16754E-06	0.160136313	1.30623E-07	3.89932E-06	0.912284291	7.44149E-07	2.22141E-05	0.841069369	6.86059E-07	2.048E-05	1.001205683	8.16682E-07	2.43794E-05
Road 9	9	2000-2100	0.182194927	1.0023E-07	2.99202E-06	0.167535536	9.21651E-08	2.75129E-06	0.806809003	4.43844E-07	1.32495E-05	0.737382092	4.0565E-07	1.21094E-05	0.904917628	4.97815E-07	1.48606E-05
Road 9	9	2100-2200	0.021825239	1.15925E-08	3.46057E-07	0.020347564	1.08077E-08	3.22627E-07	0.317152676	1.68457E-07	5.02872E-06	0.291122185	1.5463E-07	4.61598E-06	0.311469749	1.65438E-07	4.93861E-06
Road 9	9	2200-2300	0.174619045	1.09312E-07	3.26314E-06	0.162348683	1.01631E-07	3.03385E-06	0.843852113	5.28253E-07	1.57692E-05	0.779733132	4.88114E-07	1.4571E-05	0.942081815	5.89745E-07	1.76049E-05
Road 9	9	2300-0000	0.141058196	8.02751E-08	2.39635E-06	0.131894494	7.50601E-08	2.24067E-06	0.721226479	4.10444E-07	1.22525E-05	0.668570687	3.80478E-07	1.13579E-05	0.800465181	4.55538E-07	1.35986E-05
Road 10	10	0000-0100	0.288816908	2.22059E-07	4.93741E-06	0.264489786	2.03355E-07	4.52153E-06	1.430783132	1.10007E-06	2.44596E-05	1.30806967	1.00572E-06	2.23618E-05	1.572559455	1.20907E-06	2.68833E-05
Road 10	10	0100-0200	0.282022903	1.63831E-07	3.64273E-06	0.263831218	1.53263E-07	3.40776E-06	1.386070537	8.05187E-07	1.79031E-05	1.294806512	7.5217E-07	1.67243E-05	1.55863773	9.05434E-07	2.0132E-05
Road 10	10	0200-0300	0.281254963	9.13033E-08	2.0301E-06	0.261099942	8.47604E-08	1.88462E-06	1.364716378	4.43025E-07	9.85053E-06	1.265422431	4.10792E-07	9.13383E-06	1.526522373	4.95552E-07	1.10185E-05
Road 10	10	0300-0400	0.255588116	5.24028E-08	1.16516E-06	0.236322346	4.84528E-08	1.07733E-06	1.338280564	2.74385E-07	6.10088E-06	1.235463841	2.53305E-07	5.63216E-06	1.471786187	3.01758E-07	6.70949E-06
Road 10	10	0400-0500	0.29878128	1.17412E-07	2.61063E-06	0.281072517	1.10453E-07	2.4559E-06	1.395616215	5.48436E-07	1.21943E-05	1.309484417	5.14589E-07	1.14417E-05	1.590556934	6.25043E-07	1.38976E-05
Road 10	10	0500-0600	0.274054839	1.91979E-07	4.2686E-06	0.256796715	1.7989E-07	3.99979E-06	1.286466495	9.01187E-07	2.00376E-05	1.202187911	8.42149E-07	1.87249E-05	1.458984626	1.02204E-06	2.27247E-05
Road 10	10	0600-0700	0.333608261	4.67394E-07	1.03924E-05	0.313907979	4.39793E-07	9.77867E-06	1.595971549	2.236E-06	4.97168E-05	1.498004952	2.09874E-06	4.6665E-05	1.811912932	2.53854E-06	5.64436E-05
Road 10	10	0700-0800	0.332725753	7.33345E-07	1.63057E-05	0.31024788	6.83803E-07	1.52042E-05	1.610646928	3.54995E-06	7.89321E-05	1.49777959	3.30119E-06	7.34009E-05	1.808027471	3.98499E-06	8.86051E-05
Road 10	10	0800-0900	0.352994118	1.49572E-06	3.3257E-05	0.328428608	1.39163E-06	3.09426E-05	1.688865376	7.15615E-06	0.000159115	1.568342176	6.64546E-06	0.00014776	1.896770783	8.03709E-06	0.000178702
Road 10	10	0900-1000	0.389440534	1.31746E-06	2.92934E-05	0.364440295	1.23289E-06	2.74129E-05	1.806102662	6.10998E-06	0.000135854	1.685340625	5.70145E-06	0.00012677	2.04978092	6.93434E-06	0.000154183
Road 10	10	1000-1100	0.387833484	1.42468E-06	3.16773E-05	0.362873622	1.33299E-06	2.96386E-05	1.702807156	6.25513E-06	0.000139081	1.587953812	5.83323E-06	0.0001297	1.950827434	7.16621E-06	0.000159339
Road 10	10	1100-1200	0.374719894	1.3765E-06	3.06062E-05	0.350783198	1.28858E-06	2.86511E-05	1.703274387	6.25685E-06	0.000139119	1.591511202	5.84629E-06	0.000129991	1.942294399	7.13487E-06	0.000158642
Road 10	10	1200-1300	0.390282121	1.48035E-06	3.29151E-05	0.366536612	1.39028E-06	3.09125E-05	1.785667055	6.77308E-06	0.000150597	1.675325022	6.35455E-06	0.000141291	2.041861634	7.74483E-06	0.000172204
Road 10	10	1300-1400	0.379979439	1.2465E-06	2.77157E-05	0.358086231	1.17468E-06	2.61188E-05	1.703168279	5.58716E-06	0.000124229	1.602730252	5.25768E-06	0.000116903	1.960816483	6.43236E-06	0.000143022
Road 10	10	1400-1500	0.353783229	1.09408E-06	2.43265E-05	0.334003378	1.03291E-06	2.29664E-05	1.692781509	5.23494E-06	0.000116397	1.596166379	4.93616E-06	0.000109754	1.930169757	5.96907E-06	0.00013272
Road 10	10	1500-1600	0.349475088	1.10464E-06	2.45613E-05	0.327264948	1.03444E-06	2.30004E-05	1.621327184	5.12478E-06	0.000113948	1.517190761	4.79562E-06	0.000106629	1.844455709	5.83005E-06	0.000129629
Road 10	10	1600-1700	0.337668262	1.18847E-06	2.64254E-05	0.315969768	1.1121E-06	2.47273E-05	1.590591779	5.59833E-06	0.000124477	1.485743818	5.2293E-06	0.000116272	1.801713587	6.3414E-06	0.000140999
Road 10	10	1700-1800	0.314453868	1.04767E-06	2.32946E-05	0.291635309	9.71644E-07	2.16042E-05	1.552137681	5.17127E-06	0.000114982	1.438540626	4.7928E-06	0.000106566	1.730175935	5.76444E-06	0.000128171
Road 10	10	1800-1900	0.319002372	6.59495E-07	1.46637E-05	0.292983297	6.05704E-07	1.34677E-05	1.544198544	3.19243E-06	7.09827E-05	1.416131756	2.92767E-06	6.50958E-05	1.709115053	3.53337E-06	7.85634E-05
Road 10	10	1900-2000	0.280070202	5.21586E-07	1.15973E-05	0.257060611	4.78734E-07	1.06445E-05	1.421411375	2.64715E-06	5.88586E-05	1.300853112	2.42263E-06	5.38665E-05	1.557913722	2.90137E-06	6.4511E-05
Road 10	10	2000-2100	0.324107811	3.98708E-07	8.86514E-06	0.293803757	3.61428E-07	8.03625E-06	1.51860912	1.86815E-06	4.15377E-05	1.374063932	1.69033E-06	3.7584E-05	1.667867689	2.05176E-06	4.56203E-05
Road 10	10	2100-2200	0.267105008	3.37712E-07	7.50892E-06	0.2492856	3.15182E-07	7.00798E-06	1.398978916	1.76879E-06	3.93284E-05	1.303902615	1.64858E-06	3.66556E-05	1.553188215	1.96376E-06	4.36636E-05
Road 10	10	2200-2300	0.280118915	3.68524E-07	8.19402E-06	0.259378326	3.41238E-07	7.58732E-06	1.37283399	1.8061E-06	4.0158E-05	1.27081545	1.67188E-06	3.71738E-05	1.530193776	2.01312E-06	4.47611E-05
Road 10	10	2300-0000	0.257540797	3.16819E-07	7.04437E-06	0.237216795	2.91817E-07	6.48846E-06	1.263149328	1.55389E-06	3.45502E-05	1.16135821	1.42867E-06	3.1766E-05	1.398575005	1.72048E-06	3.82545E-05
Road 11	11	0000-0100	0.323078373	2.46796E-07	2.04719E-06	0.295729785	2.25905E-07	1.8739E-06	1.566612239	1.19672E-06	9.92687E-06	1.431628559	1.09361E-06	9.07154E-06	1.727358345	1.31951E-06	1.09454E-05
Road 11	11	0100-0200	0.321154238	1.72843E-07	1.43375E-06	0.300339808	1.61641E-07	1.34083E-06	1.53205489	8.24543E-07	6.83965E-06	1.430040243	7.6964E-07	6.38422E-06	1.730380051	9.31281E-07	7.72505E-06
Road 11	11	0200-0300	0.280694493	7.30975E-08	6.0635E-07	0.26056521	6.78555E-08	5.62867E-07	1.449151785	3.77383E-07	3.13042E-06	1.343549073	3.49883E-07	2.9023E-06	1.604114283	4.17738E-07	3.46517E-06
Road 11	11	0300-0400	0.300828129	7.31179E-08	6.06519E-07	0.278192963	6.76163E-08	5.60883E-07	1.519068258	3.69218E-07	3.06269E-06	1.404539038	3.41381E-07	2.83178E-06	1.682732001	4.08997E-07	3.39267E-06
Road 11	11	0400-0500	0.308755972	1.07207E-07	8.8929E-07	0.290575394	1.00894E-07	8.36926E-07	1.422757809	4.94013E-07	4.09788E-06	1.335053762	4.6356E-07	3.84527E-06	1.625629156	5.64455E-07	4.6822E-06
Road 11	11	0500-0600	0.250067387	1.17219E-07	9.72342E-07	0.234104035	1.09736E-07	9.10271E-07	1.239795767	5.81154E-07	4.82072E-06	1.15773359	5.42688E-07	4.50164E-06	1.391837625	6.52424E-07	5.41191E-06
Road 11	11	0600-0700	0.272043284	2.45595E-07	2.03723E-06	0.255239852	2.30425E-07	1.91139E-06	1.369176816	1.23606E-06	1.02532E-05	1.278461572	1.15417E-06	9.57391E-06	1.533701424	1.38459E-06	1.14853E-05
Road 11	11	0700-0800	0.329629376	6.23778E-07	5.17429E-06	0.30597811	5.79021E-07	4.80303E-06	1.652444683	3.12702E-06	2.59389E-05	1.529791829	2.89492E-06	2.40136E-05	1.835769939	3.47394E-06	2.88166E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (November) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 11	11	0800-0900	0.348588939	1.24064E-06	1.02912E-05	0.325307139	1.15778E-06	9.60386E-06	1.665637879	5.92805E-06	4.91737E-05	1.549151878	5.51347E-06	4.57347E-05	1.874459017	6.67125E-06	5.53386E-05
Road 11	11	0900-1000	0.351920318	8.9813E-07	7.45006E-06	0.329169982	8.40069E-07	6.96844E-06	1.611652966	4.11307E-06	3.41183E-05	1.499681772	3.82731E-06	3.17479E-05	1.828851754	4.66738E-06	3.87163E-05
Road 11	11	1000-1100	0.358777898	7.53683E-07	6.25186E-06	0.33528831	7.04338E-07	5.84254E-06	1.620063839	3.40326E-06	2.82303E-05	1.50904663	3.17005E-06	2.62958E-05	1.844334939	3.87438E-06	3.21383E-05
Road 11	11	1100-1200	0.314827611	7.43343E-07	6.16609E-06	0.294008645	6.94187E-07	5.75834E-06	1.56155069	3.68699E-06	3.05839E-05	1.457254613	3.44074E-06	2.85412E-05	1.751263258	4.13493E-06	3.42996E-05
Road 11	11	1200-1300	0.383005862	1.0905E-06	9.04581E-06	0.359483481	1.02353E-06	8.49026E-06	1.789029865	5.09377E-06	4.22532E-05	1.676639737	4.77377E-06	3.95988E-05	2.036123218	5.7973E-06	4.8089E-05
Road 11	11	1300-1400	0.396256547	8.32414E-07	6.90494E-06	0.373313196	7.84217E-07	6.50514E-06	1.73417347	3.64297E-06	3.02187E-05	1.629734143	3.42357E-06	2.83988E-05	2.00304734	4.20779E-06	3.4904E-05
Road 11	11	1400-1500	0.3157072	6.35799E-07	5.27401E-06	0.297678883	5.99492E-07	4.97284E-06	1.522819119	3.06679E-06	2.54393E-05	1.431950319	2.88379E-06	2.39213E-05	1.729629201	3.48328E-06	2.88941E-05
Road 11	11	1500-1600	0.281613833	5.72028E-07	4.74502E-06	0.263413031	5.35058E-07	4.43835E-06	1.404245758	2.85237E-06	2.36607E-05	1.312257675	2.66552E-06	2.21107E-05	1.575670705	3.20058E-06	2.65491E-05
Road 11	11	1600-1700	0.270503326	6.57473E-07	5.45379E-06	0.253173733	6.15353E-07	5.1044E-06	1.386564401	3.37012E-06	2.79554E-05	1.296020016	3.15005E-06	2.61299E-05	1.549193749	3.7654E-06	3.12343E-05
Road 11	11	1700-1800	0.27041756	6.71349E-07	5.5689E-06	0.249924341	6.20472E-07	5.14686E-06	1.411883894	3.5052E-06	2.90759E-05	1.303186971	3.23534E-06	2.68374E-05	1.553111312	3.85581E-06	3.19843E-05
Road 11	11	1800-1900	0.292317982	5.98846E-07	4.96748E-06	0.267750943	5.48518E-07	4.55E-06	1.492983588	3.05854E-06	2.53709E-05	1.366741423	2.79992E-06	2.32256E-05	1.634492366	3.34844E-06	2.77756E-05
Road 11	11	1900-2000	0.281782243	4.45177E-07	3.69278E-06	0.257643035	4.0704E-07	3.37643E-06	1.423110309	2.24832E-06	1.865E-05	1.295790589	2.04717E-06	1.69814E-05	1.553433624	2.45421E-06	2.03579E-05
Road 11	11	2000-2100	0.291199195	4.09499E-07	3.39683E-06	0.264019433	3.71277E-07	3.07978E-06	1.4077138	1.9796E-06	1.64209E-05	1.274085781	1.79168E-06	1.48622E-05	1.538105214	2.16296E-06	1.79419E-05
Road 11	11	2100-2200	0.206230779	2.07663E-07	1.72258E-06	0.188819338	1.90131E-07	1.57715E-06	1.119382564	1.12716E-06	9.34985E-06	1.024203123	1.03132E-06	8.55485E-06	1.213022461	1.22145E-06	1.0132E-05
Road 11	11	2200-2300	0.271205448	2.96631E-07	2.46058E-06	0.249835024	2.73257E-07	2.26669E-06	1.329394415	1.45403E-06	1.20613E-05	1.222041164	1.33661E-06	1.10873E-05	1.471876189	1.60986E-06	1.3354E-05
Road 11	11	2300-0000	0.259270405	2.70073E-07	2.24028E-06	0.238982247	2.4894E-07	2.06498E-06	1.292425453	1.34628E-06	1.11675E-05	1.188575343	1.2381E-06	1.02701E-05	1.427557591	1.48704E-06	1.23351E-05
Haul Road 1	HR1	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0700-0800	1.39449	2.62122E-06	3.94245E-06	1.28826	2.42154E-06	3.64212E-06	6.1097	1.14844E-05	1.72731E-05	5.6442	1.06094E-05	1.59571E-05	6.93246	1.30309E-05	1.95992E-05
Haul Road 1	HR1	0800-0900	1.39029	2.61333E-06	3.93057E-06	1.28946	2.4238E-06	3.64551E-06	6.09131	1.14498E-05	1.72211E-05	5.6496	1.06195E-05	1.59723E-05	6.93906	1.30433E-05	1.96178E-05
Haul Road 1	HR1	0900-1000	1.39319	2.61878E-06	3.93877E-06	1.29185	2.42829E-06	3.65227E-06	6.1042	1.14741E-05	1.72576E-05	5.6601	1.06393E-05	1.6002E-05	6.95195	1.30676E-05	1.96543E-05
Haul Road 1	HR1	1000-1100	1.38919	2.61126E-06	3.92746E-06	1.29135	2.42735E-06	3.65085E-06	6.08642	1.14406E-05	1.72073E-05	5.6576	1.06346E-05	1.59949E-05	6.94895	1.30619E-05	1.96458E-05
Haul Road 1	HR1	1100-1200	1.38509	2.60355E-06	3.91587E-06	1.29165	2.42791E-06	3.6517E-06	6.06863	1.14072E-05	1.7157E-05	5.6592	1.06376E-05	1.59995E-05	6.95085	1.30655E-05	1.96512E-05
Haul Road 1	HR1	1200-1300	1.3811	2.59605E-06	3.90459E-06	1.28816	2.42135E-06	3.64184E-06	6.05073	1.13736E-05	1.71064E-05	5.6439	1.06088E-05	1.59562E-05	6.93206	1.30302E-05	1.9598E-05
Haul Road 1	HR1	1300-1400	1.377	2.58835E-06	3.893E-06	1.28816	2.42135E-06	3.64184E-06	6.03315	1.13405E-05	1.70567E-05	5.6439	1.06088E-05	1.59562E-05	6.93206	1.30302E-05	1.9598E-05
Haul Road 1	HR1	1400-1500	1.377	2.58835E-06	3.893E-06	1.28816	2.42135E-06	3.64184E-06	6.03315	1.13405E-05	1.70567E-05	5.6439	1.06088E-05	1.59562E-05	6.93206	1.30302E-05	1.9598E-05
Haul Road 1	HR1	1500-1600	1.3732	2.5812E-06	3.88226E-06	1.27836	2.40293E-06	3.61413E-06	6.01646	1.13091E-05	1.70095E-05	5.60104	1.05283E-05	1.5835E-05	6.8794	1.29312E-05	1.94492E-05
Haul Road 1	HR1	1600-1700	1.3732	2.5812E-06	3.88226E-06	1.27327	2.39336E-06	3.59974E-06	6.01646	1.13091E-05	1.70095E-05	5.57854	1.0486E-05	1.57714E-05	6.85181	1.28793E-05	1.93712E-05
Haul Road 1	HR1	1700-1800	1.3818	2.59737E-06	3.90657E-06	1.26537	2.37852E-06	3.5774E-06	6.05393	1.13796E-05	1.71154E-05	5.54397	1.0421E-05	1.56737E-05	6.80934	1.27995E-05	1.92511E-05
Haul Road 1	HR1	1800-1900	1.3784	2.59098E-06	3.89696E-06	1.25238	2.3541E-06	3.54068E-06	6.03934	1.13521E-05	1.70742E-05	5.48721	1.03143E-05	1.55132E-05	6.73959	1.26684E-05	1.90539E-05
Haul Road 1	HR1	1900-2000	1.38609	2.60543E-06	3.9187E-06	1.25538	2.35974E-06	3.54916E-06	6.07263	1.14147E-05	1.71683E-05	5.5001	1.03385E-05	1.55497E-05	6.75548	1.26983E-05	1.90988E-05
Haul Road 1	HR1	2000-2100	1.38609	2.60543E-06	3.9187E-06	1.25128	2.35203E-06	3.53757E-06	6.07263	1.14147E-05	1.71683E-05	5.48231	1.03051E-05	1.54994E-05	6.73359	1.26571E-05	1.90369E-05
Haul Road 1	HR1	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0700-0800	1.39449	1.80633E-06	4.80829E-06	1.28826	1.66873E-06	4.442E-06	6.1097	7.91412E-06	2.10666E-05	5.6442	7.31114E-06	1.94615E-05	6.93246	8.97987E-06	2.39035E-05
Haul Road 2	HR2	0800-0900	1.39029	1.80089E-06	4.7938E-06	1.28946	1.67028E-06	4.44614E-06	6.09131	7.8903E-06	2.10032E-05	5.6496	7.31813E-06	1.94802E-05	6.93906	8.98842E-06	2.39263E-05
Haul Road 2	HR2	0900-1000	1.39319	1.80465E-06	4.8038E-06	1.29185	1.67338E-06	4.45438E-06	6.1042	7.90699E-06	2.10476E-05	5.6601	7.33174E-06	1.95164E-05	6.95195	9.00512E-06	2.39707E-05
Haul Road 2	HR2	1000-1100	1.38919	1.79947E-06	4.79001E-06	1.29135	1.67273E-06	4.45265E-06	6.08642	7.88396E-06	2.09863E-05	5.6576	7.3285E-06	1.95077E-05	6.94895	9.00123E-06	2.39604E-05
Haul Road 2	HR2	1100-1200	1.38509	1.79416E-06	4.77587E-06	1.29165	1.67312E-06	4.45369E-06	6.06863	7.86092E-06	2.0925E-05	5.6592	7.33057E-06	1.95133E-05	6.95085	9.00369E-06	2.39669E-05
Haul Road 2	HR2	1200-1300	1.3811	1.78899E-06	4.76212E-06	1.28816	1.6686E-06	4.44165E-06	6.05073	7.83773E-06	2.08633E-05	5.6439	7.31075E-06	1.94605E-05	6.93206	8.97935E-06	2.39022E-05
Haul Road 2	HR2	1300-1400	1.377	1.78368E-06	4.74798E-06	1.28816	1.6686E-06	4.44165E-06	6.03315	7.81496E-06	2.08027E-05	5.6439	7.31075E-06	1.94605E-05	6.93206	8.97935E-06	2.39022E-05
Haul Road 2	HR2	1400-1500	1.377	1.78368E-06	4.74798E-06	1.28816	1.6686E-06	4.44165E-06	6.03315	7.81496E-06	2.08027E-05	5.6439	7.31075E-06	1.94605E-05	6.93206	8.97935E-06	2.39022E-05
Haul Road 2	HR2	1500-1600	1.3732	1.77876E-06	4.73488E-06	1.27836	1.65591E-06	4.40786E-06	6.01646	7.79334E-06	2.07451E-05	5.60104	7.25523E-06	1.93127E-05	6.8794	8.91114E-06	2.37206E-05
Haul Road 2	HR2	1600-1700	1.3732	1.77876E-06	4.73488E-06	1.27327	1.64931E-06	4.39031E-06	6.01646	7.79334E-06	2.07451E-05	5.57854	7.22609E-06	1.92351E-05	6.85181	8.8754E-06	2.36255E-05
Haul Road 2	HR2	1700-1800	1.3818	1.7899E-06	4.76453E-06	1.26537	1.63908E-06	4.36307E-06	6.05393	7.84188E-06	2.08743E-05	5.54397	7.18131E-06	1.91159E-05	6.80934	8.82039E-06	2.3479E-05
Haul Road 2	HR2	1800-1900	1.3784	1.78549E-06	4.75281E-06	1.25238	1.62225E-06	4.31828E-06	6.03934	7.82298E-06	2.0824E-05	5.48721	7.10778E-06	1.89202E-05	6.73959	8.73004E-06	2.32385E-05
Haul Road 2	HR2	1900-2000	1.38609	1.79545E-06	4.77932E-06	1.25538	1.62614E-06	4.32863E-06	6.07263	7.8661E-06	2.09388E-05	5.5001	7.12448E-06	1.89647E-05	6.75548	8.75062E-06	2.32933E-05
Haul Road 2	HR2	2000-2100	1.38609	1.79545E-06	4.77932E-06	1.25128	1.62083E-06	4.31449E-06	6.07263	7.8661E-06	2.09388E-05	5.48231	7.10144E-06	1.89033E-05	6.73359	8.72227E-06	2.32178E-05
Haul Road 2	HR2	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (November) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Haul Road 2	HR2	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0700-0800	1.39449	1.80633E-06	4.80158E-06	1.28826	1.66873E-06	4.4358E-06	6.1097	7.91412E-06	2.10372E-05	5.6442	7.31114E-06	1.94344E-05	6.93246	8.97987E-06	2.38702E-05
Haul Road 3	HR3	0800-0900	1.39029	1.80089E-06	4.78712E-06	1.28946	1.67028E-06	4.43994E-06	6.09131	7.8903E-06	2.09739E-05	5.6496	7.31813E-06	1.9453E-05	6.93906	8.98842E-06	2.38929E-05
Haul Road 3	HR3	0900-1000	1.39319	1.80465E-06	4.79711E-06	1.29185	1.67338E-06	4.44817E-06	6.1042	7.90699E-06	2.10183E-05	5.6601	7.33174E-06	1.94892E-05	6.95195	9.00512E-06	2.39373E-05
Haul Road 3	HR3	1000-1100	1.38919	1.79947E-06	4.78333E-06	1.29135	1.67273E-06	4.44644E-06	6.08642	7.88396E-06	2.09571E-05	5.6576	7.3285E-06	1.94805E-05	6.94895	9.00123E-06	2.3927E-05
Haul Road 3	HR3	1100-1200	1.38509	1.79416E-06	4.76922E-06	1.29165	1.67312E-06	4.44748E-06	6.06863	7.86092E-06	2.08958E-05	5.6592	7.33057E-06	1.94861E-05	6.95085	9.00369E-06	2.39335E-05
Haul Road 3	HR3	1200-1300	1.3811	1.78899E-06	4.75548E-06	1.28816	1.6686E-06	4.43546E-06	6.05073	7.83773E-06	2.08342E-05	5.6439	7.31075E-06	1.94334E-05	6.93206	8.97935E-06	2.38688E-05
Haul Road 3	HR3	1300-1400	1.377	1.78368E-06	4.74136E-06	1.28816	1.6686E-06	4.43546E-06	6.03315	7.81496E-06	2.07737E-05	5.6439	7.31075E-06	1.94334E-05	6.93206	8.97935E-06	2.38688E-05
Haul Road 3	HR3	1400-1500	1.377	1.78368E-06	4.74136E-06	1.28816	1.6686E-06	4.43546E-06	6.03315	7.81496E-06	2.07737E-05	5.6439	7.31075E-06	1.94334E-05	6.93206	8.97935E-06	2.38688E-05
Haul Road 3	HR3	1500-1600	1.3732	1.77876E-06	4.72827E-06	1.27836	1.65591E-06	4.40172E-06	6.01646	7.79334E-06	2.07162E-05	5.60104	7.25523E-06	1.92858E-05	6.8794	8.91114E-06	2.36875E-05
Haul Road 3	HR3	1600-1700	1.3732	1.77876E-06	4.72827E-06	1.27327	1.64931E-06	4.38419E-06	6.01646	7.79334E-06	2.07162E-05	5.57854	7.22609E-06	1.92083E-05	6.85181	8.8754E-06	2.35925E-05
Haul Road 3	HR3	1700-1800	1.3818	1.7899E-06	4.75789E-06	1.26537	1.63908E-06	4.35699E-06	6.05393	7.84188E-06	2.08452E-05	5.54397	7.18131E-06	1.90893E-05	6.80934	8.82039E-06	2.34463E-05
Haul Road 3	HR3	1800-1900	1.3784	1.78549E-06	4.74618E-06	1.25238	1.62225E-06	4.31226E-06	6.03934	7.82298E-06	2.0795E-05	5.48721	7.10778E-06	1.88939E-05	6.73959	8.73004E-06	2.32061E-05
Haul Road 3	HR3	1900-2000	1.38609	1.79545E-06	4.77266E-06	1.25538	1.62614E-06	4.32259E-06	6.07263	7.8661E-06	2.09096E-05	5.5001	7.12448E-06	1.89382E-05	6.75548	8.75062E-06	2.32608E-05
Haul Road 3	HR3	2000-2100	1.38609	1.79545E-06	4.77266E-06	1.25128	1.62083E-06	4.30847E-06	6.07263	7.8661E-06	2.09096E-05	5.48231	7.10144E-06	1.8877E-05	6.73359	8.72227E-06	2.31855E-05
Haul Road 3	HR3	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (December) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 1	1	0000-0100	0.101331508	3.40434E-07	2.76948E-06	0.09211838	3.09482E-07	2.51768E-06	0.604914749	2.03228E-06	1.65329E-05	0.54604648	1.8345E-06	1.4924E-05	0.63816486	2.14398E-06	1.74416E-05
Road 1	1	0100-0200	0.078726147	1.61058E-07	1.31023E-06	0.07137	1.46008E-07	1.1878E-06	0.479193211	9.80331E-07	7.97514E-06	0.431153119	8.82051E-07	7.17562E-06	0.502523119	1.02806E-06	8.36342E-06
Road 1	1	0200-0300	0.076392987	1.10403E-07	8.98143E-07	0.069045974	9.97849E-08	8.11765E-07	0.496621039	7.17714E-07	5.83871E-06	0.442004935	6.38783E-07	5.1966E-06	0.511050909	7.38568E-07	6.00836E-06
Road 1	1	0300-0400	0.064440545	6.65208E-08	5.41157E-07	0.058011273	5.9884E-08	4.87165E-07	0.402483636	4.15477E-07	3.37996E-06	0.356681455	3.68196E-07	2.99533E-06	0.414692727	4.2808E-07	3.48249E-06
Road 1	1	0400-0500	0.083398953	1.34615E-07	1.09512E-06	0.076100581	1.22835E-07	9.99281E-07	0.484238721	7.81617E-07	6.35857E-06	0.437458256	7.06108E-07	5.74429E-06	0.513558837	8.28943E-07	6.74357E-06
Road 1	1	0500-0600	0.068870266	2.43011E-07	1.97693E-06	0.062764787	2.21467E-07	1.80167E-06	0.414597713	1.46292E-06	1.19011E-05	0.372621915	1.31481E-06	1.06962E-05	0.435386702	1.53627E-06	1.24978E-05
Road 1	1	0600-0700	0.092274392	5.83642E-07	4.74802E-06	0.084036855	5.31539E-07	4.32415E-06	0.497897181	3.14924E-06	2.56195E-05	0.448725846	2.83822E-06	2.30894E-05	0.5327627	3.36976E-06	2.74135E-05
Road 1	1	0700-0800	0.077299466	8.15358E-07	6.63306E-06	0.070377242	7.42343E-07	6.03907E-06	0.433546655	4.57307E-06	3.72026E-05	0.388879359	4.10192E-06	3.33697E-05	0.459256601	4.84426E-06	3.94088E-05
Road 1	1	0800-0900	0.08288598	1.07963E-06	8.78298E-06	0.075557161	9.84172E-07	8.00638E-06	0.449685764	5.85739E-06	4.76508E-05	0.405731816	5.28487E-06	4.29932E-05	0.481288977	6.26904E-06	5.09996E-05
Road 1	1	0900-1000	0.087897997	1.17791E-06	9.58249E-06	0.080495588	1.07871E-06	8.77549E-06	0.491172871	6.58216E-06	5.35468E-05	0.446251821	5.98018E-06	4.86496E-05	0.526747409	7.05889E-06	5.74251E-05
Road 1	1	1000-1100	0.101848187	1.32854E-06	1.08079E-05	0.092956201	1.21255E-06	9.86426E-06	0.548463597	7.15432E-06	5.82015E-05	0.49740377	6.48828E-06	5.27831E-05	0.590359971	7.70083E-06	6.26474E-05
Road 1	1	1100-1200	0.091999228	1.1638E-06	9.46772E-06	0.083990341	1.06249E-06	8.64352E-06	0.531163027	6.71929E-06	5.46624E-05	0.481312344	6.08867E-06	4.95323E-05	0.565302685	7.15116E-06	5.81758E-05
Road 1	1	1200-1300	0.095157076	1.19125E-06	9.69099E-06	0.08606973	1.07749E-06	8.76552E-06	0.541955517	6.78462E-06	5.51939E-05	0.486882384	6.09517E-06	4.95851E-05	0.572952114	7.17266E-06	5.83506E-05
Road 1	1	1300-1400	0.099402341	1.32275E-06	1.07608E-05	0.090061848	1.19846E-06	9.74963E-06	0.554626135	7.38044E-06	6.0041E-05	0.499019633	6.64048E-06	5.40213E-05	0.589081481	7.83894E-06	6.37709E-05
Road 1	1	1400-1500	0.094287945	1.36088E-06	1.10709E-05	0.08533446	1.23165E-06	1.00196E-05	0.514735176	7.42927E-06	6.04382E-05	0.462739506	6.6788E-06	5.43331E-05	0.548073966	7.91045E-06	6.43527E-05
Road 1	1	1500-1600	0.101530251	1.36441E-06	1.10997E-05	0.091960154	1.2358E-06	1.00534E-05	0.55229486	7.42198E-06	6.03789E-05	0.497104804	6.68031E-06	5.43453E-05	0.589064958	7.91611E-06	6.43988E-05
Road 1	1	1600-1700	0.097171417	1.37696E-06	1.12018E-05	0.088195205	1.24976E-06	1.0167E-05	0.53625947	7.59902E-06	6.18192E-05	0.482711576	6.84023E-06	5.56463E-05	0.570906781	8.08999E-06	6.58133E-05
Road 1	1	1700-1800	0.077476478	1.10224E-06	8.96686E-06	0.069988113	9.95702E-07	8.10018E-06	0.438163325	6.23363E-06	5.07115E-05	0.391743984	5.57323E-06	4.53391E-05	0.461732098	6.56894E-06	5.34393E-05
Road 1	1	1800-1900	0.069086512	1.00362E-06	8.16461E-06	0.06257584	9.09041E-07	7.39518E-06	0.418953127	6.08614E-06	4.95117E-05	0.375090052	5.44894E-06	4.4328E-05	0.437665891	6.35798E-06	5.17231E-05
Road 1	1	1900-2000	0.083350624	9.27682E-07	7.54683E-06	0.074908314	8.33721E-07	6.78244E-06	0.483580034	5.38219E-06	4.37849E-05	0.429647757	4.78193E-06	3.89017E-05	0.504556071	5.61565E-06	4.56841E-05
Road 1	1	2000-2100	0.075660338	7.14286E-07	5.81082E-06	0.068340795	6.45184E-07	5.24867E-06	0.452489125	4.27181E-06	3.47518E-05	0.404604632	3.81975E-06	3.10742E-05	0.472945427	4.46493E-06	3.63229E-05
Road 1	1	2100-2200	0.079596841	6.85716E-07	5.5784E-06	0.0715561	6.16446E-07	5.01488E-06	0.480805251	4.14207E-06	3.36964E-05	0.427617277	3.68387E-06	2.99688E-05	0.499173377	4.30031E-06	3.49837E-05
Road 1	1	2200-2300	0.077524736	6.32944E-07	5.14909E-06	0.069649425	5.68647E-07	4.62603E-06	0.468442161	3.82456E-06	3.11133E-05	0.415822805	3.39495E-06	2.76184E-05	0.48547223	3.9636E-06	3.22444E-05
Road 1	1	2300-0000	0.067946154	4.97354E-07	4.04605E-06	0.061439744	4.49728E-07	3.6586E-06	0.424642692	3.10831E-06	2.52865E-05	0.378131487	2.76785E-06	2.25169E-05	0.439571231	3.21758E-06	2.61755E-05
Road 2	2	0000-0100	0.167772115	2.01948E-07	1.30416E-06	0.152567308	1.83646E-07	1.18597E-06	0.714830192	8.60444E-07	5.55666E-06	0.646344615	7.78007E-07	5.0243E-06	0.798911923	9.61653E-07	6.21026E-06
Road 2	2	0100-0200	0.118771765	9.34778E-08	6.0367E-07	0.107694412	8.47595E-08	5.47369E-07	0.59121	4.65304E-07	3.00489E-06	0.532372647	4.18997E-07	2.70584E-06	0.640067059	5.03756E-07	3.25321E-06
Road 2	2	0200-0300	0.123898261	6.59644E-08	4.25991E-07	0.112170435	5.97204E-08	3.85668E-07	0.683987826	3.6416E-07	2.35171E-06	0.613186522	3.26465E-07	2.10828E-06	0.725356957	3.86185E-07	2.49395E-06
Road 2	2	0300-0400	0.107362	3.72785E-08	2.40741E-07	0.09683	3.36215E-08	2.17125E-07	0.396989333	1.37844E-07	8.9018E-07	0.352645333	1.22446E-07	7.90746E-07	0.449475333	1.56068E-07	1.00787E-06
Road 2	2	0400-0500	0.145105185	9.06907E-08	5.85672E-07	0.132466667	8.27917E-08	5.3466E-07	0.704312222	4.40195E-07	2.84274E-06	0.639136296	3.9946E-07	2.57967E-06	0.771602963	4.82252E-07	3.11434E-06
Road 2	2	0500-0600	0.115097895	1.51865E-07	9.80731E-07	0.10499193	1.38531E-07	8.9462E-07	0.516823509	6.8192E-07	4.40377E-06	0.466121404	6.15021E-07	3.97175E-06	0.571113333	7.53552E-07	4.86637E-06
Road 2	2	0600-0700	0.161577212	3.88982E-07	2.51201E-06	0.147220673	3.5442E-07	2.28881E-06	0.659473077	1.58762E-06	1.02527E-05	0.596328173	1.4356E-06	9.271E-06	0.743548846	1.79003E-06	1.15598E-05
Road 2	2	0700-0800	0.132126625	4.89358E-07	3.16023E-06	0.12034725	4.45731E-07	2.87848E-06	0.55729775	2.06407E-06	1.33295E-05	0.501250875	1.85648E-06	1.1989E-05	0.621598125	2.30222E-06	1.48675E-05
Road 2	2	0800-0900	0.148749375	1.04675E-06	6.75984E-06	0.13562727	9.54414E-07	6.16351E-06	0.6311525	4.44144E-06	2.86824E-05	0.570170625	4.01231E-06	2.59111E-05	0.705797895	4.96673E-06	3.20746E-05
Road 2	2	0900-1000	0.173418016	1.01161E-06	6.53285E-06	0.158843929	9.2659E-07	5.98383E-06	0.74237754	4.33054E-06	2.79662E-05	0.675909365	3.9428E-06	2.54622E-05	0.834753294	4.86939E-06	3.14461E-05
Road 2	2	1000-1100	0.193055668	8.35681E-07	5.39674E-06	0.176231604	7.62854E-07	4.92644E-06	0.81732984	3.53798E-06	2.28479E-05	0.742342781	3.21338E-06	2.07517E-05	0.918574385	3.97624E-06	2.56781E-05
Road 2	2	1100-1200	0.22839459	9.67505E-07	6.24805E-06	0.208579563	8.83566E-07	5.70598E-06	0.934890929	3.9603E-06	2.55752E-05	0.851231093	3.60591E-06	2.32866E-05	1.059810656	4.48948E-06	2.89926E-05
Road 2	2	1200-1300	0.176527895	7.76396E-07	5.01389E-06	0.159717211	7.0246E-07	4.53642E-06	0.776653	3.41583E-06	2.20591E-05	0.698245579	3.07099E-06	1.98321E-05	0.857962789	3.77345E-06	2.43686E-05
Road 2	2	1300-1400	0.195013677	1.00667E-06	6.50096E-06	0.176617265	9.11705E-07	5.8877E-06	0.80077417	4.13363E-06	2.66946E-05	0.72131565	3.72346E-06	2.40457E-05	0.897932915	4.63516E-06	2.99334E-05
Road 2	2	1400-1500	0.167439455	6.39526E-07	4.12999E-06	0.151545758	5.78821E-07	3.73797E-06	0.726255455	2.77389E-06	1.79135E-05	0.654499212	2.49982E-06	1.61436E-05	0.80604497	3.07864E-06	1.98816E-05
Road 2	2	1500-1600	0.209629016	8.88012E-07	5.73469E-06	0.189821803	8.04106E-07	5.19284E-06	0.828109617	3.50796E-06	2.26541E-05	0.747217268	3.1653E-06	2.04412E-05	0.937039071	3.9694E-06	2.5634E-05
Road 2	2	1600-1700	0.17597819	9.00259E-07	5.81378E-06	0.159798416	8.17487E-07	5.27925E-06	0.74367638	3.80446E-06	2.45688E-05	0.671400362	3.43471E-06	2.2181E-05	0.831198778	4.2522E-06	2.74603E-05
Road 2	2	1700-1800	0.135665135	6.97168E-07	4.50224E-06	0.122652703	6.30299E-07	4.07041E-06	0.541628514	2.78337E-06	1.79747E-05	0.486243964	2.49875E-06	1.61367E-05	0.608896667	3.12905E-06	2.02071E-05
Road 2	2	1800-1900	0.14959932	8.65737E-07	5.59084E-06	0.13565516	7.85041E-07	5.06972E-06	0.67767364	3.92172E-06	2.53261E-05	0.61039956	3.5324E-06	2.28119E-05	0.74605472	4.31745E-06	2.78816E-05
Road 2	2	1900-2000	0.127866391	5.00218E-07	3.23036E-06	0.114934024	4.49626E-07	2.90364E-06	0.585764083	2.29153E-06	1.47985E-05	0.521282899	2.03928E-06	1.31695E-05	0.636216923	2.4889E-06	1.60731E-05
Road 2	2	2000-2100	0.12156068	4.13644E-07	2.67127E-06	0.109793673	3.73603E-07	2.41269E-06	0.524665782	1.78532E-06	1.15294E-05	0.468850748	1.59539E-06	1.03029E-05	0.578644422	1.969E-06	1.27156E-05
Road 2	2	2100-2200	0.094595621	3.35026E-07	2.16357E-06	0.084998562	3.01037E-07	1.94406E-06	0.442540588	1.56733E-06	1.01217E-05	0.391121634	1.38522E-06	8.94563E-06	0.476120196	1.68626E-06	1.08897E-05
Road 2	2	2200-2300	0.13717136	3.96908E-07	2.56319E-06	0.12334752	3.56908E-07	2.30488E-06	0.59125688	1.71081E-06	1.10483E-05	0.52618264	1.52252E-06	9.83228E-06	0.64953016	1.87943E-06	1.21372E-05
Road 2	2	2300-0000	0.122605135	3.15027E-07	2.03441E-06	0.110981261	2.8516E-07	1.84154E-06	0.56238036	1.44501E-06	9.3317E-06	0.502705946	1.29168E-06	8.34151E-06	0.613687207	1.57684E-06	1.0183E-05
Road 3	3	0000-0100	0.105944	3.90838E-07	1.51909E-05	0.095885652	3.53731E-07	1.37487E-05	0.589696696	2.17545E-06	8.45542E-05	0.529288087	1.9526E-06	7.58925E-05	0.625173739	2.30633E-06	8.96411E-05
Road 3	3	0100-0200	0.079634789	1.81377E-07	7.04969E-06	0.072023169	1.64041E-07	6.37587E-06	0.468523592	1.06712E-06	4.14762E-05	0.420413803	9.57541E-07	3.72172E-05	0.492436972	1.12158E-06	4.35931E-05
Road 3	3	0200-0300	0.078477273	1.24615E-07	4.84348E-06	0.070771818	1.1238E-07	4.36792E-06	0.498187879	7.9108E-07	3.07473E-05	0.442921111	7.03321E-07	2.73363E-05	0.513692929	8.15701E-07	3.17043E-05
Road 3	3	0300-0400	0.065676	7.3739E-08	2.86605E-06	0.059166	6.64297E-08	2.58196E-06	0.369914	4.15328E-07	1.61427E-05	0.327212143	3.67384E-07	1.42793E-05	0.386378143	4.33813E-07	1.68612E-05
Road 3	3	0400-0500	0.087251681	1.58141E-07	6.14654E-06	0.079628584	1.44324E-07	5.60953E-06	0.488535133	8.85455E-07	3.44154E-05	0.441739912	8.0064E-07	3.11189E-05	0.521368496	9.44964E-07	3.67284E-05
Road 3	3	0500-0600	0.070762967	2.79212E-07	1.08523E-05	0.064371504	2.53993E-07	9.87205E-06	0.401203821	1.58304E-06	6.15289E-05	0.359839309	1.41983E-06	5.51852E-05	0.424210813	1.67382E-06	6.50572E-05
Road 3	3	0600-0700	0.097958604	6.97618E-07	2.71147E-05	0.089044122	6.34133E-07	2.46472E-05	0.49523723	3.52686E-06	0.00013708	0.445707658	3.17413E-06	0.000123371	0.534751779	3.80827E-06	0.000148018
Road 3	3	0700-0800	0.080471032	9.38353E-07	3.64714E-05	0.073254209	8.54199E-07	3.32006E-05	0.429446176	5.00767E-06	0.000194635	0.385377813	4.4938E-06	0.000174663	0.458632022	5.348E-06	0.000207863
Road 3	3	0800-0900	0.08892344	1.42201E-06	5.52701E-05	0.080771364	1.29165E-06	5.02032E-05	0.445269348	7.12049E-06	0.000276756	0.399918285	6.39527E-06	0.000248568	0.480689649	7.68692E-06	0.000298771
Road 3	3	0900-1000	0.09595314	1.48518E-06	5.77252E-05	0.087806725	1.35909E-06	5.28243E-05	0.49838085	7.71402E-06	0.000299825	0.452462808	7.0033E-06	0.0002722	0.540269534	8.36238E-06	0.000325025
Road 3	3	1000-1100	0.109030205	1.53719E-06	5.97468E-05	0.099407998	1.40153E-06	5.4474E-05	0.553280796	7.80058E-06	0.000303189	0.501334073	7.06819E-06	0.000274723	0.600742071	8.46972E-06	0.000329197
Road 3	3	1100-1200	0.107536897	1.47302E-06	5.72525E-05	0.09767459	1.33792E-06	5.20018E-05	0.561667541	7.6936E-06	0.000299031	0.506368829	6.93613E-06	0.00026959	0.604043419	8.27405E-06	0.000321592
Road 3	3	1200-1300	0.101379637	1.38868E-06	5.39743E-05	0.092223349	1.26325E-06	4.90995E-05	0.541265211	7.41413E-06	0.000288169	0.489085398	6.69938E-06	0.000260388	0.581308747	7.96264E-06	0.000309488
Road 3	3	1300-1400	0.108106224	1.6074E-06	6.24754E-05	0.097331316	1.44719E-06	5.62485E-05	0.554160054	8.23962E-06	0.000320253	0.495493355	7.36732E-06	0.000286349	0.592824671	8.81451E-06	0.000342598

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (December) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 3	3	1400-1500	0.099236103	1.48665E-06	5.77824E-05	0.089693298	1.34369E-06	5.22259E-05	0.51652349	7.73801E-06	0.000300757	0.463949325	6.9504E-06	0.000270145	0.553642623	8.29409E-06	0.00032237
Road 3	3	1500-1600	0.110129587	1.58095E-06	6.14477E-05	0.100513408	1.44291E-06	5.60823E-05	0.558030547	8.01075E-06	0.000311358	0.50650914	7.27114E-06	0.000282611	0.607022547	8.71405E-06	0.000338693
Road 3	3	1600-1700	0.104127039	1.63007E-06	6.33566E-05	0.094427305	1.47822E-06	5.74548E-05	0.537188986	8.40948E-06	0.000326855	0.483212203	7.56449E-06	0.000294013	0.577639508	9.04272E-06	0.000351468
Road 3	3	1700-1800	0.082797497	1.30015E-06	5.05334E-05	0.074604168	1.17149E-06	4.55328E-05	0.430150306	6.75453E-06	0.000262532	0.383751093	6.02594E-06	0.000234213	0.45835526	7.19742E-06	0.000279746
Road 3	3	1800-1900	0.078362639	1.29084E-06	5.01716E-05	0.070631091	1.16348E-06	4.52215E-05	0.43769518	7.20999E-06	0.000280234	0.389679649	6.41904E-06	0.000249492	0.46031074	7.58252E-06	0.000294714
Road 3	3	1900-2000	0.083479526	1.01762E-06	3.95523E-05	0.07503025	9.14623E-07	3.55491E-05	0.46584775	5.67871E-06	0.000220717	0.413912	5.04561E-06	0.00019611	0.48894225	5.96023E-06	0.000231659
Road 3	3	2000-2100	0.077909476	8.11012E-07	3.1522E-05	0.070485532	7.33731E-07	2.85183E-05	0.432734407	4.50462E-06	0.000175083	0.387577273	4.03455E-06	0.000156813	0.458062804	4.76828E-06	0.000185331
Road 3	3	2100-2200	0.076598618	7.55594E-07	2.9368E-05	0.068832358	6.78985E-07	2.63904E-05	0.439127106	4.33169E-06	0.000168362	0.390033854	3.84742E-06	0.00014954	0.458866211	4.52641E-06	0.00017593
Road 3	3	2200-2300	0.082554423	7.45489E-07	2.89753E-05	0.074737496	6.749E-07	2.62317E-05	0.459738739	4.15156E-06	0.000161361	0.411286483	3.71403E-06	0.000144355	0.486023979	4.38893E-06	0.000170587
Road 3	3	2300-0000	0.072037829	5.80038E-07	2.25446E-05	0.065276315	5.25595E-07	2.04286E-05	0.422534163	3.40218E-06	0.000132234	0.377203606	3.03719E-06	0.000118048	0.44247992	3.56278E-06	0.000138476
Road 4	4	0000-0100	0.283915143	2.30024E-07	2.463E-06	0.257004571	2.08221E-07	2.22955E-06	1.403126	1.13679E-06	1.21723E-05	1.269289429	1.02836E-06	1.10112E-05	1.526294	1.23658E-06	1.32408E-05
Road 4	4	0100-0200	0.268011	1.24079E-07	1.32859E-06	0.2426585	1.12342E-07	1.20291E-06	1.3262955	6.14026E-07	6.57473E-06	1.200684	5.55872E-07	5.95205E-06	1.4433425	6.68214E-07	7.15495E-06
Road 4	4	0200-0300	0.290278462	8.73523E-08	9.35332E-07	0.262580769	7.90174E-08	8.46085E-07	1.388837692	4.17937E-07	4.4751E-06	1.256183077	3.78018E-07	4.04766E-06	1.518763846	4.57035E-07	4.89374E-06
Road 4	4	0300-0400	0.263768571	4.27403E-08	4.57645E-07	0.238334286	3.8619E-08	4.13516E-07	1.354341429	2.19453E-07	2.34982E-06	1.223415714	1.98239E-07	2.12266E-06	1.46175	2.36858E-07	2.53617E-06
Road 4	4	0400-0500	0.270545714	8.76769E-08	9.38807E-07	0.247092143	8.00762E-08	8.57422E-07	1.295015714	4.19681E-07	4.49377E-06	1.182661429	3.8327E-07	4.10389E-06	1.429753571	4.63346E-07	4.96131E-06
Road 4	4	0500-0600	0.249702917	1.38724E-07	1.4854E-06	0.227560417	1.26422E-07	1.35368E-06	1.151735833	6.39853E-07	6.85128E-06	1.04818625	5.82326E-07	6.2353E-06	1.275746667	7.08748E-07	7.58898E-06
Road 4	4	0600-0700	0.278279434	3.41408E-07	3.65565E-06	0.253173208	3.10606E-07	3.32584E-06	1.289990943	1.58263E-06	1.69461E-05	1.172420189	1.43839E-06	1.54016E-05	1.425593396	1.74899E-06	1.87275E-05
Road 4	4	0700-0800	0.278380326	5.92847E-07	6.34796E-06	0.253895761	5.40704E-07	5.78963E-06	1.338858152	2.85127E-06	3.05302E-05	1.219378587	2.59682E-06	2.78057E-05	1.473274348	3.13753E-06	3.35953E-05
Road 4	4	0800-0900	0.285260323	1.0235E-06	1.09592E-05	0.259516323	9.31135E-07	9.9702E-06	1.375829935	4.93643E-06	5.28572E-05	1.25018671	4.48562E-06	4.80302E-05	1.509703032	5.41676E-06	5.80004E-05
Road 4	4	0900-1000	0.289781959	9.92772E-07	1.06302E-05	0.265081351	9.08149E-07	9.72408E-06	1.326713649	4.54522E-06	4.86683E-05	1.212317568	4.15331E-06	4.44719E-05	1.477398919	5.06146E-06	5.4196E-05
Road 4	4	1000-1100	0.323084722	1.07695E-06	1.15315E-05	0.294643681	9.82146E-07	1.05164E-05	1.482325	4.94108E-06	5.2907E-05	1.351288333	4.50429E-06	4.82301E-05	1.645932014	5.48644E-06	5.87465E-05
Road 4	4	1100-1200	0.300374452	1.07773E-06	1.15399E-05	0.272916387	9.79214E-07	1.0485E-05	1.369479935	4.91364E-06	5.26132E-05	1.243517935	4.4617E-06	4.7774E-05	1.516434323	5.44091E-06	5.8259E-05
Road 4	4	1200-1300	0.307891419	1.05481E-06	1.12945E-05	0.280144932	9.59756E-07	1.02767E-05	1.465089392	5.01929E-06	5.37444E-05	1.332520068	4.56512E-06	4.88813E-05	1.612665	5.52487E-06	5.9158E-05
Road 4	4	1300-1400	0.316702133	1.09966E-06	1.17747E-05	0.285204267	9.90293E-07	1.06036E-05	1.472107467	5.11148E-06	5.47316E-05	1.324869	4.60024E-06	4.92574E-05	1.610073267	5.59053E-06	5.98611E-05
Road 4	4	1400-1500	0.287179	9.30673E-07	9.96525E-06	0.2595525	8.41142E-07	9.0066E-06	1.378125286	4.46615E-06	4.78216E-05	1.244442071	4.03291E-06	4.31827E-05	1.503994571	4.87406E-06	5.21893E-05
Road 4	4	1500-1600	0.32230184	9.32586E-07	9.98574E-06	0.29412232	8.51048E-07	9.11267E-06	1.49802144	4.33455E-06	4.64126E-05	1.3666764	3.9545E-06	4.23432E-05	1.66079872	4.80555E-06	5.14558E-05
Road 4	4	1600-1700	0.302124032	8.67208E-07	9.2857E-06	0.274040968	7.86599E-07	8.42257E-06	1.418381613	4.07128E-06	4.35936E-05	1.285987177	3.69126E-06	3.95244E-05	1.560028145	4.47786E-06	4.7947E-05
Road 4	4	1700-1800	0.290498976	8.54013E-07	9.14441E-06	0.262019528	7.70289E-07	8.24793E-06	1.386684724	4.0766E-06	4.36505E-05	1.249949606	3.67462E-06	3.93463E-05	1.511969134	4.44491E-06	4.75942E-05
Road 4	4	1800-1900	0.32093717	7.87485E-07	8.43205E-06	0.289794434	7.1107E-07	7.61383E-06	1.545416415	3.79199E-06	4.06031E-05	1.395027736	3.42298E-06	3.66519E-05	1.68482217	4.13405E-06	4.42657E-05
Road 4	4	1900-2000	0.289001216	4.95048E-07	5.30077E-06	0.260125676	4.45586E-07	4.77114E-06	1.39541	2.39029E-06	2.55942E-05	1.255053649	2.14986E-06	2.30198E-05	1.515179324	2.59545E-06	2.77909E-05
Road 4	4	2000-2100	0.252343061	2.86222E-07	3.06475E-06	0.228523265	2.59205E-07	2.77545E-06	1.224503878	1.3889E-06	1.48718E-05	1.107262857	1.25592E-06	1.34479E-05	1.335786122	1.51513E-06	1.62233E-05
Road 4	4	2100-2200	0.21090973	1.8064E-07	1.93422E-06	0.190023784	1.62752E-07	1.74268E-06	1.046270811	8.96112E-07	9.59518E-06	0.940421622	8.05454E-07	8.62446E-06	1.130445405	9.68206E-07	1.03671E-05
Road 4	4	2200-2300	0.284256349	4.14541E-07	4.43872E-06	0.257747619	3.75882E-07	4.02479E-06	1.352735079	1.97274E-06	2.11233E-05	1.225394127	1.78703E-06	1.91348E-05	1.483141746	2.16292E-06	2.31596E-05
Road 4	4	2300-0000	0.264182857	2.99652E-07	3.20855E-06	0.239734082	2.71921E-07	2.91161E-06	1.291926327	1.46538E-06	1.56907E-05	1.171104898	1.32834E-06	1.42233E-05	1.41083898	1.60026E-06	1.71349E-05
Road 5	5	0000-0100	0.089717979	3.24992E-07	4.39493E-06	0.081156321	2.93978E-07	3.97553E-06	0.507908964	1.83984E-06	2.48804E-05	0.45455772	1.64658E-06	2.2267E-05	0.535714041	1.94056E-06	2.62425E-05
Road 5	5	0100-0200	0.060465328	1.38453E-07	1.87232E-06	0.054654098	1.25146E-07	1.69238E-06	0.37637418	8.61818E-07	1.16545E-05	0.336368361	7.70213E-07	1.04157E-05	0.391022459	8.95359E-07	1.21081E-05
Road 5	5	0200-0300	0.058036279	9.36772E-08	1.26681E-06	0.052245698	8.43305E-08	1.14042E-06	0.409981047	6.61756E-07	8.94905E-06	0.361977326	5.84273E-07	7.90123E-06	0.414223023	6.68603E-07	9.04165E-06
Road 5	5	0300-0400	0.051708571	6.11419E-08	8.26833E-07	0.046482063	5.49619E-08	7.4326E-07	0.29395381	3.47581E-07	4.7004E-06	0.25789	3.04938E-07	4.12373E-06	0.304372063	3.59899E-07	4.86699E-06
Road 5	5	0400-0500	0.071424141	1.32714E-07	1.79471E-06	0.065159394	1.21073E-07	1.6373E-06	0.414981212	7.7108E-07	1.04275E-05	0.373950707	6.94841E-07	9.39646E-06	0.439110101	8.15914E-07	1.10338E-05
Road 5	5	0500-0600	0.057954636	2.39302E-07	3.23613E-06	0.052686409	2.17549E-07	2.94196E-06	0.345353773	1.42601E-06	1.92842E-05	0.308388955	1.27338E-06	1.72201E-05	0.361075364	1.49093E-06	2.01621E-05
Road 5	5	0600-0700	0.084906082	6.1831E-07	8.36152E-06	0.077154227	5.61859E-07	7.59812E-06	0.433652088	3.15798E-06	4.27059E-05	0.389117216	2.83366E-06	3.83201E-05	0.466271443	3.39552E-06	4.59183E-05
Road 5	5	0700-0800	0.065844376	7.82273E-07	1.05788E-05	0.059890269	7.11534E-07	9.62221E-06	0.356237441	4.23233E-06	5.72345E-05	0.317889826	3.77673E-06	5.10735E-05	0.377780095	4.48827E-06	6.06957E-05
Road 5	5	0800-0900	0.070389348	1.11371E-06	1.50608E-05	0.063902977	1.01108E-06	1.3673E-05	0.350433345	5.54458E-06	7.49804E-05	0.312988387	4.95212E-06	6.69685E-05	0.376891364	5.9632E-06	8.06415E-05
Road 5	5	0900-1000	0.077422868	1.18576E-06	1.60352E-05	0.070856201	1.08519E-06	1.46752E-05	0.416673309	6.38148E-06	8.6298E-05	0.377400833	5.78001E-06	7.81642E-05	0.448257034	6.8652E-06	9.28394E-05
Road 5	5	1000-1100	0.088338052	1.21697E-06	1.64573E-05	0.080549196	1.10967E-06	1.50062E-05	0.461164169	6.35313E-06	8.59145E-05	0.416779646	5.74167E-06	7.76457E-05	0.497328842	6.85134E-06	9.2652E-05
Road 5	5	1100-1200	0.087190172	1.14388E-06	1.54689E-05	0.079198727	1.03904E-06	1.40511E-05	0.476172346	6.24708E-06	8.44804E-05	0.428013305	5.61526E-06	7.59363E-05	0.507212031	6.6543E-06	8.99874E-05
Road 5	5	1200-1300	0.081043607	1.07541E-06	1.4543E-05	0.073720141	9.78231E-07	1.32288E-05	0.445634809	5.91336E-06	7.99675E-05	0.401497086	5.32767E-06	7.20471E-05	0.475217228	6.3059E-06	8.52759E-05
Road 5	5	1300-1400	0.088847825	1.2957E-06	1.7522E-05	0.079988687	1.1665E-06	1.57748E-05	0.466348494	6.80092E-06	9.19701E-05	0.415894775	6.06513E-06	8.20199E-05	0.495883462	7.23163E-06	9.77947E-05
Road 5	5	1400-1500	0.083405894	1.24295E-06	1.68086E-05	0.07538927	1.12348E-06	1.5193E-05	0.439541121	6.55022E-06	8.85798E-05	0.394068149	5.87256E-06	7.94158E-05	0.469457418	6.99604E-06	9.46088E-05
Road 5	5	1500-1600	0.093109117	1.34561E-06	1.81969E-05	0.084996701	1.22837E-06	1.66115E-05	0.478442571	6.91443E-06	9.35051E-05	0.433517286	6.26517E-06	8.47251E-05	0.518513987	7.49354E-06	0.000101337
Road 5	5	1600-1700	0.088663705	1.41948E-06	1.9196E-05	0.080392837	1.28707E-06	1.74053E-05	0.46570789	7.45587E-06	0.000100827	0.417960528	6.69145E-06	9.04897E-05	0.498353365	7.97852E-06	0.000107895
Road 5	5	1700-1800	0.065498425	1.04616E-06	1.41474E-05	0.05899604	9.42298E-07	1.27429E-05	0.345867603	5.52427E-06	7.47058E-05	0.307256569	4.90757E-06	6.6366E-05	0.366252609	5.84987E-06	7.91089E-05
Road 5	5	1800-1900	0.061306627	1.05745E-06	1.43001E-05	0.05523827	9.52777E-07	1.28846E-05	0.355615919	6.13384E-06	8.29491E-05	0.315044157	5.43404E-06	7.34855E-05	0.370282427	6.38682E-06	8.63701E-05
Road 5	5	1900-2000	0.0711157	9.15641E-07	1.23824E-05	0.063869796	8.22348E-07	1.11208E-05	0.407215612	5.24305E-06	7.09028E-05	0.360685423	4.64396E-06	6.28011E-05	0.424555219	5.46631E-06	7.39219E-05
Road 5	5	2000-2100	0.06896805	7.76667E-07	1.0503E-05	0.062393917	7.02634E-07	9.50185E-06	0.3894741	4.38597E-06	5.93123E-05	0.3481561	3.92068E-06	5.302E-05	0.410550017	4.62331E-06	6.25219E-05
Road 5	5	2100-2200	0.071429758	7.74895E-07	1.0479E-05	0.064182093	6.9627E-07	9.41579E-06	0.414653201	4.4983E-06	6.08314E-05	0.36776474	3.98964E-06	5.39527E-05	0.431946834	4.68591E-06	6.33684E-05
Road 5	5	2200-2300	0.069087956	6.47051E-07	8.7502E-06	0.062510281	5.85447E-07	7.91711E-06	0.397029078	3.71842E-06	5.02849E-05	0.353817455	3.31372E-06	4.4812E-05	0.416327735	3.89917E-06	5.27291E-05
Road 5	5	2300-0000	0.060544768	5.14767E-07	6.96129E-06	0.054808609	4.65997E-07	6.30176E-06	0.366817196	3.11877E-06	4.21757E-05	0.326092428	2.77252E-06	3.74933E-05	0.380901038	3.23852E-06	4.37951E-05
Road 6	6	0000-0100	0.0538884	1.51713E-07	5.42312E-06	0.048587467	1.36789E-07	4.88965E-06	0.356982067	1.00502E-06	3.59253E-05	0.315503667	8.88242E-07	3.17511E-05	0.364091133	1.02503E-06	3.66407E-05
Road 6	6	0100-0200	0.071313246	1.52585E-07	5.45428E-06	0.064448246	1.37896E-07	4.92922E-06	0.410162982	8.77601E-07	3.13707E-05	0.365299561	7.81609E-07	2.79394E-05	0.429747807	9.19505E-07	3.28686E-05
Road 6	6	0200-0300	0.065112152	9.65439E-08	3.45105E-06	0.058759494	8.71246E-08	3.11435E-06	0.381336456	5.6542E-07	2.02115E-05	0.338383291	5.01732E-07	1.79349E-05	0.397142785	5.88857E-07	2.10492E-05
Road 6	6	0300-0400	0.066753871	7.76791E-08	2.77671E-06	0.060250645	7.01115E-08	2.5062E-06	0.435249839	5.06484E-07	1.81048E-05	0.387095484	4.50449E-07	1.61017E-05	0.447346129	5.2056E-07	1.86079E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (December) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 6	6	0400-0500	0.072254	1.22051E-07	4.36282E-06	0.065906556	1.11329E-07	3.97955E-06	0.433598778	7.3243E-07	2.61814E-05	0.389884667	6.58589E-07	2.35419E-05	0.455791222	7.69918E-07	2.75214E-05
Road 6	6	0500-0600	0.064723148	1.96793E-07	7.03456E-06	0.05886642	1.78986E-07	6.39801E-06	0.401009506	1.21929E-06	4.35845E-05	0.35833679	1.08954E-06	3.89466E-05	0.41720321	1.26852E-06	4.53446E-05
Road 6	6	0600-0700	0.069400552	3.77743E-07	1.35028E-05	0.062993414	3.4287E-07	1.22562E-05	0.449846	2.44849E-06	8.75235E-05	0.400496897	2.17988E-06	7.79219E-05	0.46349031	2.52275E-06	9.01781E-05
Road 6	6	0700-0800	0.064702035	5.61042E-07	2.0055E-05	0.058865844	5.10436E-07	1.8246E-05	0.382443874	3.31624E-06	0.000118542	0.340648571	2.95382E-06	0.000105587	0.399514416	3.46426E-06	0.000123833
Road 6	6	0800-0900	0.054826631	6.81217E-07	2.43507E-05	0.049628822	6.16634E-07	2.20422E-05	0.334418157	4.15512E-06	0.000148529	0.294085363	3.65399E-06	0.000130615	0.343714184	4.27062E-06	0.000152657
Road 6	6	0900-1000	0.057619384	6.84555E-07	2.44701E-05	0.052553397	6.24367E-07	2.23186E-05	0.334528863	3.97441E-06	0.000142069	0.298232923	3.5432E-06	0.000126655	0.350786319	4.16756E-06	0.000148973
Road 6	6	1000-1100	0.077215327	7.75342E-07	2.77153E-05	0.07028172	7.05719E-07	2.52266E-05	0.429421533	4.31195E-06	0.000154135	0.385291028	3.86882E-06	0.000138295	0.455572748	4.57454E-06	0.000163521
Road 6	6	1100-1200	0.088969361	8.88358E-07	3.17552E-05	0.080803778	8.06825E-07	2.88407E-05	0.470997782	4.70291E-06	0.00016811	0.42301	4.22375E-06	0.000150982	0.503813778	5.03057E-06	0.000179823
Road 6	6	1200-1300	0.085496119	8.39236E-07	2.99993E-05	0.077803021	7.6372E-07	2.72999E-05	0.433019598	4.25055E-06	0.00015194	0.390668107	3.83482E-06	0.000137079	0.468471128	4.59854E-06	0.000164379
Road 6	6	1300-1400	0.099391593	9.71904E-07	3.47416E-05	0.089482246	8.75005E-07	3.12779E-05	0.512250038	5.00905E-06	0.000179053	0.456991747	4.46871E-06	0.000159738	0.546473992	5.34371E-06	0.000191016
Road 6	6	1400-1500	0.094144756	1.01425E-06	3.62552E-05	0.085103118	9.16839E-07	3.27733E-05	0.47789324	5.14847E-06	0.000184037	0.428127439	4.61233E-06	0.000164872	0.513230557	5.52917E-06	0.000197646
Road 6	6	1500-1600	0.082752473	8.72877E-07	3.12018E-05	0.075478043	7.96146E-07	2.8459E-05	0.435406317	4.59269E-06	0.00016417	0.393479626	4.15044E-06	0.000148361	0.468957669	4.94659E-06	0.00017682
Road 6	6	1600-1700	0.086761997	9.37968E-07	3.35285E-05	0.07866066	8.50386E-07	3.03978E-05	0.436053264	4.71409E-06	0.00016851	0.391611997	4.23364E-06	0.000151336	0.470272656	5.08403E-06	0.000181733
Road 6	6	1700-1800	0.065195885	7.46424E-07	2.66816E-05	0.058725361	6.72344E-07	2.40336E-05	0.34113718	3.90566E-06	0.000139612	0.303205984	3.47139E-06	0.000124088	0.361931344	4.14373E-06	0.000148122
Road 6	6	1800-1900	0.063759666	8.2452E-07	2.94732E-05	0.057437634	7.42765E-07	2.65508E-05	0.340830319	4.40751E-06	0.000157551	0.302943454	3.91757E-06	0.000140037	0.360381089	4.66033E-06	0.000166588
Road 6	6	1900-2000	0.075746469	7.44954E-07	2.66291E-05	0.068031202	6.69076E-07	2.39167E-05	0.405224466	3.98532E-06	0.000142459	0.358857061	3.5293E-06	0.000126158	0.426888263	4.19838E-06	0.000150075
Road 6	6	2000-2100	0.059964665	4.70444E-07	1.68164E-05	0.054205287	4.25259E-07	1.52013E-05	0.358041722	2.80896E-06	0.000100409	0.319134665	2.50372E-06	8.94979E-05	0.373339952	2.92898E-06	0.000104699
Road 6	6	2100-2200	0.083896556	5.66869E-07	2.02633E-05	0.075410278	5.09529E-07	1.82136E-05	0.454818861	3.0731E-06	0.000109851	0.404114556	2.7305E-06	9.76044E-05	0.479524833	3.24003E-06	0.000115818
Road 6	6	2200-2300	0.063172047	4.51737E-07	1.61478E-05	0.057089843	4.08244E-07	1.45931E-05	0.369536089	2.64252E-06	9.44592E-05	0.326283071	2.33322E-06	8.34031E-05	0.383372913	2.74146E-06	9.79961E-05
Road 6	6	2300-0000	0.042405378	2.84135E-07	1.01567E-05	0.038362297	2.57045E-07	9.18831E-06	0.274848599	1.84161E-06	6.58301E-05	0.243313137	1.63031E-06	5.82769E-05	0.281675434	1.88735E-06	6.74652E-05
Road 7	7	0000-0100	0.07864442	2.12376E-07	5.30159E-06	0.071155173	1.92151E-07	4.79673E-06	0.47281771	1.27682E-06	3.18737E-05	0.422762062	1.14165E-06	2.84993E-05	0.493917236	1.3338E-06	3.32961E-05
Road 7	7	0100-0200	0.096619793	2.03404E-07	5.07761E-06	0.087461518	1.84124E-07	4.59632E-06	0.535001931	1.12628E-06	2.81157E-05	0.480021099	1.01054E-06	2.52263E-05	0.567482617	1.19466E-06	2.98226E-05
Road 7	7	0200-0300	0.08296617	1.13228E-07	2.82654E-06	0.075013775	1.02375E-07	2.55561E-06	0.477380319	6.51503E-07	1.62636E-05	0.426672008	5.82299E-07	1.45361E-05	0.501685783	6.84674E-07	1.70917E-05
Road 7	7	0300-0400	0.084522237	9.32629E-08	2.32815E-06	0.076377105	8.42755E-08	2.10379E-06	0.5170225	5.70489E-07	1.42413E-05	0.462146316	5.09938E-07	1.27297E-05	0.538523421	5.94214E-07	1.48335E-05
Road 7	7	0400-0500	0.093701441	1.51006E-07	3.7696E-06	0.085524505	1.37828E-07	3.44064E-06	0.529459009	8.53257E-07	2.13001E-05	0.478604054	7.71301E-07	1.92542E-05	0.564128559	9.09129E-07	2.26948E-05
Road 7	7	0500-0600	0.084486414	2.42871E-07	6.06286E-06	0.076967332	2.21256E-07	5.52328E-06	0.485126111	1.39458E-06	3.48133E-05	0.436572111	1.25501E-06	3.1329E-05	0.513539443	1.47626E-06	3.68523E-05
Road 7	7	0600-0700	0.089517881	4.60084E-07	1.14852E-05	0.081393698	4.18329E-07	1.04429E-05	0.529404944	2.72092E-06	6.7923E-05	0.47468636	2.43969E-06	6.09026E-05	0.556080058	2.85802E-06	7.13454E-05
Road 7	7	0700-0800	0.085186	6.98781E-07	1.74438E-05	0.07758492	6.36429E-07	1.58873E-05	0.473668336	3.8855E-06	9.69948E-05	0.425182053	3.48777E-06	8.70661E-05	0.502766973	4.1242E-06	0.000102953
Road 7	7	0800-0900	0.084324444	1.04675E-06	2.61304E-05	0.07661171	9.51011E-07	2.37403E-05	0.466847623	5.79516E-06	0.000144666	0.417450352	5.18197E-06	0.000129359	0.494062062	6.13299E-06	0.000153099
Road 7	7	0900-1000	0.085592354	9.84203E-07	2.45689E-05	0.078211051	8.99327E-07	2.24501E-05	0.455190982	5.23411E-06	0.000130661	0.410292289	4.71784E-06	0.000117773	0.48850334	5.61716E-06	0.000140223
Road 7	7	1000-1100	0.101655205	1.02574E-06	2.56059E-05	0.092662317	9.35001E-07	2.33407E-05	0.540001799	5.44884E-06	0.000136021	0.487571405	4.9198E-06	0.000122814	0.580233721	5.8548E-06	0.000146155
Road 7	7	1100-1200	0.112745347	1.13601E-06	2.83585E-05	0.102620938	1.034E-06	2.5812E-05	0.581636488	5.86051E-06	0.000146297	0.525714962	5.29705E-06	0.000132232	0.628335901	6.33105E-06	0.000158044
Road 7	7	1200-1300	0.110157504	1.10834E-06	2.76677E-05	0.100053412	1.00668E-06	2.51299E-05	0.559429336	5.62863E-06	0.000140509	0.505374711	5.08477E-06	0.000126932	0.605428123	6.09144E-06	0.000152062
Road 7	7	1300-1400	0.117709003	1.16552E-06	2.90951E-05	0.106228377	1.05184E-06	2.62573E-05	0.599364765	5.93472E-06	0.00014815	0.537494464	5.3221E-06	0.000132857	0.643722841	6.37393E-06	0.000159114
Road 7	7	1400-1500	0.109402502	1.1341E-06	2.83107E-05	0.098928045	1.02551E-06	2.56002E-05	0.56015374	5.80671E-06	0.000144954	0.503378727	5.21816E-06	0.000130262	0.602306771	6.24367E-06	0.000155862
Road 7	7	1500-1600	0.101576085	1.03379E-06	2.58069E-05	0.092409012	9.40495E-07	2.34778E-05	0.528054118	5.37429E-06	0.00013416	0.47723498	4.85707E-06	0.000121248	0.569643992	5.79757E-06	0.000144726
Road 7	7	1600-1700	0.105720587	1.11281E-06	2.77794E-05	0.095916492	1.00961E-06	2.52033E-05	0.53051834	5.58422E-06	0.0001394	0.478141877	5.03291E-06	0.000125638	0.574058369	6.04252E-06	0.000150841
Road 7	7	1700-1800	0.081673038	9.09491E-07	2.27039E-05	0.073678081	8.20461E-07	2.04814E-05	0.427194785	4.75714E-06	0.000118754	0.381767184	4.25127E-06	0.000106125	0.455445265	5.07173E-06	0.000126607
Road 7	7	1800-1900	0.0756044	8.74842E-07	2.18389E-05	0.068306365	7.90394E-07	1.97308E-05	0.402904165	4.66213E-06	0.000116382	0.360320277	4.16938E-06	0.000104081	0.428626642	4.95977E-06	0.000123812
Road 7	7	1900-2000	0.087779917	7.67213E-07	1.91521E-05	0.078889037	6.89505E-07	1.72123E-05	0.471438621	4.12046E-06	0.00010286	0.419175498	3.66367E-06	9.14572E-05	0.498064535	4.35318E-06	0.00010867
Road 7	7	2000-2100	0.081183334	5.84619E-07	1.4594E-05	0.073389738	5.28496E-07	1.3193E-05	0.450218228	3.24212E-06	8.09339E-05	0.40292371	2.90154E-06	7.24319E-05	0.476313448	3.43004E-06	8.56249E-05
Road 7	7	2100-2200	0.093323599	5.6094E-07	1.40029E-05	0.083917415	5.04402E-07	1.25915E-05	0.505837198	3.04043E-06	7.58991E-05	0.450485121	2.70773E-06	6.75937E-05	0.534402536	3.21213E-06	8.01853E-05
Road 7	7	2200-2300	0.078549826	5.09773E-07	1.27256E-05	0.07086872	4.59924E-07	1.14812E-05	0.442661244	2.87279E-06	7.17141E-05	0.392647933	2.54821E-06	6.36116E-05	0.463516652	3.00813E-06	7.50928E-05
Road 7	7	2300-0000	0.05535159	3.30291E-07	8.24513E-06	0.050107251	2.98997E-07	7.46394E-06	0.336557484	2.00829E-06	5.01333E-05	0.299847348	1.78923E-06	4.4665E-05	0.349954599	2.08823E-06	5.2129E-05
Road 8	8	0000-0100	0.249021111	1.81106E-07	2.98547E-06	0.225410833	1.63935E-07	2.70241E-06	1.2342025	8.97602E-07	1.47966E-05	1.116630556	8.12095E-07	1.33871E-05	1.342041389	9.7603E-07	1.60895E-05
Road 8	8	0100-0200	0.258222	1.56498E-07	2.57981E-06	0.233811333	1.41704E-07	2.33593E-06	1.275670333	7.73134E-07	1.27448E-05	1.154942667	6.99965E-07	1.15387E-05	1.388754	8.41669E-07	1.38746E-05
Road 8	8	0200-0300	0.244548667	7.41057E-08	1.2216E-06	0.221292	6.70582E-08	1.10543E-06	1.270458	3.84987E-07	6.34637E-06	1.149330667	3.48282E-07	5.7413E-06	1.370622667	4.1534E-07	6.84673E-06
Road 8	8	0300-0400	0.222701429	6.29863E-08	1.0383E-06	0.201390714	5.6959E-08	9.38948E-07	1.133204286	3.20502E-07	5.28336E-06	1.024321429	2.89707E-07	4.77571E-06	1.225712143	3.46666E-07	5.71466E-06
Road 8	8	0400-0500	0.252276667	1.07026E-07	1.76429E-06	0.230462381	9.77719E-08	1.61173E-06	1.210332381	5.13474E-07	8.46443E-06	1.105511429	4.69005E-07	7.73137E-06	1.33597381	5.66777E-07	9.3431E-06
Road 8	8	0500-0600	0.239966176	1.64825E-07	2.71708E-06	0.218759706	1.50259E-07	2.47697E-06	1.132133529	7.77627E-07	1.28189E-05	1.031453529	7.08473E-07	1.16789E-05	1.250213235	8.58732E-07	1.41559E-05
Road 8	8	0600-0700	0.268897742	3.36801E-07	5.55204E-06	0.24476	3.06568E-07	5.05366E-06	1.253930806	1.57058E-06	2.58904E-05	1.140042097	1.42793E-06	2.35389E-05	1.384802097	1.7345E-06	2.85926E-05
Road 8	8	0700-0800	0.266068725	5.48263E-07	9.03791E-06	0.242701078	5.00111E-07	8.24415E-06	1.253116667	2.58218E-06	4.25663E-05	1.142006667	2.35323E-06	3.8792E-05	1.384707745	2.85334E-06	4.70362E-05
Road 8	8	0800-0900	0.294566094	1.14256E-06	1.88347E-05	0.268081406	1.03983E-06	1.71412E-05	1.392158021	5.39989E-06	8.90151E-05	1.265902031	4.91017E-06	8.09422E-05	1.533983438	5.95E-06	9.80835E-05
Road 8	8	0900-1000	0.313183734	9.99657E-07	1.6479E-05	0.286566139	9.14696E-07	1.50784E-05	1.40647462	4.48935E-06	7.40053E-05	1.286646709	4.10687E-06	6.77002E-05	1.573212848	5.02157E-06	8.27787E-05
Road 8	8	1000-1100	0.296703688	9.59042E-07	1.58095E-05	0.270611875	8.74705E-07	1.44192E-05	1.373206875	4.43865E-06	7.31695E-05	1.251521063	4.04532E-06	6.66856E-05	1.522132938	4.92003E-06	8.11048E-05
Road 8	8	1100-1200	0.308358931	9.90486E-07	1.63278E-05	0.280173648	8.99952E-07	1.48354E-05	1.440195975	4.62608E-06	7.62593E-05	1.308059497	4.20165E-06	6.92625E-05	1.588233145	5.1016E-06	8.40979E-05
Road 8	8	1200-1300	0.310975882	1.068E-06	1.76055E-05	0.282968059	9.71809E-07	1.60199E-05	1.464866294	5.03085E-06	8.29317E-05	1.332233824	4.57535E-06	7.54229E-05	1.615201882	5.54716E-06	9.14428E-05
Road 8	8	1300-1400	0.285341975	9.33846E-07	1.53941E-05	0.256993457	8.41069E-07	1.38647E-05	1.32616358	4.34017E-06	7.15461E-05	1.193626296	3.90641E-06	6.43958E-05	1.450619753	4.74748E-06	7.82605E-05
Road 8	8	1400-1500	0.277849496	7.80224E-07	1.28617E-05	0.251155324	7.05264E-07	1.1626E-05	1.344303669	3.77491E-06	6.2228E-05	1.214602518	3.4107E-06	5.62241E-05	1.465757842	4.11597E-06	6.78502E-05
Road 8	8	1500-1600	0.286540216	8.04628E-07	1.3264E-05	0.261477698	7.34251E-07	1.21038E-05	1.352258777	3.79725E-06	6.25963E-05	1.232990863	3.46234E-06	5.70753E-05	1.494468561	4.19659E-06	6.91792E-05
Road 8	8	1600-1700	0.286724966	8.63071E-07	1.42274E-05	0.260028725	7.82713E-07	1.29027E-05	1.340587315	4.0353E-06	6.65205E-05	1.215199933	3.65787E-06	6.02987E-05	1.475228658	4.44059E-06	7.32014E-05
Road 8	8	1700-1800	0.235300705	7.41554E-07	1.22242E-05	0.21215891	6.68622E-07	1.1022E-05	1.144606923	3.60725E-06	5.94641E-05	1.030484936	3.24759E-06	5.35353E-05	1.242643846	3.91621E-06	6.45573E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (December) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 8	8	1800-1900	0.236285981	5.1076E-07	8.41968E-06	0.213427009	4.61347E-07	7.60514E-06	1.177952897	2.54628E-06	4.19745E-05	1.062673738	2.29709E-06	3.78667E-05	1.276100748	2.75844E-06	4.54718E-05
Road 8	8	1900-2000	0.234546364	3.6485E-07	6.01441E-06	0.211148571	3.28453E-07	5.41443E-06	1.197120519	1.86219E-06	3.06975E-05	1.077103896	1.67549E-06	2.76199E-05	1.288252468	2.00395E-06	3.30343E-05
Road 8	8	2000-2100	0.258020909	4.01366E-07	6.61637E-06	0.233659091	3.6347E-07	5.99166E-06	1.202383247	1.87037E-06	3.08324E-05	1.087587662	1.6918E-06	2.78887E-05	1.321246753	2.05527E-06	3.38804E-05
Road 8	8	2100-2200	0.213654444	2.33078E-07	3.8422E-06	0.192396296	2.09887E-07	3.45991E-06	1.088684259	1.18766E-06	1.95781E-05	0.977733333	1.06662E-06	1.75828E-05	1.17012963	1.27651E-06	2.10427E-05
Road 8	8	2200-2300	0.257474219	3.32896E-07	5.48766E-06	0.233451406	3.01836E-07	4.97566E-06	1.239769531	1.60293E-06	2.64238E-05	1.122476875	1.45128E-06	2.39239E-05	1.355928281	1.75312E-06	2.88995E-05
Road 8	8	2300-0000	0.201486038	2.15733E-07	3.55627E-06	0.182893019	1.95825E-07	3.2281E-06	1.009959057	1.08137E-06	1.7826E-05	0.915655849	9.80399E-07	1.61615E-05	1.098548868	1.17622E-06	1.93896E-05
Road 9	9	0000-0100	0.214429475	5.69474E-08	1.69998E-06	0.197382327	5.24201E-08	1.56483E-06	0.971471733	2.58E-07	7.70174E-06	0.885775198	2.35241E-07	7.02235E-06	1.083157525	2.87661E-07	8.58718E-06
Road 9	9	0100-0200	0.233054732	4.86309E-08	1.45171E-06	0.214841273	4.48303E-08	1.33826E-06	1.000629176	2.08798E-07	6.23299E-06	0.912393395	1.90387E-07	5.68336E-06	1.127234668	2.35217E-07	7.02163E-06
Road 9	9	0200-0300	0.092816104	8.80349E-09	2.62799E-07	0.08402513	7.96967E-09	2.37908E-07	0.666777671	6.3243E-08	1.88791E-06	0.595858582	5.65164E-08	1.68711E-06	0.679883712	6.44861E-08	1.92502E-06
Road 9	9	0300-0400	0.112061466	8.50311E-09	2.53832E-07	0.101491018	7.70103E-09	2.29889E-07	0.680548081	5.16393E-08	1.54152E-06	0.61443178	4.66224E-08	1.39176E-06	0.715922798	5.43235E-08	1.62165E-06
Road 9	9	0400-0500	0.251499443	4.77088E-08	1.42419E-06	0.233341945	4.42644E-08	1.32137E-06	1.037362226	1.96785E-07	5.87437E-06	0.952391618	1.80666E-07	5.3932E-06	1.185733563	2.24931E-07	6.71456E-06
Road 9	9	0500-0600	0.180903484	5.83388E-08	1.74151E-06	0.167217887	5.39254E-08	1.60976E-06	0.913265153	2.94515E-07	8.79177E-06	0.834456069	2.691E-07	8.0331E-06	1.001673956	3.23025E-07	9.64286E-06
Road 9	9	0600-0700	0.213033808	1.29318E-07	3.86037E-06	0.197480827	1.19877E-07	3.57854E-06	1.110919187	6.74363E-07	2.01309E-05	1.013534682	6.15248E-07	1.83662E-05	1.211015509	7.35125E-07	2.19447E-05
Road 9	9	0700-0800	0.17936983	1.66727E-07	4.9771E-06	0.167222892	1.55437E-07	4.64005E-06	1.027270935	9.54866E-07	2.85044E-05	0.938932011	8.72753E-07	2.60532E-05	1.106154902	1.02819E-06	3.06932E-05
Road 9	9	0800-0900	0.279093789	6.08849E-07	1.81752E-05	0.258308731	5.63506E-07	1.68216E-05	1.341939381	2.92747E-06	8.73899E-05	1.225923435	2.67438E-06	7.98347E-05	1.484232166	3.23788E-06	9.66563E-05
Road 9	9	0900-1000	0.286672638	4.73115E-07	1.41233E-05	0.267859776	4.42067E-07	1.31965E-05	1.249362048	2.06191E-06	6.15514E-05	1.151408804	1.90025E-06	5.67257E-05	1.41926858	2.34231E-06	6.99221E-05
Road 9	9	1000-1100	0.296060196	4.09981E-07	1.22387E-05	0.273605479	3.78886E-07	1.13104E-05	1.259349596	1.74394E-06	5.20595E-05	1.153177863	1.59691E-06	4.76705E-05	1.426783342	1.9758E-06	5.89809E-05
Road 9	9	1100-1200	0.209161939	3.01549E-07	9.00175E-06	0.191110585	2.75524E-07	8.22487E-06	1.099027187	1.58447E-06	4.72991E-05	0.998046991	1.43888E-06	4.29532E-05	1.189157576	1.71441E-06	5.1178E-05
Road 9	9	1200-1300	0.306040141	4.29607E-07	1.28245E-05	0.284445312	3.99293E-07	1.19196E-05	1.375129584	1.93035E-06	5.76244E-05	1.26759387	1.7794E-06	5.31181E-05	1.552039182	2.17869E-06	6.50377E-05
Road 9	9	1300-1400	0.349554476	4.04488E-07	1.20747E-05	0.323014347	3.73777E-07	1.11579E-05	1.341453397	1.55227E-06	4.63379E-05	1.228403882	1.42145E-06	4.24328E-05	1.551418229	1.79523E-06	5.35907E-05
Road 9	9	1400-1500	0.225001584	2.90239E-07	8.66413E-06	0.209104688	2.69733E-07	8.05199E-06	1.099058629	1.41772E-06	4.23214E-05	1.00471181	1.29602E-06	3.86884E-05	1.213816498	1.56575E-06	4.67404E-05
Road 9	9	1500-1600	0.188686558	2.04022E-07	6.09041E-06	0.175005565	1.89229E-07	5.64882E-06	0.972823141	1.05189E-06	3.14007E-05	0.89150966	9.63967E-07	2.87761E-05	1.066515225	1.1532E-06	3.44249E-05
Road 9	9	1600-1700	0.197802352	3.00181E-07	8.96091E-06	0.184529243	2.80038E-07	8.35961E-06	1.080282284	1.63941E-06	4.89393E-05	0.996441524	1.51218E-06	4.51411E-05	1.180970766	1.79222E-06	5.35007E-05
Road 9	9	1700-1800	0.169834321	2.22298E-07	6.63598E-06	0.158593359	2.07585E-07	6.19676E-06	1.010148898	1.3222E-06	3.94698E-05	0.933602352	1.222E-06	3.64789E-05	1.092195711	1.42959E-06	4.26757E-05
Road 9	9	1800-1900	0.169469023	1.4145E-07	4.22254E-06	0.159111415	1.32805E-07	3.96447E-06	0.980347675	8.18265E-07	2.44266E-05	0.91317638	7.622E-07	2.2753E-05	1.072287795	8.95005E-07	2.67174E-05
Road 9	9	1900-2000	0.176828834	1.44239E-07	4.30578E-06	0.164369896	1.34076E-07	4.00241E-06	0.953854685	7.78058E-07	2.32264E-05	0.871788715	7.11117E-07	2.12281E-05	1.036158611	8.45193E-07	2.52305E-05
Road 9	9	2000-2100	0.189262659	1.04118E-07	3.10809E-06	0.174248721	9.58581E-08	2.86153E-06	0.845814387	4.65301E-07	1.389E-05	0.774085555	4.25842E-07	1.27121E-05	0.948334275	5.217E-07	1.55736E-05
Road 9	9	2100-2200	0.0229898	1.22111E-08	3.64522E-07	0.02101447	1.11619E-08	3.33202E-07	0.339911157	1.80545E-07	5.38957E-06	0.303912455	1.61424E-07	4.81878E-06	0.324926925	1.72586E-07	5.15198E-06
Road 9	9	2200-2300	0.182845553	1.14462E-07	3.41687E-06	0.168009447	1.05174E-07	3.13963E-06	0.894503043	5.5996E-07	1.67158E-05	0.813225889	5.09081E-07	1.51969E-05	0.981235336	6.14255E-07	1.83366E-05
Road 9	9	2300-0000	0.147109161	8.37187E-08	2.49915E-06	0.136259948	7.75445E-08	2.31484E-06	0.763949072	4.34757E-07	1.29783E-05	0.697880187	3.97158E-07	1.18559E-05	0.834140135	4.74703E-07	1.41707E-05
Road 10	10	0000-0100	0.303718045	2.33515E-07	5.19215E-06	0.275877796	2.1211E-07	4.71621E-06	1.508611084	1.1599E-06	2.57901E-05	1.366851355	1.05091E-06	2.33667E-05	1.642729151	1.26302E-06	2.80829E-05
Road 10	10	0100-0200	0.29815082	1.732E-07	3.85105E-06	0.271189079	1.57537E-07	3.5028E-06	1.469413471	8.53602E-07	1.89796E-05	1.333007301	7.74362E-07	1.72177E-05	1.60419638	9.31899E-07	2.07205E-05
Road 10	10	0200-0300	0.297718258	9.66477E-08	2.14893E-06	0.26932138	8.74293E-08	1.94396E-06	1.446660461	4.69627E-07	1.0442E-05	1.306537886	4.24139E-07	9.4306E-06	1.575859266	5.11568E-07	1.13746E-05
Road 10	10	0300-0400	0.270443862	5.54486E-08	1.23288E-06	0.244299932	5.00884E-08	1.1137E-06	1.420353309	2.91213E-07	6.47502E-06	1.279029138	2.62237E-07	5.83076E-06	1.52332907	3.12326E-07	6.94446E-06
Road 10	10	0400-0500	0.315598019	1.24021E-07	2.75757E-06	0.289884759	1.13916E-07	2.53289E-06	1.478819107	5.81133E-07	1.29213E-05	1.353110128	5.31733E-07	1.18229E-05	1.642994887	6.45649E-07	1.43558E-05
Road 10	10	0500-0600	0.287198299	2.01186E-07	4.47331E-06	0.263628498	1.84675E-07	4.1062E-06	1.354157193	9.48605E-07	2.10919E-05	1.237362349	8.66789E-07	1.92728E-05	1.500990847	1.05146E-06	2.3379E-05
Road 10	10	0600-0700	0.349301985	4.89381E-07	1.08812E-05	0.32175187	4.50783E-07	1.0023E-05	1.677215382	2.34982E-06	5.22476E-05	1.538689843	2.15575E-06	4.79323E-05	1.860441713	2.60653E-06	5.79554E-05
Road 10	10	0700-0800	0.345429214	7.61345E-07	1.69283E-05	0.318259392	7.01461E-07	1.55968E-05	1.679690404	3.70213E-06	8.23157E-05	1.540226846	3.39474E-06	7.54811E-05	1.858486238	4.0962E-06	9.10779E-05
Road 10	10	0800-0900	0.368110162	1.55978E-06	3.46811E-05	0.335970783	1.42359E-06	3.16532E-05	1.767274265	7.48838E-06	0.000166502	1.606732443	6.80813E-06	0.000151377	1.942703226	8.23172E-06	0.00018303
Road 10	10	0900-1000	0.402251167	1.3608E-06	3.0257E-05	0.371804423	1.2578E-06	2.79668E-05	1.870110207	6.32652E-06	0.000140668	1.721861536	5.825E-06	0.000129517	2.093665959	7.0828E-06	0.000157484
Road 10	10	1000-1100	0.402915942	1.48008E-06	3.29091E-05	0.370301083	1.36027E-06	3.02453E-05	1.774023686	6.51674E-06	0.000144898	1.622943932	5.96176E-06	0.000132558	1.993245016	7.32203E-06	0.000162803
Road 10	10	1100-1200	0.392253897	1.44091E-06	3.20383E-05	0.358020851	1.31516E-06	2.92422E-05	1.786850931	6.56386E-06	0.000145945	1.625729758	5.97199E-06	0.000132785	1.983750608	7.28716E-06	0.000162028
Road 10	10	1200-1300	0.409355315	1.55269E-06	3.45237E-05	0.375634575	1.42479E-06	3.16798E-05	1.876617527	7.11805E-06	0.000158268	1.718014721	6.51647E-06	0.000144892	2.093649296	7.94126E-06	0.000176572
Road 10	10	1300-1400	0.399953922	1.31203E-06	2.91726E-05	0.36398782	1.19404E-06	2.65492E-05	1.79744407	5.89643E-06	0.000131105	1.630081058	5.3474E-06	0.000118898	1.994068878	6.54145E-06	0.000145447
Road 10	10	1400-1500	0.370623444	1.14616E-06	2.54844E-05	0.33933717	1.0494E-06	2.33332E-05	1.778790857	5.50093E-06	0.000122311	1.622642808	5.01804E-06	0.000111575	1.961979978	6.06744E-06	0.000134908
Road 10	10	1500-1600	0.366740565	1.15921E-06	2.57747E-05	0.336996439	1.0652E-06	2.36843E-05	1.705365131	5.39041E-06	0.000119854	1.563555508	4.94217E-06	0.000109888	1.900551947	6.00736E-06	0.000133572
Road 10	10	1600-1700	0.353926836	1.2457E-06	2.76977E-05	0.324488068	1.14209E-06	2.53939E-05	1.672919434	5.88809E-06	0.00013092	1.527550857	5.37645E-06	0.000119544	1.852038925	6.51853E-06	0.000144938
Road 10	10	1700-1800	0.328453795	1.09431E-06	2.43317E-05	0.300350967	1.00068E-06	2.22499E-05	1.624273977	5.41161E-06	0.000120325	1.48323237	4.9417E-06	0.000109877	1.783583338	5.94238E-06	0.000132127
Road 10	10	1800-1900	0.334489521	6.91513E-07	1.53756E-05	0.305283943	6.31134E-07	1.40331E-05	1.622621149	3.35456E-06	7.45875E-05	1.478188213	3.05596E-06	6.79483E-05	1.783472156	3.68709E-06	8.19814E-05
Road 10	10	1900-2000	0.291512876	5.42896E-07	1.20711E-05	0.2658379	4.95081E-07	1.1008E-05	1.483883521	2.7635E-06	6.14455E-05	1.348525407	2.51141E-06	5.58405E-05	1.614363307	3.00649E-06	6.68485E-05
Road 10	10	2000-2100	0.338010138	4.1581E-07	9.24541E-06	0.307247117	3.77966E-07	8.40396E-06	1.586251743	1.95136E-06	4.33879E-05	1.439439953	1.77076E-06	3.93722E-05	1.74668707	2.14872E-06	4.77762E-05
Road 10	10	2100-2200	0.278172269	3.51705E-07	7.82005E-06	0.256253521	3.23992E-07	7.20386E-06	1.461829375	1.84825E-06	4.10953E-05	1.342849051	1.69782E-06	3.77505E-05	1.599102573	2.02181E-06	4.49544E-05
Road 10	10	2200-2300	0.294013585	3.86804E-07	8.60046E-06	0.269431072	3.54463E-07	7.88138E-06	1.44524255	1.90136E-06	4.22761E-05	1.322355913	1.73969E-06	3.86815E-05	1.591786985	2.09415E-06	4.65628E-05
Road 10	10	2300-0000	0.270403843	3.32643E-07	7.39621E-06	0.246566259	3.03318E-07	6.74419E-06	1.33142109	1.63787E-06	3.64176E-05	1.210217936	1.48877E-06	3.31024E-05	1.456784195	1.79209E-06	3.98466E-05
Road 11	11	0000-0100	0.339728601	2.59515E-07	2.1527E-06	0.308472691	2.35639E-07	1.95464E-06	1.649596785	1.26011E-06	1.04527E-05	1.494802239	1.14186E-06	9.47184E-06	1.803274931	1.3775E-06	1.14265E-05
Road 11	11	0100-0200	0.339561356	1.8275E-07	1.51593E-06	0.308687786	1.66134E-07	1.3781E-06	1.62319745	8.73596E-07	7.24655E-06	1.471476503	7.9194E-07	6.56921E-06	1.780164289	9.58075E-07	7.94731E-06
Road 11	11	0200-0300	0.297098701	7.73695E-08	6.41786E-07	0.268765279	6.9991E-08	5.80581E-07	1.53646589	4.00121E-07	3.31904E-06	1.387335977	3.61285E-07	2.99689E-06	1.656101256	4.31276E-07	3.57747E-06
Road 11	11	0300-0400	0.31818899	7.73376E-08	6.41522E-07	0.287540291	6.98883E-08	5.79729E-07	1.607299452	3.90663E-07	3.24058E-06	1.452144794	3.52952E-07	2.92776E-06	1.739685085	4.2284E-07	3.50749E-06
Road 11	11	0400-0500	0.326069722	1.13219E-07	9.39158E-07	0.299650972	1.04045E-07	8.63066E-07	1.507681113	5.235E-07	4.34248E-06	1.379555809	4.79012E-07	3.97345E-06	1.679206781	5.83058E-07	4.83651E-06
Road 11	11	0500-0600	0.262287379	1.22947E-07	1.01986E-06	0.240478498	1.12724E-07	9.35057E-07	1.307611393	6.12943E-07	5.08441E-06	1.192945397	5.59193E-07	4.63855E-06	1.433423895	6.71917E-07	5.57361E-06
Road 11	11	0600-0700	0.285459266	2.57706E-07	2.13769E-06	0.261916899	2.36453E-07	1.96139E-06	1.445834884	1.30527E-06	1.08273E-05	1.316912346	1.18888E-06	9.86185E-06	1.578829244	1.42533E-06	1.18232E-05
Road 11	11	0700-0800	0.342957997	6.49E-07	5.38351E-06	0.314387814	5.94935E-07	4.93504E-06	1.726904916	3.26793E-06	2.71077E-05	1.575701913	2.9818E-06	2.47342E-05	1.890089727	3.57673E-06	2.96693E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (December) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 11	11	0800-0900	0.362913923	1.29162E-06	1.07141E-05	0.33243615	1.18315E-06	9.81432E-06	1.742030146	6.19993E-06	5.1429E-05	1.58641622	5.6461E-06	4.68349E-05	1.918852371	6.82925E-06	5.66492E-05
Road 11	11	0900-1000	0.363589899	9.27912E-07	7.6971E-06	0.335878572	8.5719E-07	7.11046E-06	1.671651553	4.26619E-06	3.53884E-05	1.533916884	3.91468E-06	3.24726E-05	1.869795456	4.77187E-06	3.95831E-05
Road 11	11	1000-1100	0.373045829	7.83655E-07	6.50048E-06	0.342274808	7.19015E-07	5.96429E-06	1.689157594	3.5484E-06	2.94343E-05	1.542775705	3.2409E-06	2.68835E-05	1.885050513	3.95992E-06	3.28478E-05
Road 11	11	1100-1200	0.330080123	7.79356E-07	6.46482E-06	0.300354026	7.09169E-07	5.88262E-06	1.641146748	3.87493E-06	3.21429E-05	1.489411101	3.51667E-06	2.9171E-05	1.789765127	4.22583E-06	3.50536E-05
Road 11	11	1200-1300	0.401900229	1.1443E-06	9.49206E-06	0.368509367	1.04923E-06	8.70343E-06	1.881947903	5.35832E-06	4.44477E-05	1.720130664	4.89759E-06	4.06259E-05	2.088640031	5.94682E-06	4.93294E-05
Road 11	11	1300-1400	0.417118786	8.76239E-07	7.26847E-06	0.379505078	7.97224E-07	6.61304E-06	1.831316175	3.84704E-06	3.19115E-05	1.658146339	3.48326E-06	2.88939E-05	2.037651417	4.28048E-06	3.5507E-05
Road 11	11	1400-1500	0.331071657	6.66742E-07	5.53068E-06	0.302558539	6.09319E-07	5.05435E-06	1.605255075	3.23281E-06	2.68164E-05	1.457048648	2.93433E-06	2.43405E-05	1.759607187	3.54365E-06	2.93949E-05
Road 11	11	1500-1600	0.295803234	6.0085E-07	4.9841E-06	0.271405799	5.51293E-07	4.57302E-06	1.48051786	3.0073E-06	2.49458E-05	1.353782852	2.74987E-06	2.28104E-05	1.62518865	3.30116E-06	2.73834E-05
Road 11	11	1600-1700	0.28349161	6.89042E-07	5.71566E-06	0.259956826	6.3184E-07	5.24116E-06	1.458927766	3.546E-06	2.94144E-05	1.332327829	3.2383E-06	2.68619E-05	1.592284655	3.87014E-06	3.21031E-05
Road 11	11	1700-1800	0.283031061	7.02664E-07	5.82865E-06	0.25778597	6.39989E-07	5.30876E-06	1.48122194	3.67734E-06	3.05038E-05	1.346279873	3.34233E-06	2.77249E-05	1.604065843	3.98232E-06	3.30336E-05
Road 11	11	1800-1900	0.306915618	6.28751E-07	5.21554E-06	0.279320186	5.72218E-07	4.7466E-06	1.57040974	3.21716E-06	2.66866E-05	1.427815961	2.92504E-06	2.42634E-05	1.707136147	3.49726E-06	2.901E-05
Road 11	11	1900-2000	0.293775383	4.64124E-07	3.84995E-06	0.266857863	4.21598E-07	3.49719E-06	1.488688258	2.35192E-06	1.95094E-05	1.345960821	2.12643E-06	1.76389E-05	1.612818684	2.54803E-06	2.11361E-05
Road 11	11	2000-2100	0.303728363	4.27118E-07	3.54298E-06	0.276091047	3.88253E-07	3.22059E-06	1.471189147	2.06886E-06	1.71614E-05	1.335478985	1.87802E-06	1.55783E-05	1.611570032	2.26627E-06	1.87989E-05
Road 11	11	2100-2200	0.217033007	2.1854E-07	1.81281E-06	0.195612158	1.96971E-07	1.63389E-06	1.180738145	1.18894E-06	9.86233E-06	1.062461185	1.06984E-06	8.8744E-06	1.258073343	1.26681E-06	1.05083E-05
Road 11	11	2200-2300	0.285526708	3.12295E-07	2.59051E-06	0.260189786	2.84583E-07	2.36064E-06	1.405902971	1.53771E-06	1.27554E-05	1.27641986	1.39608E-06	1.15806E-05	1.536609646	1.68067E-06	1.39413E-05
Road 11	11	2300-0000	0.272100119	2.83438E-07	2.35114E-06	0.248309974	2.58656E-07	2.14557E-06	1.362254519	1.41902E-06	1.17708E-05	1.238560094	1.29017E-06	1.0702E-05	1.486870067	1.54882E-06	1.28476E-05
Haul Road 1	HR1	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0700-0800	1.45365	2.73242E-06	4.1097E-06	1.32573	2.49197E-06	3.74805E-06	6.36873	1.19713E-05	1.80054E-05	5.8085	1.09182E-05	1.64216E-05	7.13423	1.34102E-05	2.01696E-05
Haul Road 1	HR1	0800-0900	1.45165	2.72867E-06	4.10405E-06	1.32024	2.48165E-06	3.73253E-06	6.36013	1.19551E-05	1.79811E-05	5.78441	1.0873E-05	1.63535E-05	7.10465	1.33546E-05	2.0086E-05
Haul Road 1	HR1	0900-1000	1.44485	2.71588E-06	4.08482E-06	1.32153	2.48408E-06	3.73618E-06	6.33046	1.18994E-05	1.78972E-05	5.79021	1.08839E-05	1.63699E-05	7.11174	1.33679E-05	2.0106E-05
Haul Road 1	HR1	1000-1100	1.44835	2.72246E-06	4.09472E-06	1.32034	2.48184E-06	3.73281E-06	6.34575	1.19281E-05	1.79405E-05	5.78501	1.08741E-05	1.63552E-05	7.10535	1.33559E-05	2.0088E-05
Haul Road 1	HR1	1100-1200	1.45315	2.73148E-06	4.10829E-06	1.31994	2.48109E-06	3.73168E-06	6.36673	1.19675E-05	1.79998E-05	5.78291	1.08701E-05	1.63492E-05	7.10285	1.33512E-05	2.00809E-05
Haul Road 1	HR1	1200-1300	1.45515	2.73524E-06	4.11394E-06	1.32373	2.48821E-06	3.7424E-06	6.37552	1.19841E-05	1.80246E-05	5.79961	1.09015E-05	1.63964E-05	7.12334	1.33897E-05	2.01388E-05
Haul Road 1	HR1	1300-1400	1.45775	2.74013E-06	4.12129E-06	1.31214	2.46643E-06	3.70963E-06	6.38671	1.20051E-05	1.80563E-05	5.74904	1.08065E-05	1.62535E-05	7.06118	1.32729E-05	1.99631E-05
Haul Road 1	HR1	1400-1500	1.45215	2.72961E-06	4.10546E-06	1.31214	2.46643E-06	3.70963E-06	6.36233	1.19593E-05	1.79873E-05	5.74904	1.08065E-05	1.62535E-05	7.06118	1.32729E-05	1.99631E-05
Haul Road 1	HR1	1500-1600	1.44665	2.71927E-06	4.08991E-06	1.31994	2.48109E-06	3.73168E-06	6.33825	1.1914E-05	1.79193E-05	5.78291	1.08701E-05	1.63492E-05	7.10285	1.33512E-05	2.00809E-05
Haul Road 1	HR1	1600-1700	1.44745	2.72077E-06	4.09217E-06	1.31234	2.4668E-06	3.7102E-06	6.34165	1.19204E-05	1.79289E-05	5.74954	1.08074E-05	1.62549E-05	7.06188	1.32742E-05	1.99651E-05
Haul Road 1	HR1	1700-1800	1.45255	2.73036E-06	4.10659E-06	1.30964	2.46173E-06	3.70256E-06	6.36423	1.19628E-05	1.79927E-05	5.73805	1.07858E-05	1.62224E-05	7.04769	1.32475E-05	1.9925E-05
Haul Road 1	HR1	1800-1900	1.45255	2.73036E-06	4.10659E-06	1.31154	2.4653E-06	3.70793E-06	6.36423	1.19628E-05	1.79927E-05	5.74614	1.0801E-05	1.62453E-05	7.05768	1.32663E-05	1.99532E-05
Haul Road 1	HR1	1900-2000	1.45005	2.72566E-06	4.09952E-06	1.30485	2.45273E-06	3.68902E-06	6.35294	1.19416E-05	1.79608E-05	5.71685	1.0746E-05	1.61625E-05	7.0217	1.31987E-05	1.98515E-05
Haul Road 1	HR1	2000-2100	1.44745	2.72077E-06	4.09217E-06	1.31084	2.46398E-06	3.70596E-06	6.34165	1.19204E-05	1.79289E-05	5.74324	1.07956E-05	1.62371E-05	7.05408	1.32595E-05	1.9943E-05
Haul Road 1	HR1	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0700-0800	1.45365	1.88297E-06	5.01227E-06	1.32573	1.71727E-06	4.5712E-06	6.36873	8.24965E-06	2.19598E-05	5.8085	7.52396E-06	2.00281E-05	7.13423	9.24123E-06	2.45993E-05
Haul Road 2	HR2	0800-0900	1.45165	1.88038E-06	5.00538E-06	1.32024	1.71016E-06	4.55227E-06	6.36013	8.23851E-06	2.19301E-05	5.78441	7.49276E-06	1.9945E-05	7.10465	9.20291E-06	2.44973E-05
Haul Road 2	HR2	0900-1000	1.44485	1.87157E-06	4.98193E-06	1.32153	1.71183E-06	4.55672E-06	6.33046	8.20008E-06	2.18278E-05	5.79021	7.50027E-06	1.9965E-05	7.11174	9.2121E-06	2.45217E-05
Haul Road 2	HR2	1000-1100	1.44835	1.8761E-06	4.994E-06	1.32034	1.71028E-06	4.55261E-06	6.34575	8.21988E-06	2.18805E-05	5.78501	7.49354E-06	1.99471E-05	7.10535	9.20382E-06	2.44997E-05
Haul Road 2	HR2	1100-1200	1.45315	1.88232E-06	5.01055E-06	1.31994	1.70977E-06	4.55123E-06	6.36673	8.24706E-06	2.19529E-05	5.78291	7.49082E-06	1.99398E-05	7.10285	9.20058E-06	2.44911E-05
Haul Road 2	HR2	1200-1300	1.45515	1.88491E-06	5.01744E-06	1.32373	1.71468E-06	4.5643E-06	6.37552	8.25845E-06	2.19832E-05	5.79961	7.51245E-06	1.99974E-05	7.12334	9.22712E-06	2.45617E-05
Haul Road 2	HR2	1300-1400	1.45775	1.88828E-06	5.02641E-06	1.31214	1.69966E-06	4.52434E-06	6.38671	8.27294E-06	2.20218E-05	5.74904	7.44694E-06	1.9823E-05	7.06118	9.14661E-06	2.43474E-05
Haul Road 2	HR2	1400-1500	1.45215	1.88102E-06	5.0071E-06	1.31214	1.69966E-06	4.52434E-06	6.36233	8.24136E-06	2.19377E-05	5.74904	7.44694E-06	1.9823E-05	7.06118	9.14661E-06	2.43474E-05
Haul Road 2	HR2	1500-1600	1.44665	1.8739E-06	4.98814E-06	1.31994	1.70977E-06	4.55123E-06	6.33825	8.21017E-06	2.18547E-05	5.78291	7.49082E-06	1.99398E-05	7.10285	9.20058E-06	2.44911E-05
Haul Road 2	HR2	1600-1700	1.44745	1.87494E-06	4.99089E-06	1.31234	1.69992E-06	4.52503E-06	6.34165	8.21457E-06	2.18664E-05	5.74954	7.44759E-06	1.98248E-05	7.06188	9.14751E-06	2.43498E-05
Haul Road 2	HR2	1700-1800	1.45255	1.88154E-06	5.00848E-06	1.30964	1.69642E-06	4.51572E-06	6.36423	8.24382E-06	2.19442E-05	5.73805	7.43271E-06	1.97851E-05	7.04769	9.12913E-06	2.43009E-05
Haul Road 2	HR2	1800-1900	1.45255	1.88154E-06	5.00848E-06	1.31154	1.69889E-06	4.52227E-06	6.36423	8.24382E-06	2.19442E-05	5.74614	7.44319E-06	1.9813E-05	7.05768	9.14207E-06	2.43353E-05
Haul Road 2	HR2	1900-2000	1.45005	1.8783E-06	4.99986E-06	1.30485	1.69022E-06	4.4992E-06	6.35294	8.2292E-06	2.19053E-05	5.71685	7.40525E-06	1.9712E-05	7.0217	9.09547E-06	2.42112E-05
Haul Road 2	HR2	2000-2100	1.44745	1.87494E-06	4.99089E-06	1.31084	1.69798E-06	4.51986E-06	6.34165	8.21457E-06	2.18664E-05	5.74324	7.43943E-06	1.9803E-05	7.05408	9.13741E-06	2.43229E-05
Haul Road 2	HR2	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (December) Year 2028

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Haul Road 2	HR2	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0700-0800	1.45365	1.88297E-06	5.00528E-06	1.32573	1.71727E-06	4.56482E-06	6.36873	8.24965E-06	2.19291E-05	5.8085	7.52396E-06	2.00001E-05	7.13423	9.24123E-06	2.4565E-05
Haul Road 3	HR3	0800-0900	1.45165	1.88038E-06	4.9984E-06	1.32024	1.71016E-06	4.54592E-06	6.36013	8.23851E-06	2.18995E-05	5.78441	7.49276E-06	1.99172E-05	7.10465	9.20291E-06	2.44631E-05
Haul Road 3	HR3	0900-1000	1.44485	1.87157E-06	4.97498E-06	1.32153	1.71183E-06	4.55036E-06	6.33046	8.20008E-06	2.17974E-05	5.79021	7.50027E-06	1.99372E-05	7.11174	9.2121E-06	2.44875E-05
Haul Road 3	HR3	1000-1100	1.44835	1.8761E-06	4.98704E-06	1.32034	1.71028E-06	4.54626E-06	6.34575	8.21988E-06	2.185E-05	5.78501	7.49354E-06	1.99193E-05	7.10535	9.20382E-06	2.44655E-05
Haul Road 3	HR3	1100-1200	1.45315	1.88232E-06	5.00356E-06	1.31994	1.70977E-06	4.54489E-06	6.36673	8.24706E-06	2.19223E-05	5.78291	7.49082E-06	1.9912E-05	7.10285	9.20058E-06	2.44569E-05
Haul Road 3	HR3	1200-1300	1.45515	1.88491E-06	5.01045E-06	1.32373	1.71468E-06	4.55794E-06	6.37552	8.25845E-06	2.19525E-05	5.79961	7.51245E-06	1.99695E-05	7.12334	9.22712E-06	2.45275E-05
Haul Road 3	HR3	1300-1400	1.45775	1.88828E-06	5.0194E-06	1.31214	1.69966E-06	4.51803E-06	6.38671	8.27294E-06	2.19911E-05	5.74904	7.44694E-06	1.97954E-05	7.06118	9.14661E-06	2.43134E-05
Haul Road 3	HR3	1400-1500	1.45215	1.88102E-06	5.00012E-06	1.31214	1.69966E-06	4.51803E-06	6.36233	8.24136E-06	2.19071E-05	5.74904	7.44694E-06	1.97954E-05	7.06118	9.14661E-06	2.43134E-05
Haul Road 3	HR3	1500-1600	1.44665	1.8739E-06	4.98118E-06	1.31994	1.70977E-06	4.54489E-06	6.33825	8.21017E-06	2.18242E-05	5.78291	7.49082E-06	1.9912E-05	7.10285	9.20058E-06	2.44569E-05
Haul Road 3	HR3	1600-1700	1.44745	1.87494E-06	4.98394E-06	1.31234	1.69992E-06	4.51872E-06	6.34165	8.21457E-06	2.18359E-05	5.74954	7.44759E-06	1.97971E-05	7.06188	9.14751E-06	2.43158E-05
Haul Road 3	HR3	1700-1800	1.45255	1.88154E-06	5.0015E-06	1.30964	1.69642E-06	4.50942E-06	6.36423	8.24382E-06	2.19137E-05	5.73805	7.43271E-06	1.97576E-05	7.04769	9.12913E-06	2.4267E-05
Haul Road 3	HR3	1800-1900	1.45255	1.88154E-06	5.0015E-06	1.31154	1.69889E-06	4.51596E-06	6.36423	8.24382E-06	2.19137E-05	5.74614	7.44319E-06	1.97854E-05	7.05768	9.14207E-06	2.43014E-05
Haul Road 3	HR3	1900-2000	1.45005	1.8783E-06	4.99289E-06	1.30485	1.69022E-06	4.49293E-06	6.35294	8.2292E-06	2.18748E-05	5.71685	7.40525E-06	1.96846E-05	7.0217	9.09547E-06	2.41775E-05
Haul Road 3	HR3	2000-2100	1.44745	1.87494E-06	4.98394E-06	1.31084	1.69798E-06	4.51355E-06	6.34165	8.21457E-06	2.18359E-05	5.74324	7.43943E-06	1.97754E-05	7.05408	9.13741E-06	2.4289E-05
Haul Road 3	HR3	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 3.4 Calculation of Vehicular Emisisons
Traffic Data and Road Segments (Year 2027)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 1	1	-	70	68.68304	N	0000-0100	177	25.42%	16.95%	5.65%	7.91%	4.52%	2.26%	10.17%	0.00%	0.00%	0.00%	0.56%	3.95%	2.26%	0.00%	4.52%	2.26%	13.56%	0.00%	100%
Road 1	1	-	70	69.19643	N	0100-0200	108	42.59%	11.11%	4.63%	6.48%	3.70%	1.85%	6.48%	0.00%	0.00%	0.00%	0.00%	2.78%	1.85%	0.00%	3.70%	2.78%	12.04%	0.00%	100%
Road 1	1	-	70	69.42708	N	0200-0300	77	32.47%	27.27%	2.60%	2.60%	1.30%	2.60%	9.09%	0.00%	0.00%	0.00%	0.00%	2.60%	1.30%	0.00%	3.90%	3.90%	10.39%	0.00%	100%
Road 1	1	-	70	69.59077	N	0300-0400	55	49.09%	20.00%	1.82%	1.82%	1.82%	1.82%	3.64%	0.00%	0.00%	0.00%	0.00%	3.64%	1.82%	0.00%	3.64%	1.82%	9.09%	0.00%	100%
Road 1	1	-	70	69.36756	N	0400-0500	85	41.18%	15.29%	3.53%	4.71%	3.53%	2.35%	8.24%	0.00%	0.00%	0.00%	1.18%	3.53%	2.35%	0.00%	3.53%	1.18%	9.41%	0.00%	100%
Road 1	1	-	70	68.60863	N	0500-0600	187	46.52%	19.79%	1.60%	2.67%	2.14%	2.14%	8.02%	0.00%	0.00%	0.00%	0.53%	3.21%	1.60%	0.00%	3.21%	2.14%	6.42%	0.00%	100%
Road 1	1	-	70	67.52976	N	0600-0700	332	38.25%	12.95%	3.31%	4.52%	3.31%	3.01%	9.94%	0.00%	0.30%	0.60%	0.60%	4.52%	2.71%	0.00%	3.01%	4.22%	8.43%	0.30%	100%
Road 1	1	-	70	65.84077	N	0700-0800	559	37.03%	17.35%	3.94%	5.72%	3.94%	2.15%	6.62%	0.00%	0.00%	0.00%	0.54%	3.40%	2.33%	0.00%	1.97%	5.90%	8.94%	0.18%	100%
Road 1	1	-	70	64.74206	N	0800-0900	685	41.31%	13.43%	4.38%	6.28%	4.23%	2.19%	7.30%	0.00%	0.15%	0.29%	0.58%	3.50%	2.04%	0.00%	1.90%	1.90%	10.36%	0.15%	100%
Road 1	1	-	70	64.30556	N	0900-1000	707	33.24%	11.60%	8.06%	11.32%	7.07%	2.55%	8.77%	0.00%	0.14%	0.14%	0.28%	2.12%	1.27%	0.00%	2.69%	1.56%	9.05%	0.14%	100%
Road 1	1	-	70	64.70238	N	1000-1100	687	30.28%	10.63%	6.40%	9.17%	5.82%	3.93%	13.83%	0.00%	0.44%	0.58%	0.29%	1.89%	1.16%	0.00%	2.18%	2.18%	11.06%	0.15%	100%
Road 1	1	-	70	65.0372	N	1100-1200	667	30.13%	14.69%	6.45%	9.15%	5.85%	3.30%	11.24%	0.00%	0.30%	0.30%	0.30%	1.65%	0.90%	0.00%	3.15%	2.10%	10.49%	0.00%	100%
Road 1	1	-	70	65.08929	N	1200-1300	660	32.58%	12.42%	5.76%	8.18%	5.30%	3.18%	10.76%	0.00%	0.15%	0.30%	0.30%	1.97%	1.21%	0.00%	3.18%	2.42%	12.12%	0.15%	100%
Road 1	1	-	70	64.40476	N	1300-1400	702	29.20%	13.82%	6.41%	9.26%	5.84%	3.70%	13.11%	0.00%	0.28%	0.43%	0.28%	1.57%	1.00%	0.00%	2.71%	1.14%	11.25%	0.00%	100%
Road 1	1	-	70	63.15476	N	1400-1500	765	33.99%	13.46%	5.49%	7.84%	4.97%	3.14%	11.90%	0.00%	0.52%	0.65%	0.39%	2.61%	1.70%	0.00%	2.48%	1.18%	9.54%	0.13%	100%
Road 1	1	-	70	64.26587	N	1500-1600	709	25.39%	13.40%	7.48%	10.58%	6.49%	3.24%	11.57%	0.00%	0.56%	0.85%	0.42%	2.68%	1.55%	0.00%	2.54%	2.54%	10.58%	0.14%	100%
Road 1	1	-	70	63.49206	N	1600-1700	748	29.14%	17.38%	5.88%	8.29%	5.21%	3.21%	11.36%	0.00%	0.40%	0.67%	0.40%	2.81%	1.60%	0.00%	2.67%	0.40%	10.43%	0.13%	100%
Road 1	1	-	70	63.45238	N	1700-1800	750	41.07%	15.47%	4.00%	5.73%	3.47%	1.87%	7.07%	0.00%	0.27%	0.27%	0.53%	3.47%	2.00%	0.00%	2.53%	3.33%	8.80%	0.13%	100%
Road 1	1	-	70	63.09524	N	1800-1900	768	38.54%	21.48%	3.39%	4.69%	2.86%	1.56%	5.86%	0.00%	0.13%	0.13%	0.52%	3.26%	1.82%	0.00%	2.86%	4.82%	7.94%	0.13%	100%
Road 1	1	-	70	65.63988	N	1900-2000	586	34.47%	21.67%	3.24%	4.78%	2.90%	2.56%	10.07%	0.00%	0.00%	0.17%	0.51%	3.07%	1.71%	0.00%	2.73%	2.39%	9.56%	0.17%	100%
Road 1	1	-	70	66.30952	N	2000-2100	496	40.12%	20.56%	3.02%	4.64%	2.82%	2.42%	9.07%	0.00%	0.00%	0.00%	0.40%	2.22%	1.41%	0.00%	2.62%	1.01%	9.68%	0.00%	100%
Road 1	1	-	70	66.62946	N	2100-2200	453	39.07%	21.19%	2.21%	3.09%	1.99%	2.87%	11.04%	0.00%	0.00%	0.00%	0.44%	2.43%	1.55%	0.00%	3.09%	1.55%	9.49%	0.00%	100%
Road 1	1	-	70	66.79315	N	2200-2300	431	37.35%	22.97%	2.78%	4.18%	2.32%	2.55%	9.51%	0.00%	0.23%	0.46%	0.46%	2.78%	1.62%	0.00%	3.02%	0.93%	8.82%	0.00%	100%
Road 1	1	-	70	67.13542	N	2300-0000	385	35.84%	26.75%	3.90%	5.71%	3.38%	1.56%	6.49%	0.00%	0.00%	0.00%	0.52%	2.86%	1.82%	0.00%	2.86%	1.04%	7.27%	0.00%	100%
Road 2	2	-	50	40.75	N	0000-0100	51	29.41%	11.76%	5.88%	7.84%	5.88%	5.88%	7.84%	0.00%	0.00%	0.00%	0.00%	9.80%	3.92%	0.00%	1.96%	1.96%	7.84%	0.00%	100%
Road 2	2	-	50	42.25	N	0100-0200	33	45.45%	9.09%	3.03%	6.06%	3.03%	3.03%	6.06%	0.00%	0.00%	0.00%	0.00%	6.06%	3.03%	0.00%	3.03%	3.03%	9.09%	0.00%	100%
Road 2	2	-	50	43.08333	N	0200-0300	23	34.78%	17.39%	4.35%	4.35%	0.00%	4.35%	8.70%	0.00%	0.00%	0.00%	0.00%	4.35%	0.00%	0.00%	4.35%	4.35%	13.04%	0.00%	100%
Road 2	2	-	50	45	N	0300-0400	15	60.00%	13.33%	0.00%	0.00%	0.00%	6.67%	0.00%	0.00%	0.00%	0.00%	0.00%	6.67%	0.00%	0.00%	0.00%	0.00%	13.33%	0.00%	100%
Road 2	2	-	50	42.75	N	0400-0500	27	40.74%	11.11%	3.70%	3.70%	3.70%	3.70%	7.41%	0.00%	0.00%	0.00%	0.00%	7.41%	3.70%	0.00%	3.70%	0.00%	11.11%	0.00%	100%
Road 2	2	-	50	40.25	N	0500-0600	57	50.88%	14.04%	1.75%	3.51%	1.75%	3.51%	5.26%	0.00%	0.00%	0.00%	0.00%	7.02%	1.75%	0.00%	1.75%	1.75%	7.02%	0.00%	100%
Road 2	2	-	50	38.56667	N	0600-0700	103	40.78%	8.74%	2.91%	4.85%	2.91%	5.83%	6.80%	0.00%	0.00%	0.97%	0.00%	10.68%	3.88%	0.00%	1.94%	3.88%	5.83%	0.00%	100%
Road 2	2	-	50	36.73333	N	0700-0800	158	43.04%	13.29%	3.16%	5.70%	3.80%	3.80%	5.06%	0.00%	0.00%	0.00%	0.00%	8.23%	3.16%	0.00%	1.27%	5.70%	3.80%	0.00%	100%
Road 2	2	-	50	32	N	0800-0900	300	44.67%	9.33%	3.00%	7.33%	4.33%	4.67%	5.33%	0.00%	0.00%	1.00%	0.00%	7.33%	3.67%	0.00%	1.33%	5.00%	3.00%	0.00%	100%
Road 2	2	-	50	33.8	N	0900-1000	246	34.15%	9.35%	5.28%	13.41%	6.91%	6.50%	8.13%	0.00%	0.00%	0.00%	0.00%	5.69%	1.63%	0.00%	1.22%	1.22%	6.50%	0.00%	100%
Road 2	2	-	50	35.86667	N	1000-1100	184	28.26%	10.33%	5.98%	10.87%	8.15%	9.78%	9.24%	0.00%	0.00%	0.00%	0.00%	4.89%	2.72%	0.00%	1.63%	0.54%	7.61%	0.00%	100%
Road 2	2	-	50	35.96667	N	1100-1200	181	20.99%	7.18%	3.87%	12.15%	11.05%	12.71%	15.47%	0.00%	0.00%	0.00%	0.00%	4.97%	0.55%	0.00%	2.21%	1.10%	7.73%	0.00%	100%
Road 2	2	-	50	35.73333	N	1200-1300	188	27.66%	12.77%	4.26%	12.23%	8.51%	6.38%	9.04%	0.00%	0.00%	0.53%	0.00%	5.32%	1.60%	0.00%	1.60%	2.13%	7.98%	0.00%	100%
Road 2	2	-	50	34.66667	N	1300-1400	220	31.36%	10.45%	3.64%	7.27%	7.73%	11.36%	10.45%	0.45%	0.00%	0.45%	0.00%	3.64%	1.36%	0.00%	1.36%	1.82%	8.64%	0.00%	100%
Road 2	2	-	50	36.56667	N	1400-1500	163	34.97%	7.98%	4.29%	10.43%	7.36%	7.98%	7.98%	0.00%	0.00%	0.61%	0.00%	4.91%	1.84%	0.00%	1.84%	1.84%	7.98%	0.00%	100%
Road 2	2	-	50	36.03333	N	1500-1600	179	31.84%	7.82%	5.59%	5.59%	7.26%	8.94%	10.06%	0.00%	0.00%	1.12%	0.56%	8.38%	3.91%	0.00%	1.68%	0.56%	6.70%	0.00%	100%
Road 2	2	-	50	34.7	N	1600-1700	219	33.33%	10.50%	3.65%	12.79%	3.65%	6.39%	7.76%	0.46%	0.00%	0.91%	0.91%	8.22%	4.11%	0.00%	0.91%	0.91%	5.48%	0.00%	100%
Road 2	2	-	50	34.76667	N	1700-1800	217	50.69%	7.37%	5.99%	4.61%	4.61%	6.91%	7.37%	0.46%	0.00%	0.00%	0.00%	5.53%	1.84%	0.00%	0.92%	1.84%	1.84%	0.00%	100%
Road 2	2	-	50	33.73333	N	1800-1900	248	41.53%	14.52%	4.03%	4.84%	4.03%	4.03%	9.68%	0.00%	0.00%	0.00%	0.81%	5.24%	4.44%	0.00%	1.21%	1.21%	4.44%	0.00%	100%
Road 2	2	-	50	36.46667	N	1900-2000	166	47.59%	16.27%	3.61%	3.61%	0.60%	1.81%	9.04%	0.60%	0.00%	0.00%	0.00%	8.43%	3.01%	0.00%	1.81%	0.60%	3.01%	0.00%	100%
Road 2	2	-	50	37.13333	N	2000-2100	146	46.58%	16.44%	4.79%	1.37%	4.11%	2.74%	4.79%	0.00%	0.00%	0.00%	0.00%	8.22%	0.68%	0.00%	2.05%	2.74%	5.48%	0.00%	100%
Road 2	2	-	50	36.93333	N	2100-2200	152	51.32%	19.08%	2.63%	1.97%	0.66%	3.95%	3.29%	0.00%	0.00%	0.00%	0.00%	5.92%	0.66%	0.00%	1.97%	3.95%	4.61%	0.00%	100%
Road 2	2	-	50	37.83333	N	2200-2300	125	43.20%	16.80%	2.40%	4.00%	2.40%	5.60%	7.20%	0.00%	0.00%	0.80%	0.00%	7.20%	2.40%	0.00%	1.60%	0.80%	5.60%	0.00%	100%
Road 2	2	-	50	38.33333	N	2300-0000	110	40.91%	20.00%	3.64%	5.45%	3.64%	3.64%	5.45%	0.00%	0.00%	0.00%	0.00%	7.27%	2.73%	0.00%	1.82%	0.91%	4.55%	0.00%	100%
Road 3	3	-	70	68.29613	N	0000-0100	229	26.64%	15.72%	5.68%	8.30%	4.80%	3.06%	9.61%	0.00%	0.00%	0.00%	0.44%	5.24%	2.62%	0.00%	3.93%	2.18%	11.79%	0.00%	100%
Road 3	3	-	70	68.95089	N	0100-0200	141	43.97%	10.64%	4.26%	6.38%	3.55%	2.13%	6.38%	0.00%	0.00%	0.00%	0.00%	3.55%	2.13%	0.00%	3.55%	2.84%	10.64%	0.00%	100%
Road 3	3	-	70	69.26339	N	0200-0300	99	33.33%	25.25%	3.03%	3.03%	1.01%	3.03%	9.09%	0.00%	0.00%	0.00%	0.00%	3.03%	1.01%	0.00%	4.04%	4.04%	10.10%	0.00%	100%
Road 3	3	-	70	69.48661	N	0300-0400	69	52.17%	18.84%	1.45%	1.45%	1.45%	2.90%	2.90%	0.00%	0.00%	0.00%	0.00%	4.35%	1.45%	0.00%	2.90%	1.45%	8.70%	0.00%	100%
Road 3	3	-	70	69.17411	N	0400-0500	111	41.44%	14.41%	3.60%	4.50%	3.60%	2.70%	8.11%	0.00%	0.00%	0.00%	0.90%	4.50%	2.70%	0.00%	3.60%	0.90%	9.01%	0.00%	100%
Road 3	3	-	70	68.19196	N	0500-0600	243	47.33%	18.52%	1.65%	2.88%	2.06%	2.47%	7.82%	0.00%	0.00%	0.00%	0.41%	4.12%	1.65%	0.00%	2.88%	2.06%	6.17%	0.00%	100%
Road 3	3	-	70	66.74107	N	0600-0700	438	38.58%	12.10%	3.20%	4.79%	3.20%	3.65%	9.13%	0.00%	0.23%	0.68%	0.46%	6.16%	2.97%	0.00%	2.74%	4.34%	7.53%	0.23%	100%
Road 3	3	-	70	64.12698	N	0700-0800	716	38.41%	16.34%	3.77%	5.73%	3.91%	2.51%	6.28%	0.14%	0.00%	0.00%	0.42%	4.47%	2.51%	0.00%	1.82%	5.87%	7.68%	0.14%	100%
Road 3	3	-	70	58.71032	N	0800-0900	989	42.16%	12.13%	3.94%	6.57%	4.25%	3.03%	6.77%	0.00%	0.10%	0.51%	0.40%	4.55%	2.63%	0.00%	1.82%	2.93%	8.09%	0.10%	100%
Road 3	3	-	70	59.40476	N	0900-1000	954	33.44%	11.01%	7.34%	11.84%	7.13%	3.67%	8.49%	0.00%	0.10%	0.10%	0.21%	3.14%	1.36%	0.00%	2.31%	1.47%	8.28%	0.10%	100%
Road 3	3	-	70	61.07143	N	1000-1100	870	29.89%	10.57%	6.44%	9.43%	6.32%	5.17%	12.87%	0.00%	0.34%	0.46%	0.23%	2.64%	1.49%	0.00%	2.18%	1.84%	10.00%	0.11%	100%
Road 3	3	-	70	61.54762	N	1100-1200	846	28.25%	13.12%	5.91%	9.69%	6.97%	5.20%	12.17%	0.00%	0.24%	0.24%	0.24%	2.48%	0.83%	0.00%	2.96%	1.89%	9.81%	0.00%	100%
Road 3	3	-	70	61.54762	N	1200-1300	846	31.56%	12.53%	5.44%	8.98%	6.03%	3.90%	10.40%	0.00%	0.12%	0.35%	0.24%	2.84%	1.30%	0.00%	2.84%	2.48%	10.87%	0.12%	100%
Road 3	3	-	70	60.09921	N	1300-1400	919	29.82%	13.06%	5.88%	8.81%	6.42%	5.44%	12.40%	0.11%	0.22%	0.44%	0.22%	2.18%	1.09%	0.00%	2.39%	1.31%	10.23%	0.00%	100%
Road 3	3	-	70	60	N	1400-1500	924	34.20%	12.55%	5.30%	8.33%	5.41%	4.00%	11.26%	0.00%	0.43%	0.65%	0.32%	3.03%	1.73%	0.00%	2.38%	1.30%	8.98%	0.11%	100%
Road 3	3	-	70	60.6746	N	1500-1600	890	26.63%	12.25%	7.08%	9.55%	6.74%	4.38%	11.35%	0.00%	0.45%	0.90%	0.45%	3.82%	2.13%	0.00%	2.36%	2.13%	9.66%	0.11%	100%
Road 3	3	-	70	59.10714	N	1600-1700	969	30.13%	15.69%	5.47%	9.29%	4.85%	3.92%	10.63%	0.10%	0.31%	0.72%	0.52%	3.92%	2.27%	0.00%	2.27%	0.52%	9.29%	0.10%	100%
Road 3	3	-	70	59.0873	N	1700-1800	970	43.09%	13.71%	4.43%	5.46%	3.71%	3.09%	7.11%	0.10%	0.21%	0.21%	0.41%	3.92%	2.06%	0.00%	2.16%	2.99%	7.22%	0.10%	100%
Road 3	3	-	70	58.15476	N	1800-1900	1017	39.23%	19.76%	3.54%	4.72%	3.15%	2.26%	6.78%	0.00%	0.10%	0.10%	0.59%	3.74%	2.56%	0.00%	2.46%	3.93%	6.98%	0.10%	100%
Road 3	3	-	70	63.39286	N	1900-2000	753	37.32%	20.45%	3.32%	4.52%	2.52%	2.52%	9.83%	0.13%	0.00%	0.13%	0.40%	4.25%	1.99%	0.00%	2.66%	1.99%	7.84%	0.13%	100%
Road 3	3	-	70	65.20833	N	2000-2100	644	41.46%	19.57%	3.57%	3.88%	3.26%	2.48%	8.23%	0.00%	0.00%	0.00%	0.31%	3.73%	1.24%	0.00%	2.48%	1.40%	8.39%	0.00%	100%
Road 3	3	-	70	65.46131	N	2100-2200	610	41.97%	20.49%	2.30%	2.95%	1.64%	3.28%	9.18%	0.00%	0.00%	0.00%	0.33%	3.44%	1.31%	0.00%	2.95%	2.13%	8.03%	0.00%	100%
Road 3	3	-	70	65.8631	N	2200-2300	556	38.49%	21.58%	2.70%	4.14%	2.34%	3.42%	8.99%	0.00%	0.18%	0.54%	0.36%	3.96%	1.80%	0.00%	2.70%	0.90%	7.91%	0.00%	100%

Appendix 3.4 Calculation of Vehicular Emisisons
Traffic Data and Road Segments (Year 2027)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 3	3	-	70	66.29464	N	2300-0000	498	36.75%	25.10%	4.02%	5.62%	3.61%	2.01%	6.22%	0.00%	0.00%	0.00%	0.40%	4.02%	2.01%	0.00%	2.61%	1.00%	6.63%	0.00%	100%
Road 4	4	-	50	42.08333	N	0000-0100	35	5.71%	2.86%	2.86%	2.86%	2.86%	2.86%	25.71%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	54.29%	0.00%	100%
Road 4	4	-	50	45	N	0100-0200	20	10.00%	0.00%	0.00%	5.00%	0.00%	5.00%	20.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	60.00%	0.00%	100%
Road 4	4	-	50	45	N	0200-0300	13	7.69%	0.00%	0.00%	0.00%	0.00%	7.69%	30.77%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	53.85%	0.00%	100%
Road 4	4	-	50	45	N	0300-0400	7	14.29%	0.00%	0.00%	0.00%	0.00%	0.00%	14.29%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	71.43%	0.00%	100%
Road 4	4	-	50	45	N	0400-0500	14	14.29%	0.00%	0.00%	0.00%	0.00%	7.14%	28.57%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	50.00%	0.00%	100%
Road 4	4	-	50	45	N	0500-0600	24	16.67%	4.17%	0.00%	0.00%	4.17%	8.33%	33.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	33.33%	0.00%	100%
Road 4	4	-	50	40.66667	N	0600-0700	52	11.54%	1.92%	1.92%	1.92%	5.77%	7.69%	32.69%	0.00%	0.00%	0.00%	0.00%	0.00%	1.92%	0.00%	0.00%	1.92%	32.69%	0.00%	100%
Road 4	4	-	50	38.93333	N	0700-0800	92	10.87%	2.17%	2.17%	4.35%	4.35%	5.43%	22.83%	1.09%	0.00%	0.00%	0.00%	0.00%	3.26%	0.00%	0.00%	2.17%	41.30%	0.00%	100%
Road 4	4	-	50	36.9	N	0800-0900	153	15.03%	1.96%	2.61%	3.92%	3.27%	3.92%	29.41%	0.00%	0.00%	0.00%	0.00%	0.00%	1.96%	0.00%	0.00%	0.65%	37.25%	0.00%	100%
Road 4	4	-	50	37.06667	N	0900-1000	148	12.84%	2.03%	2.70%	4.73%	4.73%	8.11%	25.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.03%	37.84%	0.00%	100%
Road 4	4	-	50	37.23333	N	1000-1100	143	4.20%	0.70%	2.80%	6.99%	5.59%	8.39%	33.57%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.70%	37.06%	0.00%	100%
Road 4	4	-	50	36.83333	N	1100-1200	155	12.26%	1.29%	3.23%	4.52%	3.87%	7.74%	40.65%	0.00%	0.00%	0.00%	0.00%	0.65%	0.00%	0.00%	0.00%	0.00%	25.81%	0.00%	100%
Road 4	4	-	50	37.1	N	1200-1300	147	8.16%	0.68%	2.72%	6.12%	4.08%	4.76%	29.25%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.36%	42.86%	0.00%	100%
Road 4	4	-	50	37.03333	N	1300-1400	149	6.71%	0.67%	4.03%	5.37%	4.70%	7.38%	32.21%	0.67%	0.00%	0.00%	0.00%	0.00%	0.67%	0.00%	0.00%	0.00%	37.58%	0.00%	100%
Road 4	4	-	50	37.4	N	1400-1500	138	10.14%	2.90%	2.17%	6.52%	4.35%	4.35%	33.33%	0.00%	0.00%	0.00%	0.00%	0.00%	1.45%	0.00%	0.00%	1.45%	33.33%	0.00%	100%
Road 4	4	-	50	37.86667	N	1500-1600	124	3.23%	1.61%	1.61%	5.65%	6.45%	6.45%	33.87%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	41.13%	0.00%	100%
Road 4	4	-	50	37.86667	N	1600-1700	124	6.45%	0.00%	4.84%	6.45%	5.65%	6.45%	29.84%	0.81%	0.00%	0.00%	0.00%	0.00%	0.81%	0.00%	0.00%	0.00%	38.71%	0.00%	100%
Road 4	4	-	50	37.8	N	1700-1800	126	8.73%	0.00%	5.56%	5.56%	3.97%	5.56%	28.57%	0.79%	0.00%	0.00%	0.00%	0.00%	0.79%	0.00%	0.00%	1.59%	38.89%	0.00%	100%
Road 4	4	-	50	38.46667	N	1800-1900	106	7.55%	0.94%	1.89%	0.94%	2.83%	3.77%	34.91%	0.00%	0.00%	0.00%	0.00%	0.00%	1.89%	0.00%	0.00%	0.00%	45.28%	0.00%	100%
Road 4	4	-	50	39.53333	N	1900-2000	74	6.76%	2.70%	2.70%	4.05%	5.41%	1.35%	36.49%	0.00%	0.00%	0.00%	0.00%	1.35%	0.00%	0.00%	0.00%	0.00%	39.19%	0.00%	100%
Road 4	4	-	50	45	N	2000-2100	49	10.20%	4.08%	0.00%	2.04%	2.04%	6.12%	14.29%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.08%	57.14%	0.00%	100%
Road 4	4	-	50	45	N	2100-2200	37	16.22%	8.11%	0.00%	10.81%	2.70%	5.41%	10.81%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	45.95%	0.00%	100%
Road 4	4	-	50	39.9	N	2200-2300	63	11.11%	3.17%	1.59%	3.17%	1.59%	6.35%	34.92%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	38.10%	0.00%	100%
Road 4	4	-	50	41	N	2300-0000	48	12.50%	4.17%	2.08%	4.17%	2.08%	4.17%	27.08%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	43.75%	0.00%	100%
Road 5	5	-	70	68.56399	N	0000-0100	193	30.57%	18.13%	6.22%	9.33%	5.18%	3.11%	6.22%	0.00%	0.00%	0.00%	0.52%	6.22%	3.11%	0.00%	4.66%	2.59%	4.15%	0.00%	100%
Road 5	5	-	70	69.0997	N	0100-0200	121	49.59%	12.40%	4.96%	6.61%	4.13%	1.65%	4.13%	0.00%	0.00%	0.00%	0.00%	4.13%	2.48%	0.00%	4.13%	3.31%	2.48%	0.00%	100%
Road 5	5	-	70	69.36012	N	0200-0300	86	37.21%	29.07%	3.49%	3.49%	1.16%	2.33%	5.81%	0.00%	0.00%	0.00%	0.00%	3.49%	1.16%	0.00%	4.65%	4.65%	3.49%	0.00%	100%
Road 5	5	-	70	69.53869	N	0300-0400	62	56.45%	20.97%	1.61%	1.61%	1.61%	3.23%	1.61%	0.00%	0.00%	0.00%	0.00%	4.84%	1.61%	0.00%	3.23%	1.61%	1.61%	0.00%	100%
Road 5	5	-	70	69.27827	N	0400-0500	97	45.36%	16.49%	4.12%	5.15%	4.12%	2.06%	5.15%	0.00%	0.00%	0.00%	1.03%	5.15%	3.09%	0.00%	4.12%	1.03%	3.09%	0.00%	100%
Road 5	5	-	70	68.37798	N	0500-0600	218	50.92%	20.18%	1.83%	3.21%	1.83%	1.83%	4.59%	0.00%	0.00%	0.00%	0.46%	4.59%	1.83%	0.00%	3.21%	2.29%	3.21%	0.00%	100%
Road 5	5	-	70	67.13542	N	0600-0700	385	42.34%	13.51%	3.38%	5.19%	2.86%	3.12%	5.97%	0.00%	0.26%	0.78%	0.52%	7.01%	3.12%	0.00%	3.12%	4.68%	3.90%	0.26%	100%
Road 5	5	-	70	65.35714	N	0700-0800	624	42.47%	18.43%	4.01%	5.93%	3.85%	2.08%	4.01%	0.00%	0.00%	0.00%	0.48%	5.13%	2.40%	0.00%	2.08%	6.41%	2.56%	0.16%	100%
Road 5	5	-	70	61.74603	N	0800-0900	836	47.25%	13.88%	4.19%	7.06%	4.43%	2.87%	2.63%	0.00%	0.12%	0.60%	0.48%	5.38%	2.75%	0.00%	2.15%	3.35%	2.75%	0.12%	100%
Road 5	5	-	70	62.30159	N	0900-1000	808	37.25%	12.62%	8.17%	13.12%	7.55%	2.85%	5.45%	0.00%	0.12%	0.12%	0.25%	3.71%	1.61%	0.00%	2.72%	1.36%	2.97%	0.12%	100%
Road 5	5	-	70	63.92857	N	1000-1100	726	34.85%	12.53%	7.16%	9.92%	6.47%	4.55%	8.82%	0.00%	0.41%	0.55%	0.28%	3.17%	1.79%	0.00%	2.62%	2.07%	4.68%	0.14%	100%
Road 5	5	-	70	64.64286	N	1100-1200	690	31.88%	15.80%	6.52%	10.87%	7.68%	4.64%	5.80%	0.00%	0.29%	0.29%	0.29%	2.90%	1.01%	0.00%	3.62%	2.32%	6.09%	0.00%	100%
Road 5	5	-	70	64.46429	N	1200-1300	699	36.34%	15.02%	6.01%	9.59%	6.44%	3.72%	6.44%	0.00%	0.14%	0.43%	0.29%	3.43%	1.57%	0.00%	3.43%	2.72%	4.29%	0.14%	100%
Road 5	5	-	70	63.11508	N	1300-1400	767	34.42%	15.38%	6.13%	9.52%	6.65%	5.08%	8.60%	0.00%	0.26%	0.52%	0.26%	2.61%	1.17%	0.00%	2.87%	1.56%	4.95%	0.00%	100%
Road 5	5	-	70	62.7381	N	1400-1500	786	38.42%	14.25%	5.85%	8.65%	5.60%	3.94%	7.38%	0.00%	0.51%	0.76%	0.38%	3.56%	1.78%	0.00%	2.80%	1.27%	4.71%	0.13%	100%
Road 5	5	-	70	63.15476	N	1500-1600	765	30.46%	13.99%	7.97%	10.20%	6.67%	4.05%	7.71%	0.00%	0.52%	1.05%	0.52%	4.44%	2.48%	0.00%	2.75%	2.48%	4.58%	0.13%	100%
Road 5	5	-	70	61.62698	N	1600-1700	842	33.61%	18.05%	5.46%	9.62%	4.75%	3.56%	7.84%	0.00%	0.36%	0.83%	0.59%	4.51%	2.49%	0.00%	2.61%	0.59%	4.99%	0.12%	100%
Road 5	5	-	70	61.5873	N	1700-1800	844	48.22%	15.76%	4.27%	5.45%	3.67%	2.73%	3.91%	0.00%	0.24%	0.24%	0.47%	4.50%	2.25%	0.00%	2.49%	3.20%	2.49%	0.12%	100%
Road 5	5	-	70	60.27778	N	1800-1900	910	42.86%	21.98%	3.74%	5.16%	3.19%	2.09%	3.52%	0.00%	0.11%	0.11%	0.66%	4.18%	2.64%	0.00%	2.75%	4.40%	2.53%	0.11%	100%
Road 5	5	-	70	64.90079	N	1900-2000	677	40.77%	22.30%	3.40%	4.58%	2.07%	2.66%	6.94%	0.15%	0.00%	0.15%	0.44%	4.58%	2.22%	0.00%	2.95%	2.22%	4.43%	0.15%	100%
Road 5	5	-	70	65.58036	N	2000-2100	594	44.11%	20.88%	3.87%	4.04%	3.37%	2.19%	7.58%	0.00%	0.00%	0.00%	0.34%	4.04%	1.35%	0.00%	2.69%	1.18%	4.38%	0.00%	100%
Road 5	5	-	70	65.75149	N	2100-2200	571	43.61%	21.37%	2.45%	2.28%	1.58%	3.15%	9.11%	0.00%	0.00%	0.00%	0.35%	3.68%	1.40%	0.00%	3.15%	2.28%	5.60%	0.00%	100%
Road 5	5	-	70	66.33929	N	2200-2300	492	42.07%	23.78%	2.85%	4.27%	2.44%	2.85%	5.89%	0.00%	0.20%	0.61%	0.41%	4.47%	2.03%	0.00%	3.05%	1.02%	4.07%	0.00%	100%
Road 5	5	-	70	66.66667	N	2300-0000	448	39.51%	27.46%	4.24%	5.80%	3.57%	1.79%	4.02%	0.00%	0.00%	0.00%	0.45%	4.46%	2.23%	0.00%	2.90%	1.12%	2.46%	0.00%	100%
Road 6	6	-	70	68.89881	N	0000-0100	148	44.59%	25.68%	3.38%	4.05%	2.03%	2.03%	2.70%	0.00%	0.00%	0.00%	0.68%	4.05%	2.03%	0.00%	4.05%	2.03%	2.70%	0.00%	100%
Road 6	6	-	70	69.15923	N	0100-0200	113	38.05%	20.35%	7.08%	6.19%	3.54%	4.42%	4.42%	0.00%	0.00%	0.00%	0.00%	3.54%	0.88%	0.00%	3.54%	2.65%	5.31%	0.00%	100%
Road 6	6	-	70	69.4122	N	0200-0300	79	41.77%	22.78%	6.33%	5.06%	3.80%	2.53%	2.53%	0.00%	0.00%	0.00%	0.00%	5.06%	1.27%	0.00%	3.80%	1.27%	3.80%	0.00%	100%
Road 6	6	-	70	69.53869	N	0300-0400	62	35.48%	19.35%	9.68%	9.68%	4.84%	3.23%	3.23%	0.00%	0.00%	0.00%	0.00%	3.23%	1.61%	0.00%	4.84%	1.61%	3.23%	0.00%	100%
Road 6	6	-	70	69.33036	N	0400-0500	90	37.78%	20.00%	5.56%	6.67%	3.33%	3.33%	4.44%	0.00%	0.00%	1.11%	0.00%	4.44%	1.11%	0.00%	4.44%	3.33%	4.44%	0.00%	100%
Road 6	6	-	70	68.80208	N	0500-0600	161	37.89%	23.60%	5.59%	6.21%	3.11%	3.11%	3.73%	0.00%	0.00%	0.00%	0.62%	3.73%	1.86%	0.00%	3.73%	3.11%	3.73%	0.00%	100%
Road 6	6	-	70	67.86458	N	0600-0700	287	32.40%	26.48%	6.27%	6.62%	3.83%	3.48%	3.83%	0.00%	0.00%	0.00%	0.35%	3.83%	2.09%	0.00%	4.53%	2.79%	3.48%	0.00%	100%
Road 6	6	-	70	66.60714	N	0700-0800	456	37.50%	24.56%	5.92%	6.14%	3.51%	2.63%	2.63%	0.00%	0.22%	0.22%	0.44%	5.04%	2.19%	0.00%	3.29%	3.29%	2.41%	0.00%	100%
Road 6	6	-	70	65.13393	N	0800-0900	654	42.20%	27.98%	5.35%	3.82%	1.22%	2.14%	0.31%	0.00%	0.15%	0.61%	0.46%	5.81%	3.67%	0.00%	3.21%	2.29%	0.61%	0.15%	100%
Road 6	6	-	70	65.32738	N	0900-1000	628	41.24%	26.11%	5.57%	6.21%	3.18%	4.14%	2.55%	0.00%	0.00%	0.32%	0.00%	3.50%	1.11%	0.00%	2.87%	1.59%	1.59%	0.00%	100%
Road 6	6	-	70	66.04167	N	1000-1100	532	34.77%	23.50%	6.77%	5.64%	5.45%	4.32%	4.14%	0.00%	0.19%	0.19%	0.38%	3.57%	1.69%	0.00%	3.38%	0.56%	5.45%	0.00%	100%
Road 6	6	-	70	66.07143	N	1100-1200	528	29.17%	18.37%	8.52%	10.42%	7.20%	6.44%	7.20%	0.00%	0.19%	0.38%	0.19%	2.27%	1.14%	0.00%	2.84%	0.95%	4.73%	0.00%	100%
Road 6	6	-	70	66.16071	N	1200-1300	516	37.98%	13.57%	8.14%	9.11%	6.98%	5.43%	3.29%	0.00%	0.19%	0.19%	0.19%	4.07%	1.74%	0.00%	2.91%	0.97%	5.23%	0.00%	100%
Road 6	6	-	70	66.16815	N	1300-1400	515	28.16%	17.28%	8.35%	8.54%	5.83%	4.66%	6.80%	0.19%	0.39%	0.58%	0.58%	5.63%	2.52%	0.00%	3.11%	0.97%	6.21%	0.19%	100%
Road 6	6	-	70	65.77381	N	1400-1500	568	30.11%	17.61%	7.92%	8.45%	5.46%	4.93%	6.34%	0.18%	0.53%	0.88%	0.70%	5.81%	3.17%	0.00%	3.17%	1.23%	3.35%	0.18%	100%
Road 6	6	-	70	65.87054	N	1500-1600	555	35.86%	17.30%	6.31%	8.11%	4.50%	3.96%	4.68%	0.18%	0.00%	0.36%	0.36%	5.41%	2.34%	0.00%	2.88%	2.70%	4.86%	0.18%	100%
Road 6	6	-	70	65.77381	N	1600-1700	568	35.74%	14.44%	7.57%	8.80%	4.75%	4.40%	4.40%	0.00%	0.35%	0.70%	0.53%	5.63%	2.46%	0.00%	2.46%	2.46%	5.11%	0.18%	100%
Road 6	6	-	70	65.54315	N	1700-1800	599	47.41%	16.03%	5.18%	7.01%	2.34%	3.17%	2.50%	0.00%	0.17%	0.33%	0.50%	5.34%	2.34%	0.00%	2.17%	2.67%	2.67%	0.17%	100%
Road 6	6	-	70	64.78175	N	1800-1900	683	48.90%	16.25%	4.54%	3.07%	1.90%	1.90%	3.22%	0.00%	0.29%	0.44%	0.44%	6.15%	2.34%	0.00%	2.78%	4.83%	2.78%	0.15%	100%
Road 6	6	-	70	66.12351	N	1900-2000	521	39.35%	19.96%	4.22%	3.45%	2.11%	3.45%	4.03%	0.00%	0.38%	0.38%	0.58%	6.33%	2.11%	0.00%	3.45%	5.76%	4.22%	0.19%	100%
Road 6	6	-	70	66.9494	N	2000-2100	410	46.83%	22.20%	3.41%	3.17%	1.46%	1.95%	3.90%	0.00%	0.00%	0.00%	0.49%	5.85%	1.95%	0.00%	3.66%	3.17%	1.95%	0.00%	100%
Road 6	6	-	70	67.35119	N	2100-2200	356	41.29%	20.51%	2.25%	2.25%	1.12%	2.53%	7.02%	0.00%	0.00%	0.00%	0.56%	7.58%	2.81%	0.00%	3.65%	2.53%	5.62%	0.28%	100%

Appendix 3.4 Calculation of Vehicular Emisisons
Traffic Data and Road Segments (Year 2027)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 6	6	-	70	67.19494	N	2200-2300	377	33.42%	33.95%	3.45%	3.45%	1.86%	2.65%	2.65%	0.00%	0.53%	1.06%	0.53%	5.57%	2.39%	0.00%	2.92%	2.92%	2.65%	0.00%	100%
Road 6	6	-	70	67.36607	N	2300-0000	354	49.44%	23.16%	5.08%	5.37%	3.11%	1.41%	1.41%	0.00%	0.00%	0.00%	0.28%	3.11%	1.13%	0.00%	2.54%	2.26%	1.69%	0.00%	100%
Road 7	7	-	70	68.63095	N	0000-0100	184	38.59%	20.65%	2.72%	3.80%	2.17%	2.17%	6.52%	0.00%	0.00%	0.00%	0.54%	3.26%	1.63%	0.00%	3.26%	2.17%	12.50%	0.00%	100%
Road 7	7	-	70	68.93601	N	0100-0200	143	32.17%	16.08%	5.59%	6.29%	3.50%	4.20%	9.79%	0.00%	0.00%	0.00%	0.00%	2.80%	0.70%	0.00%	2.80%	2.10%	13.99%	0.00%	100%
Road 7	7	-	70	69.3006	N	0200-0300	94	37.23%	19.15%	5.32%	5.32%	3.19%	2.13%	7.45%	0.00%	0.00%	0.00%	0.00%	4.26%	1.06%	0.00%	3.19%	1.06%	10.64%	0.00%	100%
Road 7	7	-	70	69.43452	N	0300-0400	76	31.58%	15.79%	7.89%	10.53%	5.26%	2.63%	6.58%	0.00%	0.00%	0.00%	0.00%	2.63%	1.32%	0.00%	3.95%	1.32%	10.53%	0.00%	100%
Road 7	7	-	70	69.17411	N	0400-0500	111	33.33%	16.22%	4.50%	6.31%	3.60%	3.60%	9.91%	0.00%	0.00%	0.90%	0.00%	3.60%	0.90%	0.00%	3.60%	2.70%	10.81%	0.00%	100%
Road 7	7	-	70	68.54167	N	0500-0600	196	33.67%	19.39%	4.59%	6.12%	3.57%	3.57%	9.69%	0.00%	0.00%	0.00%	0.51%	3.06%	1.53%	0.00%	3.06%	3.06%	8.16%	0.00%	100%
Road 7	7	-	70	67.39583	N	0600-0700	350	28.57%	22.00%	5.43%	6.86%	4.29%	4.00%	9.14%	0.00%	0.00%	0.00%	0.29%	3.14%	1.71%	0.00%	3.71%	2.57%	8.29%	0.00%	100%
Road 7	7	-	70	65.83333	N	0700-0800	560	32.86%	20.18%	5.00%	6.43%	4.29%	3.04%	6.25%	0.00%	0.18%	0.18%	0.36%	4.11%	1.79%	0.00%	2.68%	3.39%	9.29%	0.00%	100%
Road 7	7	-	70	61.54762	N	0800-0900	846	34.63%	21.75%	4.73%	5.56%	2.84%	2.84%	5.91%	0.24%	0.12%	0.47%	0.35%	4.49%	2.84%	0.00%	2.48%	1.77%	8.87%	0.12%	100%
Road 7	7	-	70	62.7381	N	0900-1000	786	34.48%	20.87%	5.09%	6.49%	4.07%	5.22%	7.51%	0.00%	0.00%	0.25%	0.13%	2.80%	1.15%	0.00%	2.29%	1.27%	8.40%	0.00%	100%
Road 7	7	-	70	64.6627	N	1000-1100	689	28.88%	18.14%	5.66%	6.53%	5.52%	4.64%	11.32%	0.29%	0.15%	0.15%	0.29%	3.05%	1.31%	0.00%	2.61%	0.73%	10.74%	0.00%	100%
Road 7	7	-	70	64.72222	N	1100-1200	686	24.93%	14.14%	7.29%	9.04%	6.27%	6.27%	13.41%	0.00%	0.15%	0.29%	0.15%	1.90%	0.87%	0.00%	2.19%	0.87%	12.24%	0.00%	100%
Road 7	7	-	70	64.74206	N	1200-1300	685	31.09%	10.51%	6.57%	8.61%	6.28%	5.40%	10.36%	0.00%	0.15%	0.15%	0.15%	3.07%	1.46%	0.00%	2.19%	0.88%	13.14%	0.00%	100%
Road 7	7	-	70	64.94048	N	1300-1400	675	24.44%	13.33%	6.81%	8.89%	6.07%	5.04%	12.00%	0.15%	0.30%	0.44%	0.44%	4.30%	2.07%	0.00%	2.37%	1.04%	12.15%	0.15%	100%
Road 7	7	-	70	64.28571	N	1400-1500	708	27.12%	14.27%	6.92%	8.33%	5.37%	4.52%	10.31%	0.14%	0.42%	0.71%	0.56%	4.66%	2.82%	0.00%	2.54%	1.13%	10.03%	0.14%	100%
Road 7	7	-	70	64.60317	N	1500-1600	692	31.36%	14.16%	5.49%	7.51%	4.48%	4.19%	9.97%	0.29%	0.00%	0.29%	0.29%	4.34%	2.02%	0.00%	2.31%	2.60%	10.55%	0.14%	100%
Road 7	7	-	70	64.12698	N	1600-1700	716	30.45%	11.45%	6.42%	8.94%	5.31%	4.47%	10.34%	0.00%	0.28%	0.56%	0.42%	4.47%	1.96%	0.00%	1.96%	2.65%	10.20%	0.14%	100%
Road 7	7	-	70	63.27381	N	1700-1800	759	41.90%	12.78%	4.35%	7.25%	2.77%	3.16%	6.85%	0.00%	0.13%	0.26%	0.40%	4.22%	2.11%	0.00%	1.71%	3.69%	8.30%	0.13%	100%
Road 7	7	-	70	62.69841	N	1800-1900	788	45.18%	14.34%	4.06%	4.06%	2.03%	1.90%	5.08%	0.00%	0.25%	0.38%	0.38%	5.33%	2.03%	0.00%	2.41%	4.57%	7.87%	0.13%	100%
Road 7	7	-	70	65.55804	N	1900-2000	597	36.18%	17.59%	3.69%	4.02%	2.18%	3.18%	7.54%	0.00%	0.34%	0.34%	0.50%	5.53%	2.01%	0.00%	3.02%	5.03%	8.71%	0.17%	100%
Road 7	7	-	70	66.36905	N	2000-2100	488	40.98%	19.06%	2.87%	2.87%	2.05%	2.87%	6.97%	0.00%	0.00%	0.00%	0.41%	4.92%	1.64%	0.00%	3.07%	3.28%	9.02%	0.00%	100%
Road 7	7	-	70	66.9494	N	2100-2200	410	37.80%	19.02%	1.95%	2.68%	1.71%	2.44%	9.51%	0.00%	0.00%	0.00%	0.49%	6.59%	2.93%	0.00%	3.17%	2.44%	9.02%	0.24%	100%
Road 7	7	-	70	66.71131	N	2200-2300	442	30.54%	29.41%	3.17%	3.62%	2.04%	2.94%	6.56%	0.00%	0.45%	0.90%	0.45%	4.75%	2.04%	0.00%	2.49%	2.94%	7.69%	0.00%	100%
Road 7	7	-	70	66.97173	N	2300-0000	407	46.44%	20.39%	4.67%	5.90%	3.19%	1.47%	3.44%	0.00%	0.00%	0.00%	0.25%	2.70%	0.98%	0.00%	2.21%	2.21%	6.14%	0.00%	100%
Road 8	8	-	50	45	N	0000-0100	36	13.89%	0.00%	0.00%	2.78%	2.78%	2.78%	22.22%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.78%	52.78%	0.00%	100%
Road 8	8	-	50	45	N	0100-0200	30	10.00%	0.00%	0.00%	6.67%	3.33%	3.33%	30.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	46.67%	0.00%	100%
Road 8	8	-	50	45	N	0200-0300	15	13.33%	0.00%	0.00%	6.67%	0.00%	0.00%	33.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	46.67%	0.00%	100%
Road 8	8	-	50	45	N	0300-0400	14	14.29%	0.00%	0.00%	14.29%	7.14%	0.00%	21.43%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	42.86%	0.00%	100%
Road 8	8	-	50	45	N	0400-0500	21	14.29%	0.00%	0.00%	4.76%	4.76%	4.76%	33.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	38.10%	0.00%	100%
Road 8	8	-	50	45	N	0500-0600	34	14.71%	0.00%	0.00%	5.88%	5.88%	5.88%	35.29%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	29.41%	0.00%	100%
Road 8	8	-	50	39.93333	N	0600-0700	62	11.29%	1.61%	1.61%	8.06%	6.45%	6.45%	33.87%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.61%	29.03%	0.00%	100%
Road 8	8	-	50	38.63333	N	0700-0800	101	12.87%	0.99%	0.99%	7.92%	6.93%	4.95%	22.77%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.97%	39.60%	0.00%	100%
Road 8	8	-	50	35.66667	N	0800-0900	190	8.42%	0.53%	2.63%	12.11%	7.37%	4.74%	25.79%	1.05%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	37.37%	0.00%	100%
Road 8	8	-	50	36.76667	N	0900-1000	157	7.64%	0.00%	3.18%	7.01%	7.64%	9.55%	27.39%	0.00%	0.00%	0.00%	0.64%	0.00%	1.27%	0.00%	0.00%	0.00%	35.67%	0.00%	100%
Road 8	8	-	50	36.73333	N	1000-1100	158	8.23%	0.00%	1.27%	9.49%	5.70%	5.70%	36.71%	1.27%	0.00%	0.00%	0.00%	1.27%	0.00%	0.00%	0.00%	1.27%	29.11%	0.00%	100%
Road 8	8	-	50	36.7	N	1100-1200	159	11.32%	0.00%	2.52%	4.40%	3.14%	5.66%	34.59%	0.00%	0.00%	0.00%	0.00%	0.63%	0.00%	0.00%	0.00%	0.63%	37.11%	0.00%	100%
Road 8	8	-	50	36.36667	N	1200-1300	169	10.06%	1.18%	1.18%	6.51%	4.14%	5.33%	32.54%	0.00%	0.00%	0.00%	0.00%	0.00%	0.59%	0.00%	0.00%	0.59%	37.87%	0.00%	100%
Road 8	8	-	50	36.66667	N	1300-1400	160	12.50%	0.63%	1.25%	9.38%	6.88%	6.25%	29.38%	0.00%	0.00%	0.00%	0.00%	0.00%	0.63%	0.00%	0.00%	1.25%	31.88%	0.00%	100%
Road 8	8	-	50	37.36667	N	1400-1500	139	15.11%	0.72%	2.16%	7.19%	5.04%	2.88%	27.34%	0.00%	0.00%	0.00%	0.00%	0.00%	1.44%	0.00%	0.00%	0.72%	37.41%	0.00%	100%
Road 8	8	-	50	37.43333	N	1500-1600	137	13.87%	1.46%	1.46%	5.11%	4.38%	5.11%	32.12%	0.73%	0.00%	0.00%	0.00%	0.00%	0.73%	0.00%	0.00%	1.46%	33.58%	0.00%	100%
Road 8	8	-	50	37.13333	N	1600-1700	146	10.27%	0.00%	1.37%	8.90%	7.53%	4.79%	34.25%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.74%	30.14%	0.00%	100%
Road 8	8	-	50	36.8	N	1700-1800	156	21.79%	0.64%	0.64%	7.69%	3.85%	3.21%	24.36%	0.00%	0.00%	0.00%	0.00%	0.00%	1.28%	0.00%	0.00%	7.05%	29.49%	0.00%	100%
Road 8	8	-	50	38.43333	N	1800-1900	107	21.50%	1.87%	0.93%	9.35%	2.80%	1.87%	18.69%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.80%	40.19%	0.00%	100%
Road 8	8	-	50	45	N	1900-2000	77	14.29%	1.30%	0.00%	7.79%	2.60%	1.30%	32.47%	0.00%	0.00%	0.00%	0.00%	0.00%	1.30%	0.00%	0.00%	0.00%	38.96%	0.00%	100%
Road 8	8	-	50	45	N	2000-2100	76	10.53%	2.63%	0.00%	1.32%	5.26%	7.89%	22.37%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.95%	46.05%	0.00%	100%
Road 8	8	-	50	45	N	2100-2200	53	13.21%	9.43%	0.00%	5.66%	5.66%	1.89%	26.42%	0.00%	0.00%	0.00%	0.00%	0.00%	3.77%	0.00%	0.00%	1.89%	32.08%	0.00%	100%
Road 8	8	-	50	39.86667	N	2200-2300	64	14.06%	3.13%	1.56%	4.69%	3.13%	4.69%	29.69%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.13%	35.94%	0.00%	100%
Road 8	8	-	50	40.66667	N	2300-0000	52	25.00%	1.92%	1.92%	9.62%	3.85%	1.92%	17.31%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.92%	36.54%	0.00%	100%
Road 9	9	-	50	35	Y	0000-0100	14	28.57%	7.14%	0.00%	21.43%	7.14%	7.14%	21.43%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.14%	0.00%	100%
Road 9	9	-	50	35	Y	0100-0200	11	27.27%	9.09%	0.00%	18.18%	9.09%	9.09%	18.18%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	9.09%	0.00%	100%
Road 9	9	-	50	35	Y	0200-0300	5	40.00%	20.00%	0.00%	20.00%	0.00%	0.00%	20.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%
Road 9	9	-	50	35	Y	0300-0400	4	50.00%	0.00%	0.00%	25.00%	0.00%	0.00%	25.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%
Road 9	9	-	50	35	Y	0400-0500	10	30.00%	10.00%	0.00%	10.00%	10.00%	10.00%	20.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.00%	0.00%	100%
Road 9	9	-	50	35	Y	0500-0600	17	35.29%	11.76%	0.00%	11.76%	5.88%	5.88%	17.65%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.88%	5.88%	0.00%	100%
Road 9	9	-	50	35	Y	0600-0700	32	25.00%	9.38%	0.00%	15.63%	6.25%	6.25%	18.75%	9.38%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.13%	6.25%	0.00%	100%
Road 9	9	-	50	33	Y	0700-0800	48	29.17%	8.33%	2.08%	16.67%	6.25%	4.17%	12.50%	10.42%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	6.25%	4.17%	0.00%	100%
Road 9	9	-	50	30.20833	Y	0800-0900	115	16.52%	7.83%	3.48%	18.26%	9.57%	3.48%	28.70%	4.35%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.74%	6.09%	0.00%	100%
Road 9	9	-	50	31.41667	Y	0900-1000	86	25.58%	5.81%	4.65%	10.47%	8.14%	6.98%	17.44%	6.98%	0.00%	0.00%	1.16%	1.16%	0.00%	0.00%	0.00%	1.16%	10.47%	0.00%	100%
Road 9	9	-	50	32.04167	Y	1000-1100	71	21.13%	5.63%	1.41%	14.08%	4.23%	12.68%	22.54%	4.23%	0.00%	0.00%	0.00%	1.41%	0.00%	0.00%	0.00%	0.00%	12.68%	0.00%	100%
Road 9	9	-	50	31.91667	Y	1100-1200	74	28.38%	2.70%	1.35%	18.92%	0.00%	9.46%	21.62%	5.41%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.05%	8.11%	0.00%	100%
Road 9	9	-	50	31.95833	Y	1200-1300	73	15.07%	9.59%	1.37%	17.81%	10.96%	9.59%	26.03%	2.74%	0.00%	0.00%	0.00%	0.00%	1.37%	0.00%	0.00%	1.37%	4.11%	0.00%	100%
Road 9	9	-	50	32.5	Y	1300-1400	60	11.67%	0.00%	3.33%	21.67%	16.67%	16.67%	15.00%	5.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.00%	0.00%	100%
Road 9	9	-	50	32.16667	Y	1400-1500	68	27.94%	8.82%	1.47%	17.65%	11.76%	0.00%	17.65%	5.88%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.47%	7.35%	0.00%	100%
Road 9	9	-	50	35	Y	1500-1600	57	38.60%	5.26%	0.00%	10.53%	5.26%	3.51%	19.30%	8.77%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.75%	7.02%	0.00%	100%
Road 9	9	-	50	35	Y	1600-1700	79	29.11%	3.80%	0.00%	29.11%	6.33%	1.27%	17.72%	5.06%	0.00%	0.00%	0.00%	0.00%	1.27%	0.00%	0.00%	1.27%	5.06%	0.00%	100%
Road 9	9	-	50	35	Y	1700-1800	68	41.18%	1.47%	0.00%	19.12%	4.41%	2.94%	7.35%	8.82%	0.00%	0.00%	0.00%	0.00%	1.47%	0.00%	0.00%	5.88%	7.35%	0.00%	100%
Road 9	9	-	50	35	Y	1800-1900	44	40.91%	11.36%	0.00%	15.91%	4.55%	4.55%	9.09%	4.55%	0.00%	0.00%	0.00%	0.00%	2.27%	0.00%	0.00%	4.55%	2.27%	0.00%	100%
Road 9	9	-	50	35	Y	1900-2000	43	25.58%	18.60%	0.00%	18.60%	4.65%	2.33%	13.95%	0.00%	0.00%	0.00%	0.00%	2.33%	0.00%	0.00%	0.00%	11.63%	2.33%	0.00%	100%
Road 9	9	-	50	35	Y	2000-2100	29	34.48%	20.69%	0.00%	3.45%	6.90%	13.79%	6.90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	6.90%	6.90%	0.00%	100%

Appendix 3.4 Calculation of Vehicular Emisisons
Traffic Data and Road Segments (Year 2027)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Road 9	9	-	50	35	Y	2100-2200	27	55.56%	14.81%	0.00%	29.63%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%
Road 9	9	-	50	35	Y	2200-2300	33	33.33%	15.15%	0.00%	12.12%	6.06%	6.06%	18.18%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.03%	6.06%	0.00%	100%
Road 9	9	-	50	35	Y	2300-0000	30	40.00%	13.33%	0.00%	16.67%	6.67%	3.33%	13.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.33%	3.33%	0.00%	100%
Road 10	10	-	50	35	Y	0000-0100	45	13.33%	4.44%	0.00%	6.67%	2.22%	2.22%	24.44%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.22%	44.44%	0.00%	100%
Road 10	10	-	50	35	Y	0100-0200	34	14.71%	2.94%	0.00%	8.82%	2.94%	2.94%	23.53%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.94%	41.18%	0.00%	100%
Road 10	10	-	50	35	Y	0200-0300	19	15.79%	5.26%	0.00%	5.26%	0.00%	5.26%	31.58%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	36.84%	0.00%	100%
Road 10	10	-	50	35	Y	0300-0400	12	16.67%	8.33%	0.00%	8.33%	0.00%	0.00%	16.67%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	50.00%	0.00%	100%
Road 10	10	-	50	35	Y	0400-0500	23	13.04%	4.35%	0.00%	8.70%	4.35%	4.35%	30.43%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	34.78%	0.00%	100%
Road 10	10	-	50	35	Y	0500-0600	41	19.51%	4.88%	0.00%	7.32%	4.88%	4.88%	31.71%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.44%	24.39%	0.00%	100%
Road 10	10	-	50	31.58333	Y	0600-0700	82	13.41%	3.66%	1.22%	7.32%	4.88%	6.10%	31.71%	3.66%	0.00%	0.00%	0.00%	0.00%	1.22%	0.00%	0.00%	2.44%	24.39%	0.00%	100%
Road 10	10	-	50	29.85	Y	0700-0800	129	15.50%	3.88%	0.78%	8.53%	4.65%	4.65%	22.48%	3.88%	0.00%	0.00%	0.00%	0.00%	0.78%	0.00%	0.00%	3.10%	31.78%	0.00%	100%
Road 10	10	-	50	27.88333	Y	0800-0900	247	11.34%	3.24%	2.43%	9.72%	2.02%	4.45%	31.17%	2.83%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.81%	31.98%	0.00%	100%
Road 10	10	-	50	28.73333	Y	0900-1000	196	8.16%	3.06%	2.55%	8.16%	4.59%	5.61%	29.08%	3.06%	0.00%	0.00%	0.00%	0.51%	1.02%	0.00%	0.00%	1.02%	33.16%	0.00%	100%
Road 10	10	-	50	28.45	Y	1000-1100	213	11.74%	1.88%	1.41%	7.98%	5.63%	7.51%	33.33%	2.35%	0.00%	0.00%	0.00%	0.47%	0.00%	0.00%	0.00%	0.94%	26.76%	0.00%	100%
Road 10	10	-	50	28.45	Y	1100-1200	213	12.68%	0.94%	1.41%	8.45%	2.35%	6.57%	34.27%	1.88%	0.00%	0.00%	0.00%	0.47%	0.00%	0.00%	0.00%	0.94%	30.05%	0.00%	100%
Road 10	10	-	50	28.33333	Y	1200-1300	220	10.91%	3.18%	0.91%	8.18%	5.00%	5.91%	33.64%	0.91%	0.00%	0.00%	0.00%	0.00%	0.91%	0.00%	0.00%	0.91%	29.55%	0.00%	100%
Road 10	10	-	50	28.8	Y	1300-1400	192	10.42%	0.52%	1.04%	11.46%	6.77%	6.77%	29.69%	1.56%	0.00%	0.00%	0.00%	0.00%	0.52%	0.00%	0.00%	1.04%	30.21%	0.00%	100%
Road 10	10	-	50	29	Y	1400-1500	180	12.78%	3.89%	1.11%	11.67%	6.11%	2.22%	27.22%	2.22%	0.00%	0.00%	0.00%	0.00%	1.11%	0.00%	0.00%	1.11%	30.56%	0.00%	100%
Road 10	10	-	50	28.93333	Y	1500-1600	184	15.22%	2.72%	1.09%	8.15%	3.80%	5.43%	31.52%	1.63%	0.00%	0.00%	0.00%	0.00%	0.54%	0.00%	0.00%	0.54%	29.35%	0.00%	100%
Road 10	10	-	50	28.58333	Y	1600-1700	205	14.15%	0.98%	0.98%	15.12%	6.34%	2.93%	32.20%	1.95%	0.00%	0.00%	0.00%	0.00%	0.49%	0.00%	0.00%	1.46%	23.41%	0.00%	100%
Road 10	10	-	50	28.8	Y	1700-1800	192	23.44%	1.04%	0.52%	11.98%	3.65%	3.65%	22.92%	2.60%	0.00%	0.00%	0.00%	0.00%	1.56%	0.00%	0.00%	2.60%	26.04%	0.00%	100%
Road 10	10	-	50	29.98333	Y	1800-1900	121	19.83%	2.48%	0.83%	9.09%	4.13%	3.31%	19.01%	1.65%	0.00%	0.00%	0.00%	0.00%	0.83%	0.00%	0.00%	2.48%	36.36%	0.00%	100%
Road 10	10	-	50	35	Y	1900-2000	109	16.51%	9.17%	0.00%	5.50%	1.83%	1.83%	28.44%	0.92%	0.00%	0.00%	0.00%	0.92%	0.92%	0.00%	0.00%	4.59%	29.36%	0.00%	100%
Road 10	10	-	50	35	Y	2000-2100	72	11.11%	5.56%	0.00%	0.00%	2.78%	5.56%	27.78%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.39%	45.83%	0.00%	100%
Road 10	10	-	50	35	Y	2100-2200	72	20.83%	11.11%	0.00%	11.11%	4.17%	1.39%	23.61%	0.00%	0.00%	0.00%	0.00%	0.00%	2.78%	0.00%	0.00%	1.39%	23.61%	0.00%	100%
Road 10	10	-	50	35	Y	2200-2300	75	20.00%	6.67%	0.00%	6.67%	2.67%	5.33%	20.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.33%	0.00%	0.00%	1.33%	36.00%	0.00%	100%
Road 10	10	-	50	32.08333	Y	2300-0000	70	22.86%	5.71%	1.43%	10.00%	2.86%	2.86%	21.43%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.43%	31.43%	0.00%	100%
Road 11	11	-	50	35	Y	0000-0100	44	9.09%	2.27%	0.00%	6.82%	2.27%	2.27%	6.82%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	70.45%	0.00%	100%
Road 11	11	-	50	35	Y	0100-0200	31	9.68%	3.23%	0.00%	6.45%	3.23%	3.23%	6.45%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	67.74%	0.00%	100%
Road 11	11	-	50	35	Y	0200-0300	15	13.33%	6.67%	0.00%	6.67%	0.00%	0.00%	6.67%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	66.67%	0.00%	100%
Road 11	11	-	50	35	Y	0300-0400	14	14.29%	0.00%	0.00%	7.14%	0.00%	0.00%	7.14%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	71.43%	0.00%	100%
Road 11	11	-	50	35	Y	0400-0500	20	15.00%	5.00%	0.00%	5.00%	5.00%	5.00%	10.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	55.00%	0.00%	100%
Road 11	11	-	50	35	Y	0500-0600	27	22.22%	7.41%	0.00%	7.41%	3.70%	3.70%	11.11%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.70%	40.74%	0.00%	100%
Road 11	11	-	50	35	Y	0600-0700	52	15.38%	5.77%	0.00%	9.62%	3.85%	3.85%	11.54%	5.77%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.92%	42.31%	0.00%	100%
Road 11	11	-	50	30.5	Y	0700-0800	108	12.96%	3.70%	0.93%	7.41%	2.78%	1.85%	5.56%	4.63%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.78%	57.41%	0.00%	100%
Road 11	11	-	50	28.58333	Y	0800-0900	205	11.22%	4.39%	1.95%	10.24%	5.37%	1.95%	16.10%	2.44%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.98%	45.37%	0.00%	100%
Road 11	11	-	50	29.56667	Y	0900-1000	146	15.07%	3.42%	2.74%	6.16%	4.79%	4.11%	10.27%	4.11%	0.00%	0.00%	0.68%	0.68%	0.00%	0.00%	0.00%	0.68%	47.26%	0.00%	100%
Road 11	11	-	50	30.04167	Y	1000-1100	119	12.61%	3.36%	0.84%	8.40%	2.52%	7.56%	13.45%	2.52%	0.00%	0.00%	0.00%	0.84%	0.00%	0.00%	0.00%	0.00%	47.90%	0.00%	100%
Road 11	11	-	50	29.76667	Y	1100-1200	134	15.67%	1.49%	0.75%	10.45%	0.00%	5.22%	11.94%	2.99%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.24%	49.25%	0.00%	100%
Road 11	11	-	50	29.28333	Y	1200-1300	163	9.20%	4.29%	0.61%	7.98%	4.91%	4.29%	11.66%	1.23%	0.00%	0.00%	0.00%	0.00%	0.61%	0.00%	0.00%	0.61%	54.60%	0.00%	100%
Road 11	11	-	50	30	Y	1300-1400	120	5.83%	0.00%	1.67%	10.83%	8.33%	8.33%	7.50%	2.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	55.00%	0.00%	100%
Road 11	11	-	50	30.16667	Y	1400-1500	116	16.38%	5.17%	0.86%	10.34%	6.90%	0.00%	10.34%	3.45%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.86%	45.69%	0.00%	100%
Road 11	11	-	50	35	Y	1500-1600	117	18.80%	2.56%	0.00%	5.13%	2.56%	1.71%	9.40%	4.27%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.85%	54.70%	0.00%	100%
Road 11	11	-	50	35	Y	1600-1700	139	16.55%	2.16%	0.00%	16.55%	3.60%	0.72%	10.07%	2.88%	0.00%	0.00%	0.00%	0.00%	0.72%	0.00%	0.00%	0.72%	46.04%	0.00%	100%
Road 11	11	-	50	35	Y	1700-1800	142	21.13%	0.70%	0.00%	9.15%	2.11%	1.41%	3.52%	4.23%	0.00%	0.00%	0.00%	0.00%	0.70%	0.00%	0.00%	2.82%	54.23%	0.00%	100%
Road 11	11	-	50	35	Y	1800-1900	118	16.95%	4.24%	0.00%	5.93%	1.69%	1.69%	3.39%	1.69%	0.00%	0.00%	0.00%	0.00%	0.85%	0.00%	0.00%	1.69%	61.86%	0.00%	100%
Road 11	11	-	50	35	Y	1900-2000	91	12.09%	8.79%	0.00%	8.79%	2.20%	1.10%	6.59%	0.00%	0.00%	0.00%	0.00%	1.10%	0.00%	0.00%	0.00%	5.49%	53.85%	0.00%	100%
Road 11	11	-	50	35	Y	2000-2100	81	17.28%	7.41%	0.00%	1.23%	2.47%	4.94%	2.47%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.47%	61.73%	0.00%	100%
Road 11	11	-	50	35	Y	2100-2200	57	26.32%	7.02%	0.00%	14.04%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	52.63%	0.00%	100%
Road 11	11	-	50	35	Y	2200-2300	63	17.46%	7.94%	0.00%	6.35%	3.17%	3.17%	9.52%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.59%	50.79%	0.00%	100%
Road 11	11	-	50	35	Y	2300-0000	60	20.00%	6.67%	0.00%	8.33%	3.33%	1.67%	6.67%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.67%	51.67%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	0000-0100	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	0100-0200	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	0200-0300	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	0300-0400	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	0400-0500	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	0500-0600	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	0600-0700	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	0700-0800	90	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	0800-0900	90	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	0900-1000	90	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	1000-1100	90	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	1100-1200	90	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	1200-1300	90	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	1300-1400	90	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	1400-1500	90	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	1500-1600	90	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	1600-1700	90	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	1700-1800	90	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	1800-1900	90	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	1900-2000	90	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%

Appendix 3.4 Calculation of Vehicular Emisisons
Traffic Data and Road Segments (Year 2027)

Road Name	Road ID	Road Type	Speed Limit (km/hr)	Average Speed (km/hr)	Start Emission Estimated by Broad Brush Approach (Y/N)	Hour	Total Vehicles (Veh/hr)	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Haul Road 1	HR1	-	8	8	N	2000-2100	90	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	2100-2200	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	2200-2300	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 1	HR1	-	8	8	N	2300-0000	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	0000-0100	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	0100-0200	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	0200-0300	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	0300-0400	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	0400-0500	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	0500-0600	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	0600-0700	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	0700-0800	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	0800-0900	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	0900-1000	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	1000-1100	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	1100-1200	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	1200-1300	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	1300-1400	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	1400-1500	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	1500-1600	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	1600-1700	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	1700-1800	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	1800-1900	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	1900-2000	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	2000-2100	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	2100-2200	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	2200-2300	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 2	HR2	-	8	8	N	2300-0000	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	0000-0100	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	0100-0200	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	0200-0300	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	0300-0400	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	0400-0500	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	0500-0600	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	0600-0700	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	0700-0800	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	0800-0900	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	0900-1000	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	1000-1100	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	1100-1200	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	1200-1300	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	1300-1400	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	1400-1500	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	1500-1600	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	1600-1700	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	1700-1800	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	1800-1900	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	1900-2000	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	2000-2100	45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	2100-2200	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	2200-2300	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%
Haul Road 3	HR3	-	8	8	N	2300-0000	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%	100%

Appendix 3.4 Calculation of Vehicular Emisisons

Traffic Data and Road Segments (Year 2027)

Road ID	Segment ID	X coordinate of endpoint 1	Y coordinate of endpoint 1	X coordinate of endpoint 2	Y coordinate of endpoint 2	Road height (mAG)	Physical Road width (m)	Road elevation (m)	Barrier 1 width (m)	Barrier 1 height (m)	Barrier 1 DCL (m)	Barrier 2 width (m)	Barrier 2 height (m)	Barrier 2 DCL (m)
1	101	828242.3	824610.5	828289.6	824616.5	0	8.8							
1	102	828289.6	824616.5	828345.2	824613.2	0	8.8							
1	103	828345.2	824613.2	828393.7	824604.3	0	8.8							
2	201	828243.6	824599.7	828289.2	824602.8	0	6							
2	202	828289.2	824602.8	828319.6	824603.4	0	6							
2	203	828319.6	824603.4	828361.2	824598.3	0	6							
2	204	828361.2	824598.3	828391.9	824591.4	0	6							
3	301	827622.1	824564.9	827684.2	824567.6	0	14.5							
3	302	827684.2	824567.6	827744.3	824569.4	0	9.5							
3	303	827744.3	824569.4	827964.2	824571.3	15	8.8	20						
3	304	827964.2	824571.3	828081.5	824573.3	0	10.7							
3	305	828081.5	824573.3	828242.6	824603.5	0	14.6							
4	401	827377.9	824531.6	827454.6	824530.9	0	6							
4	402	827454.6	824530.9	827480.4	824531.6	0	6							
4	403	827480.4	824531.6	827514.3	824536.6	0	6							
4	404	827514.3	824536.6	827566.9	824551.5	0	6							
4	405	827566.9	824551.5	827622.4	824561.6	0	6							
5	501	827368.6	824570.9	827455.4	824571.3	12	8.8	25						
5	502	827455.4	824571.3	827555.4	824571.4	25	8.8	20						
5	503	827555.4	824571.4	827622.4	824570.1	10	8.8	25						
6	601	827366.9	824580.9	827460.9	824580.1	10	8.8	25						
6	602	827460.9	824580.1	827610.6	824580.7	30	8.8	22						
6	603	827610.6	824580.7	827733.2	824581.3	0	8.8							
6	604	827733.2	824581.3	828037.8	824582.2	15	8.8	20						
7	701	828037.6	824586.5	828080.8	824587.4	0	17.7							
7	702	828080.8	824587.4	828201.9	824614.1	0	14.9		1	5	7.5			
7	703	828201.9	824614.1	828267.3	824626.1	0	14.9		1	5	7.5			
7	704	828267.3	824626.1	828346.3	824627.8	0	15.5		1	5	7.75			
7	705	828346.3	824627.8	828395.2	824618.9	0	17.7		1	5	8.85			
8	801	827738.6	824652.6	827741.8	824624.8	0	7.75							
8	802	827741.8	824624.8	827761.8	824604.4	0	7.75							
8	803	827761.8	824604.4	827791.9	824599.8	0	7.75							
8	804	827791.9	824599.8	827913.9	824595.7	0	7.75							
8	805	827913.9	824595.7	828037.8	824592.1	0	7.75							
9	901	827882.4	824651.4	827956.1	824648.4	0	10.5							
9	902	827956.1	824648.4	827974.8	824648.9	0	12.4							
9	903	827974.8	824648.9	828037.8	824627.1	0	8							
9	904	828037.8	824627.1	828058.9	824623.6	0	7.9							
9	905	828058.9	824623.6	828088	824624.9	0	7.9							
9	906	828088	824624.9	828155.8	824654.4	0	7.9							
9	907	828155.8	824654.4	828269.5	824708.4	0	10.15							
9	908	828269.5	824708.4	828357.8	824774.9	0	5.5							
9	909	828357.8	824774.9	828400.6	824792.5	0	10.5							
10	1001	827359.4	824666.1	827665.9	824660.6	0	10.2							
10	1002	827665.9	824660.6	827700.1	824659.6	0	10.5							
10	1003	827700.1	824659.6	827738.6	824652.6	0	10.5							
11	1101	827738.6	824652.6	827818.3	824648.1	0	10							
11	1102	827818.3	824648.1	827882.4	824651.4	0	10							
HR1	HR1	827867.4	824736.8	827898.8	824735.9	0	7.3							
HR2	HR2	827878.3	824733.2	827876.4	824656.6	0	3.65							
HR3	HR3	827882	824733.1	827880.4	824656.6	0	3.65							

Appendix 3.4 Calculation of Vehicular Emisisons

Traffic Data and Road Segments (Year 2027)

Start Profile	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<=2.5t	04 - Light Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus Single Deck	15 - Franchised Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t
	PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9
Y	1	1	1	1	1	0	0	1	1	1	1	1	1	0	0	1	0	0
N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Remarks:

Y: The start profile 'Y' is adopted for Tam Kon Shan Road (Road 9, 10 and 11)
- As indicated on Annex I on Appendix 3.4, no parking is allowed on Tam Kon Shan Road.
- There are no bus stops on Tam Kon Shan Road and hence no engine start from FBSD, FBDD and NFB9 is expected
- Most of the HGVs along the local roads in the assessment area are the working vehicles travelling to/from the Project, other industrial buildings and dockyards on Tam Kon Shan Road, which includes concrete mixer trucks and cement tankers. These working vehicles are not supposed to park along these roads, i.e. no engine start is expected.
- To account for parking in Tsing Yi Northeast Park Car Park, vehicle classes that can park inside Tsing Yi Northeast Park Car Park (including PC, TAXI, LGV3, LGV4, LGV6, PLB, PV4, PV5, NFB6, NFB7, NFB8 and MC, i.e.

N: No start emission under broad-brush approach.

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (Summary) Year 2027

Road Name	Road ID	Hour	NO2 Emission			NO Emission			NOX Emission			PM25 Emission			PM10 Emission		
			AnnualHourMin			AnnualHourMin			AnnualHourMin			AnnualHourMin			AnnualHourMin		
			g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year
Road 1	1	0000-0100	0.111237571	3.695E-07	0.001097284	0.6604901	2.194E-06	0.006515289	0.7717277	2.564E-06	0.007612573	0.0295577	9.819E-08	0.000291567	0.0321514	1.068E-07	0.000317151
Road 1	1	0100-0200	0.086261574	1.749E-07	0.000519201	0.524337	1.063E-06	0.003155938	0.6105986	1.238E-06	0.003675138	0.0235516	4.774E-08	0.000141755	0.0256283	5.195E-08	0.000154255
Road 1	1	0200-0300	0.082569351	1.193E-07	0.000354327	0.5337818	7.714E-07	0.002290597	0.6163512	8.907E-07	0.002644923	0.0229326	3.314E-08	9.84097E-05	0.0249506	3.606E-08	0.00010707
Road 1	1	0300-0400	0.070637818	7.292E-08	0.000216518	0.4358251	4.499E-07	0.001335885	0.5064629	5.228E-07	0.001552403	0.0186413	1.924E-08	5.7139E-05	0.0202564	2.091E-08	6.20895E-05
Road 1	1	0400-0500	0.091992	1.468E-07	0.000435776	0.5297741	8.452E-07	0.002509596	0.6217661	9.919E-07	0.002945372	0.0235195	3.752E-08	0.000111414	0.0255875	4.082E-08	0.000121211
Road 1	1	0500-0600	0.074330695	2.609E-07	0.000774647	0.4442181	1.559E-06	0.004629478	0.5185488	1.82E-06	0.005404125	0.0192076	6.741E-08	0.000200175	0.0209021	7.336E-08	0.000217834
Road 1	1	0600-0700	0.10076003	6.279E-07	0.00186432	0.5454343	3.399E-06	0.01009194	0.6461943	4.027E-06	0.01195626	0.0239741	1.494E-07	0.000443583	0.0260846	1.625E-07	0.000482633
Road 1	1	0700-0800	0.084855206	8.903E-07	0.002643531	0.4745216	4.979E-06	0.014782977	0.5593768	5.869E-06	0.017426508	0.0198026	2.078E-07	0.000616918	0.021522	2.258E-07	0.000670484
Road 1	1	0800-0900	0.090743445	1.167E-06	0.003464176	0.4873041	6.265E-06	0.018603077	0.5780476	7.432E-06	0.022067253	0.0211051	2.713E-07	0.000805697	0.0229375	2.949E-07	0.000875651
Road 1	1	0900-1000	0.09421587	1.25E-06	0.003712253	0.5311451	7.048E-06	0.020927952	0.625361	8.298E-06	0.024640205	0.0226632	3.007E-07	0.000892967	0.024628	3.268E-07	0.000970384
Road 1	1	1000-1100	0.109512591	1.412E-06	0.004192904	0.5915779	7.628E-06	0.022649716	0.7010905	9.04E-06	0.02684262	0.026403	3.404E-07	0.00101089	0.0287034	3.701E-07	0.001098966
Road 1	1	1100-1200	0.09912934	1.241E-06	0.00368487	0.5727828	7.171E-06	0.021291678	0.6719121	8.412E-06	0.024976548	0.0251282	3.146E-07	0.000934075	0.0273182	3.42E-07	0.00101548
Road 1	1	1200-1300	0.102095485	1.265E-06	0.0037553	0.5854084	7.252E-06	0.021532625	0.6875038	8.516E-06	0.025287924	0.0260873	3.232E-07	0.000959549	0.0283595	3.513E-07	0.001043125
Road 1	1	1300-1400	0.106907749	1.409E-06	0.004182543	0.5996297	7.901E-06	0.023459264	0.7065375	9.309E-06	0.027641807	0.0264733	3.488E-07	0.001035712	0.028768	3.79E-07	0.001125489
Road 1	1	1400-1500	0.102272889	1.468E-06	0.004360297	0.5596563	8.036E-06	0.023860359	0.6619292	9.504E-06	0.028220656	0.024664	3.541E-07	0.001051523	0.0268339	3.853E-07	0.001144034
Road 1	1	1500-1600	0.109643597	1.459E-06	0.004332351	0.5981603	7.96E-06	0.023635127	0.7078039	9.419E-06	0.027967478	0.02588	3.444E-07	0.001022596	0.0281285	3.743E-07	0.001111442
Road 1	1	1600-1700	0.105236578	1.477E-06	0.004386947	0.5810324	8.157E-06	0.024221223	0.686269	9.635E-06	0.02860817	0.0252447	3.544E-07	0.001052363	0.0274614	3.855E-07	0.001144769
Road 1	1	1700-1800	0.08453824	1.19E-06	0.003533528	0.4768839	6.713E-06	0.019932789	0.5614222	7.903E-06	0.023466318	0.0204412	2.877E-07	0.000854403	0.0222445	3.131E-07	0.000929777
Road 1	1	1800-1900	0.075446094	1.088E-06	0.003229179	0.4532148	6.533E-06	0.019398112	0.5286609	7.62E-06	0.022627291	0.0188845	2.722E-07	0.000808279	0.0205534	2.963E-07	0.00087971
Road 1	1	1900-2000	0.090214505	9.922E-07	0.00294624	0.5213721	5.734E-06	0.017027054	0.6115866	6.727E-06	0.019973294	0.0226801	2.494E-07	0.00074069	0.0246436	2.71E-07	0.000804816
Road 1	1	2000-2100	0.081691149	7.605E-07	0.00225814	0.4848937	4.514E-06	0.013403627	0.5665849	5.275E-06	0.015661767	0.0212723	1.98E-07	0.000588016	0.0231086	2.151E-07	0.000638777
Road 1	1	2100-2200	0.08629936	7.337E-07	0.002178712	0.5154466	4.382E-06	0.013012958	0.601746	5.116E-06	0.01519167	0.023097	1.964E-07	0.000583106	0.0250932	2.133E-07	0.000633504
Road 1	1	2200-2300	0.084032807	6.798E-07	0.00201846	0.5005805	4.049E-06	0.012023899	0.5846133	4.729E-06	0.014042359	0.0218333	1.766E-07	0.000524434	0.0237178	1.919E-07	0.000569699
Road 1	1	2300-0000	0.073684468	5.324E-07	0.001580996	0.457873	3.309E-06	0.009824261	0.5315575	3.841E-06	0.011405257	0.0187971	1.358E-07	0.000403315	0.0204167	1.475E-07	0.000438066
Road 2	2	0000-0100	0.186496471	2.202E-07	0.000518969	0.7967794	9.406E-07	0.00221722	0.9832759	1.161E-06	0.002736189	0.0288451	3.405E-08	8.02681E-05	0.0313673	3.703E-08	8.72865E-05
Road 2	2	0100-0200	0.132735152	1.014E-07	0.000239001	0.6627006	5.062E-07	0.001193251	0.7954358	6.076E-07	0.001432253	0.0255539	1.952E-08	4.60121E-05	0.0277888	2.123E-08	5.00362E-05
Road 2	2	0200-0300	0.132632609	7.061E-08	0.000166448	0.7305678	3.89E-07	0.00091683	0.8632004	4.596E-07	0.001083278	0.0278426	1.482E-08	3.49412E-05	0.0302774	1.612E-08	3.79968E-05
Road 2	2	0300-0400	0.117058	4.065E-08	9.58061E-05	0.432482	1.502E-07	0.000353965	0.54954	1.908E-07	0.000449771	0.014974	5.199E-09	1.22555E-05	0.016278	5.652E-09	1.33227E-05
Road 2	2	0400-0500	0.157561481	9.848E-08	0.000232121	0.7679811	4.8E-07	0.001131397	0.9255426	5.785E-07	0.001363518	0.03013	1.883E-08	4.43878E-05	0.032757	2.047E-08	4.8258E-05
Road 2	2	0500-0600	0.125562105	1.657E-07	0.000390512	0.5622037	7.418E-07	0.001748514	0.6877658	9.075E-07	0.002139026	0.0202319	2.669E-08	6.29235E-05	0.0219853	2.901E-08	6.83765E-05
Road 2	2	0600-0700	0.178694466	4.261E-07	0.001004266	0.731625	1.744E-06	0.004111747	0.9103195	2.17E-06	0.005116013	0.0263127	6.274E-08	0.000147878	0.0286317	6.827E-08	0.000160911
Road 2	2	0700-0800	0.142382848	5.208E-07	0.001227483	0.6093354	2.229E-06	0.005253081	0.7517183	2.749E-06	0.006480564	0.0207072	7.573E-08	0.000178517	0.0225491	8.247E-08	0.000194395
Road 2	2	0800-0900	0.160599333	1.115E-06	0.002628849	0.6869011	4.77E-06	0.011243877	0.8475005	5.885E-06	0.013872725	0.023576	1.637E-07	0.000385915	0.0256514	1.781E-07	0.000419887
Road 2	2	0900-1000	0.18191565	1.036E-06	0.002441776	0.7916101	4.508E-06	0.010625442	0.9735257	5.544E-06	0.013067218	0.0269049	1.532E-07	0.000361133	0.0292511	1.666E-07	0.000392625
Road 2	2	1000-1100	0.202295163	8.616E-07	0.002030972	0.8725405	3.716E-06	0.008759998	1.0748357	4.578E-06	0.01079097	0.0308689	1.315E-07	0.000309913	0.0335577	1.429E-07	0.000336907
Road 2	2	1100-1200	0.245050276	1.027E-06	0.002420106	1.0077527	4.222E-06	0.009952521	1.2528029	5.249E-06	0.012372627	0.0367785	1.541E-07	0.000363223	0.0399814	1.675E-07	0.000394854
Road 2	2	1200-1300	0.186985532	8.137E-07	0.001918079	0.8284986	3.606E-06	0.008498656	1.0154841	4.419E-06	0.010416734	0.028888	1.257E-07	0.000296331	0.0314112	1.367E-07	0.000322213
Road 2	2	1300-1400	0.207430864	1.056E-06	0.002489985	0.8617694	4.389E-06	0.010344615	1.0692003	5.445E-06	0.0128346	0.0309237	1.575E-07	0.000371206	0.033628	1.713E-07	0.000403667
Road 2	2	1400-1500	0.180745215	6.82E-07	0.001607515	0.785008	2.962E-06	0.006981718	0.9657533	3.644E-06	0.008589233	0.0281667	1.063E-07	0.00025051	0.0306401	1.156E-07	0.000272507
Road 2	2	1500-1600	0.222025419	9.2E-07	0.002168484	0.8949129	3.708E-06	0.008740462	1.1169383	4.628E-06	0.010908947	0.0328236	1.36E-07	0.000320583	0.0356829	1.479E-07	0.000348509
Road 2	2	1600-1700	0.190473973	9.656E-07	0.002276042	0.8102122	4.107E-06	0.009681519	1.0006862	5.073E-06	0.011957561	0.0276943	1.404E-07	0.000330929	0.0301064	1.526E-07	0.000359752
Road 2	2	1700-1800	0.144703641	7.269E-07	0.001713325	0.580189	2.914E-06	0.006869575	0.7248927	3.641E-06	0.0085829	0.0201734	1.013E-07	0.000238857	0.0219457	1.102E-07	0.000259842
Road 2	2	1800-1900	0.159171734	9.138E-07	0.002153864	0.7396406	4.246E-06	0.010008593	0.8988123	5.16E-06	0.012162456	0.0270214	1.551E-07	0.000365645	0.0293781	1.687E-07	0.000397536
Road 2	2	1900-2000	0.136138554	5.231E-07	0.001233076	0.6322315	2.429E-06	0.005726441	0.7683701	2.953E-06	0.006959517	0.02258	8.677E-08	0.000204519	0.0245514	9.434E-08	0.000222374
Road 2	2	2000-2100	0.134048219	4.53E-07	0.00106786	0.5709146	1.929E-06	0.004548043	0.7049628	2.383E-06	0.005615904	0.0197999	6.692E-08	0.000157731	0.0215521	7.284E-08	0.000171689
Road 2	2	2100-2200	0.103788224	3.652E-07	0.00086078	0.4788232	1.685E-06	0.003971178	0.5826114	2.05E-06	0.004831958	0.0160032	5.631E-08	0.000132725	0.0174279	6.132E-08	0.00014454
Road 2	2	2200-2300	0.14872688	4.303E-07	0.001014379	0.6422751	1.858E-06	0.004380581	0.791002	2.289E-06	0.005394959	0.0228898	6.623E-08	0.000156118	0.0249009	7.205E-08	0.000169834
Road 2	2	2300-0000	0.134906727	3.435E-07	0.000809705	0.6164949	1.57E-06	0.003700179	0.7514016	1.913E-06	0.004509884	0.0211394	5.383E-08	0.000126878	0.0229976	5.856E-08	0.000138031
Road 3	3	0000-0100	0.11623607	4.269E-07	0.006056866	0.642787	2.361E-06	0.033494551	0.7590231	2.788E-06	0.039551417	0.0280527	1.03E-07	0.001461779	0.0305105	1.121E-07	0.001589852
Road 3	3	0100-0200	0.087447021	1.978E-07	0.002805664	0.5114396	1.157E-06	0.01640911	0.5988866	1.354E-06	0.019214774	0.0227533	5.146E-08	0.000730022	0.0247608	5.6E-08	0.000794429
Road 3	3	0200-0300	0.084979394	1.349E-07	0.001914346	0.53527	8.5E-07	0.012058122	0.6202494	9.849E-07	0.013972468	0.0228662	3.631E-08	0.00051511	0.0248793	3.951E-08	0.00056046
Road 3	3	0300-0400	0.073176957	8.099E-08	0.001148934	0.4037472	4.468E-07	0.006339138	0.4769242	5.278E-07	0.007488072	0.0167307	1.852E-08	0.000262685	0.018208	2.015E-08	0.000285879
Road 3	3	0400-0500	0.097248108	1.731E-07	0.002456268	0.5398771	9.612E-07	0.013636078	0.6371252	1.134E-06	0.016092346	0.0238858	4.253E-08	0.000603301	0.0259849	4.626E-08	0.000656319
Road 3	3	0500-0600	0.078520288	3.06E-07	0.004341699	0.4396021	1.713E-06	0.024307352	0.5181224	2.019E-06	0.028649051	0.0187385	7.304E-08	0.001036127	0.0203905	7.947E-08	0.001127474
Road 3	3	0600-0700	0.10740847	7.546E-07	0.010704939	0.5409781	3.801E-06	0.053916955	0.6483866	4.555E-06	0.064621894	0.0232095	1.631E-07	0.002313188	0.025219	1.772E-07	0.002513473
Road 3	3	0700-0800	0.088268338	1.014E-06	0.014381015	0.4655956	5.347E-06	0.075856623	0.553864	6.361E-06	0.090237638	0.0190326	2.186E-07	0.003100857	0.0206903	2.376E-07	0.003370935
Road 3	3	0800-0900	0.097086431	1.54E-06	0.02184874	0.4881816	7.744E-06	0.109862452	0.585268	9.284E-06	0.131711192	0.0203392	3.226E-07	0.004577222	0.0221235	3.509E-07	0.004978768
Road 3	3	0900-1000	0.104059958	1.592E-06	0.022589343	0.5389478	8.247E-06	0.116994829	0.6430078	9.839E-06	0.139584172	0.0222098	3.398E-07	0.00482131	0.0241484	3.695E-07	0.00524214
Road 3	3	1000-1100	0.117163494	1.635E-06	0.0231944	0.5985587	8.353E-06	0.118494331	0.7157222	9.987E-06	0.141688731	0.0261226	3.645E-07	0.005171398	0.0283838	3.961E-07	0.005619024
Road 3	3	1100-1200	0.115123924	1.562E-06	0.022161927	0.6039629	8.195E-06	0.116265854	0.7190868	9.758E-06	0.138427781	0.0260746	3.538E-07	0.005019485	0.0283559	3.848E-07	0.005458656
Road 3	3	1200-1300	0.108761395	1.476E-06	0.020937109	0.5830932	7.912E-06	0.112248328	0.6918546	9.388E-06	0.133185436	0.0253103	3.434E-07	0.004872367	0.0275273	3.735E-07	0.005299134
Road 3	3	1300-1400	0.115828651	1.707E-06	0.024221614	0.5975868	8.809E-06	0.124964901	0.7134154	1.052E-05	0.149186515	0.0258209	3.806E-07	0.005399559	0.0280545	4.135E-07	0.005866632

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (Summary)

Year 2027

Road Name	Road ID	Hour	NO2 Emission			NO Emission			NOX Emission			PM25 Emission			PM10 Emission		
			AnnualHourMin			AnnualHourMin			AnnualHourMin			AnnualHourMin			AnnualHourMin		
			g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year
Road 3	3	1400-1500	0.107371623	1.591E-06	0.022575276	0.5600871	8.301E-06	0.117760359	0.6674587	9.892E-06	0.140335635	0.0243354	3.607E-07	0.005116614	0.0264394	3.918E-07	0.00555899
Road 3	3	1500-1600	0.119560461	1.707E-06	0.024213031	0.6068403	8.663E-06	0.122895498	0.7264007	1.037E-05	0.147108529	0.0261131	3.728E-07	0.005288341	0.0283757	4.051E-07	0.005746571
Road 3	3	1600-1700	0.112579133	1.75E-06	0.024822942	0.5837213	9.072E-06	0.12870662	0.6963004	1.082E-05	0.153529561	0.0246239	3.827E-07	0.005429395	0.0267693	4.161E-07	0.005902462
Road 3	3	1700-1800	0.090149134	1.403E-06	0.019897791	0.4686258	7.291E-06	0.103435478	0.558775	8.694E-06	0.123333269	0.019536	3.039E-07	0.004311995	0.0212512	3.306E-07	0.004690577
Road 3	3	1800-1900	0.085428918	1.394E-06	0.01976958	0.4768886	7.779E-06	0.110359445	0.5623176	9.173E-06	0.130129024	0.0195117	3.183E-07	0.004515313	0.0212425	3.465E-07	0.00491584
Road 3	3	1900-2000	0.091421368	1.104E-06	0.015664418	0.5063463	6.116E-06	0.086758934	0.5977677	7.22E-06	0.102423352	0.0216974	2.621E-07	0.003717701	0.0236089	2.851E-07	0.004045217
Road 3	3	2000-2100	0.084836755	8.763E-07	0.012432014	0.4658829	4.812E-06	0.068270671	0.5507196	5.689E-06	0.080702685	0.0199696	2.063E-07	0.002926355	0.0217004	2.242E-07	0.003179984
Road 3	3	2100-2200	0.083927902	8.212E-07	0.011649513	0.477114	4.668E-06	0.066225249	0.5610419	5.489E-06	0.077874762	0.0206458	2.02E-07	0.002865714	0.0224354	2.195E-07	0.003114118
Road 3	3	2200-2300	0.090037716	8.03E-07	0.011391236	0.4949027	4.414E-06	0.062613237	0.5849404	5.216E-06	0.074004472	0.0210686	1.879E-07	0.002665523	0.0228873	2.041E-07	0.002895618
Road 3	3	2300-0000	0.079406165	6.343E-07	0.00899819	0.455332	3.637E-06	0.051597554	0.5347382	4.271E-06	0.060595744	0.0184562	1.474E-07	0.00209143	0.0200482	1.601E-07	0.002271832
Road 4	4	0000-0100	0.296948286	2.406E-07	0.000940263	1.5142251	1.227E-06	0.004794672	1.8111734	1.467E-06	0.005734934	0.0646263	5.236E-08	0.000204634	0.0702846	5.694E-08	0.00022255
Road 4	4	0100-0200	0.2809685	1.301E-07	0.000508379	1.4342635	6.64E-07	0.002595131	1.715232	7.941E-07	0.003103511	0.0617455	2.859E-08	0.000111721	0.067112	3.107E-08	0.000121431
Road 4	4	0200-0300	0.303998462	9.148E-08	0.000357532	1.50041	4.515E-07	0.00176463	1.8044085	5.43E-07	0.002122162	0.06553	1.972E-08	7.70697E-05	0.0712162	2.143E-08	8.37572E-05
Road 4	4	0300-0400	0.276621429	4.482E-08	0.00017518	1.4684329	2.379E-07	0.000929935	1.7450543	2.828E-07	0.001105115	0.0640786	1.038E-08	4.05799E-05	0.0696529	1.129E-08	4.411E-05
Road 4	4	0400-0500	0.283328571	9.182E-08	0.000358855	1.3991986	4.534E-07	0.00177218	1.6825271	5.453E-07	0.002131035	0.0609443	1.975E-08	7.71901E-05	0.0662329	2.146E-08	8.38884E-05
Road 4	4	0500-0600	0.261511667	1.453E-07	0.00056781	1.2409821	6.894E-07	0.002694493	1.5024938	8.347E-07	0.003262303	0.0538654	2.993E-08	0.000116956	0.0585304	3.252E-08	0.000127085
Road 4	4	0600-0700	0.290123077	3.492E-07	0.001364853	1.3865873	1.669E-06	0.006523053	1.6767104	2.018E-06	0.007887907	0.0587296	7.069E-08	0.000276287	0.0638675	7.688E-08	0.000300458
Road 4	4	0700-0800	0.290810543	6.193E-07	0.002420462	1.4499241	3.088E-06	0.012067949	1.7407347	3.707E-06	0.014488412	0.0602095	1.282E-07	0.000501133	0.0654718	1.394E-07	0.000544933
Road 4	4	0800-0900	0.296133529	1.049E-06	0.004099014	1.478698	5.237E-06	0.020467806	1.7748316	6.286E-06	0.02456682	0.0617837	2.188E-07	0.000855196	0.0671522	2.378E-07	0.000929506
Road 4	4	0900-1000	0.301990676	1.035E-06	0.004043483	1.4245737	4.88E-06	0.01907423	1.7265644	5.915E-06	0.023117713	0.058411	2.001E-07	0.00078209	0.0634937	2.175E-07	0.000850145
Road 4	4	1000-1100	0.336408112	1.114E-06	0.00435214	1.5891266	5.26E-06	0.020558665	1.9255348	6.374E-06	0.024910805	0.065412	2.165E-07	0.000846241	0.0710967	2.353E-07	0.000919784
Road 4	4	1100-1200	0.313088	1.123E-06	0.004390343	1.469451	5.272E-06	0.02060569	1.782539	6.396E-06	0.024996034	0.0611419	2.194E-07	0.000857376	0.0664581	2.384E-07	0.000931923
Road 4	4	1200-1300	0.320370204	1.09E-06	0.004260591	1.5730463	5.353E-06	0.020919881	1.8934165	6.443E-06	0.025180472	0.0648492	2.207E-07	0.000862427	0.0704837	2.398E-07	0.000937361
Road 4	4	1300-1400	0.329678926	1.137E-06	0.004444039	1.5807821	5.452E-06	0.021308783	1.910461	6.589E-06	0.025752821	0.0648623	2.237E-07	0.000874338	0.0704967	2.431E-07	0.000950289
Road 4	4	1400-1500	0.300836087	9.61E-07	0.00375586	1.4919291	4.766E-06	0.018626344	1.7927651	5.727E-06	0.022382204	0.0619013	1.977E-07	0.000772822	0.0672838	2.149E-07	0.000840021
Road 4	4	1500-1600	0.335905806	9.642E-07	0.003768249	1.6084124	4.617E-06	0.018043445	1.9443182	5.581E-06	0.021811694	0.0673216	1.932E-07	0.000755225	0.0731796	2.101E-07	0.000820941
Road 4	4	1600-1700	0.315177016	9.047E-07	0.00353571	1.526346	4.381E-06	0.017122811	1.8415231	5.286E-06	0.020658521	0.0631218	1.812E-07	0.000708111	0.068615	1.97E-07	0.000769735
Road 4	4	1700-1800	0.302311667	8.817E-07	0.003446084	1.4889749	4.343E-06	0.016972988	1.7912866	5.225E-06	0.020419071	0.0613575	1.79E-07	0.00069942	0.0667044	1.946E-07	0.00076037
Road 4	4	1800-1900	0.334455472	8.207E-07	0.003207337	1.6692306	4.096E-06	0.016007465	2.003686	4.916E-06	0.019214802	0.0711522	1.746E-07	0.00068233	0.0773469	1.898E-07	0.000741736
Road 4	4	1900-2000	0.302651892	5.184E-07	0.002026168	1.504087	2.576E-06	0.010069434	1.8067389	3.095E-06	0.012095602	0.0641408	1.099E-07	0.000429404	0.0696997	1.194E-07	0.00046662
Road 4	4	2000-2100	0.264648776	3.002E-07	0.001173185	1.3232059	1.501E-06	0.005865755	1.5878547	1.801E-06	0.007038939	0.0562576	6.381E-08	0.000249389	0.0611627	6.937E-08	0.000271133
Road 4	4	2100-2200	0.221405405	1.896E-07	0.000741123	1.1280592	9.662E-07	0.003776017	1.3494646	1.156E-06	0.00451714	0.0460659	3.945E-08	0.000154199	0.050073	4.289E-08	0.000167612
Road 4	4	2200-2300	0.296537143	4.325E-07	0.00169013	1.4554121	2.122E-06	0.008295201	1.7519492	2.555E-06	0.00998533	0.0617798	9.01E-08	0.000352118	0.0671341	9.79E-08	0.000382635
Road 4	4	2300-0000	0.274833958	3.054E-07	0.001193471	1.38559	1.54E-06	0.006016949	1.660424	1.845E-06	0.007210421	0.0587144	6.524E-08	0.000254968	0.0638463	7.094E-08	0.000277253
Road 5	5	0000-0100	0.099220829	3.594E-07	0.001774058	0.552526	2.001E-06	0.009879108	0.6517468	2.361E-06	0.011653166	0.0225251	8.159E-08	0.000402746	0.0245117	8.879E-08	0.000438266
Road 5	5	0100-0200	0.067351901	1.53E-07	0.000754993	0.410338	9.319E-07	0.004599757	0.4776899	1.085E-06	0.00535475	0.0170976	3.883E-08	0.000191659	0.0186186	4.228E-08	0.000208708
Road 5	5	0200-0300	0.063525698	1.025E-07	0.000506122	0.4382392	7.074E-07	0.003491543	0.5017649	8.099E-07	0.003997665	0.017177	2.773E-08	0.000136853	0.0187001	3.018E-08	0.000148988
Road 5	5	0300-0400	0.058429839	6.799E-08	0.000335609	0.3193745	3.716E-07	0.001834424	0.3778044	4.396E-07	0.002170033	0.0119166	1.387E-08	6.84467E-05	0.0129455	1.506E-08	7.43563E-05
Road 5	5	0400-0500	0.080761237	1.47E-07	0.000725742	0.4593499	8.363E-07	0.004127842	0.5401111	9.833E-07	0.004853584	0.0192157	3.498E-08	0.000172677	0.0209124	3.807E-08	0.000187924
Road 5	5	0500-0600	0.064862615	2.654E-07	0.001309962	0.3769922	1.542E-06	0.007613715	0.4418549	1.808E-06	0.008923677	0.0151011	6.179E-08	0.000304982	0.0164393	6.726E-08	0.000332007
Road 5	5	0600-0700	0.094492156	6.828E-07	0.003370266	0.4753508	3.435E-06	0.01695441	0.569843	4.118E-06	0.020324676	0.0193114	1.395E-07	0.000688784	0.0209822	1.516E-07	0.000748374
Road 5	5	0700-0800	0.072667788	8.511E-07	0.004200822	0.3829758	4.485E-06	0.022139288	0.4556436	5.336E-06	0.02634011	0.0143099	1.676E-07	0.000827232	0.0155613	1.822E-07	0.000899575
Road 5	5	0800-0900	0.078152464	1.226E-06	0.006052805	0.3854774	6.048E-06	0.029854715	0.4636299	7.275E-06	0.03590752	0.014648	2.298E-07	0.001134468	0.0159462	2.502E-07	0.001235012
Road 5	5	0900-1000	0.084824121	1.286E-06	0.006349484	0.4500759	6.825E-06	0.033690295	0.5349	8.112E-06	0.040039779	0.0173982	2.638E-07	0.001302336	0.0189289	2.871E-07	0.00141692
Road 5	5	1000-1100	0.096218003	1.311E-06	0.006471436	0.5003525	6.818E-06	0.03365274	0.5965705	8.129E-06	0.040124177	0.0206312	2.811E-07	0.001387612	0.0224197	3.055E-07	0.001507907
Road 5	5	1100-1200	0.09439129	1.222E-06	0.00603377	0.5108672	6.616E-06	0.032656138	0.6052585	7.838E-06	0.038689908	0.020543	2.66E-07	0.001313166	0.0223358	2.893E-07	0.001427768
Road 5	5	1200-1300	0.088433333	1.16E-06	0.005726653	0.4819361	6.323E-06	0.031208605	0.5703694	7.483E-06	0.036935258	0.0195011	2.558E-07	0.001262828	0.0211923	2.78E-07	0.001372342
Road 5	5	1300-1400	0.095576362	1.376E-06	0.00679131	0.5010535	7.213E-06	0.035603048	0.5966299	8.589E-06	0.042394359	0.0204138	2.939E-07	0.001450532	0.0222152	3.198E-07	0.001578533
Road 5	5	1400-1500	0.09103285	1.343E-06	0.006628701	0.4764671	7.029E-06	0.034694705	0.5675	8.372E-06	0.041323406	0.0195507	2.884E-07	0.001423616	0.0212749	3.139E-07	0.001549165
Road 5	5	1500-1600	0.10198834	1.464E-06	0.007228026	0.5214984	7.488E-06	0.036959164	0.6234867	8.952E-06	0.04418719	0.0211353	3.035E-07	0.00149788	0.0229977	3.302E-07	0.001629874
Road 5	5	1600-1700	0.096152138	1.52E-06	0.007500302	0.504231	7.969E-06	0.039332301	0.6003831	9.488E-06	0.046832603	0.0204237	3.228E-07	0.001593142	0.0222144	3.511E-07	0.001732821
Road 5	5	1700-1800	0.071908329	1.139E-06	0.005622499	0.3765794	5.965E-06	0.029444675	0.4484878	7.104E-06	0.035067174	0.0146941	2.328E-07	0.001148928	0.015996	2.534E-07	0.001250722
Road 5	5	1800-1900	0.067716396	1.157E-06	0.005708775	0.3877358	6.622E-06	0.032687746	0.4554522	7.779E-06	0.038396521	0.0148154	2.53E-07	0.001249	0.0161023	2.75E-07	0.001357493
Road 5	5	1900-2000	0.078345643	9.955E-07	0.004913729	0.4423244	5.62E-06	0.02774197	0.5206701	6.616E-06	0.0326557	0.0179938	2.286E-07	0.001128545	0.0195553	2.485E-07	0.001226483
Road 5	5	2000-2100	0.075157121	8.379E-07	0.004135845	0.4166714	4.645E-06	0.022929148	0.4918286	5.483E-06	0.027064993	0.0172521	1.923E-07	0.000949373	0.0187388	2.089E-07	0.001031186
Road 5	5	2100-2200	0.078741786	8.439E-07	0.004165327	0.4511279	4.835E-06	0.023864017	0.5298697	5.679E-06	0.028029344	0.0192986	2.068E-07	0.001020867	0.0209674	2.247E-07	0.001109144
Road 5	5	2200-2300	0.075968435	7.015E-07	0.003462629	0.4266908	3.94E-06	0.019448499	0.5026592	4.642E-06	0.022911129	0.0171156	1.58E-07	0.000780128	0.0185904	1.717E-07	0.00084735
Road 5	5	2300-0000	0.067018996	5.635E-07	0.002781529	0.3933088	3.307E-06	0.016323728	0.4603277	3.871E-06	0.019105257	0.014804	1.245E-07	0.000614417	0.0160753	1.352E-07	0.000667183
Road 6	6	0000-0100	0.060473041	1.68E-07	0.002191689	0.388518	1.079E-06	0.014080833	0.4489911	1.247E-06	0.016272522	0.0149782	4.161E-08	0.000542848	0.0163069	4.53E-08	0.000591001
Road 6	6	0100-0200	0.078416903	1.663E-07	0.002169919	0.44421	9.421E-07	0.012291991	0.5226269	1.108E-06	0.01446191	0.0171878	3.645E-08	0.000475613	0.0187104	3.968E-08	0.000517745
Road 6	6	0200-0300	0.072103038	1.069E-07	0.001394878	0.4110767	6.095E-07	0.007952532	0.4831797	7.164E-07	0.009347409	0.0154861	2.296E-08	0.000299588	0.0168581	2.5E-08	0.00032613
Road 6	6	0300-0400	0.07295	8.489E-08	0.001107573	0.4669321	5.434E-07	0.007089259	0.5398821	6.282E-07	0.008196833	0.0178818	2.081E-08	0.000271492	0.0194302	2.261E-08	0.000295001

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (Summary) Year 2027

Road Name	Road ID	Hour	NO2 Emission			NO Emission			NOX Emission			PM25 Emission			PM10 Emission		
			AnnualHourMin			AnnualHourMin			AnnualHourMin			AnnualHourMin			AnnualHourMin		
			g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year
Road 6	6	0400-0500	0.079292222	1.339E-07	0.001747546	0.4659714	7.871E-07	0.010269688	0.5452637	9.211E-07	0.012017234	0.0182357	3.08E-08	0.000401901	0.0198507	3.353E-08	0.000437495
Road 6	6	0500-0600	0.071483043	2.16E-07	0.002818281	0.4334214	1.31E-06	0.017088016	0.5049044	1.526E-06	0.019906297	0.0164773	4.979E-08	0.000649633	0.0179389	5.421E-08	0.000707256
Road 6	6	0600-0700	0.076414983	4.116E-07	0.005370514	0.477308	2.571E-06	0.033545637	0.553723	2.983E-06	0.038916151	0.0181037	9.752E-08	0.001272342	0.0197002	1.061E-07	0.001384546
Road 6	6	0700-0800	0.071934605	6.157E-07	0.008032637	0.4107731	3.516E-06	0.045869315	0.4827077	4.131E-06	0.053901952	0.0148864	1.274E-07	0.001662307	0.0161699	1.384E-07	0.001805622
Road 6	6	0800-0900	0.061223287	7.515E-07	0.009805051	0.3662617	4.496E-06	0.058657656	0.427485	5.247E-06	0.068462706	0.0125904	1.545E-07	0.002016386	0.0136834	1.68E-07	0.002191432
Road 6	6	0900-1000	0.063206704	7.45E-07	0.009720268	0.3581107	4.221E-06	0.055072203	0.4213175	4.966E-06	0.064792471	0.0123743	1.459E-07	0.001902984	0.0134478	1.585E-07	0.002068071
Road 6	6	1000-1100	0.084667162	8.454E-07	0.011030167	0.4647728	4.641E-06	0.060549116	0.54944	5.486E-06	0.071579282	0.0182764	1.825E-07	0.002380992	0.019853	1.982E-07	0.002586381
Road 6	6	1100-1200	0.096332273	9.546E-07	0.0124555	0.5026845	4.982E-06	0.064995739	0.5990168	5.936E-06	0.07745124	0.0196594	1.948E-07	0.002541911	0.0213551	2.116E-07	0.002761151
Road 6	6	1200-1300	0.093775233	9.082E-07	0.011849317	0.4649357	4.503E-06	0.058748666	0.5587109	5.411E-06	0.070597982	0.018078	1.751E-07	0.002284313	0.019634	1.901E-07	0.002480926
Road 6	6	1300-1400	0.109631573	1.06E-06	0.013826056	0.5536369	5.351E-06	0.069821258	0.6632684	6.411E-06	0.083647315	0.0221579	2.142E-07	0.002794413	0.0240726	2.327E-07	0.003035893
Road 6	6	1400-1500	0.104172236	1.111E-06	0.014489579	0.5225229	5.57E-06	0.072679034	0.6266952	6.681E-06	0.087168613	0.0206384	2.2E-07	0.002870647	0.0224215	2.39E-07	0.003118663
Road 6	6	1500-1600	0.091687928	9.551E-07	0.012461221	0.4704713	4.901E-06	0.063941318	0.5621592	5.856E-06	0.076402539	0.018456	1.923E-07	0.00250834	0.0200507	2.089E-07	0.002725077
Road 6	6	1600-1700	0.096309701	1.027E-06	0.013395959	0.4727871	5.04E-06	0.065761152	0.5690968	6.067E-06	0.079157112	0.0183691	1.958E-07	0.002555	0.0199551	2.127E-07	0.002775599
Road 6	6	1700-1800	0.072032337	8.098E-07	0.01056598	0.3652753	4.107E-06	0.05357998	0.4373076	4.916E-06	0.06414596	0.0134332	1.51E-07	0.001970432	0.0145886	1.64E-07	0.002139916
Road 6	6	1800-1900	0.071139122	9.119E-07	0.011898293	0.3728419	4.779E-06	0.062359255	0.4439811	5.691E-06	0.074257548	0.014453	1.853E-07	0.002417328	0.0157102	2.014E-07	0.0026276
Road 6	6	1900-2000	0.084628464	8.275E-07	0.010797162	0.4430951	4.333E-06	0.056531445	0.5277235	5.16E-06	0.067328608	0.0172815	1.69E-07	0.002204825	0.0187833	1.837E-07	0.002396427
Road 6	6	2000-2100	0.067346122	5.182E-07	0.006761638	0.3831728	2.949E-06	0.038471043	0.4505189	3.467E-06	0.04523268	0.014879	1.145E-07	0.001493868	0.0161623	1.244E-07	0.001622718
Road 6	6	2100-2200	0.094239185	6.297E-07	0.008215556	0.4944404	3.304E-06	0.04310418	0.5886796	3.933E-06	0.051319736	0.0207355	1.385E-07	0.001807674	0.0225286	1.505E-07	0.001963991
Road 6	6	2200-2300	0.070909576	5.017E-07	0.006546387	0.4019115	2.844E-06	0.037104559	0.4728211	3.346E-06	0.043650946	0.0141541	1.002E-07	0.001306711	0.0153771	1.088E-07	0.00141962
Road 6	6	2300-0000	0.047339294	3.145E-07	0.004103746	0.2972102	1.975E-06	0.025764541	0.3445495	2.289E-06	0.029868288	0.0103834	6.899E-08	0.00090012	0.0112703	7.488E-08	0.000976998
Road 7	7	0000-0100	0.086476874	2.31E-07	0.002104923	0.5162542	1.379E-06	0.012566083	0.6027311	1.61E-06	0.014671007	0.022574	6.03E-08	0.00054947	0.024559	6.561E-08	0.000597788
Road 7	7	0100-0200	0.104151469	2.162E-07	0.001970244	0.5770187	1.198E-06	0.01091552	0.6811701	1.414E-06	0.012885763	0.0252071	5.233E-08	0.000476845	0.0274213	5.693E-08	0.000518731
Road 7	7	0200-0300	0.090644255	1.237E-07	0.001127163	0.5164643	7.048E-07	0.006422241	0.6071085	8.285E-07	0.007549404	0.0219185	2.991E-08	0.000272557	0.0238462	3.254E-08	0.000296528
Road 7	7	0300-0400	0.091555132	1.01E-07	0.000920481	0.5572207	6.148E-07	0.005602209	0.6487758	7.159E-07	0.00652269	0.0233832	2.58E-08	0.000235091	0.025443	2.807E-08	0.0002558
Road 7	7	0400-0500	0.101603243	1.637E-07	0.001491932	0.5712374	9.206E-07	0.008387994	0.6728406	1.084E-06	0.009879926	0.024725	3.985E-08	0.00036306	0.0268993	4.335E-08	0.000394986
Road 7	7	0500-0600	0.092539235	2.633E-07	0.002399388	0.5281821	1.503E-06	0.013694881	0.6207213	1.766E-06	0.016094269	0.0223291	6.354E-08	0.000578957	0.0242964	6.914E-08	0.000629965
Road 7	7	0600-0700	0.097088943	4.934E-07	0.004495276	0.5661	2.877E-06	0.026210767	0.663189	3.37E-06	0.030706042	0.0235584	1.197E-07	0.001090767	0.0255959	1.301E-07	0.001185106
Road 7	7	0700-0800	0.092947571	7.557E-07	0.006885644	0.5106753	4.152E-06	0.037831311	0.6036229	4.908E-06	0.044716955	0.0208514	1.695E-07	0.001544692	0.0226571	1.842E-07	0.00167846
Road 7	7	0800-0900	0.091773103	1.127E-06	0.0102708	0.5077136	6.236E-06	0.056820844	0.5994867	7.363E-06	0.067091645	0.0207051	2.543E-07	0.002317214	0.0225219	2.766E-07	0.002520543
Road 7	7	0900-1000	0.093017795	1.061E-06	0.009671795	0.4926325	5.622E-06	0.051222896	0.5856503	6.683E-06	0.060894691	0.0200458	2.288E-07	0.002084315	0.021811	2.489E-07	0.002267861
Road 7	7	1000-1100	0.110032483	1.101E-06	0.010029023	0.5839382	5.841E-06	0.053223648	0.6939707	6.942E-06	0.063252671	0.0252933	2.53E-07	0.002305386	0.0274922	2.75E-07	0.002505807
Road 7	7	1100-1200	0.12050145	1.2E-06	0.010935406	0.6258238	6.233E-06	0.056792987	0.7463253	7.433E-06	0.067728393	0.0272484	2.714E-07	0.002472772	0.0296204	2.95E-07	0.002688023
Road 7	7	1200-1300	0.11907654	1.184E-06	0.010790344	0.603926	6.006E-06	0.054725888	0.7230026	7.19E-06	0.065516232	0.0263824	2.624E-07	0.002390693	0.0286764	2.852E-07	0.002598563
Road 7	7	1300-1400	0.127901319	1.253E-06	0.01142082	0.6472405	6.343E-06	0.057794692	0.7751418	7.596E-06	0.069215513	0.0279863	2.743E-07	0.00249901	0.0304228	2.981E-07	0.00271657
Road 7	7	1400-1500	0.119433665	1.228E-06	0.011186096	0.6113337	6.284E-06	0.057257197	0.7307673	7.512E-06	0.068443293	0.0261716	2.69E-07	0.002451216	0.0284424	2.924E-07	0.002663902
Road 7	7	1500-1600	0.110232807	1.107E-06	0.010091029	0.5693314	5.72E-06	0.052118244	0.6795643	6.827E-06	0.062209273	0.0245	2.461E-07	0.002242805	0.0266329	2.676E-07	0.00243805
Road 7	7	1600-1700	0.115364518	1.199E-06	0.010927071	0.5743386	5.97E-06	0.054400077	0.6897031	7.17E-06	0.065327149	0.0245097	2.548E-07	0.002321505	0.0266384	2.769E-07	0.002523126
Road 7	7	1700-1800	0.089556877	9.869E-07	0.008992061	0.4634929	5.108E-06	0.046537534	0.5530498	6.094E-06	0.055529595	0.019224	2.118E-07	0.001930207	0.020923	2.306E-07	0.002100801
Road 7	7	1800-1900	0.08300627	9.496E-07	0.008652779	0.439607	5.029E-06	0.04582572	0.5226132	5.979E-06	0.054478499	0.0182547	2.088E-07	0.001902912	0.0198691	2.273E-07	0.002071204
Road 7	7	1900-2000	0.096937571	8.402E-07	0.007655701	0.5152441	4.466E-06	0.040691699	0.6121816	5.306E-06	0.0483474	0.0217218	1.883E-07	0.00171549	0.0236077	2.046E-07	0.001864434
Road 7	7	2000-2100	0.089303773	6.327E-07	0.005765117	0.4864495	3.447E-06	0.031403357	0.5757533	4.079E-06	0.037168474	0.0207711	1.472E-07	0.001340902	0.0225696	1.599E-07	0.001457011
Road 7	7	2100-2200	0.103225341	6.145E-07	0.005598719	0.5483544	3.264E-06	0.029741555	0.6515797	3.879E-06	0.035340274	0.0240579	1.432E-07	0.001304846	0.0261398	1.556E-07	0.001417768
Road 7	7	2200-2300	0.08700524	5.583E-07	0.005087286	0.4827117	3.098E-06	0.028224654	0.569717	3.656E-06	0.03331194	0.0191968	1.232E-07	0.001122456	0.0208582	1.339E-07	0.001219603
Road 7	7	2300-0000	0.059974967	3.544E-07	0.003229111	0.3615138	2.136E-06	0.019464253	0.4214887	2.491E-06	0.022693364	0.0141358	8.353E-08	0.000761086	0.0153487	9.07E-08	0.00082639
Road 8	8	0000-0100	0.261120833	1.899E-07	0.001142643	1.3348425	9.708E-07	0.005841162	1.5959633	1.161E-06	0.006983805	0.0581917	4.232E-08	0.000254642	0.0632544	4.6E-08	0.000276796
Road 8	8	0100-0200	0.270706333	1.641E-07	0.000987157	1.3778497	8.351E-07	0.005024465	1.648556	9.991E-07	0.006011622	0.059994	3.636E-08	0.000218774	0.065198	3.951E-08	0.000237751
Road 8	8	0200-0300	0.256211333	7.764E-08	0.00046715	1.37347	4.162E-07	0.002504247	1.6296813	4.938E-07	0.002971397	0.060356	1.829E-08	0.000110047	0.0655913	1.988E-08	0.000119593
Road 8	8	0300-0400	0.233966429	6.617E-08	0.000398151	1.2237079	3.461E-07	0.00208244	1.4576743	4.123E-07	0.002480591	0.0517586	1.464E-08	8.80799E-05	0.0562514	1.591E-08	9.57256E-05
Road 8	8	0400-0500	0.26440619	1.122E-07	0.000674928	1.3060205	5.541E-07	0.003333773	1.5704267	6.662E-07	0.004008701	0.0568962	2.414E-08	0.000145234	0.0618262	2.623E-08	0.000157819
Road 8	8	0500-0600	0.251502353	1.727E-07	0.001039412	1.2199162	8.379E-07	0.005041684	1.4714185	1.011E-06	0.006081096	0.0527921	3.626E-08	0.00021818	0.0573724	3.941E-08	0.000237109
Road 8	8	0600-0700	0.280886774	3.518E-07	0.002116848	1.3469445	1.687E-06	0.010150983	1.6278313	2.039E-06	0.012267831	0.0559311	7.006E-08	0.000421514	0.0607885	7.614E-08	0.000458121
Road 8	8	0700-0800	0.280680198	5.727E-07	0.003445878	1.3611256	2.777E-06	0.016710379	1.6418058	3.35E-06	0.020156257	0.056057	1.144E-07	0.000688206	0.0609622	1.244E-07	0.000748425
Road 8	8	0800-0900	0.308211	1.183E-06	0.007118172	1.4995596	5.756E-06	0.034632516	1.8077706	6.939E-06	0.041750687	0.0602302	2.312E-07	0.001391024	0.0654741	2.513E-07	0.001512133
Road 8	8	0900-1000	0.32661121	1.036E-06	0.006233005	1.5109301	4.792E-06	0.028834389	1.8375413	5.828E-06	0.035067393	0.0619236	1.964E-07	0.001181741	0.0673059	2.135E-07	0.001284456
Road 8	8	1000-1100	0.313487722	1.001E-06	0.006020663	1.4890244	4.753E-06	0.028597339	1.8025122	5.753E-06	0.034618002	0.0613151	1.957E-07	0.001177583	0.0666489	2.127E-07	0.001280021
Road 8	8	1100-1200	0.321489874	1.033E-06	0.006213426	1.5483401	4.973E-06	0.029924728	1.86983	6.006E-06	0.036138154	0.064523	2.073E-07	0.001247033	0.0701296	2.253E-07	0.001355392
Road 8	8	1200-1300	0.325511716	1.111E-06	0.006686826	1.5840885	5.408E-06	0.032541147	1.9096002	6.52E-06	0.039227973	0.0653393	2.231E-07	0.001342234	0.0710284	2.425E-07	0.001459101
Road 8	8	1300-1400	0.298559375	9.65E-07	0.00580654	1.4266053	4.611E-06	0.02774537	1.7251646	5.576E-06	0.03355191	0.0582305	1.882E-07	0.001132497	0.0632959	2.046E-07	0.001231013
Road 8	8	1400-1500	0.289654388	8.134E-07	0.004893974	1.4492994	4.07E-06	0.024487227	1.7389537	4.883E-06	0.029381201	0.0601488	1.689E-07	0.001016269	0.0653754	1.836E-07	0.001104577
Road 8	8	1500-1600	0.297241314	8.227E-07	0.0049499	1.447789	4.007E-06	0.024109741	1.7450303	4.83E-06	0.029059642	0.0605068	1.675E-07	0.001007607	0.0657696	1.82E-07	0.001095247
Road 8	8	1600-1700	0.299752877	8.841E-07	0.005319648	1.4418473	4.253E-06	0.025588148	1.7416002	5.137E-06	0.030907796	0.0598376	1.765E-07	0.001061925	0.0650486	1.919E-07	0.001154403
Road 8	8	1700-1800	0.245301795	7.731E-07	0.004651489	1.2334254	3.887E-06	0.0233886	1.4787272	4.66E-06	0.028040089	0.050742	1.599E-07	0.000962185	0.0551793	1.739E-07	0.001046327

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (Summary) Year 2027

Road Name	Road ID	Hour	NO2 Emission			NO Emission			NOX Emission			PM25 Emission			PM10 Emission		
			AnnualHourMin			AnnualHourMin			AnnualHourMin			AnnualHourMin			AnnualHourMin		
			g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year
Road 8	8	1800-1900	0.24652729	5.329E-07	0.003206384	1.2678054	2.741E-06	0.016489333	1.5143327	3.273E-06	0.019695717	0.0518478	1.121E-07	0.000674342	0.0563766	1.219E-07	0.000733246
Road 8	8	1900-2000	0.245942338	3.826E-07	0.002301923	1.2958126	2.016E-06	0.012128292	1.5417549	2.398E-06	0.014430215	0.0566808	8.817E-08	0.00053051	0.0615943	9.581E-08	0.000576498
Road 8	8	2000-2100	0.27014	4.148E-07	0.002495567	1.293805	1.986E-06	0.011952235	1.563945	2.401E-06	0.014447802	0.0555737	8.533E-08	0.000513392	0.0604097	9.275E-08	0.000558068
Road 8	8	2100-2200	0.222953019	2.387E-07	0.001436336	1.1751698	1.258E-06	0.007570825	1.3981228	1.497E-06	0.009007161	0.0506309	5.421E-08	0.000326181	0.0550249	5.892E-08	0.000354488
Road 8	8	2200-2300	0.268791719	3.475E-07	0.002091041	1.3338947	1.725E-06	0.010376914	1.6026864	2.072E-06	0.012467955	0.0561361	7.258E-08	0.000436706	0.0610088	7.888E-08	0.000474612
Road 8	8	2300-0000	0.214878846	2.257E-07	0.0013582	1.1087188	1.165E-06	0.007007958	1.3235977	1.39E-06	0.008366158	0.0459479	4.827E-08	0.000290426	0.0499687	5.249E-08	0.00031584
Road 9	9	0000-0100	0.221498116	5.882E-08	0.000640946	1.0267543	2.727E-07	0.002971106	1.2482525	3.315E-07	0.003612052	0.0355479	9.441E-09	0.000102865	0.0386107	1.025E-08	0.000111727
Road 9	9	0100-0200	0.240344291	5.015E-08	0.00054645	1.0548806	2.201E-07	0.002398389	1.2952249	2.703E-07	0.002944838	0.0353464	7.376E-09	8.0364E-05	0.0383943	8.012E-09	8.72938E-05
Road 9	9	0200-0300	0.09680477	9.182E-09	0.000100044	0.706936	6.705E-08	0.00073059	0.8037407	7.623E-08	0.000830634	0.0239321	2.27E-09	2.47329E-05	0.0259751	2.464E-09	2.68442E-05
Road 9	9	0300-0400	0.117071153	8.883E-09	9.67907E-05	0.730558	5.543E-08	0.000604002	0.8476292	6.432E-08	0.000700793	0.0299152	2.27E-09	2.47329E-05	0.0324689	2.464E-09	2.68442E-05
Road 9	9	0400-0500	0.259052324	4.914E-08	0.00053544	1.0946035	2.076E-07	0.002262457	1.3536558	2.568E-07	0.002797898	0.0377711	7.165E-09	7.80699E-05	0.0410348	7.784E-09	8.48157E-05
Road 9	9	0500-0600	0.187010491	6.031E-08	0.000657111	0.9671498	3.119E-07	0.003398335	1.1541603	3.722E-07	0.004055446	0.037066	1.195E-08	0.000130241	0.0410355	1.323E-08	0.000144189
Road 9	9	0600-0700	0.218037508	1.324E-07	0.001442131	1.1778263	7.15E-07	0.007790311	1.3958638	8.473E-07	0.009232442	0.0360685	2.189E-08	0.000238562	0.0395918	2.403E-08	0.000261866
Road 9	9	0700-0800	0.186725798	1.7E-07	0.001852547	1.1085782	1.009E-06	0.010998441	1.295304	1.179E-06	0.012850988	0.0336863	3.067E-08	0.000334209	0.0373979	3.405E-08	0.000371033
Road 9	9	0800-0900	0.285666919	6.232E-07	0.006790181	1.4140514	3.085E-06	0.033611399	1.6997183	3.708E-06	0.04040158	0.0458881	1.001E-07	0.00109074	0.0500804	1.093E-07	0.001190389
Road 9	9	0900-1000	0.290243101	4.735E-07	0.005159219	1.3073689	2.133E-06	0.023239147	1.597612	2.606E-06	0.028398365	0.0402163	6.561E-08	0.000714864	0.0438598	7.155E-08	0.00077963
Road 9	9	1000-1100	0.306287553	4.125E-07	0.004494809	1.3392809	1.804E-06	0.01965412	1.6455684	2.216E-06	0.024148929	0.0443474	5.973E-08	0.000650804	0.0482062	6.493E-08	0.000707433
Road 9	9	1100-1200	0.215472718	3.025E-07	0.003295699	1.1643556	1.634E-06	0.017809057	1.3798283	1.937E-06	0.021104757	0.0424278	5.956E-08	0.000648941	0.0466435	6.548E-08	0.000713421
Road 9	9	1200-1300	0.315789323	4.373E-07	0.004764791	1.472001	2.038E-06	0.022210305	1.7877903	2.476E-06	0.026975096	0.0433897	6.009E-08	0.000654686	0.0473443	6.556E-08	0.000714355
Road 9	9	1300-1400	0.356249318	4.055E-07	0.004418032	1.389087	1.581E-06	0.017226786	1.7453363	1.987E-06	0.021644819	0.0401065	4.565E-08	0.000497382	0.043573	4.959E-08	0.000540371
Road 9	9	1400-1500	0.229377307	2.959E-07	0.00322391	1.1578115	1.494E-06	0.016273102	1.3871889	1.789E-06	0.019497013	0.035608	4.593E-08	0.000500473	0.0388846	5.016E-08	0.000546524
Road 9	9	1500-1600	0.192997677	2.087E-07	0.002273791	1.0361231	1.12E-06	0.012207024	1.2291208	1.329E-06	0.014480815	0.0349907	3.783E-08	0.000412241	0.0382328	4.134E-08	0.000450437
Road 9	9	1600-1700	0.199415761	2.988E-07	0.003256193	1.1494571	1.723E-06	0.018769099	1.3488729	2.021E-06	0.022025292	0.0328463	4.922E-08	0.000536336	0.0358295	5.369E-08	0.000585048
Road 9	9	1700-1800	0.173825372	2.242E-07	0.002443125	1.0981377	1.417E-06	0.015434384	1.2719631	1.641E-06	0.017877508	0.0324041	4.18E-08	0.000455441	0.0359507	4.637E-08	0.00050529
Road 9	9	1800-1900	0.171430741	1.431E-07	0.001559068	1.0649883	8.889E-07	0.009685478	1.236419	1.032E-06	0.011244546	0.0283706	2.368E-08	0.000258015	0.0313948	2.62E-08	0.000285519
Road 9	9	1900-2000	0.180346731	1.471E-07	0.001602877	0.9994395	8.152E-07	0.008882772	1.1797862	9.624E-07	0.010485649	0.036579	2.984E-08	0.000325105	0.0412616	3.366E-08	0.000366723
Road 9	9	2000-2100	0.195449586	1.075E-07	0.001171538	0.8892472	4.892E-07	0.005330207	1.0846968	5.967E-07	0.006501745	0.0320788	1.765E-08	0.000192282	0.0357535	1.967E-08	0.000214309
Road 9	9	2100-2200	0.025802754	1.322E-08	0.000143997	0.368845	1.889E-07	0.002058407	0.3946477	2.021E-07	0.002202404	0.0092891	4.758E-09	5.18394E-05	0.0100319	5.138E-09	5.59846E-05
Road 9	9	2200-2300	0.188833522	1.182E-07	0.001288002	0.9451009	5.916E-07	0.006446377	1.1339345	7.098E-07	0.007734379	0.0341665	2.139E-08	0.000233044	0.0375099	2.348E-08	0.000255849
Road 9	9	2300-0000	0.151788954	8.638E-08	0.000941207	0.8055953	4.585E-07	0.004995302	0.9573843	5.448E-07	0.005936509	0.0283938	1.616E-08	0.000176063	0.0312636	1.779E-08	0.000193858
Road 10	10	0000-0100	0.315122304	2.423E-07	0.001966293	1.619063	1.245E-06	0.010102593	1.9341853	1.487E-06	0.012068886	0.0665562	5.117E-08	0.000415296	0.0726314	5.584E-08	0.000453204
Road 10	10	0100-0200	0.309276135	1.797E-07	0.001458082	1.5756971	9.153E-07	0.007428622	1.8849733	1.095E-06	0.008886704	0.064698	3.758E-08	0.000305018	0.0707032	4.107E-08	0.00033333
Road 10	10	0200-0300	0.309245437	1.004E-07	0.00081473	1.5534949	5.043E-07	0.004092795	1.8627403	6.047E-07	0.004907525	0.063818	2.072E-08	0.000168133	0.0693657	2.252E-08	0.000182749
Road 10	10	0300-0400	0.281268	5.767E-08	0.000468013	1.5275611	3.132E-07	0.002541771	1.8088291	3.709E-07	0.003009784	0.0608534	1.248E-08	0.000101256	0.066133	1.356E-08	0.000110041
Road 10	10	0400-0500	0.326776633	1.284E-07	0.001042163	1.581567	6.215E-07	0.005043965	1.9083436	7.499E-07	0.006086127	0.0623696	2.451E-08	0.00019891	0.0677895	2.664E-08	0.000216196
Road 10	10	0500-0600	0.297161648	2.082E-07	0.001689403	1.4462248	1.013E-06	0.008221977	1.7433865	1.221E-06	0.00991138	0.058314	4.085E-08	0.000331523	0.0636987	4.462E-08	0.000362136
Road 10	10	0600-0700	0.358276918	5.02E-07	0.004073702	1.8026212	2.526E-06	0.020496275	2.1608981	3.027E-06	0.024569977	0.0635138	8.898E-08	0.000722169	0.0693686	9.719E-08	0.000788739
Road 10	10	0700-0800	0.354467366	7.813E-07	0.006340486	1.8001382	3.968E-06	0.032199725	2.1546055	4.749E-06	0.038540212	0.0641976	1.415E-07	0.001148325	0.0701418	1.546E-07	0.001254652
Road 10	10	0800-0900	0.37834786	1.597E-06	0.012958205	1.8829425	7.946E-06	0.064489741	2.2612904	9.543E-06	0.077447946	0.0703429	2.969E-07	0.002409205	0.0765791	3.232E-07	0.002622791
Road 10	10	0900-1000	0.415747096	1.392E-06	0.011299049	2.017378	6.756E-06	0.054827691	2.4331251	8.148E-06	0.06612674	0.0707768	2.37E-07	0.001923552	0.0771048	2.582E-07	0.002095531
Road 10	10	1000-1100	0.414759574	1.509E-06	0.012249903	1.8871728	6.868E-06	0.055737552	2.3019324	8.377E-06	0.067987455	0.0699724	2.546E-07	0.002066633	0.0761911	2.773E-07	0.002250301
Road 10	10	1100-1200	0.404419476	1.472E-06	0.011944508	1.9064854	6.938E-06	0.056307949	2.3109049	8.41E-06	0.068252458	0.072576	2.641E-07	0.002143528	0.0790186	2.876E-07	0.002333811
Road 10	10	1200-1300	0.421061844	1.583E-06	0.012844736	2.0107823	7.558E-06	0.061340083	2.4318442	9.141E-06	0.074184819	0.0727577	2.735E-07	0.002219516	0.0792152	2.978E-07	0.002416507
Road 10	10	1300-1400	0.410700508	1.347E-06	0.010934101	1.9173564	6.29E-06	0.05104588	2.3280569	7.637E-06	0.061979981	0.069193	2.27E-07	0.001842128	0.075376	2.473E-07	0.00200674
Road 10	10	1400-1500	0.379084065	1.166E-06	0.009461601	1.9036727	5.855E-06	0.047513979	2.2827568	7.02E-06	0.05697558	0.0662713	2.038E-07	0.001654073	0.0722059	2.221E-07	0.001802196
Road 10	10	1500-1600	0.378493395	1.19E-06	0.009656789	1.8288678	5.75E-06	0.046661292	2.2073612	6.939E-06	0.056318081	0.0679741	2.137E-07	0.001734275	0.073983	2.326E-07	0.001887585
Road 10	10	1600-1700	0.362654286	1.27E-06	0.010308685	1.7814329	6.24E-06	0.050638396	2.1440872	7.51E-06	0.060947081	0.0646362	2.264E-07	0.001837325	0.0704725	2.468E-07	0.002003226
Road 10	10	1700-1800	0.336422106	1.104E-06	0.008956583	1.7521857	5.748E-06	0.046648532	2.0886079	6.852E-06	0.055605116	0.060929	1.999E-07	0.001622117	0.0665773	2.184E-07	0.00177249
Road 10	10	1800-1900	0.343786206	7.107E-07	0.005768069	1.7423706	3.602E-06	0.029233614	2.0861568	4.313E-06	0.035001683	0.0639933	1.323E-07	0.001073684	0.0698341	1.444E-07	0.001171682
Road 10	10	1900-2000	0.299782297	5.583E-07	0.004530948	1.5959392	2.972E-06	0.024121231	1.8957215	3.53E-06	0.028652179	0.0612588	1.141E-07	0.000925874	0.0671834	1.251E-07	0.001015419
Road 10	10	2000-2100	0.350397286	4.31E-07	0.003498242	1.7013248	2.093E-06	0.016985423	2.0517221	2.524E-06	0.020483664	0.0700873	8.622E-08	0.000699727	0.0763689	9.395E-08	0.00076244
Road 10	10	2100-2200	0.286812252	3.528E-07	0.002863432	1.6053162	1.975E-06	0.016026906	1.8921285	2.328E-06	0.018890338	0.0516562	6.355E-08	0.000515717	0.0563143	6.928E-08	0.000562221
Road 10	10	2200-2300	0.306125998	3.923E-07	0.003183597	1.57641	2.02E-06	0.01639408	1.882536	2.412E-06	0.019577677	0.0578415	7.412E-08	0.000601531	0.0630353	8.078E-08	0.000655544
Road 10	10	2300-0000	0.281706774	3.369E-07	0.002734336	1.4330351	1.714E-06	0.013909499	1.7147419	2.051E-06	0.016643836	0.0565064	6.758E-08	0.000548469	0.0616179	7.369E-08	0.000598083
Road 11	11	0000-0100	0.352889908	2.696E-07	0.000816174	1.775054	1.356E-06	0.004105398	2.1279439	1.626E-06	0.004921572	0.070813	5.409E-08	0.000163778	0.0769625	5.879E-08	0.000178001
Road 11	11	0100-0200	0.352470555	1.897E-07	0.000574349	1.7444996	9.389E-07	0.002842651	2.0969701	1.129E-06	0.003417	0.0688455	3.705E-08	0.000112183	0.0748238	4.027E-08	0.000121925
Road 11	11	0200-0300	0.30916159	8.051E-08	0.000243763	1.6556387	4.312E-07	0.001305413	1.9648002	5.117E-07	0.001549176	0.0661574	1.723E-08	5.21628E-05	0.0718984	1.872E-08	5.66893E-05
Road 11	11	0300-0400	0.331191758	8.05E-08	0.000243724	1.735288	4.218E-07	0.001276999	2.0664798	5.023E-07	0.001520723	0.0708829	1.723E-08	5.21628E-05	0.077034	1.872E-08	5.66893E-05
Road 11	11	0400-0500	0.337946162	1.173E-07	0.000355278	1.6158917	5.611E-07	0.001698765	1.9538379	6.784E-07	0.002054043	0.0625206	2.171E-08	6.5727E-05	0.0679474	2.359E-08	7.14322E-05
Road 11	11	0500-0600	0.272132532	1.276E-07	0.00038622	1.4004943	6.565E-07	0.001987633	1.6726269	7.84E-07	0.002373853	0.0556601	2.609E-08	7.89948E-05	0.0609705	2.858E-08	8.65315E-05
Road 11	11	0600-0700	0.294769236	2.661E-07	0.000805706	1.548347	1.398E-06	0.004232166	1.8431162	1.664E-06	0.005037872	0.0557614	5.034E-08	0.000152415	0.0608488	5.493E-08	0.000166321
Road 11	11	0700-0800	0.346098133	6.489E-07	0.00196478	1.817796	3.408E-06	0.01031953	2.1638942	4.057E-06	0.012284311	0.067709	1.27E-07	0.00038438	0.0739643	1.387E-07	0.000419891

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (Summary) Year 2027

Road Name	Road ID	Hour	NO2 Emission			NO Emission			NOX Emission			PM25 Emission			PM10 Emission		
			AnnualHourMin			AnnualHourMin			AnnualHourMin			AnnualHourMin			AnnualHourMin		
			g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year
Road 11	11	0800-0900	0.37349076	1.329E-06	0.004024619	1.8579476	6.612E-06	0.020020658	2.2314384	7.942E-06	0.024045277	0.0676342	2.407E-07	0.000728805	0.0736751	2.622E-07	0.0007939
Road 11	11	0900-1000	0.372775264	9.449E-07	0.002860823	1.7796786	4.511E-06	0.013657948	2.1524539	5.456E-06	0.016518771	0.0636713	1.614E-07	0.000488638	0.0692503	1.755E-07	0.000531454
Road 11	11	1000-1100	0.386792521	7.991E-07	0.002419447	1.8141009	3.748E-06	0.01134748	2.2008934	4.547E-06	0.013766927	0.0663218	1.37E-07	0.000414853	0.0720385	1.488E-07	0.000450612
Road 11	11	1100-1200	0.342489997	7.968E-07	0.002412369	1.7623914	4.1E-06	0.012413613	2.1048814	4.897E-06	0.014825982	0.0673347	1.566E-07	0.00047428	0.073432	1.708E-07	0.000517227
Road 11	11	1200-1300	0.41549949	1.176E-06	0.003559993	2.0231552	5.725E-06	0.017334361	2.4386547	6.901E-06	0.020894354	0.0726403	2.056E-07	0.000622381	0.0790695	2.238E-07	0.000677466
Road 11	11	1300-1400	0.432542325	9.011E-07	0.002728355	1.9595758	4.082E-06	0.012360452	2.3921182	4.984E-06	0.015088807	0.0693161	1.444E-07	0.000437226	0.0753012	1.569E-07	0.000474979
Road 11	11	1400-1500	0.340469669	6.857E-07	0.002076	1.7121848	3.448E-06	0.010439979	2.0526544	4.134E-06	0.01251598	0.0614198	1.237E-07	0.000374505	0.0668238	1.346E-07	0.000407455
Road 11	11	1500-1600	0.306160714	6.219E-07	0.001882896	1.5923582	3.234E-06	0.009793043	1.8985189	3.856E-06	0.011675939	0.0618006	1.255E-07	0.000380075	0.0672724	1.366E-07	0.000413727
Road 11	11	1600-1700	0.29197543	7.046E-07	0.002133301	1.5691934	3.787E-06	0.011465218	1.8611688	4.491E-06	0.013598519	0.0563386	1.36E-07	0.000411634	0.0613103	1.48E-07	0.00044796
Road 11	11	1700-1800	0.29391675	7.246E-07	0.002193834	1.6073999	3.963E-06	0.011997846	1.9013166	4.687E-06	0.01419168	0.0599191	1.477E-07	0.000447244	0.0654781	1.614E-07	0.000488738
Road 11	11	1800-1900	0.317489538	6.504E-07	0.001969257	1.6991513	3.481E-06	0.010539138	2.0166409	4.131E-06	0.012508395	0.0640114	1.311E-07	0.000397037	0.0697849	1.43E-07	0.000432847
Road 11	11	1900-2000	0.303929994	4.802E-07	0.001453804	1.5937694	2.518E-06	0.007623561	1.8976994	2.998E-06	0.009077366	0.0633171	1E-07	0.000302868	0.0695333	1.099E-07	0.000332602
Road 11	11	2000-2100	0.315531005	4.437E-07	0.001343439	1.5813468	2.224E-06	0.006732916	1.8968778	2.667E-06	0.008076355	0.0637339	8.963E-08	0.000271361	0.0695899	9.786E-08	0.000296294
Road 11	11	2100-2200	0.230190778	2.278E-07	0.00068969	1.2925002	1.279E-06	0.003872545	1.522691	1.507E-06	0.004562235	0.0503317	4.981E-08	0.000150802	0.0546783	5.411E-08	0.000163825
Road 11	11	2200-2300	0.296335013	3.241E-07	0.000981329	1.507774	1.649E-06	0.004993072	1.804109	1.973E-06	0.005974401	0.0594539	6.503E-08	0.000196885	0.0648195	7.09E-08	0.000214653
Road 11	11	2300-0000	0.28243863	2.942E-07	0.000890772	1.4620071	1.523E-06	0.004610964	1.7444458	1.817E-06	0.005501736	0.0578319	6.024E-08	0.000182394	0.0630618	6.569E-08	0.000198888
Haul Road 1	HR1	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0700-0800	1.47643	2.775E-06	0.001523548	6.78481	1.275E-05	0.007001338	8.26124	1.553E-05	0.008524886	0.21962	4.128E-07	0.000226629	0.23871	4.487E-07	0.000246328
Haul Road 1	HR1	0800-0900	1.47444	2.772E-06	0.001521495	6.7756	1.274E-05	0.006991834	8.25004	1.551E-05	0.008513329	0.21962	4.128E-07	0.000226629	0.23871	4.487E-07	0.000246328
Haul Road 1	HR1	0900-1000	1.46754	2.759E-06	0.001514375	6.74402	1.268E-05	0.006959246	8.21156	1.544E-05	0.008473621	0.21962	4.128E-07	0.000226629	0.23871	4.487E-07	0.000246328
Haul Road 1	HR1	1000-1100	1.47104	2.765E-06	0.001517986	6.76021	1.271E-05	0.006975953	8.23125	1.547E-05	0.008493939	0.21962	4.128E-07	0.000226629	0.23871	4.487E-07	0.000246328
Haul Road 1	HR1	1100-1200	1.47593	2.774E-06	0.001523032	6.78271	1.275E-05	0.006999171	8.25864	1.552E-05	0.008522203	0.21962	4.128E-07	0.000226629	0.23871	4.487E-07	0.000246328
Haul Road 1	HR1	1200-1300	1.47803	2.778E-06	0.001525199	6.7919	1.277E-05	0.007008654	8.26993	1.554E-05	0.008533853	0.21962	4.128E-07	0.000226629	0.23871	4.487E-07	0.000246328
Haul Road 1	HR1	1300-1400	1.48063	2.783E-06	0.001527882	6.8039	1.279E-05	0.007021037	8.28453	1.557E-05	0.008548919	0.21962	4.128E-07	0.000226629	0.23871	4.487E-07	0.000246328
Haul Road 1	HR1	1400-1500	1.47494	2.772E-06	0.001522011	6.7779	1.274E-05	0.006994207	8.25284	1.551E-05	0.008516218	0.21962	4.128E-07	0.000226629	0.23871	4.487E-07	0.000246328
Haul Road 1	HR1	1500-1600	1.46934	2.762E-06	0.001516232	6.75231	1.269E-05	0.006967801	8.22165	1.545E-05	0.008484033	0.21962	4.128E-07	0.000226629	0.23871	4.487E-07	0.000246328
Haul Road 1	HR1	1600-1700	1.47014	2.763E-06	0.001517057	6.75601	1.27E-05	0.006971619	8.22615	1.546E-05	0.008488676	0.21962	4.128E-07	0.000226629	0.23871	4.487E-07	0.000246328
Haul Road 1	HR1	1700-1800	1.47534	2.773E-06	0.001522423	6.78	1.274E-05	0.006996374	8.25534	1.552E-05	0.008518798	0.21962	4.128E-07	0.000226629	0.23871	4.487E-07	0.000246328
Haul Road 1	HR1	1800-1900	1.47534	2.773E-06	0.001522423	6.78	1.274E-05	0.006996374	8.25534	1.552E-05	0.008518798	0.21962	4.128E-07	0.000226629	0.23871	4.487E-07	0.000246328
Haul Road 1	HR1	1900-2000	1.47274	2.768E-06	0.00151974	6.768	1.272E-05	0.006983991	8.24074	1.549E-05	0.008503732	0.21962	4.128E-07	0.000226629	0.23871	4.487E-07	0.000246328
Haul Road 1	HR1	2000-2100	1.47014	2.763E-06	0.001517057	6.75601	1.27E-05	0.006971619	8.22615	1.546E-05	0.008488676	0.21962	4.128E-07	0.000226629	0.23871	4.487E-07	0.000246328
Haul Road 1	HR1	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0700-0800	1.47643	1.912E-06	0.001858149	6.78481	8.789E-06	0.008538968	8.26124	1.07E-05	0.010397117	0.21962	2.845E-07	0.000276401	0.23871	3.092E-07	0.000300427
Haul Road 2	HR2	0800-0900	1.47444	1.91E-06	0.001855645	6.7756	8.777E-06	0.008527377	8.25004	1.069E-05	0.010383022	0.21962	2.845E-07	0.000276401	0.23871	3.092E-07	0.000300427
Haul Road 2	HR2	0900-1000	1.46754	1.901E-06	0.001846961	6.74402	8.736E-06	0.008487632	8.21156	1.064E-05	0.010334593	0.21962	2.845E-07	0.000276401	0.23871	3.092E-07	0.000300427
Haul Road 2	HR2	1000-1100	1.47104	1.905E-06	0.001851366	6.76021	8.757E-06	0.008508008	8.23125	1.066E-05	0.010359374	0.21962	2.845E-07	0.000276401	0.23871	3.092E-07	0.000300427
Haul Road 2	HR2	1100-1200	1.47593	1.912E-06	0.00185752	6.78271	8.786E-06	0.008536325	8.25864	1.07E-05	0.010393845	0.21962	2.845E-07	0.000276401	0.23871	3.092E-07	0.000300427
Haul Road 2	HR2	1200-1300	1.47803	1.915E-06	0.001860163	6.7919	8.798E-06	0.008547891	8.26993	1.071E-05	0.010408054	0.21962	2.845E-07	0.000276401	0.23871	3.092E-07	0.000300427
Haul Road 2	HR2	1300-1400	1.48063	1.918E-06	0.001863435	6.8039	8.813E-06	0.008562994	8.28453	1.073E-05	0.010426429	0.21962	2.845E-07	0.000276401	0.23871	3.092E-07	0.000300427
Haul Road 2	HR2	1400-1500	1.47494	1.911E-06	0.001856274	6.7779	8.78E-06	0.008530272	8.25284	1.069E-05	0.010386546	0.21962	2.845E-07	0.000276401	0.23871	3.092E-07	0.000300427
Haul Road 2	HR2	1500-1600	1.46934	1.903E-06	0.001849226	6.75231	8.747E-06	0.008498066	8.22165	1.065E-05	0.010347292	0.21962	2.845E-07	0.000276401	0.23871	3.092E-07	0.000300427
Haul Road 2	HR2	1600-1700	1.47014	1.904E-06	0.001850233	6.75601	8.751E-06	0.008502722	8.22615	1.066E-05	0.010352955	0.21962	2.845E-07	0.000276401	0.23871	3.092E-07	0.000300427
Haul Road 2	HR2	1700-1800	1.47534	1.911E-06	0.001856777	6.78	8.782E-06	0.008532915	8.25534	1.069E-05	0.010389692	0.21962	2.845E-07	0.000276401	0.23871	3.092E-07	0.000300427
Haul Road 2	HR2	1800-1900	1.47534	1.911E-06	0.001856777	6.78	8.782E-06	0.008532915	8.25534	1.069E-05	0.010389692	0.21962	2.845E-07	0.000276401	0.23871	3.092E-07	0.000300427
Haul Road 2	HR2	1900-2000	1.47274	1.908E-06	0.001853505	6.768	8.767E-06	0.008517812	8.24074	1.067E-05	0.010371317	0.21962	2.845E-07	0.000276401	0.23871	3.092E-07	0.000300427
Haul Road 2	HR2	2000-2100	1.47014	1.904E-06	0.001850233	6.75601	8.751E-06	0.008502722	8.22615	1.066E-05	0.010352955	0.21962	2.845E-07	0.000276401	0.23871	3.092E-07	0.000300427
Haul Road 2	HR2	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (Summary) Year 2027

Road Name	Road ID	Hour	NO2 Emission			NO Emission			NOX Emission			PM25 Emission			PM10 Emission		
			AnnualHourMin			AnnualHourMin			AnnualHourMin			AnnualHourMin			AnnualHourMin		
			g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year	g/km/veh	g/s/m2	tonne/year
Haul Road 2	HR2	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0700-0800	1.47643	1.912E-06	0.001855558	6.78481	8.789E-06	0.008527063	8.26124	1.07E-05	0.010382621	0.21962	2.845E-07	0.000276016	0.23871	3.092E-07	0.000300008
Haul Road 3	HR3	0800-0900	1.47444	1.91E-06	0.001853057	6.7756	8.777E-06	0.008515488	8.25004	1.069E-05	0.010368545	0.21962	2.845E-07	0.000276016	0.23871	3.092E-07	0.000300008
Haul Road 3	HR3	0900-1000	1.46754	1.901E-06	0.001844386	6.74402	8.736E-06	0.008475799	8.21156	1.064E-05	0.010320184	0.21962	2.845E-07	0.000276016	0.23871	3.092E-07	0.000300008
Haul Road 3	HR3	1000-1100	1.47104	1.905E-06	0.001848784	6.76021	8.757E-06	0.008496146	8.23125	1.066E-05	0.01034493	0.21962	2.845E-07	0.000276016	0.23871	3.092E-07	0.000300008
Haul Road 3	HR3	1100-1200	1.47593	1.912E-06	0.00185493	6.78271	8.786E-06	0.008524424	8.25864	1.07E-05	0.010379354	0.21962	2.845E-07	0.000276016	0.23871	3.092E-07	0.000300008
Haul Road 3	HR3	1200-1300	1.47803	1.915E-06	0.001857569	6.7919	8.798E-06	0.008535974	8.26993	1.071E-05	0.010393543	0.21962	2.845E-07	0.000276016	0.23871	3.092E-07	0.000300008
Haul Road 3	HR3	1300-1400	1.48063	1.918E-06	0.001860837	6.8039	8.813E-06	0.008551055	8.28453	1.073E-05	0.010411892	0.21962	2.845E-07	0.000276016	0.23871	3.092E-07	0.000300008
Haul Road 3	HR3	1400-1500	1.47494	1.911E-06	0.001853686	6.7779	8.78E-06	0.008518379	8.25284	1.069E-05	0.010372064	0.21962	2.845E-07	0.000276016	0.23871	3.092E-07	0.000300008
Haul Road 3	HR3	1500-1600	1.46934	1.903E-06	0.001846648	6.75231	8.747E-06	0.008486217	8.22165	1.065E-05	0.010332865	0.21962	2.845E-07	0.000276016	0.23871	3.092E-07	0.000300008
Haul Road 3	HR3	1600-1700	1.47014	1.904E-06	0.001847653	6.75601	8.751E-06	0.008490868	8.22615	1.066E-05	0.010338521	0.21962	2.845E-07	0.000276016	0.23871	3.092E-07	0.000300008
Haul Road 3	HR3	1700-1800	1.47534	1.911E-06	0.001854189	6.78	8.782E-06	0.008521018	8.25534	1.069E-05	0.010375206	0.21962	2.845E-07	0.000276016	0.23871	3.092E-07	0.000300008
Haul Road 3	HR3	1800-1900	1.47534	1.911E-06	0.001854189	6.78	8.782E-06	0.008521018	8.25534	1.069E-05	0.010375206	0.21962	2.845E-07	0.000276016	0.23871	3.092E-07	0.000300008
Haul Road 3	HR3	1900-2000	1.47274	1.908E-06	0.001850921	6.768	8.767E-06	0.008505936	8.24074	1.067E-05	0.010356857	0.21962	2.845E-07	0.000276016	0.23871	3.092E-07	0.000300008
Haul Road 3	HR3	2000-2100	1.47014	1.904E-06	0.001847653	6.75601	8.751E-06	0.008490868	8.22615	1.066E-05	0.010338521	0.21962	2.845E-07	0.000276016	0.23871	3.092E-07	0.000300008
Haul Road 3	HR3	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (January) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 1	1	0000-0100	0.109079153	3.624E-07	2.94792E-06	0.0977638	3.248E-07	2.64212E-06	0.6467243	2.148E-06	1.74781E-05	0.5753862	1.911E-06	1.55501E-05	0.6731499	2.236E-06	1.81922E-05
Road 1	1	0100-0200	0.084568981	1.714E-07	1.39456E-06	0.0754415	1.529E-07	1.24404E-06	0.513248	1.04E-06	8.46354E-06	0.4540875	9.204E-07	7.48798E-06	0.529529	1.073E-06	8.73202E-06
Road 1	1	0200-0300	0.080297403	1.16E-07	9.44047E-07	0.0726305	1.05E-07	8.53908E-07	0.5171748	7.474E-07	6.08036E-06	0.4618135	6.674E-07	5.42948E-06	0.534444	7.724E-07	6.28339E-06
Road 1	1	0300-0400	0.068977273	7.12E-08	5.79255E-07	0.0619187	6.392E-08	5.19979E-07	0.4236304	4.373E-07	3.55755E-06	0.3754969	3.876E-07	3.15334E-06	0.4374156	4.515E-07	3.67332E-06
Road 1	1	0400-0500	0.089931059	1.435E-07	1.16716E-06	0.0808089	1.289E-07	1.04877E-06	0.5168845	8.246E-07	6.70832E-06	0.4601068	7.34E-07	5.97144E-06	0.5409158	8.629E-07	7.02021E-06
Road 1	1	0500-0600	0.072321337	2.538E-07	2.06495E-06	0.0651727	2.287E-07	1.86084E-06	0.4307812	1.512E-06	1.22998E-05	0.3829416	1.344E-06	1.09339E-05	0.4481142	1.573E-06	1.27947E-05
Road 1	1	0600-0700	0.097130934	6.052E-07	4.92376E-06	0.0883139	5.503E-07	4.47681E-06	0.5240494	3.265E-06	2.65651E-05	0.4724301	2.944E-06	2.39484E-05	0.560744	3.494E-06	2.84252E-05
Road 1	1	0700-0800	0.081665814	8.568E-07	6.97033E-06	0.0750216	7.871E-07	6.40323E-06	0.4543431	4.767E-06	3.8779E-05	0.4130804	4.334E-06	3.52572E-05	0.488102	5.121E-06	4.16604E-05
Road 1	1	0800-0900	0.087152219	1.12E-06	9.11529E-06	0.0803858	1.033E-06	8.40758E-06	0.4656762	5.987E-06	4.87053E-05	0.4269464	5.489E-06	4.46545E-05	0.5073322	6.523E-06	5.30621E-05
Road 1	1	0900-1000	0.091221796	1.21E-06	9.84735E-06	0.0830182	1.102E-06	8.96177E-06	0.5129357	6.806E-06	5.53712E-05	0.463736	6.154E-06	5.00601E-05	0.5467542	7.255E-06	5.90218E-05
Road 1	1	1000-1100	0.105472475	1.36E-06	1.10636E-05	0.097286	1.254E-06	1.02049E-05	0.568378	7.329E-06	5.96204E-05	0.5219157	6.73E-06	5.47468E-05	0.6192017	7.984E-06	6.49516E-05
Road 1	1	1100-1200	0.095918051	1.201E-06	9.76849E-06	0.0876592	1.097E-06	8.92739E-06	0.5529372	6.922E-06	5.63122E-05	0.5023702	6.289E-06	5.11624E-05	0.5900294	7.386E-06	6.00898E-05
Road 1	1	1200-1300	0.098386136	1.219E-06	9.91469E-06	0.0892562	1.106E-06	8.99464E-06	0.5624628	6.967E-06	5.66812E-05	0.5078576	6.291E-06	5.11785E-05	0.5971138	7.397E-06	6.01731E-05
Road 1	1	1300-1400	0.103289188	1.361E-06	1.10712E-05	0.0936213	1.234E-06	1.00349E-05	0.5782002	7.618E-06	6.1975E-05	0.5210695	6.865E-06	5.58514E-05	0.6146908	8.099E-06	6.58863E-05
Road 1	1	1400-1500	0.099180458	1.424E-06	1.15848E-05	0.0897069	1.288E-06	1.04782E-05	0.5416907	7.778E-06	6.32724E-05	0.4874427	6.999E-06	5.69359E-05	0.5771496	8.287E-06	6.74142E-05
Road 1	1	1500-1600	0.106533568	1.418E-06	1.15328E-05	0.0963034	1.282E-06	1.04253E-05	0.5800428	7.719E-06	6.27925E-05	0.521541	6.94E-06	5.64594E-05	0.6178444	8.222E-06	6.68847E-05
Road 1	1	1600-1700	0.101934358	1.431E-06	1.16419E-05	0.0924947	1.299E-06	1.05638E-05	0.5611366	7.878E-06	6.40872E-05	0.5061281	7.106E-06	5.78047E-05	0.5986228	8.404E-06	6.83685E-05
Road 1	1	1700-1800	0.08209548	1.156E-06	9.40117E-06	0.073439	1.034E-06	8.40987E-06	0.4619162	6.502E-06	5.28963E-05	0.409483	5.764E-06	4.6892E-05	0.482922	6.798E-06	5.53018E-05
Road 1	1	1800-1900	0.073423346	1.058E-06	8.60987E-06	0.0658125	9.486E-07	7.7174E-06	0.4403096	6.347E-06	5.16322E-05	0.3900133	5.622E-06	4.57343E-05	0.4558258	6.57E-06	5.34517E-05
Road 1	1	1900-2000	0.087001485	9.569E-07	7.78441E-06	0.0789968	8.688E-07	7.06819E-06	0.5005089	5.505E-06	4.47827E-05	0.4509703	4.96E-06	4.03503E-05	0.5299672	5.829E-06	4.74185E-05
Road 1	1	2000-2100	0.079162319	7.369E-07	5.99517E-06	0.0711705	6.625E-07	5.38993E-06	0.46841	4.361E-06	3.54739E-05	0.4171714	3.884E-06	3.15935E-05	0.4883419	4.546E-06	3.69834E-05
Road 1	1	2100-2200	0.082345828	7.001E-07	5.69562E-06	0.0747819	6.358E-07	5.17245E-06	0.489506	4.162E-06	3.38577E-05	0.4408683	3.748E-06	3.04936E-05	0.5156502	4.384E-06	3.5666E-05
Road 1	1	2200-2300	0.081988561	6.632E-07	5.3955E-06	0.0740545	5.991E-07	4.87338E-06	0.4870728	3.94E-06	3.20533E-05	0.4355408	3.523E-06	2.86621E-05	0.5095953	4.122E-06	3.35354E-05
Road 1	1	2300-0000	0.071803766	5.189E-07	4.22094E-06	0.0645424	4.664E-07	3.79409E-06	0.4437721	3.207E-06	2.60869E-05	0.3936489	2.844E-06	2.31404E-05	0.4581913	3.311E-06	2.69345E-05
Road 2	2	0000-0100	0.182897843	2.159E-07	1.3944E-06	0.1639763	1.936E-07	1.25014E-06	0.78048	9.214E-07	5.95031E-06	0.6956127	8.212E-07	5.30329E-06	0.859589	1.015E-06	6.55343E-06
Road 2	2	0100-0200	0.130119394	9.94E-08	6.41895E-07	0.1160618	8.866E-08	5.72547E-07	0.6488224	4.956E-07	3.20072E-06	0.5746082	4.389E-07	2.83461E-06	0.69067	5.276E-07	3.40716E-06
Road 2	2	0200-0300	0.129027826	6.87E-08	4.43628E-07	0.11688	6.223E-08	4.01861E-07	0.7089952	3.775E-07	2.43769E-06	0.6368713	3.391E-07	2.18971E-06	0.7537513	4.013E-07	2.59157E-06
Road 2	2	0300-0400	0.114340667	3.97E-08	2.56389E-07	0.102708	3.566E-08	2.30305E-07	0.4206873	1.461E-07	9.43319E-07	0.373584	1.297E-07	8.37698E-07	0.476292	1.654E-07	1.068E-06
Road 2	2	0400-0500	0.15405037	9.628E-08	6.21776E-07	0.1384781	8.655E-08	5.58924E-07	0.7499352	4.687E-07	3.02688E-06	0.6701333	4.188E-07	2.70478E-06	0.8086115	5.054E-07	3.26371E-06
Road 2	2	0500-0600	0.122209123	1.612E-07	1.04132E-06	0.1102279	1.454E-07	9.39235E-07	0.5456979	7.2E-07	4.64981E-06	0.4869539	6.425E-07	4.14926E-06	0.5971818	7.879E-07	5.08849E-06
Road 2	2	0600-0700	0.172323883	4.109E-07	2.65332E-06	0.1567429	3.737E-07	2.41342E-06	0.7036649	1.678E-06	1.08345E-05	0.6360218	1.516E-06	9.79303E-06	0.7927648	1.89E-06	1.22064E-05
Road 2	2	0700-0800	0.137064747	5.013E-07	3.23736E-06	0.1259612	4.607E-07	2.9751E-06	0.583918	2.136E-06	1.37917E-05	0.5318216	1.945E-06	1.25612E-05	0.6577828	2.406E-06	1.55363E-05
Road 2	2	0800-0900	0.154223533	1.071E-06	6.91639E-06	0.1422926	9.881E-07	6.38133E-06	0.6568429	4.561E-06	2.94571E-05	0.6025392	4.184E-06	2.70218E-05	0.7448318	5.172E-06	3.34031E-05
Road 2	2	0900-1000	0.176165163	1.003E-06	6.47833E-06	0.1602874	9.127E-07	5.89443E-06	0.7649706	4.356E-06	2.81312E-05	0.6926875	3.944E-06	2.5473E-05	0.8529749	4.857E-06	3.13674E-05
Road 2	2	1000-1100	0.194828641	8.298E-07	5.35893E-06	0.1797251	7.655E-07	4.9435E-06	0.8387649	3.573E-06	2.3071E-05	0.7709664	3.284E-06	2.12061E-05	0.9506915	4.049E-06	2.61496E-05
Road 2	2	1100-1200	0.237099006	9.934E-07	6.41529E-06	0.216775	9.082E-07	5.86537E-06	0.9742466	4.082E-06	2.63606E-05	0.8887004	3.723E-06	2.40459E-05	1.1054754	4.632E-06	2.99113E-05
Road 2	2	1200-1300	0.18015617	7.84E-07	5.06308E-06	0.1635209	7.116E-07	4.59556E-06	0.7962161	3.465E-06	2.23767E-05	0.7192846	3.13E-06	2.02147E-05	0.8828055	3.842E-06	2.48102E-05
Road 2	2	1300-1400	0.200397955	1.021E-06	6.59058E-06	0.181525	9.244E-07	5.9699E-06	0.8311886	4.233E-06	2.73357E-05	0.7495656	3.817E-06	2.46513E-05	0.9310906	4.742E-06	3.06212E-05
Road 2	2	1400-1500	0.175298405	6.614E-07	4.27143E-06	0.1586037	5.984E-07	3.86464E-06	0.7603952	2.869E-06	1.85283E-05	0.685616	2.587E-06	1.67061E-05	0.8442198	3.185E-06	2.05708E-05
Road 2	2	1500-1600	0.215676704	8.937E-07	5.77117E-06	0.1948755	8.075E-07	5.21456E-06	0.8684809	3.599E-06	2.32392E-05	0.7824317	3.242E-06	2.09366E-05	0.9773072	4.049E-06	2.61512E-05
Road 2	2	1600-1700	0.184538174	9.355E-07	6.04141E-06	0.1675171	8.492E-07	5.48417E-06	0.7834125	3.971E-06	2.56473E-05	0.7080476	3.589E-06	2.318E-05	0.8755647	4.439E-06	2.86642E-05
Road 2	2	1700-1800	0.140551797	7.06E-07	4.55936E-06	0.1258183	6.32E-07	4.08142E-06	0.5625543	2.826E-06	1.82487E-05	0.5004566	2.514E-06	1.62343E-05	0.6262749	3.146E-06	2.03157E-05
Road 2	2	1800-1900	0.154943347	8.895E-07	5.74424E-06	0.1390867	7.985E-07	5.15638E-06	0.7192766	4.129E-06	2.66658E-05	0.6411444	3.681E-06	2.37692E-05	0.7802311	4.479E-06	2.89256E-05
Road 2	2	1900-2000	0.131313916	5.046E-07	3.25857E-06	0.1192945	4.584E-07	2.9603E-06	0.6072082	2.333E-06	1.50679E-05	0.547583	2.104E-06	1.35883E-05	0.6668775	2.563E-06	1.65486E-05
Road 2	2	2000-2100	0.129882671	4.39E-07	2.83473E-06	0.1167529	3.946E-07	2.54817E-06	0.5514385	1.864E-06	1.20353E-05	0.4908432	1.659E-06	1.07128E-05	0.6075961	2.053E-06	1.3261E-05
Road 2	2	2100-2200	0.099047105	3.485E-07	2.25057E-06	0.0899039	3.163E-07	2.04282E-06	0.4534738	1.596E-06	1.03039E-05	0.4064397	1.43E-06	9.23522E-06	0.4963436	1.746E-06	1.1278E-05
Road 2	2	2200-2300	0.1451484	4.2E-07	2.71225E-06	0.1311898	3.796E-07	2.45142E-06	0.6253056	1.809E-06	1.16845E-05	0.5603982	1.622E-06	1.04716E-05	0.6915881	2.001E-06	1.29231E-05
Road 2	2	2300-0000	0.131517273	3.349E-07	2.16263E-06	0.1182661	3.011E-07	1.94474E-06	0.5983844	1.524E-06	9.83967E-06	0.532633	1.356E-06	8.75847E-06	0.6508991	1.657E-06	1.07032E-05
Road 3	3	0000-0100	0.113513886	4.169E-07	1.62055E-05	0.1016779	3.735E-07	1.45158E-05	0.6261137	2.3E-06	8.93856E-05	0.5567455	2.045E-06	7.94824E-05	0.6584233	2.418E-06	9.39982E-05
Road 3	3	0100-0200	0.085603901	1.936E-07	7.52474E-06	0.0773557	1.749E-07	6.79971E-06	0.4998091	1.13E-06	4.39341E-05	0.4486221	1.015E-06	3.94347E-05	0.5259778	1.19E-06	4.62344E-05
Road 3	3	0200-0300	0.082509495	1.31E-07	5.09235E-06	0.0747802	1.187E-07	4.61531E-06	0.517878	8.223E-07	3.19625E-05	0.4637058	7.363E-07	2.86191E-05	0.538486	8.551E-07	3.32344E-05
Road 3	3	0300-0400	0.071642899	7.929E-08	3.08178E-06	0.0641519	7.1E-08	2.75954E-06	0.393917	4.36E-07	1.69446E-05	0.3476428	3.847E-07	1.49541E-05	0.4117946	4.557E-07	1.77137E-05
Road 3	3	0400-0500	0.095072342	1.693E-07	6.57894E-06	0.0854399	1.521E-07	5.91238E-06	0.5268294	9.38E-07	3.64562E-05	0.469327	8.356E-07	3.24771E-05	0.5547669	9.877E-07	3.83895E-05
Road 3	3	0500-0600	0.076291564	2.974E-07	1.15574E-05	0.0688736	2.684E-07	1.04337E-05	0.4257114	1.659E-06	6.44912E-05	0.3792972	1.478E-06	5.74599E-05	0.4481707	1.747E-06	6.78935E-05
Road 3	3	0600-0700	0.10340258	7.264E-07	2.82348E-05	0.094159	6.615E-07	2.57107E-05	0.5190149	3.646E-06	0.00014172	0.4687778	3.293E-06	0.000128003	0.5629368	3.955E-06	0.000153714
Road 3	3	0700-0800	0.084809916	9.74E-07	3.78563E-05	0.0778617	8.942E-07	3.47549E-05	0.4450558	5.111E-06	0.000198658	0.4043921	4.644E-06	0.000180507	0.4822538	5.538E-06	0.000215262
Road 3	3	0800-0900	0.09342996	1.482E-06	5.76051E-05	0.0856868	1.359E-06	5.2831E-05	0.4676628	7.419E-06	0.000288342	0.4257634	6.754E-06	0.000262508	0.5114502	8.113E-06	0.000315339
Road 3	3	0900-1000	0.100561342	1.539E-06	5.98078E-05	0.0926255	1.417E-06	5.50881E-05	0.5193674	7.947E-06	0.000308889	0.4755847	7.277E-06	0.000282849	0.5682101	8.695E-06	0.000337937
Road 3	3	1000-1100	0.113364885	1.582E-06	6.1486E-05	0.1039786	1.451E-06	5.63952E-05	0.5781907	8.068E-06	0.000313595	0.5275664	7.362E-06	0.000286138	0.631545	8.813E-06	0.000342533
Road 3	3	1100-1200	0.111424858	1.512E-06	5.87667E-05	0.1012911	1.374E-06	5.3422E-05	0.5834603	7.917E-06	0.000307723	0.52711	7.153E-06	0.000278004	0.6284011	8.527E-06	0.000331426
Road 3	3	1200-1300	0.10505091	1.425E-06	5.5405E-05	0.0958484	1.301E-06	5.05515E-05	0.5621289	7.628E-06	0.000296473	0.5099879	6.92E-06	0.000268973	0.6058363	8.221E-06	0.000319525
Road 3	3	1300-1400	0.111897116	1.649E-06	6.41081E-05	0.1010873	1.49E-06	5.7915E-05	0.5762531	8.494E-06	0.000330147	0.5176058	7.63E-06	0.000296547	0.618693	9.12E-06	0.000354462

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (January) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 3	3	1400-1500	0.104106385	1.543E-06	5.99692E-05	0.0937712	1.39E-06	5.40157E-05	0.5420558	8.034E-06	0.000312244	0.4857179	7.199E-06	0.000279792	0.5794892	8.588E-06	0.000333807
Road 3	3	1500-1600	0.116128292	1.658E-06	6.44328E-05	0.1057093	1.509E-06	5.86519E-05	0.588443	8.4E-06	0.000326492	0.5331355	7.611E-06	0.000295806	0.6388448	9.12E-06	0.000354457
Road 3	3	1600-1700	0.109530526	1.702E-06	6.61664E-05	0.0988618	1.537E-06	5.97216E-05	0.566815	8.81E-06	0.000342408	0.5081642	7.898E-06	0.000306977	0.607026	9.435E-06	0.000366699
Road 3	3	1700-1800	0.087374186	1.359E-06	5.28364E-05	0.0790113	1.229E-06	4.77793E-05	0.4530635	7.049E-06	0.000273974	0.4064161	6.323E-06	0.000245766	0.4854274	7.552E-06	0.000293545
Road 3	3	1800-1900	0.082800344	1.351E-06	5.24967E-05	0.0741907	1.21E-06	4.7038E-05	0.4605705	7.513E-06	0.000292009	0.4082003	6.659E-06	0.000258805	0.482391	7.869E-06	0.000305843
Road 3	3	1900-2000	0.088565405	1.07E-06	4.15755E-05	0.0800652	9.67E-07	3.75852E-05	0.4891433	5.908E-06	0.00022962	0.4379883	5.29E-06	0.000205606	0.5180535	6.257E-06	0.000243191
Road 3	3	2000-2100	0.082340248	8.505E-07	3.3058E-05	0.0738379	7.627E-07	2.96445E-05	0.4508532	4.657E-06	0.000181009	0.4003413	4.135E-06	0.000160729	0.4741792	4.898E-06	0.000190374
Road 3	3	2100-2200	0.080274033	7.854E-07	3.0527E-05	0.0725327	7.097E-07	2.75831E-05	0.4538508	4.441E-06	0.000172592	0.4064174	3.976E-06	0.000154554	0.4789502	4.686E-06	0.000182137
Road 3	3	2200-2300	0.087611151	7.813E-07	3.03678E-05	0.0789515	7.041E-07	2.73662E-05	0.479565	4.277E-06	0.000166227	0.4278629	3.816E-06	0.000148306	0.5068144	4.52E-06	0.000175672
Road 3	3	2300-0000	0.077368012	6.18E-07	2.40198E-05	0.0696866	5.566E-07	2.1635E-05	0.4413204	3.525E-06	0.000137013	0.3925233	3.135E-06	0.000121863	0.4622099	3.692E-06	0.000143498
Road 4	4	0000-0100	0.290029714	2.35E-07	2.51604E-06	0.2597917	2.105E-07	2.25372E-06	1.4786891	1.198E-06	1.28278E-05	1.3235157	1.072E-06	1.14817E-05	1.5833074	1.283E-06	1.37354E-05
Road 4	4	0100-0200	0.275074	1.273E-07	1.3636E-06	0.2487385	1.152E-07	1.23305E-06	1.404062	6.5E-07	6.96023E-06	1.2692885	5.876E-07	6.29213E-06	1.518027	7.028E-07	7.52518E-06
Road 4	4	0200-0300	0.295324615	8.887E-08	9.51591E-07	0.2682515	8.072E-08	8.64357E-07	1.4575654	4.386E-07	4.69655E-06	1.3237415	3.983E-07	4.26534E-06	1.5919931	4.791E-07	5.1297E-06
Road 4	4	0300-0400	0.270862857	4.389E-08	4.69954E-07	0.2432486	3.942E-08	4.22042E-07	1.43795	2.33E-07	2.49488E-06	1.29092	2.092E-07	2.23978E-06	1.5341686	2.486E-07	2.66182E-06
Road 4	4	0400-0500	0.277017857	8.977E-08	9.61265E-07	0.2491407	8.074E-08	8.6453E-07	1.3681229	4.434E-07	4.74745E-06	1.2300407	3.986E-07	4.2683E-06	1.4791814	4.794E-07	5.13283E-06
Road 4	4	0500-0600	0.254149583	1.412E-07	1.51185E-06	0.2299033	1.277E-07	1.36762E-06	1.2059083	6.699E-07	7.17353E-06	1.0891875	6.051E-07	6.4792E-06	1.3190908	7.328E-07	7.84682E-06
Road 4	4	0600-0700	0.279395769	3.363E-07	3.60106E-06	0.2546137	3.065E-07	3.28165E-06	1.3348833	1.607E-06	1.7205E-05	1.2155479	1.463E-06	1.56669E-05	1.4701615	1.77E-06	1.89485E-05
Road 4	4	0700-0800	0.279623587	5.955E-07	6.37631E-06	0.2570217	5.474E-07	5.86091E-06	1.3933679	2.967E-06	3.17732E-05	1.2794254	2.725E-06	2.9175E-05	1.5364472	3.272E-06	3.50359E-05
Road 4	4	0800-0900	0.285194575	1.01E-06	1.08153E-05	0.261706	9.269E-07	9.92459E-06	1.4233639	5.041E-06	5.39778E-05	1.305352	4.623E-06	4.95024E-05	1.567058	5.55E-06	5.9427E-05
Road 4	4	0900-1000	0.291781351	9.996E-07	1.07035E-05	0.2685597	9.201E-07	9.85167E-06	1.3759916	4.714E-06	5.0476E-05	1.2654716	4.335E-06	4.64218E-05	1.5340312	5.255E-06	5.62734E-05
Road 4	4	1000-1100	0.32548042	1.077E-06	1.15363E-05	0.298528	9.882E-07	1.0581E-05	1.5374017	5.089E-06	5.44918E-05	1.4095622	4.666E-06	4.99606E-05	1.7080903	5.654E-06	6.05417E-05
Road 4	4	1100-1200	0.303018129	1.087E-06	1.16415E-05	0.275459	9.883E-07	1.05827E-05	1.4220181	5.102E-06	5.46316E-05	1.2920087	4.636E-06	4.96369E-05	1.5674677	5.624E-06	6.02196E-05
Road 4	4	1200-1300	0.309458844	1.053E-06	1.12753E-05	0.2823461	9.608E-07	1.02874E-05	1.5193076	5.17E-06	5.53567E-05	1.3854786	4.714E-06	5.04806E-05	1.6678247	5.675E-06	6.0768E-05
Road 4	4	1300-1400	0.318519933	1.099E-06	1.17633E-05	0.2877038	9.923E-07	1.06253E-05	1.5270354	5.267E-06	5.63953E-05	1.3787607	4.755E-06	5.09193E-05	1.6664646	5.748E-06	6.15446E-05
Road 4	4	1400-1500	0.291671377	9.317E-07	9.97655E-06	0.2626798	8.391E-07	8.9849E-06	1.4461991	4.62E-06	4.94669E-05	1.3013893	4.157E-06	4.45137E-05	1.5640691	4.996E-06	5.34986E-05
Road 4	4	1500-1600	0.326221935	9.364E-07	1.00263E-05	0.2968234	8.52E-07	9.12278E-06	1.5620552	4.484E-06	4.80093E-05	1.4208984	4.079E-06	4.36709E-05	1.7177218	4.93E-06	5.27937E-05
Road 4	4	1600-1700	0.306667984	8.803E-07	9.42535E-06	0.2767635	7.944E-07	8.50625E-06	1.485014	4.263E-06	4.56415E-05	1.3398123	3.846E-06	4.11788E-05	1.6165759	4.64E-06	4.9685E-05
Road 4	4	1700-1800	0.293125	8.549E-07	9.15442E-06	0.2652871	7.738E-07	8.28503E-06	1.4433936	4.21E-06	4.50778E-05	1.3055287	3.808E-06	4.07722E-05	1.5708158	4.582E-06	4.90573E-05
Road 4	4	1800-1900	0.324254906	7.956E-07	8.51922E-06	0.2908792	7.137E-07	7.64234E-06	1.6181476	3.97E-06	4.2514E-05	1.4513723	3.561E-06	3.81322E-05	1.7422515	4.275E-06	4.57746E-05
Road 4	4	1900-2000	0.293362568	5.025E-07	5.38076E-06	0.2654642	4.547E-07	4.86906E-06	1.4577068	2.497E-06	2.67368E-05	1.3181659	2.258E-06	2.41774E-05	1.5836301	2.713E-06	2.90464E-05
Road 4	4	2000-2100	0.256963469	2.915E-07	3.12086E-06	0.2305557	2.615E-07	2.80014E-06	1.2842671	1.457E-06	1.55976E-05	1.1508992	1.305E-06	1.39779E-05	1.3814549	1.567E-06	1.6778E-05
Road 4	4	2100-2200	0.211948649	1.815E-07	1.94375E-06	0.1918914	1.644E-07	1.75981E-06	1.0786903	9.239E-07	9.8925E-06	0.9748522	8.349E-07	8.94022E-06	1.1667435	9.993E-07	1.07E-05
Road 4	4	2200-2300	0.288729524	4.211E-07	4.50857E-06	0.2605102	3.799E-07	4.06792E-06	1.4169641	2.066E-06	2.21262E-05	1.2773954	1.863E-06	1.99468E-05	1.5379056	2.243E-06	2.40147E-05
Road 4	4	2300-0000	0.268007917	2.978E-07	3.18857E-06	0.2416665	2.685E-07	2.87518E-06	1.3505333	1.501E-06	1.60677E-05	1.2164773	1.352E-06	1.44728E-05	1.4581438	1.62E-06	1.7348E-05
Road 5	5	0000-0100	0.096881036	3.509E-07	4.74582E-06	0.0867802	3.144E-07	4.25101E-06	0.5376807	1.948E-06	2.63388E-05	0.4769236	1.728E-06	2.33626E-05	0.5637037	2.042E-06	2.76136E-05
Road 5	5	0100-0200	0.065925537	1.497E-07	2.02467E-06	0.0595574	1.353E-07	1.82909E-06	0.4006955	9.1E-07	1.23059E-05	0.3584817	8.141E-07	1.10095E-05	0.4180391	9.494E-07	1.28386E-05
Road 5	5	0200-0300	0.061658605	9.952E-08	1.34588E-06	0.0558191	9.01E-08	1.21842E-06	0.4232999	6.833E-07	9.23978E-06	0.3768106	6.082E-07	8.22501E-06	0.4326297	6.983E-07	9.44343E-06
Road 5	5	0300-0400	0.05716371	6.652E-08	8.99553E-07	0.0511631	5.954E-08	8.05125E-07	0.3112063	3.621E-07	4.89728E-06	0.2726834	3.173E-07	4.29107E-06	0.3238465	3.768E-07	5.09619E-06
Road 5	5	0400-0500	0.078946701	1.437E-07	1.94366E-06	0.0709325	1.291E-07	1.74635E-06	0.4479442	8.155E-07	1.10283E-05	0.3977762	7.242E-07	9.79322E-06	0.4687087	8.533E-07	1.15396E-05
Road 5	5	0500-0600	0.063013532	2.578E-07	3.48662E-06	0.0568498	2.326E-07	3.14558E-06	0.3647083	1.492E-06	2.01798E-05	0.3235949	1.324E-06	1.79049E-05	0.3804447	1.557E-06	2.10505E-05
Road 5	5	0600-0700	0.090959091	6.573E-07	8.88836E-06	0.0828087	5.984E-07	8.09192E-06	0.4555942	3.292E-06	4.45199E-05	0.4105143	2.966E-06	4.01147E-05	0.493323	3.565E-06	4.82066E-05
Road 5	5	0700-0800	0.069815801	8.177E-07	1.10574E-05	0.0640584	7.502E-07	1.01455E-05	0.3653352	4.279E-06	5.78617E-05	0.3305838	3.872E-06	5.23578E-05	0.3946422	4.622E-06	6.25033E-05
Road 5	5	0800-0900	0.075185251	1.18E-06	1.59534E-05	0.0689427	1.082E-06	1.46288E-05	0.3684531	5.781E-06	7.81814E-05	0.3343085	5.246E-06	7.09363E-05	0.4032512	6.327E-06	8.55651E-05
Road 5	5	0900-1000	0.081973304	1.243E-06	1.68112E-05	0.0754973	1.145E-06	1.54831E-05	0.4333533	6.572E-06	8.88727E-05	0.3962046	6.009E-06	8.12542E-05	0.4717019	7.153E-06	9.67373E-05
Road 5	5	1000-1100	0.093094904	1.269E-06	1.71545E-05	0.0853813	1.163E-06	1.57331E-05	0.4830413	6.582E-06	8.90094E-05	0.4398763	5.994E-06	8.10554E-05	0.5252576	7.157E-06	9.67885E-05
Road 5	5	1100-1200	0.091354826	1.183E-06	1.59991E-05	0.0830522	1.076E-06	1.4545E-05	0.4931618	6.387E-06	8.63681E-05	0.4444278	5.756E-06	7.78332E-05	0.52748	6.831E-06	9.23783E-05
Road 5	5	1200-1300	0.085409185	1.121E-06	1.51529E-05	0.0779242	1.022E-06	1.3825E-05	0.4642348	6.09E-06	8.23625E-05	0.4201988	5.513E-06	7.45499E-05	0.498123	6.535E-06	8.83748E-05
Road 5	5	1300-1400	0.092336688	1.329E-06	1.79756E-05	0.0834105	1.201E-06	1.62379E-05	0.4828208	6.951E-06	9.39931E-05	0.4328124	6.231E-06	8.42578E-05	0.5162229	7.431E-06	0.000100496
Road 5	5	1400-1500	0.088266374	1.302E-06	1.76089E-05	0.0795138	1.173E-06	1.58628E-05	0.460881	6.799E-06	9.19446E-05	0.4123716	6.083E-06	8.22671E-05	0.4918854	7.256E-06	9.81299E-05
Road 5	5	1500-1600	0.099037908	1.422E-06	1.92299E-05	0.0901647	1.295E-06	1.7507E-05	0.5054606	7.257E-06	9.8144E-05	0.4573374	6.566E-06	8.88E-05	0.5475021	7.861E-06	0.000106307
Road 5	5	1600-1700	0.093532922	1.478E-06	1.9989E-05	0.0844159	1.334E-06	1.80406E-05	0.4893362	7.733E-06	0.000104577	0.4378437	6.919E-06	9.3572E-05	0.5222596	8.253E-06	0.000111613
Road 5	5	1700-1800	0.069691055	1.104E-06	1.49291E-05	0.063003	9.98E-07	1.34964E-05	0.3636608	5.761E-06	7.79029E-05	0.3251252	5.15E-06	6.96479E-05	0.3881282	6.148E-06	8.31443E-05
Road 5	5	1800-1900	0.065597604	1.12E-06	1.51511E-05	0.0587682	1.004E-06	1.35737E-05	0.374005	6.388E-06	8.63841E-05	0.3300499	5.637E-06	7.62317E-05	0.3888181	6.641E-06	8.98055E-05
Road 5	5	1900-2000	0.075898656	9.644E-07	1.30418E-05	0.0685643	8.712E-07	1.17815E-05	0.4269128	5.425E-06	7.33572E-05	0.3813338	4.845E-06	6.55253E-05	0.4498981	5.717E-06	7.73068E-05
Road 5	5	2000-2100	0.072961279	8.134E-07	1.1E-05	0.0654176	7.293E-07	9.86271E-06	0.4030039	4.493E-06	6.0759E-05	0.3571566	3.982E-06	5.38468E-05	0.4225742	4.711E-06	6.37095E-05
Road 5	5	2100-2200	0.075299545	8.07E-07	1.0913E-05	0.0680351	7.291E-07	9.86016E-06	0.4288349	4.596E-06	6.215E-05	0.3835697	4.111E-06	5.55898E-05	0.4516048	4.84E-06	6.545E-05
Road 5	5	2200-2300	0.073901626	6.824E-07	9.22856E-06	0.0665731	6.148E-07	8.31341E-06	0.4128869	3.813E-06	5.15598E-05	0.3672161	3.391E-06	4.58566E-05	0.4337892	4.006E-06	5.417E-05
Road 5	5	2300-0000	0.065279085	5.489E-07	7.42279E-06	0.0587776	4.942E-07	6.68351E-06	0.3806173	3.2E-06	4.32794E-05	0.3373166	2.836E-06	3.83558E-05	0.3960942	3.331E-06	4.50393E-05
Road 6	6	0000-0100	0.058992432	1.639E-07	5.85761E-06	0.0527019	1.464E-07	5.233E-06	0.3766416	1.046E-06	3.73984E-05	0.3305353	9.182E-07	3.28203E-05	0.3832372	1.065E-06	3.80533E-05
Road 6	6	0100-0200	0.076754602	1.628E-07	5.81896E-06	0.0693111	1.47E-07	5.25465E-06	0.4334095	9.192E-07	3.28579E-05	0.3864584	8.196E-07	2.92984E-05	0.4557695	9.666E-07	3.4553E-05
Road 6	6	0200-0300	0.070022532	1.038E-07	3.71131E-06	0.0635184	9.418E-08	3.36658E-06	0.3975515	5.895E-07	2.10709E-05	0.3554524	5.27E-07	1.88396E-05	0.4189708	6.212E-07	2.22062E-05
Road 6	6	0300-0400	0.071431935	8.312E-08	2.9713E-06	0.064165	7.467E-08	2.66902E-06	0.4559606	5.306E-07	1.89663E-05	0.4038829	4.7E-07	1.68E-05	0.4680479	5.447E-07	1.9469E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (January) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 6	6	0400-0500	0.077509556	1.309E-07	4.68016E-06	0.0696192	1.176E-07	4.20372E-06	0.4541089	7.671E-07	2.74199E-05	0.4020246	6.791E-07	2.42749E-05	0.4716438	7.967E-07	2.84786E-05
Road 6	6	0500-0600	0.069464224	2.099E-07	7.50325E-06	0.0627156	1.895E-07	6.77429E-06	0.4193866	1.267E-06	4.53005E-05	0.372373	1.125E-06	4.02223E-05	0.4350886	1.315E-06	4.69966E-05
Road 6	6	0600-0700	0.073525749	3.961E-07	1.41574E-05	0.0668869	3.603E-07	1.28791E-05	0.4562051	2.457E-06	8.78425E-05	0.4084039	2.2E-06	7.86384E-05	0.4752909	2.56E-06	9.15175E-05
Road 6	6	0700-0800	0.069108991	5.915E-07	2.11428E-05	0.0634253	5.428E-07	1.94039E-05	0.3916053	3.352E-06	0.000119805	0.35399	3.03E-06	0.000108298	0.4174153	3.572E-06	0.000127701
Road 6	6	0800-0900	0.058868257	7.226E-07	2.58298E-05	0.0538638	6.612E-07	2.3634E-05	0.3479011	4.27E-06	0.00015265	0.3125964	3.837E-06	0.000137159	0.3664602	4.498E-06	0.000160793
Road 6	6	0900-1000	0.061007675	7.191E-07	2.57044E-05	0.0560562	6.607E-07	2.36182E-05	0.3428663	4.041E-06	0.00014446	0.3098434	3.652E-06	0.000130546	0.3658996	4.313E-06	0.000154164
Road 6	6	1000-1100	0.081893722	8.177E-07	2.92297E-05	0.0750188	7.491E-07	2.67759E-05	0.4478231	4.472E-06	0.000159838	0.4054015	4.048E-06	0.000144697	0.4804203	4.797E-06	0.000171473
Road 6	6	1100-1200	0.093246193	9.241E-07	3.30314E-05	0.0847606	8.4E-07	3.00255E-05	0.4851274	4.808E-06	0.000171851	0.436902	4.33E-06	0.000154768	0.5216626	5.17E-06	0.000184793
Road 6	6	1200-1300	0.090586938	8.773E-07	3.13601E-05	0.0826712	8.006E-07	2.86198E-05	0.4480259	4.339E-06	0.000155101	0.4060144	3.932E-06	0.000140557	0.4886856	4.733E-06	0.000169177
Road 6	6	1300-1400	0.105920466	1.024E-06	3.65974E-05	0.0956809	9.248E-07	3.30594E-05	0.5335103	5.157E-06	0.000184337	0.4783377	4.624E-06	0.000165274	0.5740186	5.548E-06	0.000198333
Road 6	6	1400-1500	0.101009225	1.077E-06	3.84921E-05	0.0910068	9.702E-07	3.46805E-05	0.5053198	5.387E-06	0.000192565	0.4518569	4.817E-06	0.000172192	0.5428638	5.787E-06	0.000206872
Road 6	6	1500-1600	0.089071532	9.278E-07	3.31661E-05	0.0810305	8.441E-07	3.0172E-05	0.4555825	4.746E-06	0.000169638	0.4112951	4.284E-06	0.000153147	0.4923256	5.128E-06	0.000183319
Road 6	6	1600-1700	0.093716232	9.991E-07	3.5713E-05	0.0845833	9.017E-07	3.22326E-05	0.4589049	4.892E-06	0.000174877	0.4108062	4.379E-06	0.000156548	0.4953895	5.281E-06	0.000188781
Road 6	6	1700-1800	0.069813105	7.849E-07	2.8056E-05	0.0631296	7.097E-07	2.53701E-05	0.3527862	3.966E-06	0.000141775	0.3154757	3.547E-06	0.000126781	0.3786053	4.256E-06	0.000152151
Road 6	6	1800-1900	0.06892448	8.835E-07	3.15832E-05	0.0617509	7.916E-07	2.82961E-05	0.3599175	4.614E-06	0.000164925	0.3183941	4.082E-06	0.000145898	0.380145	4.873E-06	0.000174194
Road 6	6	1900-2000	0.081998964	8.018E-07	2.86621E-05	0.0740617	7.242E-07	2.58877E-05	0.4276695	4.182E-06	0.000149489	0.3819393	3.735E-06	0.000133504	0.456001	4.459E-06	0.000159392
Road 6	6	2000-2100	0.06537322	5.031E-07	1.79823E-05	0.0585512	4.506E-07	1.61058E-05	0.3702644	2.849E-06	0.000101849	0.3271365	2.517E-06	8.99861E-05	0.3856877	2.968E-06	0.000106092
Road 6	6	2100-2200	0.090107022	6.021E-07	2.15214E-05	0.0814368	5.441E-07	1.94506E-05	0.4704141	3.143E-06	0.000112355	0.4213534	2.815E-06	0.000100637	0.5027902	3.359E-06	0.000120088
Road 6	6	2200-2300	0.06896069	4.88E-07	1.74424E-05	0.0620488	4.39E-07	1.56941E-05	0.3876337	2.743E-06	9.8045E-05	0.3421357	2.421E-06	8.65371E-05	0.4041845	2.86E-06	0.000102231
Road 6	6	2300-0000	0.046095113	3.063E-07	1.09476E-05	0.0414945	2.757E-07	9.85501E-06	0.2872105	1.908E-06	6.82128E-05	0.2536711	1.685E-06	6.02472E-05	0.2951656	1.961E-06	7.01022E-05
Road 7	7	0000-0100	0.084538782	2.258E-07	5.63767E-06	0.0756255	2.02E-07	5.04327E-06	0.5029973	1.344E-06	3.35436E-05	0.4450521	1.189E-06	2.96793E-05	0.5206776	1.391E-06	3.47226E-05
Road 7	7	0100-0200	0.10201163	2.118E-07	5.28703E-06	0.0917462	1.905E-07	4.75499E-06	0.5640598	1.171E-06	2.92339E-05	0.5031034	1.045E-06	2.60747E-05	0.5948496	1.235E-06	3.08297E-05
Road 7	7	0200-0300	0.088095977	1.202E-07	3.0013E-06	0.0799104	1.091E-07	2.72243E-06	0.5005213	6.831E-07	1.7052E-05	0.4496291	6.136E-07	1.53182E-05	0.5295396	7.227E-07	1.80406E-05
Road 7	7	0300-0400	0.089608721	9.888E-08	2.46825E-06	0.0805508	8.888E-08	2.21875E-06	0.5439775	6.002E-07	1.49837E-05	0.4846041	5.347E-07	1.33483E-05	0.5651549	6.236E-07	1.55671E-05
Road 7	7	0400-0500	0.099334324	1.601E-07	3.99621E-06	0.0892701	1.439E-07	3.59132E-06	0.5573248	8.982E-07	2.24211E-05	0.4960515	7.994E-07	1.99561E-05	0.5853216	9.433E-07	2.35474E-05
Road 7	7	0500-0600	0.089983392	2.561E-07	6.39211E-06	0.0812634	2.312E-07	5.77267E-06	0.5120979	1.457E-06	3.63777E-05	0.4571584	1.301E-06	3.24749E-05	0.5384218	1.532E-06	3.82476E-05
Road 7	7	0600-0700	0.093502109	4.751E-07	1.18608E-05	0.0850771	4.323E-07	1.07921E-05	0.5425922	2.757E-06	6.88283E-05	0.4880877	2.48E-06	6.19144E-05	0.5731647	2.913E-06	7.27065E-05
Road 7	7	0700-0800	0.089379077	7.267E-07	1.81405E-05	0.0820986	6.675E-07	1.66629E-05	0.4885014	3.972E-06	9.9147E-05	0.4441422	3.611E-06	9.01438E-05	0.5262408	4.279E-06	0.000106807
Road 7	7	0800-0900	0.088215036	1.084E-06	2.70482E-05	0.081027	9.952E-07	2.48442E-05	0.4847416	5.954E-06	0.00014863	0.4407912	5.414E-06	0.000135154	0.5218181	6.409E-06	0.000159998
Road 7	7	0900-1000	0.089901063	1.026E-06	2.56102E-05	0.0823302	9.395E-07	2.34535E-05	0.4738404	5.407E-06	0.000134983	0.4295526	4.902E-06	0.000122367	0.5118828	5.841E-06	0.000145821
Road 7	7	1000-1100	0.106254807	1.063E-06	2.65334E-05	0.0975944	9.763E-07	2.43708E-05	0.5623404	5.625E-06	0.000140425	0.5127608	5.129E-06	0.000128044	0.6103551	6.106E-06	0.000152415
Road 7	7	1100-1200	0.116620744	1.162E-06	2.89952E-05	0.1062248	1.058E-06	2.64104E-05	0.6045294	6.021E-06	0.000150303	0.5475578	5.454E-06	0.000136138	0.6537825	6.512E-06	0.000162549
Road 7	7	1200-1300	0.114939193	1.143E-06	2.85354E-05	0.1046741	1.041E-06	2.5987E-05	0.5818379	5.787E-06	0.00014445	0.5277583	5.249E-06	0.000131024	0.6324325	6.29E-06	0.000157011
Road 7	7	1300-1400	0.123572385	1.211E-06	3.02309E-05	0.1117687	1.095E-06	2.73432E-05	0.6242416	6.118E-06	0.000152715	0.5617078	5.505E-06	0.000137417	0.6734766	6.6E-06	0.00016476
Road 7	7	1400-1500	0.115818547	1.191E-06	2.97192E-05	0.1044836	1.074E-06	2.68106E-05	0.5916955	6.082E-06	0.00015183	0.5310894	5.459E-06	0.000136278	0.635573	6.533E-06	0.000163089
Road 7	7	1500-1600	0.107086619	1.076E-06	2.68576E-05	0.0971792	9.763E-07	2.43728E-05	0.55184	5.544E-06	0.000138403	0.4980245	5.004E-06	0.000124906	0.5952037	5.98E-06	0.000149279
Road 7	7	1600-1700	0.112068071	1.165E-06	2.90818E-05	0.1013483	1.054E-06	2.63E-05	0.5569214	5.789E-06	0.000144522	0.500943	5.207E-06	0.000129995	0.6022913	6.261E-06	0.000156295
Road 7	7	1700-1800	0.086872256	9.573E-07	2.38973E-05	0.0782887	8.627E-07	2.15361E-05	0.4485119	4.942E-06	0.000123379	0.4009482	4.418E-06	0.000110295	0.4792369	5.281E-06	0.000131831
Road 7	7	1800-1900	0.080565563	9.217E-07	2.30092E-05	0.0722303	8.264E-07	2.06287E-05	0.4256933	4.87E-06	0.000121576	0.3780307	4.325E-06	0.000107964	0.450261	5.151E-06	0.000128593
Road 7	7	1900-2000	0.093777523	8.128E-07	2.02908E-05	0.0848845	7.357E-07	1.83666E-05	0.4967524	4.306E-06	0.000107483	0.4460271	3.866E-06	9.65075E-05	0.5309116	4.602E-06	0.000114874
Road 7	7	2000-2100	0.086631557	6.138E-07	1.53222E-05	0.0777273	5.507E-07	1.37473E-05	0.4704537	3.333E-06	8.32075E-05	0.4180901	2.962E-06	7.39461E-05	0.4958173	3.513E-06	8.76935E-05
Road 7	7	2100-2200	0.098646204	5.872E-07	1.46585E-05	0.0893277	5.317E-07	1.32738E-05	0.5218357	3.106E-06	7.75431E-05	0.469041	2.792E-06	6.9698E-05	0.5583687	3.324E-06	8.29718E-05
Road 7	7	2200-2300	0.084727738	5.437E-07	1.35729E-05	0.0763612	4.9E-07	1.22326E-05	0.4676309	3.001E-06	7.49119E-05	0.41566	2.667E-06	6.65865E-05	0.4920212	3.157E-06	7.88191E-05
Road 7	7	2300-0000	0.058432892	3.453E-07	8.61941E-06	0.0526018	3.108E-07	7.75927E-06	0.3502336	2.07E-06	5.16628E-05	0.3108843	1.837E-06	4.58584E-05	0.3634861	2.148E-06	5.36177E-05
Road 8	8	0000-0100	0.255066667	1.855E-07	3.05795E-06	0.2284303	1.661E-07	2.73861E-06	1.3035447	9.48E-07	1.5628E-05	1.1667817	8.486E-07	1.39883E-05	1.3952119	1.015E-06	1.67269E-05
Road 8	8	0100-0200	0.265021667	1.606E-07	2.64775E-06	0.239684	1.453E-07	2.39461E-06	1.3488667	8.175E-07	1.34761E-05	1.219484	7.391E-07	1.21835E-05	1.459168	8.843E-07	1.45781E-05
Road 8	8	0200-0300	0.248928667	7.543E-08	1.24348E-06	0.226202	6.855E-08	1.12996E-06	1.33432	4.043E-07	6.66538E-06	1.2120633	3.673E-07	6.05467E-06	1.4382653	4.358E-07	7.18463E-06
Road 8	8	0300-0400	0.229152857	6.481E-08	1.06838E-06	0.2059914	5.826E-08	9.60398E-07	1.1984414	3.39E-07	5.58751E-06	1.0766886	3.045E-07	5.01986E-06	1.28268	3.628E-07	5.98026E-06
Road 8	8	0400-0500	0.258537619	1.097E-07	1.80808E-06	0.2325881	9.867E-08	1.6266E-06	1.2770681	5.418E-07	8.93115E-06	1.1484324	4.872E-07	8.03154E-06	1.3810205	5.859E-07	9.65813E-06
Road 8	8	0500-0600	0.244454118	1.679E-07	2.7679E-06	0.2212209	1.519E-07	2.50483E-06	1.1857347	8.144E-07	1.34258E-05	1.0720553	7.364E-07	1.21386E-05	1.2932762	8.883E-07	1.46435E-05
Road 8	8	0600-0700	0.270559194	3.389E-07	5.58635E-06	0.2466455	3.089E-07	5.09259E-06	1.2969061	1.624E-06	2.67778E-05	1.1814063	1.48E-06	2.4393E-05	1.4280518	1.789E-06	2.94856E-05
Road 8	8	0700-0800	0.269899901	5.507E-07	9.07816E-06	0.2481218	5.063E-07	8.34565E-06	1.3083587	2.67E-06	4.4007E-05	1.2019849	2.453E-06	4.04291E-05	1.4501066	2.959E-06	4.87748E-05
Road 8	8	0800-0900	0.296867421	1.139E-06	1.87841E-05	0.2725468	1.046E-06	1.72452E-05	1.4438226	5.542E-06	9.13569E-05	1.3248098	5.085E-06	8.38264E-05	1.5973567	6.131E-06	0.000101072
Road 8	8	0900-1000	0.315603185	1.001E-06	1.65012E-05	0.2905514	9.215E-07	1.51914E-05	1.4599894	4.631E-06	7.63349E-05	1.3438682	4.262E-06	7.02636E-05	1.6344196	5.184E-06	8.54549E-05
Road 8	8	1000-1100	0.303313861	9.682E-07	1.59596E-05	0.2782273	8.881E-07	1.46396E-05	1.4404533	4.598E-06	7.57932E-05	1.3203227	4.214E-06	6.94722E-05	1.59855	5.102E-06	8.41118E-05
Road 8	8	1100-1200	0.311148302	9.994E-07	1.64755E-05	0.2828391	9.085E-07	1.49765E-05	1.4984555	4.813E-06	7.93441E-05	1.361724	4.374E-06	7.21041E-05	1.6445631	5.283E-06	8.70806E-05
Road 8	8	1200-1300	0.314455799	1.074E-06	1.76978E-05	0.2868459	9.793E-07	1.61439E-05	1.5298676	5.223E-06	8.61022E-05	1.3951695	4.763E-06	7.85213E-05	1.6820153	5.743E-06	9.46652E-05
Road 8	8	1300-1400	0.28846625	9.324E-07	1.53705E-05	0.2605863	8.423E-07	1.3885E-05	1.3781373	4.455E-06	7.34322E-05	1.2444216	4.022E-06	6.63073E-05	1.5050079	4.865E-06	8.01923E-05
Road 8	8	1400-1500	0.280843309	7.886E-07	1.30003E-05	0.2529529	7.103E-07	1.17092E-05	1.4051024	3.946E-06	6.50424E-05	1.2650254	3.552E-06	5.85582E-05	1.5179783	4.263E-06	7.02675E-05
Road 8	8	1500-1600	0.28868438	7.99E-07	1.3171E-05	0.2626576	7.27E-07	1.19835E-05	1.4057945	3.891E-06	6.41381E-05	1.2780944	3.537E-06	5.83119E-05	1.540752	4.264E-06	7.02954E-05
Road 8	8	1600-1700	0.291661233	8.603E-07	1.4181E-05	0.2632257	7.764E-07	1.27984E-05	1.4027342	4.137E-06	6.82028E-05	1.2653721	3.732E-06	6.15241E-05	1.5285977	4.509E-06	7.43224E-05
Road 8	8	1700-1800	0.237815962	7.495E-07	1.23549E-05	0.2151882	6.782E-07	1.11794E-05	1.1952908	3.767E-06	6.20972E-05	1.0799933	3.404E-06	5.61073E-05	1.2951815	4.082E-06	6.72867E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (January) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 8	8	1800-1900	0.239038318	5.167E-07	8.51776E-06	0.2145102	4.637E-07	7.64373E-06	1.2287882	2.656E-06	4.37859E-05	1.1015933	2.381E-06	3.92535E-05	1.3161035	2.845E-06	4.68973E-05
Road 8	8	1900-2000	0.238421818	3.709E-07	6.11379E-06	0.2157262	3.356E-07	5.53181E-06	1.2559478	1.954E-06	3.2206E-05	1.1360836	1.767E-06	2.91323E-05	1.3518099	2.103E-06	3.46641E-05
Road 8	8	2000-2100	0.262295658	4.027E-07	6.63863E-06	0.2353336	3.613E-07	5.95623E-06	1.2558257	1.928E-06	3.17846E-05	1.1257012	1.728E-06	2.84912E-05	1.3610347	2.09E-06	3.44474E-05
Road 8	8	2100-2200	0.213386604	2.285E-07	3.76632E-06	0.1930942	2.067E-07	3.40815E-06	1.1233209	1.203E-06	1.98268E-05	1.0144283	1.086E-06	1.79049E-05	1.2075225	1.293E-06	2.1313E-05
Road 8	8	2200-2300	0.261706719	3.384E-07	5.57787E-06	0.2361236	3.053E-07	5.03261E-06	1.2984106	1.679E-06	2.76736E-05	1.1699664	1.513E-06	2.4936E-05	1.40609	1.818E-06	2.99686E-05
Road 8	8	2300-0000	0.209561731	2.201E-07	3.62902E-06	0.1890433	1.986E-07	3.2737E-06	1.080695	1.135E-06	1.87146E-05	0.9736165	1.023E-06	1.68603E-05	1.1626598	1.221E-06	2.0134E-05
Road 9	9	0000-0100	0.217253199	5.77E-08	1.72236E-06	0.1978906	5.256E-08	1.56886E-06	1.0042393	2.667E-07	7.96152E-06	0.90708	2.409E-07	7.19125E-06	1.1049707	2.935E-07	8.76011E-06
Road 9	9	0100-0200	0.236207301	4.929E-08	1.47135E-06	0.216558	4.519E-08	1.34896E-06	1.0343825	2.158E-07	6.44324E-06	0.9393798	1.96E-07	5.85146E-06	1.1559378	2.412E-07	7.20042E-06
Road 9	9	0200-0300	0.09417783	8.933E-09	2.66655E-07	0.085575	8.117E-09	2.42297E-07	0.6859436	6.506E-08	1.94218E-06	0.6179931	5.862E-08	1.74978E-06	0.703568	6.673E-08	1.99208E-06
Road 9	9	0300-0400	0.114665028	8.701E-09	2.5973E-07	0.1033492	7.842E-09	2.34098E-07	0.7148824	5.424E-08	1.61929E-06	0.6433462	4.882E-08	1.45725E-06	0.7466955	5.666E-08	1.69135E-06
Road 9	9	0400-0500	0.254208789	4.822E-08	1.43953E-06	0.2327033	4.414E-08	1.31775E-06	1.0718611	2.033E-07	6.06973E-06	0.9707093	1.841E-07	5.49693E-06	1.2034126	2.283E-07	6.81468E-06
Road 9	9	0500-0600	0.182602836	5.889E-08	1.75787E-06	0.1674787	5.401E-08	1.61228E-06	0.9426079	3.04E-07	9.07425E-06	0.8555679	2.759E-07	8.23634E-06	1.0230466	3.299E-07	9.84861E-06
Road 9	9	0600-0700	0.21148544	1.284E-07	3.83231E-06	0.1960767	1.19E-07	3.55309E-06	1.136664	6.9E-07	2.05974E-05	1.040716	6.317E-07	1.88588E-05	1.2367927	7.508E-07	2.24118E-05
Road 9	9	0700-0800	0.18119721	1.65E-07	4.9252E-06	0.1699062	1.547E-07	4.61829E-06	1.0692751	9.736E-07	2.90644E-05	0.9909914	9.023E-07	2.69365E-05	1.1608976	1.057E-06	3.15548E-05
Road 9	9	0800-0900	0.276600176	6.034E-07	1.80128E-05	0.2579971	5.628E-07	1.68013E-05	1.361437	2.97E-06	8.86597E-05	1.2599231	2.749E-06	8.20489E-05	1.5179202	3.311E-06	9.88502E-05
Road 9	9	0900-1000	0.282667267	4.611E-07	1.37659E-05	0.2644393	4.314E-07	1.28782E-05	1.2671936	2.067E-06	6.17124E-05	1.1734948	1.914E-06	5.71492E-05	1.437934	2.346E-06	7.00274E-05
Road 9	9	1000-1100	0.297278868	4.004E-07	1.19523E-05	0.2761977	3.72E-07	1.11048E-05	1.2970896	1.747E-06	5.21506E-05	1.1965007	1.612E-06	4.81063E-05	1.4726984	1.984E-06	5.92111E-05
Road 9	9	1100-1200	0.208877143	2.932E-07	8.75293E-06	0.1909291	2.68E-07	8.00082E-06	1.129123	1.585E-06	4.73155E-05	1.0280497	1.443E-06	4.30801E-05	1.2189787	1.711E-06	5.10809E-05
Road 9	9	1200-1300	0.307186561	4.254E-07	1.26986E-05	0.2859004	3.959E-07	1.18187E-05	1.4298981	1.98E-06	5.91097E-05	1.3239465	1.833E-06	5.47298E-05	1.609847	2.229E-06	6.65485E-05
Road 9	9	1300-1400	0.346804823	3.947E-07	1.17833E-05	0.3208561	3.652E-07	1.09017E-05	1.3495399	1.536E-06	4.5853E-05	1.2383427	1.409E-06	4.20749E-05	1.5591988	1.775E-06	5.29765E-05
Road 9	9	1400-1500	0.22416996	2.892E-07	8.63211E-06	0.2077905	2.68E-07	8.00139E-06	1.1275327	1.454E-06	4.34179E-05	1.0301992	1.329E-06	3.96699E-05	1.2379898	1.597E-06	4.76713E-05
Road 9	9	1500-1600	0.188431788	2.037E-07	6.08219E-06	0.1742569	1.884E-07	5.62465E-06	1.0096314	1.092E-06	3.25888E-05	0.9254676	1.001E-06	2.98722E-05	1.0997245	1.189E-06	3.54968E-05
Road 9	9	1600-1700	0.195293411	2.927E-07	8.73666E-06	0.1816077	2.722E-07	8.12441E-06	1.1233093	1.683E-06	5.02524E-05	1.0367629	1.554E-06	4.63807E-05	1.2183706	1.826E-06	5.45051E-05
Road 9	9	1700-1800	0.170265757	2.196E-07	6.55642E-06	0.1588066	2.049E-07	6.11517E-06	1.0742197	1.386E-06	4.1365E-05	0.9958105	1.285E-06	3.83457E-05	1.1546172	1.489E-06	4.44608E-05
Road 9	9	1800-1900	0.168171696	1.404E-07	4.19021E-06	0.1568993	1.31E-07	3.90935E-06	1.0441089	8.715E-07	2.60153E-05	0.9697323	8.094E-07	2.41621E-05	1.1266316	9.404E-07	2.80715E-05
Road 9	9	1900-2000	0.176124688	1.437E-07	4.28864E-06	0.1643298	1.34E-07	4.00143E-06	0.9713368	7.923E-07	2.36521E-05	0.896865	7.316E-07	2.18387E-05	1.0611948	8.656E-07	2.58401E-05
Road 9	9	2000-2100	0.190572482	1.048E-07	3.1296E-06	0.1742659	9.587E-08	2.86181E-06	0.8651956	4.76E-07	1.42083E-05	0.7876963	4.333E-07	1.29356E-05	0.9619622	5.292E-07	1.57974E-05
Road 9	9	2100-2200	0.024779644	1.269E-08	3.78869E-07	0.0228673	1.171E-08	3.4963E-07	0.3508872	1.797E-07	5.3649E-06	0.3185944	1.632E-07	4.87116E-06	0.3414617	1.749E-07	5.22079E-06
Road 9	9	2200-2300	0.184589815	1.156E-07	3.44947E-06	0.1692511	1.06E-07	3.16283E-06	0.9197984	5.758E-07	1.71885E-05	0.8374941	5.243E-07	1.56504E-05	1.0067452	6.302E-07	1.88133E-05
Road 9	9	2300-0000	0.148612074	8.457E-08	2.52468E-06	0.1369137	7.792E-08	2.32594E-06	0.7838327	4.461E-07	1.3316E-05	0.7153451	4.071E-07	1.21526E-05	0.8522588	4.85E-07	1.44785E-05
Road 10	10	0000-0100	0.307990656	2.368E-07	5.26519E-06	0.2768934	2.129E-07	4.73357E-06	1.580662	1.215E-06	2.70219E-05	1.4188064	1.091E-06	2.42549E-05	1.6956998	1.304E-06	2.89885E-05
Road 10	10	0100-0200	0.303071679	1.761E-07	3.91461E-06	0.2752878	1.599E-07	3.55574E-06	1.5432508	8.965E-07	1.99333E-05	1.399205	8.128E-07	1.80727E-05	1.6744929	9.727E-07	2.16285E-05
Road 10	10	0200-0300	0.300478151	9.754E-08	2.16885E-06	0.272931	8.86E-08	1.97002E-06	1.508846	4.898E-07	1.08909E-05	1.3691976	4.445E-07	9.88288E-06	1.6421286	5.331E-07	1.18529E-05
Road 10	10	0300-0400	0.275413654	5.647E-08	1.25554E-06	0.2473654	5.072E-08	1.12767E-06	1.4952283	3.066E-07	6.81636E-06	1.3397938	2.747E-07	6.10777E-06	1.5871592	3.254E-07	7.23545E-06
Road 10	10	0400-0500	0.31992553	1.257E-07	2.79538E-06	0.2895732	1.138E-07	2.53017E-06	1.5472699	6.08E-07	1.35194E-05	1.3946765	5.481E-07	1.21861E-05	1.6842497	6.619E-07	1.47163E-05
Road 10	10	0500-0600	0.289465053	2.028E-07	4.50862E-06	0.2638046	1.848E-07	4.10894E-06	1.407487	9.86E-07	2.19226E-05	1.277039	8.946E-07	1.98908E-05	1.5408436	1.079E-06	2.39997E-05
Road 10	10	0600-0700	0.346593338	4.856E-07	1.07969E-05	0.3195701	4.477E-07	9.95506E-06	1.7423621	2.441E-06	5.4277E-05	1.6033079	2.246E-06	4.99453E-05	1.922878	2.694E-06	5.99003E-05
Road 10	10	0700-0800	0.342209091	7.542E-07	1.67705E-05	0.3174216	6.996E-07	1.55557E-05	1.7357919	3.826E-06	8.5065E-05	1.606652	3.541E-06	7.87363E-05	1.9240736	4.241E-06	9.42921E-05
Road 10	10	0800-0900	0.364771553	1.539E-06	3.4228E-05	0.3358313	1.417E-06	3.15124E-05	1.8123998	7.649E-06	0.000170065	1.6651621	7.027E-06	0.000156249	2.0009934	8.445E-06	0.000187761
Road 10	10	0900-1000	0.403121984	1.35E-06	3.00162E-05	0.3744333	1.254E-06	2.78801E-05	1.9543371	6.545E-06	0.000145519	1.8120051	6.068E-06	0.000134921	2.1864384	7.322E-06	0.000162801
Road 10	10	1000-1100	0.402319729	1.464E-06	3.25548E-05	0.3715124	1.352E-06	3.00619E-05	1.8287701	6.655E-06	0.00014798	1.6823583	6.123E-06	0.000136133	2.0538708	7.475E-06	0.000166194
Road 10	10	1100-1200	0.391966646	1.426E-06	3.1717E-05	0.3578459	1.302E-06	2.89561E-05	1.8470058	6.722E-06	0.000149455	1.6816325	6.12E-06	0.000136074	2.0394784	7.422E-06	0.00016503
Road 10	10	1200-1300	0.407888487	1.533E-06	3.40901E-05	0.3750997	1.41E-06	3.13497E-05	1.9475236	7.32E-06	0.000162768	1.7885966	6.723E-06	0.000149485	2.1636963	8.133E-06	0.000180835
Road 10	10	1300-1400	0.398078875	1.306E-06	2.90358E-05	0.3631934	1.191E-06	2.64913E-05	1.8573634	6.093E-06	0.000135476	1.6898379	5.543E-06	0.000123257	2.0530314	6.735E-06	0.000149748
Road 10	10	1400-1500	0.368883768	1.134E-06	2.52247E-05	0.3365867	1.035E-06	2.30162E-05	1.8516551	5.695E-06	0.000126618	1.685674	5.184E-06	0.000115268	2.0222607	6.219E-06	0.000138284
Road 10	10	1500-1600	0.368337752	1.158E-06	2.57471E-05	0.3374484	1.061E-06	2.35879E-05	1.7792353	5.594E-06	0.00012437	1.6279192	5.118E-06	0.000113793	1.9653676	6.179E-06	0.000137381
Road 10	10	1600-1700	0.353834169	1.239E-06	2.75561E-05	0.3228894	1.131E-06	2.51461E-05	1.7370077	6.084E-06	0.000135276	1.5800823	5.534E-06	0.000123054	1.9029718	6.665E-06	0.000148201
Road 10	10	1700-1800	0.327408022	1.074E-06	2.38811E-05	0.3002118	9.848E-07	2.18974E-05	1.7059542	5.596E-06	0.000124432	1.5649751	5.134E-06	0.000114149	1.8651869	6.119E-06	0.000136046
Road 10	10	1800-1900	0.334287539	6.911E-07	1.53663E-05	0.3032074	6.268E-07	1.39376E-05	1.6938908	3.502E-06	7.78636E-05	1.5352026	3.174E-06	7.05691E-05	1.83841	3.801E-06	8.45068E-05
Road 10	10	1900-2000	0.291596206	5.431E-07	1.20746E-05	0.2669405	4.971E-07	1.10536E-05	1.5516493	2.89E-06	6.42516E-05	1.4191541	2.643E-06	5.87651E-05	1.6860946	3.14E-06	6.98188E-05
Road 10	10	2000-2100	0.340569065	4.19E-07	9.3154E-06	0.3068291	3.775E-07	8.39253E-06	1.6527234	2.033E-06	4.5206E-05	1.486777	1.829E-06	4.0667E-05	1.793606	2.206E-06	4.90595E-05
Road 10	10	2100-2200	0.276884649	3.406E-07	7.57347E-06	0.2559707	3.149E-07	7.00143E-06	1.5489685	1.905E-06	4.23681E-05	1.4330515	1.763E-06	3.91975E-05	1.6890223	2.078E-06	4.61989E-05
Road 10	10	2200-2300	0.298855413	3.83E-07	8.51503E-06	0.2725337	3.492E-07	7.76507E-06	1.5377552	1.971E-06	4.38139E-05	1.4037805	1.799E-06	3.99967E-05	1.6763142	2.148E-06	4.77618E-05
Road 10	10	2300-0000	0.274923884	3.288E-07	7.31096E-06	0.2492018	2.98E-07	6.62694E-06	1.3965127	1.67E-06	3.7137E-05	1.26306	1.511E-06	3.35881E-05	1.5122618	1.809E-06	4.02151E-05
Road 11	11	0000-0100	0.344927934	2.635E-07	2.18564E-06	0.3099257	2.367E-07	1.96385E-06	1.7337653	1.324E-06	1.0986E-05	1.5551183	1.188E-06	9.85404E-06	1.865044	1.425E-06	1.18179E-05
Road 11	11	0100-0200	0.345359315	1.859E-07	1.54181E-06	0.3135391	1.687E-07	1.39975E-06	1.7082612	9.194E-07	7.6263E-06	1.5468742	8.325E-07	6.90581E-06	1.8604133	1.001E-06	8.30557E-06
Road 11	11	0200-0300	0.30041302	7.823E-08	6.48945E-07	0.2728983	7.107E-08	5.89509E-07	1.6079561	4.187E-07	3.47347E-06	1.4589177	3.799E-07	3.15152E-06	1.731816	4.51E-07	3.74103E-06
Road 11	11	0300-0400	0.324307015	7.882E-08	6.53857E-07	0.2913569	7.082E-08	5.87424E-07	1.6993708	4.13E-07	3.42621E-06	1.5262275	3.71E-07	3.07713E-06	1.8175844	4.418E-07	3.66455E-06
Road 11	11	0400-0500	0.330874395	1.149E-07	9.52997E-07	0.2996316	1.04E-07	8.6301E-07	1.5808805	5.489E-07	4.55331E-06	1.4250447	4.948E-07	4.10447E-06	1.7246763	5.988E-07	4.96748E-06
Road 11	11	0500-0600	0.264990162	1.242E-07	1.03037E-06	0.2412125	1.131E-07	9.37911E-07	1.3627477	6.388E-07	5.2988E-06	1.2347576	5.788E-07	4.80113E-06	1.4759701	6.919E-07	5.73904E-06
Road 11	11	0600-0700	0.284777649	2.571E-07	2.13259E-06	0.2616472	2.362E-07	1.95938E-06	1.4923821	1.347E-06	1.11759E-05	1.3632791	1.231E-06	1.02091E-05	1.6249263	1.467E-06	1.21684E-05
Road 11	11	0700-0800	0.333488894	6.253E-07	5.18685E-06	0.3079914	5.775E-07	4.79028E-06	1.7491478	3.28E-06	2.7205E-05	1.6111922	3.021E-06	2.50593E-05	1.9191836	3.598E-06	2.98496E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (January) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 11	11	0800-0900	0.36060808	1.283E-06	1.0646E-05	0.333038	1.185E-06	9.83209E-06	1.7892567	6.368E-06	5.28232E-05	1.6464579	5.86E-06	4.86074E-05	1.9794959	7.045E-06	5.84395E-05
Road 11	11	0900-1000	0.361422328	9.161E-07	7.59917E-06	0.3355475	8.505E-07	7.05513E-06	1.7215208	4.364E-06	3.61962E-05	1.5907424	4.032E-06	3.34465E-05	1.9262899	4.883E-06	4.05016E-05
Road 11	11	1000-1100	0.374964198	7.747E-07	6.42591E-06	0.3457227	7.143E-07	5.92479E-06	1.7569953	3.63E-06	3.01103E-05	1.6139368	3.334E-06	2.76587E-05	1.9596595	4.049E-06	3.35835E-05
Road 11	11	1100-1200	0.33163718	7.715E-07	6.3998E-06	0.3018523	7.022E-07	5.82502E-06	1.7069403	3.971E-06	3.29398E-05	1.5510781	3.608E-06	2.99321E-05	1.8529304	4.311E-06	3.57571E-05
Road 11	11	1200-1300	0.402413255	1.139E-06	9.44622E-06	0.3697015	1.046E-06	8.67835E-06	1.9582278	5.542E-06	4.59673E-05	1.795344	5.081E-06	4.21438E-05	2.1650455	6.127E-06	5.08221E-05
Road 11	11	1300-1400	0.419214162	8.734E-07	7.24462E-06	0.3823097	7.965E-07	6.60685E-06	1.896782	3.952E-06	3.27791E-05	1.7221562	3.588E-06	2.97613E-05	2.1044659	4.384E-06	3.63682E-05
Road 11	11	1400-1500	0.33106258	6.667E-07	5.53052E-06	0.3014919	6.072E-07	5.03653E-06	1.6629402	3.349E-06	2.778E-05	1.505312	3.032E-06	2.51468E-05	1.8068039	3.639E-06	3.01833E-05
Road 11	11	1500-1600	0.297780441	6.049E-07	5.01742E-06	0.2724054	5.533E-07	4.58986E-06	1.5481214	3.145E-06	2.60849E-05	1.4126896	2.87E-06	2.38029E-05	1.6850949	3.423E-06	2.83928E-05
Road 11	11	1600-1700	0.284917992	6.876E-07	5.70339E-06	0.259957	6.273E-07	5.20373E-06	1.5303232	3.693E-06	3.06335E-05	1.3930268	3.362E-06	2.78851E-05	1.6529838	3.989E-06	3.30888E-05
Road 11	11	1700-1800	0.285799359	7.046E-07	5.84451E-06	0.2609965	6.434E-07	5.3373E-06	1.5626861	3.852E-06	3.19564E-05	1.4264666	3.517E-06	2.91708E-05	1.6874631	4.16E-06	3.45081E-05
Road 11	11	1800-1900	0.308529673	6.321E-07	5.24297E-06	0.2789956	5.716E-07	4.74108E-06	1.6508901	3.382E-06	2.80542E-05	1.4932836	3.059E-06	2.5376E-05	1.7722792	3.631E-06	3.0117E-05
Road 11	11	1900-2000	0.295347603	4.666E-07	3.87055E-06	0.2694183	4.256E-07	3.53075E-06	1.5470147	2.444E-06	2.02737E-05	1.4071024	2.223E-06	1.84402E-05	1.6765206	2.649E-06	2.19709E-05
Road 11	11	2000-2100	0.306700932	4.313E-07	3.57765E-06	0.276336	3.886E-07	3.22345E-06	1.5362207	2.16E-06	1.79199E-05	1.3827469	1.944E-06	1.61297E-05	1.6590829	2.333E-06	1.93531E-05
Road 11	11	2100-2200	0.220401257	2.181E-07	1.8092E-06	0.1996473	1.976E-07	1.63884E-06	1.2360786	1.223E-06	1.01466E-05	1.119094	1.107E-06	9.18628E-06	1.3187413	1.305E-06	1.08251E-05
Road 11	11	2200-2300	0.288904189	3.16E-07	2.62115E-06	0.2619654	2.865E-07	2.37674E-06	1.467323	1.605E-06	1.33126E-05	1.3274878	1.452E-06	1.2044E-05	1.5894531	1.738E-06	1.44207E-05
Road 11	11	2300-0000	0.275702791	2.872E-07	2.38227E-06	0.2500369	2.605E-07	2.1605E-06	1.4247106	1.484E-06	1.23105E-05	1.2888676	1.343E-06	1.11367E-05	1.5389044	1.603E-06	1.32972E-05
Haul Road 1	HR1	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0700-0800	1.41956	2.668E-06	4.01332E-06	1.3048	2.453E-06	3.68888E-06	6.5236	1.226E-05	1.84433E-05	5.9962	1.127E-05	1.69522E-05	7.301	1.372E-05	2.06411E-05
Haul Road 1	HR1	0800-0900	1.41986	2.669E-06	4.01417E-06	1.3028	2.449E-06	3.68322E-06	6.5245	1.226E-05	1.84458E-05	5.98671	1.125E-05	1.69254E-05	7.28951	1.37E-05	2.06086E-05
Haul Road 1	HR1	0900-1000	1.41796	2.665E-06	4.0088E-06	1.3049	2.453E-06	3.68916E-06	6.5161	1.225E-05	1.84221E-05	5.9967	1.127E-05	1.69536E-05	7.3016	1.372E-05	2.06428E-05
Haul Road 1	HR1	1000-1100	1.42316	2.675E-06	4.0235E-06	1.3048	2.453E-06	3.68888E-06	6.54009	1.229E-05	1.84899E-05	5.9963	1.127E-05	1.69525E-05	7.3011	1.372E-05	2.06414E-05
Haul Road 1	HR1	1100-1200	1.42835	2.685E-06	4.03817E-06	1.2981	2.44E-06	3.66994E-06	6.56409	1.234E-05	1.85577E-05	5.96532	1.121E-05	1.68649E-05	7.26342	1.365E-05	2.05349E-05
Haul Road 1	HR1	1200-1300	1.42755	2.683E-06	4.03591E-06	1.302	2.447E-06	3.68096E-06	6.55999	1.233E-05	1.85461E-05	5.98301	1.125E-05	1.69149E-05	7.28501	1.369E-05	2.05959E-05
Haul Road 1	HR1	1300-1400	1.43035	2.689E-06	4.04383E-06	1.29151	2.428E-06	3.65131E-06	6.57279	1.235E-05	1.85823E-05	5.93522	1.116E-05	1.67798E-05	7.22673	1.358E-05	2.04311E-05
Haul Road 1	HR1	1400-1500	1.42995	2.688E-06	4.0427E-06	1.28741	2.42E-06	3.63971E-06	6.57139	1.235E-05	1.85784E-05	5.91623	1.112E-05	1.67261E-05	7.20364	1.354E-05	2.03658E-05
Haul Road 1	HR1	1500-1600	1.42695	2.682E-06	4.03422E-06	1.2981	2.44E-06	3.66994E-06	6.55769	1.233E-05	1.85396E-05	5.96532	1.121E-05	1.68649E-05	7.26342	1.365E-05	2.05349E-05
Haul Road 1	HR1	1600-1700	1.43035	2.689E-06	4.04383E-06	1.29041	2.426E-06	3.6482E-06	6.57279	1.235E-05	1.85823E-05	5.92973	1.115E-05	1.67643E-05	7.22014	1.357E-05	2.04125E-05
Haul Road 1	HR1	1700-1800	1.43035	2.689E-06	4.04383E-06	1.294	2.432E-06	3.65835E-06	6.57279	1.235E-05	1.85823E-05	5.94623	1.118E-05	1.68109E-05	7.24023	1.361E-05	2.04693E-05
Haul Road 1	HR1	1800-1900	1.43035	2.689E-06	4.04383E-06	1.28311	2.412E-06	3.62756E-06	6.57279	1.235E-05	1.85823E-05	5.89634	1.108E-05	1.66699E-05	7.17945	1.35E-05	2.02975E-05
Haul Road 1	HR1	1900-2000	1.42755	2.683E-06	4.03591E-06	1.29131	2.427E-06	3.65074E-06	6.55999	1.233E-05	1.85461E-05	5.93422	1.115E-05	1.6777E-05	7.22553	1.358E-05	2.04277E-05
Haul Road 1	HR1	2000-2100	1.42755	2.683E-06	4.03591E-06	1.28111	2.408E-06	3.6219E-06	6.55999	1.233E-05	1.85461E-05	5.88745	1.107E-05	1.66448E-05	7.16856	1.347E-05	2.02667E-05
Haul Road 1	HR1	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0700-0800	1.41956	1.839E-06	4.89473E-06	1.3048	1.69E-06	4.49903E-06	6.5236	8.45E-06	2.24938E-05	5.9962	7.767E-06	2.06753E-05	7.301	9.457E-06	2.51743E-05
Haul Road 2	HR2	0800-0900	1.41986	1.839E-06	4.89576E-06	1.3028	1.688E-06	4.49213E-06	6.5245	8.451E-06	2.24969E-05	5.98671	7.755E-06	2.06425E-05	7.28951	9.442E-06	2.51347E-05
Haul Road 2	HR2	0900-1000	1.41796	1.837E-06	4.88921E-06	1.3049	1.69E-06	4.49937E-06	6.5161	8.441E-06	2.24679E-05	5.9967	7.768E-06	2.0677E-05	7.3016	9.458E-06	2.51764E-05
Haul Road 2	HR2	1000-1100	1.42316	1.843E-06	4.90714E-06	1.3048	1.69E-06	4.49903E-06	6.54009	8.472E-06	2.25506E-05	5.9963	7.767E-06	2.06756E-05	7.3011	9.457E-06	2.51746E-05
Haul Road 2	HR2	1100-1200	1.42835	1.85E-06	4.92504E-06	1.2981	1.681E-06	4.47593E-06	6.56409	8.503E-06	2.26334E-05	5.96532	7.727E-06	2.05688E-05	7.26342	9.409E-06	2.50447E-05
Haul Road 2	HR2	1200-1300	1.42755	1.849E-06	4.92228E-06	1.302	1.687E-06	4.48937E-06	6.55999	8.497E-06	2.26192E-05	5.98301	7.75E-06	2.06298E-05	7.28501	9.437E-06	2.51192E-05
Haul Road 2	HR2	1300-1400	1.43035	1.853E-06	4.93193E-06	1.29151	1.673E-06	4.4532E-06	6.57279	8.514E-06	2.26634E-05	5.93522	7.688E-06	2.0465E-05	7.22673	9.361E-06	2.49182E-05
Haul Road 2	HR2	1400-1500	1.42995	1.852E-06	4.93055E-06	1.28741	1.668E-06	4.43907E-06	6.57139	8.512E-06	2.26585E-05	5.91623	7.664E-06	2.03995E-05	7.20364	9.331E-06	2.48386E-05
Haul Road 2	HR2	1500-1600	1.42695	1.848E-06	4.92021E-06	1.2981	1.681E-06	4.47593E-06	6.55769	8.494E-06	2.26113E-05	5.96532	7.727E-06	2.05688E-05	7.26342	9.409E-06	2.50447E-05
Haul Road 2	HR2	1600-1700	1.43035	1.853E-06	4.93193E-06	1.29041	1.672E-06	4.44941E-06	6.57279	8.514E-06	2.26634E-05	5.92973	7.681E-06	2.04461E-05	7.22014	9.353E-06	2.48955E-05
Haul Road 2	HR2	1700-1800	1.43035	1.853E-06	4.93193E-06	1.294	1.676E-06	4.46179E-06	6.57279	8.514E-06	2.26634E-05	5.94623	7.702E-06	2.0503E-05	7.24023	9.379E-06	2.49647E-05
Haul Road 2	HR2	1800-1900	1.43035	1.853E-06	4.93193E-06	1.28311	1.662E-06	4.42424E-06	6.57279	8.514E-06	2.26634E-05	5.89634	7.638E-06	2.03309E-05	7.17945	9.3E-06	2.47552E-05
Haul Road 2	HR2	1900-2000	1.42755	1.849E-06	4.92228E-06	1.29131	1.673E-06	4.45251E-06	6.55999	8.497E-06	2.26192E-05	5.93422	7.687E-06	2.04615E-05	7.22553	9.359E-06	2.49141E-05
Haul Road 2	HR2	2000-2100	1.42755	1.849E-06	4.92228E-06	1.28111	1.659E-06	4.41734E-06	6.55999	8.497E-06	2.26192E-05	5.88745	7.626E-06	2.03003E-05	7.16856	9.286E-06	2.47176E-05
Haul Road 2	HR2	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (January) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Haul Road 2	HR2	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0700-0800	1.41956	1.839E-06	4.8879E-06	1.3048	1.69E-06	4.49276E-06	6.5236	8.45E-06	2.24624E-05	5.9962	7.767E-06	2.06464E-05	7.301	9.457E-06	2.51392E-05
Haul Road 3	HR3	0800-0900	1.41986	1.839E-06	4.88894E-06	1.3028	1.688E-06	4.48587E-06	6.5245	8.451E-06	2.24655E-05	5.98671	7.755E-06	2.06138E-05	7.28951	9.442E-06	2.50996E-05
Haul Road 3	HR3	0900-1000	1.41796	1.837E-06	4.88239E-06	1.3049	1.69E-06	4.4931E-06	6.5161	8.441E-06	2.24366E-05	5.9967	7.768E-06	2.06482E-05	7.3016	9.458E-06	2.51413E-05
Haul Road 3	HR3	1000-1100	1.42316	1.843E-06	4.9003E-06	1.3048	1.69E-06	4.49276E-06	6.54009	8.472E-06	2.25192E-05	5.9963	7.767E-06	2.06468E-05	7.3011	9.457E-06	2.51395E-05
Haul Road 3	HR3	1100-1200	1.42835	1.85E-06	4.91817E-06	1.2981	1.681E-06	4.46969E-06	6.56409	8.503E-06	2.26018E-05	5.96532	7.727E-06	2.05401E-05	7.26342	9.409E-06	2.50098E-05
Haul Road 3	HR3	1200-1300	1.42755	1.849E-06	4.91542E-06	1.302	1.687E-06	4.48312E-06	6.55999	8.497E-06	2.25877E-05	5.98301	7.75E-06	2.0601E-05	7.28501	9.437E-06	2.50841E-05
Haul Road 3	HR3	1300-1400	1.43035	1.853E-06	4.92506E-06	1.29151	1.673E-06	4.447E-06	6.57279	8.514E-06	2.26318E-05	5.93522	7.688E-06	2.04365E-05	7.22673	9.361E-06	2.48835E-05
Haul Road 3	HR3	1400-1500	1.42995	1.852E-06	4.92368E-06	1.28741	1.668E-06	4.43288E-06	6.57139	8.512E-06	2.2627E-05	5.91623	7.664E-06	2.03711E-05	7.20364	9.331E-06	2.4804E-05
Haul Road 3	HR3	1500-1600	1.42695	1.848E-06	4.91335E-06	1.2981	1.681E-06	4.46969E-06	6.55769	8.494E-06	2.25798E-05	5.96532	7.727E-06	2.05401E-05	7.26342	9.409E-06	2.50098E-05
Haul Road 3	HR3	1600-1700	1.43035	1.853E-06	4.92506E-06	1.29041	1.672E-06	4.44321E-06	6.57279	8.514E-06	2.26318E-05	5.92973	7.681E-06	2.04176E-05	7.22014	9.353E-06	2.48608E-05
Haul Road 3	HR3	1700-1800	1.43035	1.853E-06	4.92506E-06	1.294	1.676E-06	4.45557E-06	6.57279	8.514E-06	2.26318E-05	5.94623	7.702E-06	2.04744E-05	7.24023	9.379E-06	2.49299E-05
Haul Road 3	HR3	1800-1900	1.43035	1.853E-06	4.92506E-06	1.28311	1.662E-06	4.41807E-06	6.57279	8.514E-06	2.26318E-05	5.89634	7.638E-06	2.03026E-05	7.17945	9.3E-06	2.47207E-05
Haul Road 3	HR3	1900-2000	1.42755	1.849E-06	4.91542E-06	1.29131	1.673E-06	4.44631E-06	6.55999	8.497E-06	2.25877E-05	5.93422	7.687E-06	2.0433E-05	7.22553	9.359E-06	2.48793E-05
Haul Road 3	HR3	2000-2100	1.42755	1.849E-06	4.91542E-06	1.28111	1.659E-06	4.41119E-06	6.55999	8.497E-06	2.25877E-05	5.88745	7.626E-06	2.0272E-05	7.16856	9.286E-06	2.46832E-05
Haul Road 3	HR3	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (February) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 1	1	0000-0100	0.101364972	3.367E-07	2.73944E-06	0.0928656	3.085E-07	2.50975E-06	0.5974098	1.985E-06	1.61453E-05	0.5452713	1.811E-06	1.47363E-05	0.6381369	2.12E-06	1.7246E-05
Road 1	1	0100-0200	0.079083333	1.603E-07	1.3041E-06	0.0718231	1.456E-07	1.18438E-06	0.4773861	9.677E-07	7.87218E-06	0.4314556	8.746E-07	7.11477E-06	0.5032787	1.02E-06	8.29915E-06
Road 1	1	0200-0300	0.07549961	1.091E-07	8.8764E-07	0.0682799	9.868E-08	8.02758E-07	0.4813082	6.956E-07	5.65868E-06	0.4314119	6.235E-07	5.07206E-06	0.4996918	7.222E-07	5.87482E-06
Road 1	1	0300-0400	0.064502727	6.659E-08	5.41679E-07	0.0580322	5.991E-08	4.87341E-07	0.3921549	4.048E-07	3.29323E-06	0.3499242	3.612E-07	2.93858E-06	0.4079564	4.211E-07	3.42592E-06
Road 1	1	0400-0500	0.08451	1.348E-07	1.0968E-06	0.0758087	1.209E-07	9.83873E-07	0.4820982	7.691E-07	6.25685E-06	0.4299916	6.86E-07	5.58059E-06	0.5058004	8.069E-07	6.56446E-06
Road 1	1	0500-0600	0.067888717	2.383E-07	1.93839E-06	0.0609222	2.138E-07	1.73948E-06	0.3999127	1.404E-06	1.14185E-05	0.3557689	1.249E-06	1.01581E-05	0.4166911	1.462E-06	1.18975E-05
Road 1	1	0600-0700	0.091562651	5.705E-07	4.64149E-06	0.0825995	5.147E-07	4.18713E-06	0.4905218	3.057E-06	2.48655E-05	0.4400647	2.742E-06	2.23078E-05	0.5226642	3.257E-06	2.64949E-05
Road 1	1	0700-0800	0.076550465	8.031E-07	6.53373E-06	0.0706524	7.413E-07	6.03032E-06	0.4221247	4.429E-06	3.60291E-05	0.386893	4.059E-06	3.3022E-05	0.4575455	4.8E-06	3.90524E-05
Road 1	1	0800-0900	0.08178708	1.052E-06	8.55414E-06	0.0761119	9.785E-07	7.96058E-06	0.4351146	5.594E-06	4.55088E-05	0.4029826	5.181E-06	4.21481E-05	0.4790946	6.16E-06	5.01087E-05
Road 1	1	0900-1000	0.086367454	1.146E-06	9.32332E-06	0.0794948	1.055E-06	8.58142E-06	0.4837892	6.42E-06	5.22248E-05	0.4433302	5.883E-06	4.78573E-05	0.5228249	6.938E-06	5.64387E-05
Road 1	1	1000-1100	0.10016508	1.292E-06	1.05069E-05	0.0920325	1.187E-06	9.65382E-06	0.5382283	6.94E-06	5.64579E-05	0.4928855	6.355E-06	5.17016E-05	0.584918	7.542E-06	6.13554E-05
Road 1	1	1100-1200	0.091352429	1.144E-06	9.30352E-06	0.083037	1.04E-06	8.45665E-06	0.5247893	6.57E-06	5.34456E-05	0.4750502	5.947E-06	4.83801E-05	0.5580872	6.987E-06	5.68367E-05
Road 1	1	1200-1300	0.093424727	1.157E-06	9.41471E-06	0.0855292	1.059E-06	8.61905E-06	0.532636	6.598E-06	5.36754E-05	0.4861405	6.022E-06	4.89899E-05	0.5716697	7.081E-06	5.7609E-05
Road 1	1	1300-1400	0.098166752	1.293E-06	1.05221E-05	0.089785	1.183E-06	9.6237E-06	0.5474133	7.213E-06	5.86751E-05	0.4991429	6.577E-06	5.35012E-05	0.5889279	7.76E-06	6.31249E-05
Road 1	1	1400-1500	0.093849412	1.348E-06	1.09621E-05	0.0860209	1.235E-06	1.00477E-05	0.5108626	7.335E-06	5.96715E-05	0.4668421	6.703E-06	5.45297E-05	0.5528631	7.938E-06	6.45774E-05
Road 1	1	1500-1600	0.100265882	1.334E-06	1.08543E-05	0.0919468	1.224E-06	9.95369E-06	0.5441344	7.241E-06	5.89052E-05	0.4973289	6.618E-06	5.38383E-05	0.5892758	7.842E-06	6.3792E-05
Road 1	1	1600-1700	0.095893476	1.346E-06	1.0952E-05	0.0871373	1.223E-06	9.95192E-06	0.525689	7.38E-06	6.00388E-05	0.4759004	6.681E-06	5.43524E-05	0.5630377	7.905E-06	6.43043E-05
Road 1	1	1700-1800	0.076834587	1.082E-06	8.79872E-06	0.070328	9.9E-07	8.05361E-06	0.4296715	6.048E-06	4.92038E-05	0.3913685	5.509E-06	4.48176E-05	0.4616965	6.499E-06	5.28712E-05
Road 1	1	1800-1900	0.068498698	9.874E-07	8.03239E-06	0.0626766	9.034E-07	7.34968E-06	0.4072111	5.87E-06	4.7751E-05	0.3702007	5.336E-06	4.3411E-05	0.4328774	6.24E-06	5.07607E-05
Road 1	1	1900-2000	0.080255119	8.827E-07	7.18078E-06	0.0753826	8.291E-07	6.74482E-06	0.4585446	5.043E-06	4.1028E-05	0.429329	4.722E-06	3.8414E-05	0.5047117	5.551E-06	4.51588E-05
Road 1	1	2000-2100	0.072708488	6.769E-07	5.5064E-06	0.0676418	6.297E-07	5.12269E-06	0.4272587	3.977E-06	3.23574E-05	0.3954201	3.681E-06	2.99462E-05	0.4630619	4.311E-06	3.50689E-05
Road 1	1	2100-2200	0.075912936	6.454E-07	5.25068E-06	0.0709994	6.037E-07	4.91082E-06	0.4481376	3.81E-06	3.09964E-05	0.4173718	3.549E-06	2.88684E-05	0.4883712	4.152E-06	3.37792E-05
Road 1	1	2200-2300	0.073699165	5.962E-07	4.84999E-06	0.069071	5.587E-07	4.54542E-06	0.4332497	3.505E-06	2.85113E-05	0.4041427	3.269E-06	2.65958E-05	0.4732137	3.828E-06	3.11412E-05
Road 1	1	2300-0000	0.064217065	4.64E-07	3.77496E-06	0.0612746	4.428E-07	3.60199E-06	0.3915228	2.829E-06	2.30154E-05	0.3720232	2.688E-06	2.18692E-05	0.4332979	3.131E-06	2.54711E-05
Road 2	2	0000-0100	0.169996667	2.007E-07	1.29604E-06	0.1557531	1.839E-07	1.18745E-06	0.7220249	8.524E-07	5.50465E-06	0.6595906	7.787E-07	5.02866E-06	0.8153437	9.626E-07	6.21611E-06
Road 2	2	0100-0200	0.121692727	9.296E-08	6.00325E-07	0.11049	8.44E-08	5.4506E-07	0.6039194	4.613E-07	2.97921E-06	0.546067	4.171E-07	2.69381E-06	0.656557	5.015E-07	3.23887E-06
Road 2	2	0200-0300	0.121443043	6.466E-08	4.1755E-07	0.1099583	5.854E-08	3.78062E-07	0.6629148	3.529E-07	2.27926E-06	0.5966365	3.177E-07	2.05138E-06	0.7065948	3.762E-07	2.42944E-06
Road 2	2	0300-0400	0.106974	3.714E-08	2.39871E-07	0.096268	3.343E-08	2.15864E-07	0.3900187	1.354E-07	8.74549E-07	0.3484987	1.21E-07	7.81448E-07	0.4447667	1.544E-07	9.97312E-07
Road 2	2	0400-0500	0.144807778	9.05E-08	5.84472E-07	0.1299381	8.121E-08	5.24455E-07	0.7016522	4.385E-07	2.832E-06	0.6272444	3.92E-07	2.53168E-06	0.7571826	4.732E-07	3.05613E-06
Road 2	2	0500-0600	0.114775965	1.514E-07	9.77988E-07	0.103084	1.36E-07	8.78363E-07	0.50817	6.705E-07	4.33004E-06	0.4531904	5.98E-07	3.86156E-06	0.5562744	7.34E-07	4.73993E-06
Road 2	2	0600-0700	0.162468155	3.874E-07	2.50157E-06	0.1466167	3.496E-07	2.2575E-06	0.6601007	1.574E-06	1.01638E-05	0.5931675	1.414E-06	9.13319E-06	0.7397842	1.764E-06	1.13907E-05
Road 2	2	0700-0800	0.128536835	4.701E-07	3.03593E-06	0.1186718	4.34E-07	2.80293E-06	0.5433716	1.987E-06	1.2834E-05	0.4985872	1.824E-06	1.17762E-05	0.617259	2.258E-06	1.45792E-05
Road 2	2	0800-0900	0.1447583	1.005E-06	6.49191E-06	0.1346878	9.353E-07	6.04028E-06	0.6139903	4.264E-06	2.75353E-05	0.5687711	3.95E-06	2.55074E-05	0.7034589	4.885E-06	3.15477E-05
Road 2	2	0900-1000	0.166748252	9.495E-07	6.13203E-06	0.1534424	8.738E-07	5.64272E-06	0.7221727	4.112E-06	2.65573E-05	0.6624273	3.772E-06	2.43602E-05	0.8158697	4.646E-06	3.00029E-05
Road 2	2	1000-1100	0.185038315	7.881E-07	5.08964E-06	0.1700172	7.241E-07	4.67647E-06	0.794744	3.385E-06	2.18601E-05	0.728453	3.103E-06	2.00367E-05	0.8984702	3.827E-06	2.47132E-05
Road 2	2	1100-1200	0.225870221	9.464E-07	6.11146E-06	0.2053285	8.603E-07	5.55566E-06	0.9268156	3.883E-06	2.50772E-05	0.8411556	3.524E-06	2.27595E-05	1.0464841	4.385E-06	2.83152E-05
Road 2	2	1200-1300	0.171162926	7.449E-07	4.81033E-06	0.1566832	6.819E-07	4.4034E-06	0.7541644	3.282E-06	2.11949E-05	0.6886227	2.997E-06	1.93529E-05	0.8453059	3.679E-06	2.37563E-05
Road 2	2	1300-1400	0.190417818	9.697E-07	6.26236E-06	0.1740323	8.863E-07	5.72348E-06	0.78743	4.01E-06	2.58966E-05	0.7179421	3.656E-06	2.36113E-05	0.8919744	4.542E-06	2.93348E-05
Road 2	2	1400-1500	0.165920982	6.26E-07	4.04293E-06	0.152072	5.738E-07	3.70548E-06	0.7180848	2.709E-06	1.74973E-05	0.6568986	2.479E-06	1.60064E-05	0.8089706	3.052E-06	1.97119E-05
Road 2	2	1500-1600	0.202999609	8.411E-07	5.43195E-06	0.1860008	7.707E-07	4.97709E-06	0.8157979	3.38E-06	2.18295E-05	0.7463674	3.093E-06	1.99716E-05	0.9323682	3.863E-06	2.49487E-05
Road 2	2	1600-1700	0.173684658	8.805E-07	5.68608E-06	0.1578118	8E-07	5.16644E-06	0.7349942	3.726E-06	2.40622E-05	0.6661252	3.377E-06	2.18076E-05	0.823937	4.177E-06	2.6974E-05
Road 2	2	1700-1800	0.131644194	6.613E-07	4.27041E-06	0.1205022	6.053E-07	3.90897E-06	0.52455	2.635E-06	1.70159E-05	0.4786609	2.404E-06	1.55273E-05	0.599163	3.01E-06	1.94363E-05
Road 2	2	1800-1900	0.144711653	8.308E-07	5.36492E-06	0.132497	7.606E-07	4.91208E-06	0.6682871	3.836E-06	2.47755E-05	0.6097675	3.501E-06	2.2606E-05	0.7422645	4.261E-06	2.75181E-05
Road 2	2	1900-2000	0.121165843	4.656E-07	3.00674E-06	0.1138428	4.375E-07	2.82502E-06	0.5567538	2.139E-06	1.38159E-05	0.5214754	2.004E-06	1.29405E-05	0.6353183	2.441E-06	1.57655E-05
Road 2	2	2000-2100	0.119313082	4.032E-07	2.60405E-06	0.1109469	3.75E-07	2.42145E-06	0.5027614	1.699E-06	1.09729E-05	0.4651175	1.572E-06	1.01513E-05	0.5760644	1.947E-06	1.25728E-05
Road 2	2	2100-2200	0.0912625	3.211E-07	2.07369E-06	0.0853036	3.001E-07	1.93829E-06	0.4135668	1.455E-06	9.39717E-06	0.3841401	1.352E-06	8.72853E-06	0.4694437	1.652E-06	1.06668E-05
Road 2	2	2200-2300	0.13051976	3.777E-07	2.4389E-06	0.1223247	3.539E-07	2.28577E-06	0.5575241	1.613E-06	1.04179E-05	0.520541	1.506E-06	9.72686E-06	0.6428658	1.86E-06	1.20126E-05
Road 2	2	2300-0000	0.117678091	2.996E-07	1.93507E-06	0.1123025	2.86E-07	1.84667E-06	0.5298403	1.349E-06	8.71255E-06	0.5039663	1.283E-06	8.28709E-06	0.6162688	1.569E-06	1.01338E-05
Road 3	3	0000-0100	0.106381703	3.907E-07	1.51873E-05	0.0968103	3.556E-07	1.38209E-05	0.5839133	2.145E-06	8.33609E-05	0.5290297	1.943E-06	7.55256E-05	0.62584	2.299E-06	8.93465E-05
Road 3	3	0100-0200	0.079989291	1.809E-07	7.0312E-06	0.0725899	1.642E-07	6.38078E-06	0.4645686	1.051E-06	4.08364E-05	0.419554	9.489E-07	3.68796E-05	0.4921438	1.113E-06	4.32603E-05
Road 3	3	0200-0300	0.077544343	1.231E-07	4.7859E-06	0.0700943	1.113E-07	4.3261E-06	0.4820366	7.654E-07	2.97505E-05	0.4320438	6.86E-07	2.6665E-05	0.5021382	7.974E-07	3.09911E-05
Road 3	3	0300-0400	0.066685942	7.38E-08	2.86855E-06	0.0601297	6.655E-08	2.58653E-06	0.3622525	4.009E-07	1.55826E-05	0.323902	3.585E-07	1.39329E-05	0.3840317	4.25E-07	1.65194E-05
Road 3	3	0400-0500	0.089677748	1.597E-07	6.20564E-06	0.0801566	1.427E-07	5.54678E-06	0.4939323	8.794E-07	3.41798E-05	0.438754	7.812E-07	3.03615E-05	0.5189105	9.239E-07	3.59082E-05
Road 3	3	0500-0600	0.072179877	2.813E-07	1.09346E-05	0.064387	2.51E-07	9.754E-06	0.3990974	1.556E-06	6.04594E-05	0.352514	1.374E-06	5.34025E-05	0.4169009	1.625E-06	6.31565E-05
Road 3	3	0600-0700	0.098222991	6.9E-07	2.68204E-05	0.0894588	6.285E-07	2.44273E-05	0.4902745	3.444E-06	0.000133873	0.4439167	3.119E-06	0.000121214	0.5333755	3.747E-06	0.000145642
Road 3	3	0700-0800	0.079650838	9.147E-07	3.55535E-05	0.0732809	8.416E-07	3.27101E-05	0.4142348	4.757E-06	0.000184901	0.3785233	4.347E-06	0.00016896	0.4518041	5.189E-06	0.00020167
Road 3	3	0800-0900	0.088236744	1.4E-06	5.44032E-05	0.0810846	1.286E-06	4.99935E-05	0.4396731	6.975E-06	0.000271085	0.4015253	6.369E-06	0.000247564	0.4826099	7.656E-06	0.000297558
Road 3	3	0900-1000	0.095339686	1.459E-06	5.67023E-05	0.0876435	1.341E-06	5.21251E-05	0.4907003	7.509E-06	0.000291839	0.4492382	6.874E-06	0.00026718	0.5368818	8.215E-06	0.000319305
Road 3	3	1000-1100	0.107981057	1.507E-06	5.8566E-05	0.0982555	1.371E-06	5.32911E-05	0.5493114	7.665E-06	0.000297932	0.4979173	6.948E-06	0.000270057	0.5961728	8.319E-06	0.000323348
Road 3	3	1100-1200	0.105598381	1.433E-06	5.56937E-05	0.0969063	1.315E-06	5.11094E-05	0.5507939	7.474E-06	0.000290495	0.5036222	6.834E-06	0.000265616	0.6005285	8.149E-06	0.000316725
Road 3	3	1200-1300	0.099288026	1.347E-06	5.23656E-05	0.090754	1.231E-06	4.78646E-05	0.5291079	7.18E-06	0.000279057	0.4823081	6.545E-06	0.000254375	0.5730621	7.776E-06	0.000302239
Road 3	3	1300-1400	0.106085441	1.564E-06	6.07785E-05	0.0965036	1.422E-06	5.52888E-05	0.5441866	8.021E-06	0.000311776	0.4935938	7.276E-06	0.00028279	0.5900974	8.698E-06	0.000338079

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (February) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 3	3	1400-1500	0.098467781	1.459E-06	5.67211E-05	0.0901363	1.336E-06	5.19219E-05	0.511059	7.574E-06	0.000294389	0.4664789	6.913E-06	0.000268709	0.5566152	8.249E-06	0.000320631
Road 3	3	1500-1600	0.109272011	1.56E-06	6.06286E-05	0.1000249	1.428E-06	5.5498E-05	0.5518635	7.878E-06	0.000306197	0.503853	7.193E-06	0.000279558	0.6038779	8.62E-06	0.000335056
Road 3	3	1600-1700	0.102551971	1.594E-06	6.19507E-05	0.0944717	1.468E-06	5.70695E-05	0.5279779	8.206E-06	0.000318947	0.4849013	7.536E-06	0.000292925	0.579373	9.005E-06	0.000349994
Road 3	3	1700-1800	0.081769371	1.272E-06	4.94471E-05	0.0747336	1.163E-06	4.51925E-05	0.4213044	6.555E-06	0.000254769	0.3834785	5.966E-06	0.000231895	0.4582121	7.129E-06	0.000277088
Road 3	3	1800-1900	0.077035605	1.257E-06	4.88417E-05	0.0706229	1.152E-06	4.4776E-05	0.4249683	6.932E-06	0.000269436	0.3874036	6.319E-06	0.00024562	0.4580265	7.471E-06	0.000290396
Road 3	3	1900-2000	0.081963785	9.899E-07	3.84765E-05	0.0761592	9.198E-07	3.57517E-05	0.4495888	5.43E-06	0.000211052	0.4156239	5.02E-06	0.000195108	0.4917831	5.94E-06	0.000230859
Road 3	3	2000-2100	0.075640093	7.813E-07	3.0368E-05	0.0703467	7.266E-07	2.82428E-05	0.4111647	4.247E-06	0.000165075	0.3804925	3.93E-06	0.00015276	0.4508392	4.657E-06	0.000181003
Road 3	3	2100-2200	0.073806918	7.221E-07	2.80676E-05	0.0690278	6.754E-07	2.62502E-05	0.4143725	4.054E-06	0.000157579	0.3857322	3.774E-06	0.000146688	0.45476	4.449E-06	0.000172938
Road 3	3	2200-2300	0.078584964	7.008E-07	2.72391E-05	0.0749928	6.688E-07	2.5994E-05	0.4255802	3.795E-06	0.000147515	0.4049692	3.612E-06	0.00014037	0.479962	4.28E-06	0.000166364
Road 3	3	2300-0000	0.069331667	5.538E-07	2.15248E-05	0.0659701	5.269E-07	2.04812E-05	0.3904365	3.119E-06	0.000121216	0.3699062	2.955E-06	0.000114842	0.4358763	3.482E-06	0.000135323
Road 4	4	0000-0100	0.271812571	2.202E-07	2.35801E-06	0.2473131	2.004E-07	2.14547E-06	1.3851589	1.122E-06	1.20164E-05	1.2598929	1.021E-06	1.09297E-05	1.507206	1.221E-06	1.30752E-05
Road 4	4	0100-0200	0.2572065	1.191E-07	1.27503E-06	0.233369	1.08E-07	1.15686E-06	1.312895	6.078E-07	6.5083E-06	1.191126	5.514E-07	5.90466E-06	1.424495	6.595E-07	7.06152E-06
Road 4	4	0200-0300	0.278056154	8.367E-08	8.95949E-07	0.2516331	7.572E-08	8.10809E-07	1.3722877	4.13E-07	4.42177E-06	1.2420562	3.738E-07	4.00214E-06	1.4936892	4.495E-07	4.81295E-06
Road 4	4	0300-0400	0.252654286	4.094E-08	4.38361E-07	0.2281671	3.697E-08	3.95876E-07	1.3413043	2.173E-07	2.3272E-06	1.2112343	1.963E-07	2.10152E-06	1.4394014	2.332E-07	2.4974E-06
Road 4	4	0400-0500	0.26144	8.473E-08	9.07209E-07	0.2337007	7.574E-08	8.10953E-07	1.2909186	4.184E-07	4.47955E-06	1.1540907	3.74E-07	4.00475E-06	1.3877914	4.497E-07	4.8157E-06
Road 4	4	0500-0600	0.24073	1.337E-07	1.43202E-06	0.2150104	1.195E-07	1.27902E-06	1.1412692	6.34E-07	6.78902E-06	1.0183133	5.657E-07	6.05759E-06	1.2333238	6.852E-07	7.33662E-06
Road 4	4	0600-0700	0.265565577	3.197E-07	3.42281E-06	0.2419648	2.913E-07	3.11862E-06	1.2681094	1.526E-06	1.63443E-05	1.1545367	1.39E-06	1.48805E-05	1.3965015	1.681E-06	1.79992E-05
Road 4	4	0700-0800	0.26291913	5.599E-07	5.99539E-06	0.2420525	5.155E-07	5.51957E-06	1.3087707	2.787E-06	2.98441E-05	1.2041012	2.564E-06	2.74573E-05	1.4461537	3.08E-06	3.29769E-05
Road 4	4	0800-0900	0.269417386	9.542E-07	1.0217E-05	0.2476192	8.77E-07	9.39038E-06	1.3439768	4.76E-06	5.09672E-05	1.2346131	4.373E-06	4.68198E-05	1.4822322	5.25E-06	5.62102E-05
Road 4	4	0900-1000	0.276494122	9.472E-07	1.01427E-05	0.253957	8.7E-07	9.316E-06	1.3033097	4.465E-06	4.78098E-05	1.1963235	4.099E-06	4.38852E-05	1.4502805	4.969E-06	5.32012E-05
Road 4	4	1000-1100	0.310037622	1.026E-06	1.0989E-05	0.2820222	9.335E-07	9.99601E-06	1.4643143	4.847E-06	5.19013E-05	1.3316133	4.408E-06	4.71978E-05	1.6136355	5.341E-06	5.71938E-05
Road 4	4	1100-1200	0.287212903	1.031E-06	1.10343E-05	0.2634342	9.452E-07	1.01207E-05	1.3474022	4.834E-06	5.1765E-05	1.235565	4.433E-06	4.74684E-05	1.4989992	5.378E-06	5.75891E-05
Road 4	4	1200-1300	0.292531429	9.954E-07	1.06585E-05	0.2673252	9.096E-07	9.74013E-06	1.4356198	4.885E-06	5.23075E-05	1.3115469	4.463E-06	4.77869E-05	1.578872	5.373E-06	5.7527E-05
Road 4	4	1300-1400	0.30197745	1.042E-06	1.11524E-05	0.2746106	9.472E-07	1.01417E-05	1.4474426	4.992E-06	5.34558E-05	1.3157105	4.538E-06	4.85908E-05	1.5903211	5.485E-06	5.87325E-05
Road 4	4	1400-1500	0.275901159	8.814E-07	9.43713E-06	0.2524596	8.065E-07	8.63532E-06	1.3673683	4.368E-06	4.67705E-05	1.2505204	3.995E-06	4.27738E-05	1.50298	4.801E-06	5.14091E-05
Road 4	4	1500-1600	0.306910242	8.809E-07	9.4328E-06	0.2807881	8.06E-07	8.62994E-06	1.4692123	4.217E-06	4.51558E-05	1.3440411	3.858E-06	4.13087E-05	1.6248292	4.664E-06	4.99387E-05
Road 4	4	1600-1700	0.287130565	8.242E-07	8.82488E-06	0.2644533	7.591E-07	8.1279E-06	1.3901699	3.99E-06	4.27265E-05	1.2798311	3.674E-06	3.93352E-05	1.5442844	4.433E-06	4.74631E-05
Road 4	4	1700-1800	0.27443881	8.004E-07	8.57084E-06	0.2509359	7.319E-07	7.83684E-06	1.350951	3.94E-06	4.21908E-05	1.2346379	3.601E-06	3.85583E-05	1.4855738	4.333E-06	4.63951E-05
Road 4	4	1800-1900	0.301988302	7.41E-07	7.93421E-06	0.2769308	6.795E-07	7.27587E-06	1.506803	3.697E-06	3.95886E-05	1.3816031	3.39E-06	3.62992E-05	1.658534	4.07E-06	4.3575E-05
Road 4	4	1900-2000	0.271699324	4.654E-07	4.98342E-06	0.2525759	4.327E-07	4.63267E-06	1.3494641	2.312E-06	2.47514E-05	1.2539945	2.148E-06	2.30004E-05	1.5065704	2.581E-06	2.7633E-05
Road 4	4	2000-2100	0.236197347	2.679E-07	2.86866E-06	0.2196902	2.492E-07	2.66817E-06	1.1792704	1.338E-06	1.43224E-05	1.0960994	1.243E-06	1.33123E-05	1.3157896	1.492E-06	1.59805E-05
Road 4	4	2100-2200	0.195219459	1.672E-07	1.79033E-06	0.1827265	1.565E-07	1.67576E-06	0.9920427	8.497E-07	9.09787E-06	0.9277162	7.946E-07	8.50794E-06	1.1104427	9.511E-07	1.01837E-05
Road 4	4	2200-2300	0.259206508	3.78E-07	4.04757E-06	0.2475262	3.61E-07	3.86518E-06	1.2711349	1.854E-06	1.9849E-05	1.2134635	1.77E-06	1.89485E-05	1.4609897	2.131E-06	2.28137E-05
Road 4	4	2300-0000	0.240455833	2.672E-07	2.86078E-06	0.2288225	2.542E-07	2.72237E-06	1.210491	1.345E-06	1.44016E-05	1.1515744	1.28E-06	1.37006E-05	1.3803969	1.534E-06	1.6423E-05
Road 5	5	0000-0100	0.090766788	3.288E-07	4.4463E-06	0.0826412	2.994E-07	4.04826E-06	0.5006089	1.813E-06	2.45228E-05	0.4528689	1.64E-06	2.21842E-05	0.5355101	1.94E-06	2.62325E-05
Road 5	5	0100-0200	0.061575455	1.398E-07	1.89107E-06	0.0558898	1.269E-07	1.71645E-06	0.3714295	8.435E-07	1.14071E-05	0.3347269	7.602E-07	1.02799E-05	0.3906167	8.871E-07	1.19964E-05
Road 5	5	0200-0300	0.057889884	9.344E-08	1.26362E-06	0.0522964	8.441E-08	1.14152E-06	0.3921537	6.33E-07	8.55992E-06	0.3500547	5.65E-07	7.64098E-06	0.402351	6.494E-07	8.78251E-06
Road 5	5	0300-0400	0.053161452	6.186E-08	8.36572E-07	0.0479381	5.578E-08	7.54375E-07	0.2845245	3.311E-07	4.4774E-06	0.2533245	2.948E-07	3.98643E-06	0.3012626	3.506E-07	4.7408E-06
Road 5	5	0400-0500	0.07445299	1.355E-07	1.83303E-06	0.0665465	1.212E-07	1.63837E-06	0.4190355	7.629E-07	1.03166E-05	0.3713955	6.762E-07	9.14373E-06	0.437942	7.973E-07	1.07821E-05
Road 5	5	0500-0600	0.059591284	2.438E-07	3.29727E-06	0.0531326	2.174E-07	2.9399E-06	0.3409301	1.395E-06	1.88641E-05	0.3002017	1.228E-06	1.66106E-05	0.3533342	1.446E-06	1.95505E-05
Road 5	5	0600-0700	0.086385974	6.242E-07	8.44148E-06	0.0786704	5.685E-07	7.68753E-06	0.4296522	3.105E-06	4.19849E-05	0.3883948	2.807E-06	3.79533E-05	0.4670652	3.375E-06	4.56408E-05
Road 5	5	0700-0800	0.065530401	7.675E-07	1.03787E-05	0.0602754	7.059E-07	9.5464E-06	0.338832	3.968E-06	5.36641E-05	0.3087901	3.616E-06	4.89061E-05	0.3690655	4.322E-06	5.84525E-05
Road 5	5	0800-0900	0.071001292	1.114E-06	1.50656E-05	0.0652192	1.023E-06	1.38388E-05	0.3457042	5.424E-06	7.33543E-05	0.3148825	4.941E-06	6.68143E-05	0.3801018	5.964E-06	8.06531E-05
Road 5	5	0900-1000	0.077718082	1.179E-06	1.59385E-05	0.0714804	1.084E-06	1.46593E-05	0.4090727	6.204E-06	8.38932E-05	0.3741144	5.674E-06	7.67239E-05	0.4455948	6.758E-06	9.13832E-05
Road 5	5	1000-1100	0.088713512	1.209E-06	1.63471E-05	0.0807314	1.1E-06	1.48763E-05	0.4583824	6.246E-06	8.44655E-05	0.4149224	5.654E-06	7.64572E-05	0.4956539	6.754E-06	9.13335E-05
Road 5	5	1100-1200	0.08658813	1.121E-06	1.51643E-05	0.0794701	1.029E-06	1.39177E-05	0.4647734	6.019E-06	8.13964E-05	0.4244467	5.497E-06	7.43339E-05	0.5039167	6.526E-06	8.82516E-05
Road 5	5	1200-1300	0.08073093	1.059E-06	1.43229E-05	0.0738165	9.684E-07	1.30962E-05	0.4361929	5.723E-06	7.73875E-05	0.3971913	5.211E-06	7.0468E-05	0.4710078	6.179E-06	8.35642E-05
Road 5	5	1300-1400	0.087526532	1.26E-06	1.70392E-05	0.0796469	1.147E-06	1.55053E-05	0.4552879	6.554E-06	8.86332E-05	0.412586	5.939E-06	8.03202E-05	0.492233	7.086E-06	9.58255E-05
Road 5	5	1400-1500	0.083494059	1.232E-06	1.66569E-05	0.0764518	1.128E-06	1.52519E-05	0.4340839	6.404E-06	8.65986E-05	0.3959425	5.841E-06	7.89895E-05	0.4723944	6.969E-06	9.42415E-05
Road 5	5	1500-1600	0.093192732	1.338E-06	1.8095E-05	0.0853411	1.225E-06	1.65705E-05	0.4735782	6.8E-06	9.19535E-05	0.4320741	6.204E-06	8.38947E-05	0.5174152	7.429E-06	0.000100465
Road 5	5	1600-1700	0.087546722	1.384E-06	1.87097E-05	0.0806629	1.275E-06	1.72385E-05	0.4551375	7.193E-06	9.72679E-05	0.4176636	6.6E-06	8.92593E-05	0.4983265	7.875E-06	0.000106498
Road 5	5	1700-1800	0.065171268	1.032E-06	1.39609E-05	0.0595911	9.44E-07	1.27655E-05	0.3373282	5.344E-06	7.2262E-05	0.3064739	4.855E-06	6.56524E-05	0.366065	5.799E-06	7.8418E-05
Road 5	5	1800-1900	0.061029066	1.042E-06	1.40959E-05	0.0559302	9.553E-07	1.29182E-05	0.343942	5.874E-06	7.94404E-05	0.3129165	5.344E-06	7.22744E-05	0.3688467	6.3E-06	8.51927E-05
Road 5	5	1900-2000	0.070202083	8.92E-07	1.20629E-05	0.0652222	8.287E-07	1.12072E-05	0.3916902	4.977E-06	6.73048E-05	0.361608	4.595E-06	6.21357E-05	0.4268302	5.423E-06	7.3343E-05
Road 5	5	2000-2100	0.066999343	7.47E-07	1.01012E-05	0.0623314	6.949E-07	9.39741E-06	0.3670176	4.092E-06	5.53335E-05	0.3393058	3.783E-06	5.11555E-05	0.4016373	4.478E-06	6.05529E-05
Road 5	5	2100-2200	0.069231559	7.42E-07	1.00336E-05	0.0647375	6.938E-07	9.38225E-06	0.3911408	4.192E-06	5.66871E-05	0.3639102	3.9E-06	5.27406E-05	0.4286477	4.594E-06	6.21229E-05
Road 5	5	2200-2300	0.066264919	6.119E-07	8.27492E-06	0.0632264	5.838E-07	7.89548E-06	0.3652213	3.373E-06	4.56075E-05	0.3471829	3.206E-06	4.33549E-05	0.4104093	3.79E-06	5.12504E-05
Road 5	5	2300-0000	0.058477679	4.917E-07	6.64941E-06	0.0556417	4.679E-07	6.32693E-06	0.3354638	2.821E-06	3.81451E-05	0.3174447	2.669E-06	3.60962E-05	0.3730864	3.137E-06	4.24231E-05
Road 6	6	0000-0100	0.055161216	1.532E-07	5.47719E-06	0.0501501	1.393E-07	4.97962E-06	0.3482184	9.673E-07	3.45761E-05	0.3128686	8.691E-07	3.10661E-05	0.3630188	1.008E-06	3.60457E-05
Road 6	6	0100-0200	0.071670442	1.52E-07	5.43352E-06	0.0650326	1.379E-07	4.93028E-06	0.4006519	8.497E-07	3.03744E-05	0.360315	7.642E-07	2.73164E-05	0.4253476	9.021E-07	3.22467E-05
Road 6	6	0200-0300	0.065837975	9.762E-08	3.48952E-06	0.059583	8.835E-08	3.158E-06	0.3695411	5.479E-07	1.95863E-05	0.3310653	4.909E-07	1.7547E-05	0.3906484	5.792E-07	2.0705E-05
Road 6	6	0300-0400	0.066603387	7.75E-08	2.77045E-06	0.0602448	7.01E-08	2.50596E-06	0.4204716	4.893E-07	1.749E-05	0.3770424	4.388E-07	1.56836E-05	0.4372873	5.089E-07	1.81895E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (February) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 6	6	0400-0500	0.073077667	1.234E-07	4.41255E-06	0.0653134	1.103E-07	3.94373E-06	0.4239276	7.161E-07	2.55975E-05	0.3748222	6.331E-07	2.26324E-05	0.4401357	7.435E-07	2.65761E-05
Road 6	6	0500-0600	0.065717826	1.986E-07	7.09858E-06	0.0586545	1.772E-07	6.33563E-06	0.3921884	1.185E-06	4.23627E-05	0.3455884	1.044E-06	3.73291E-05	0.404243	1.222E-06	4.36647E-05
Road 6	6	0600-0700	0.069784704	3.759E-07	1.34371E-05	0.0635477	3.423E-07	1.22361E-05	0.428256	2.307E-06	8.24609E-05	0.3855462	2.077E-06	7.42371E-05	0.4490939	2.419E-06	8.64732E-05
Road 6	6	0700-0800	0.064865417	5.552E-07	1.98445E-05	0.0596951	5.109E-07	1.82628E-05	0.3628372	3.105E-06	0.000111004	0.3305771	2.829E-06	0.000101135	0.3902722	3.34E-06	0.000119397
Road 6	6	0800-0900	0.055506896	6.813E-07	2.4355E-05	0.0509307	6.252E-07	2.23471E-05	0.3245374	3.984E-06	0.000142398	0.2933465	3.601E-06	0.000128713	0.3442773	4.226E-06	0.00015106
Road 6	6	0900-1000	0.057771035	6.809E-07	2.43407E-05	0.053018	6.249E-07	2.23381E-05	0.321398	3.788E-06	0.000135415	0.2914753	3.436E-06	0.000122807	0.3444933	4.06E-06	0.000145145
Road 6	6	1000-1100	0.077957556	7.784E-07	2.78248E-05	0.0708753	7.077E-07	2.5297E-05	0.4236547	4.23E-06	0.000151212	0.3819176	3.813E-06	0.000136315	0.4527929	4.521E-06	0.000161612
Road 6	6	1100-1200	0.088364432	8.757E-07	3.13021E-05	0.0811131	8.038E-07	2.87334E-05	0.4569812	4.529E-06	0.000161881	0.4172562	4.135E-06	0.000147808	0.4983692	4.939E-06	0.000176542
Road 6	6	1200-1300	0.085606783	8.291E-07	2.96361E-05	0.0783267	7.586E-07	2.71158E-05	0.4213348	4.08E-06	0.000145861	0.3840057	3.719E-06	0.000132938	0.4623324	4.478E-06	0.000160054
Road 6	6	1300-1400	0.100392117	9.704E-07	3.46872E-05	0.0913549	8.83E-07	3.15647E-05	0.5031575	4.863E-06	0.00017385	0.4560191	4.408E-06	0.000157563	0.5473741	5.291E-06	0.000189127
Road 6	6	1400-1500	0.095544683	1.019E-06	3.64097E-05	0.0874793	9.326E-07	3.33362E-05	0.4757782	5.072E-06	0.000181307	0.433848	4.625E-06	0.000165329	0.5213273	5.558E-06	0.000198665
Road 6	6	1500-1600	0.08376609	8.726E-07	3.11906E-05	0.0766724	7.987E-07	2.85492E-05	0.4261747	4.439E-06	0.000158688	0.3882724	4.045E-06	0.000144575	0.4649447	4.843E-06	0.000173124
Road 6	6	1600-1700	0.087718063	9.351E-07	3.34272E-05	0.0808211	8.616E-07	3.0799E-05	0.4270136	4.552E-06	0.000162724	0.3918394	4.177E-06	0.00014932	0.4726605	5.039E-06	0.000180119
Road 6	6	1700-1800	0.065303623	7.342E-07	2.62438E-05	0.0597311	6.715E-07	2.40044E-05	0.3272557	3.679E-06	0.000131515	0.2974502	3.344E-06	0.000119537	0.3571813	4.016E-06	0.000143542
Road 6	6	1800-1900	0.064093353	8.216E-07	2.93695E-05	0.058763	7.533E-07	2.6927E-05	0.3316839	4.252E-06	0.000151987	0.3019999	3.871E-06	0.000138385	0.360763	4.625E-06	0.000165312
Road 6	6	1900-2000	0.075844146	7.416E-07	2.65108E-05	0.0704393	6.888E-07	2.46215E-05	0.3922867	3.836E-06	0.000137121	0.3620058	3.54E-06	0.000126536	0.432445	4.229E-06	0.000151158
Road 6	6	2000-2100	0.059994537	4.617E-07	1.65028E-05	0.0557688	4.292E-07	1.53404E-05	0.3363926	2.589E-06	9.25322E-05	0.310458	2.389E-06	8.53983E-05	0.3662269	2.818E-06	0.000100739
Road 6	6	2100-2200	0.082889522	5.538E-07	1.97976E-05	0.0775196	5.18E-07	1.8515E-05	0.4295299	2.87E-06	0.00010259	0.3998719	2.672E-06	9.55066E-05	0.4773914	3.19E-06	0.000114022
Road 6	6	2200-2300	0.061724032	4.367E-07	1.5612E-05	0.0588954	4.167E-07	1.48965E-05	0.3402313	2.407E-06	8.60554E-05	0.3225203	2.282E-06	8.15757E-05	0.3814158	2.699E-06	9.64723E-05
Road 6	6	2300-0000	0.041280311	2.743E-07	9.80412E-06	0.0392776	2.61E-07	9.32848E-06	0.2522486	1.676E-06	5.99093E-05	0.2384094	1.584E-06	5.66225E-05	0.2776869	1.845E-06	6.5951E-05
Road 7	7	0000-0100	0.078891696	2.108E-07	5.26108E-06	0.0719082	1.921E-07	4.79537E-06	0.4658257	1.244E-06	3.10647E-05	0.4218136	1.127E-06	2.81296E-05	0.4937218	1.319E-06	3.2925E-05
Road 7	7	0100-0200	0.095341642	1.979E-07	4.94134E-06	0.086531	1.797E-07	4.4847E-06	0.5239185	1.088E-06	2.71535E-05	0.472963	9.819E-07	2.45126E-05	0.559494	1.162E-06	2.89973E-05
Road 7	7	0200-0300	0.082897661	1.131E-07	2.8242E-06	0.0750511	1.024E-07	2.55688E-06	0.4673698	6.378E-07	1.59226E-05	0.4203016	5.736E-07	1.43191E-05	0.4953528	6.76E-07	1.68759E-05
Road 7	7	0300-0400	0.0837164	9.237E-08	2.30595E-06	0.0756353	8.346E-08	2.08336E-06	0.5045161	5.567E-07	1.38968E-05	0.4531878	5.001E-07	1.2483E-05	0.528823	5.835E-07	1.45663E-05
Road 7	7	0400-0500	0.093572151	1.508E-07	3.7644E-06	0.0837567	1.35E-07	3.36952E-06	0.5213489	8.402E-07	2.09738E-05	0.4635125	7.47E-07	1.8647E-05	0.5472692	8.82E-07	2.20166E-05
Road 7	7	0500-0600	0.084949326	2.417E-07	6.0345E-06	0.076018	2.163E-07	5.40006E-06	0.4793546	1.364E-06	3.40517E-05	0.4253532	1.21E-06	3.02156E-05	0.5013712	1.427E-06	3.56157E-05
Road 7	7	0600-0700	0.088552525	4.5E-07	1.1233E-05	0.0803993	4.085E-07	1.01987E-05	0.5095578	2.589E-06	6.46379E-05	0.4589948	2.332E-06	5.82239E-05	0.5393941	2.741E-06	6.84226E-05
Road 7	7	0700-0800	0.083888857	6.821E-07	1.70262E-05	0.0773025	6.285E-07	1.56894E-05	0.4545347	3.696E-06	9.2253E-05	0.4160115	3.382E-06	8.44343E-05	0.493314	4.011E-06	0.000100124
Road 7	7	0800-0900	0.083103521	1.021E-06	2.54809E-05	0.0766549	9.415E-07	2.35037E-05	0.4536556	5.572E-06	0.000139098	0.4152635	5.101E-06	0.000127327	0.4919184	6.042E-06	0.00015083
Road 7	7	0900-1000	0.085111607	9.713E-07	2.42458E-05	0.0781849	8.922E-07	2.22726E-05	0.4459967	5.09E-06	0.000127052	0.4068166	4.642E-06	0.00011589	0.4850015	5.535E-06	0.000138163
Road 7	7	1000-1100	0.101080585	1.011E-06	2.52414E-05	0.0922539	9.228E-07	2.30372E-05	0.5327316	5.329E-06	0.000133031	0.4836692	4.838E-06	0.00012078	0.5759231	5.761E-06	0.000143817
Road 7	7	1100-1200	0.110731224	1.103E-06	2.75309E-05	0.1012781	1.009E-06	2.51806E-05	0.5719344	5.696E-06	0.000142199	0.521344	5.192E-06	0.000129621	0.622622	6.201E-06	0.000154801
Road 7	7	1200-1300	0.108827017	1.082E-06	2.7018E-05	0.0995597	9.901E-07	2.47172E-05	0.5493804	5.464E-06	0.000136392	0.5014724	4.987E-06	0.000124498	0.6010321	5.977E-06	0.000149215
Road 7	7	1300-1400	0.117262043	1.149E-06	2.86871E-05	0.106868	1.047E-06	2.61443E-05	0.5902869	5.785E-06	0.000144408	0.5365674	5.258E-06	0.000131266	0.6434354	6.306E-06	0.000157411
Road 7	7	1400-1500	0.10957767	1.126E-06	2.81178E-05	0.1003591	1.032E-06	2.57523E-05	0.5579852	5.736E-06	0.00014318	0.5095631	5.238E-06	0.000130755	0.6099222	6.269E-06	0.000156507
Road 7	7	1500-1600	0.100740476	1.012E-06	2.5266E-05	0.0922438	9.268E-07	2.3135E-05	0.5171678	5.196E-06	0.000129707	0.471938	4.741E-06	0.000118363	0.5641818	5.668E-06	0.000141498
Road 7	7	1600-1700	0.105109558	1.093E-06	2.7276E-05	0.0963632	1.002E-06	2.50063E-05	0.5202964	5.409E-06	0.000135017	0.4755578	4.944E-06	0.000123408	0.571921	5.945E-06	0.000148414
Road 7	7	1700-1800	0.081305058	8.959E-07	2.23658E-05	0.0743783	8.196E-07	2.04604E-05	0.4173811	4.599E-06	0.000114815	0.3801125	4.189E-06	0.000104563	0.4544908	5.008E-06	0.000125024
Road 7	7	1800-1900	0.075048573	8.586E-07	2.14336E-05	0.0687642	7.867E-07	1.96388E-05	0.393776	4.505E-06	0.000112461	0.3589577	4.107E-06	0.000102517	0.4277219	4.893E-06	0.000122156
Road 7	7	1900-2000	0.086676293	7.513E-07	1.87543E-05	0.0808323	7.006E-07	1.74898E-05	0.4562237	3.954E-06	9.87138E-05	0.4236587	3.672E-06	9.16676E-05	0.504491	4.373E-06	0.000109157
Road 7	7	2000-2100	0.079546906	5.636E-07	1.40692E-05	0.0739765	5.241E-07	1.3084E-05	0.4290067	3.04E-06	7.58769E-05	0.3968566	2.812E-06	7.01906E-05	0.4708331	3.336E-06	8.32746E-05
Road 7	7	2100-2200	0.090827	5.407E-07	1.34966E-05	0.0849525	5.057E-07	1.26237E-05	0.4775133	2.842E-06	7.0957E-05	0.4449268	2.648E-06	6.61147E-05	0.5298793	3.154E-06	7.87384E-05
Road 7	7	2200-2300	0.075981898	4.876E-07	1.21719E-05	0.072039	4.623E-07	1.15403E-05	0.4134126	2.653E-06	6.62265E-05	0.3898904	2.502E-06	6.24583E-05	0.4619294	2.964E-06	7.39986E-05
Road 7	7	2300-0000	0.052337764	3.093E-07	7.72032E-06	0.0498513	2.946E-07	7.35354E-06	0.3091972	1.827E-06	4.56095E-05	0.2931274	1.732E-06	4.32391E-05	0.3429787	2.027E-06	5.05926E-05
Road 8	8	0000-0100	0.238983611	1.738E-07	2.86513E-06	0.2174389	1.581E-07	2.60684E-06	1.2212031	8.881E-07	1.46408E-05	1.1106186	8.077E-07	1.3315E-05	1.3280575	9.659E-07	1.59218E-05
Road 8	8	0100-0200	0.247832	1.502E-07	2.47601E-06	0.2248857	1.363E-07	2.24676E-06	1.2613423	7.644E-07	1.26017E-05	1.1444517	6.936E-07	1.14339E-05	1.3693373	8.299E-07	1.36806E-05
Road 8	8	0200-0300	0.234418	7.104E-08	1.171E-06	0.212232	6.431E-08	1.06017E-06	1.25641	3.807E-07	6.2762E-06	1.137472	3.447E-07	5.68206E-06	1.349704	4.09E-07	6.74223E-06
Road 8	8	0300-0400	0.213875	6.049E-08	9.97153E-07	0.19334	5.468E-08	9.01413E-07	1.1183993	3.163E-07	5.21433E-06	1.010705	2.859E-07	4.71223E-06	1.204045	3.405E-07	5.61364E-06
Road 8	8	0400-0500	0.244030476	1.035E-07	1.70662E-06	0.2182105	9.257E-08	1.52605E-06	1.2051462	5.113E-07	8.42816E-06	1.0776833	4.572E-07	7.53675E-06	1.2958938	5.498E-07	9.0628E-06
Road 8	8	0500-0600	0.231592059	1.591E-07	2.62226E-06	0.2069388	1.421E-07	2.34312E-06	1.1229474	7.713E-07	1.27149E-05	1.0026938	6.887E-07	1.13533E-05	1.2096326	8.309E-07	1.36964E-05
Road 8	8	0600-0700	0.257213871	3.222E-07	5.3108E-06	0.2343955	2.936E-07	4.83966E-06	1.2323135	1.544E-06	2.54441E-05	1.122374	1.406E-06	2.31741E-05	1.3567695	1.699E-06	2.80138E-05
Road 8	8	0700-0800	0.253806634	5.179E-07	8.53686E-06	0.2336952	4.768E-07	7.86041E-06	1.2294352	2.509E-06	4.13524E-05	1.1315909	2.309E-06	3.80614E-05	1.3652861	2.786E-06	4.59218E-05
Road 8	8	0800-0900	0.280504421	1.077E-06	1.77487E-05	0.2579204	9.9E-07	1.63197E-05	1.3637987	5.235E-06	8.62934E-05	1.2533627	4.811E-06	7.93057E-05	1.5112831	5.801E-06	9.56254E-05
Road 8	8	0900-1000	0.299108981	9.487E-07	1.56388E-05	0.2747897	8.716E-07	1.43673E-05	1.3835757	4.388E-06	7.23397E-05	1.2709331	4.031E-06	6.64502E-05	1.5457228	4.903E-06	8.08174E-05
Road 8	8	1000-1100	0.288938544	9.223E-07	1.52032E-05	0.2628536	8.39E-07	1.38307E-05	1.3717986	4.379E-06	7.21807E-05	1.2470565	3.981E-06	6.56171E-05	1.5099101	4.82E-06	7.94478E-05
Road 8	8	1100-1200	0.294907736	9.473E-07	1.56155E-05	0.2704817	8.688E-07	1.43222E-05	1.4200384	4.561E-06	7.51919E-05	1.3022396	4.183E-06	6.89544E-05	1.5727213	5.052E-06	8.32766E-05
Road 8	8	1200-1300	0.297223195	1.015E-06	1.6728E-05	0.2716184	9.273E-07	1.52869E-05	1.445627	4.936E-06	8.13611E-05	1.3207541	4.509E-06	7.43331E-05	1.5923725	5.437E-06	8.96201E-05
Road 8	8	1300-1400	0.273502563	8.84E-07	1.45732E-05	0.2487406	8.04E-07	1.32538E-05	1.3063454	4.223E-06	6.96068E-05	1.1875872	3.839E-06	6.3279E-05	1.4363278	4.643E-06	7.65328E-05
Road 8	8	1400-1500	0.265672662	7.46E-07	1.2298E-05	0.2431242	6.827E-07	1.12543E-05	1.3289058	3.732E-06	6.15153E-05	1.2157082	3.414E-06	5.62753E-05	1.4588324	4.097E-06	6.75296E-05
Road 8	8	1500-1600	0.271590365	7.517E-07	1.23911E-05	0.248472	6.877E-07	1.13363E-05	1.3218682	3.659E-06	6.03091E-05	1.2086464	3.345E-06	5.51434E-05	1.4571183	4.033E-06	6.64797E-05
Road 8	8	1600-1700	0.273084932	8.055E-07	1.32777E-05	0.2514717	7.417E-07	1.22269E-05	1.3130082	3.873E-06	6.38402E-05	1.2086529	3.565E-06	5.87663E-05	1.4601247	4.307E-06	7.09932E-05
Road 8	8	1700-1800	0.222623462	7.016E-07	1.15656E-05	0.2035447	6.415E-07	1.05745E-05	1.1179172	3.523E-06	5.80775E-05	1.0207531	3.217E-06	5.30297E-05	1.2242978	3.858E-06	6.36042E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (February) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 8	8	1800-1900	0.222675888	4.813E-07	7.93471E-06	0.2042717	4.416E-07	7.2789E-06	1.1437651	2.472E-06	4.07563E-05	1.0485114	2.266E-06	3.73621E-05	1.2527831	2.708E-06	4.4641E-05
Road 8	8	1900-2000	0.22084974	3.435E-07	5.66319E-06	0.205323	3.194E-07	5.26505E-06	1.1629477	1.809E-06	2.98212E-05	1.0808849	1.681E-06	2.77169E-05	1.2862079	2.001E-06	3.29819E-05
Road 8	8	2000-2100	0.241093684	3.702E-07	6.10202E-06	0.22424	3.443E-07	5.67545E-06	1.1533797	1.771E-06	2.91917E-05	1.0721612	1.646E-06	2.71361E-05	1.2964012	1.99E-06	3.28116E-05
Road 8	8	2100-2200	0.196453962	2.103E-07	3.46745E-06	0.1838309	1.968E-07	3.24465E-06	1.0324681	1.105E-06	1.82233E-05	0.965027	1.033E-06	1.70329E-05	1.1488579	1.23E-06	2.02776E-05
Road 8	8	2200-2300	0.234942188	3.038E-07	5.00743E-06	0.2243563	2.901E-07	4.78181E-06	1.1642153	1.505E-06	2.48134E-05	1.1111425	1.437E-06	2.36823E-05	1.3354988	1.727E-06	2.84641E-05
Road 8	8	2300-0000	0.188096731	1.976E-07	3.25731E-06	0.1790377	1.881E-07	3.10043E-06	0.9688354	1.018E-06	1.67775E-05	0.9217342	9.683E-07	1.59618E-05	1.1007719	1.156E-06	1.90623E-05
Road 9	9	0000-0100	0.205118544	5.447E-08	1.62616E-06	0.1898658	5.042E-08	1.50524E-06	0.9425081	2.503E-07	7.47212E-06	0.866965	2.302E-07	6.87322E-06	1.0568308	2.807E-07	8.37846E-06
Road 9	9	0100-0200	0.223280993	4.659E-08	1.39083E-06	0.206274	4.304E-08	1.2849E-06	0.9704431	2.025E-07	6.04496E-06	0.8901119	1.857E-07	5.54457E-06	1.096386	2.288E-07	6.82947E-06
Road 9	9	0200-0300	0.088550811	8.399E-09	2.50722E-07	0.0804733	7.633E-09	2.27852E-07	0.6385401	6.056E-08	1.80796E-06	0.578432	5.486E-08	1.63777E-06	0.6589053	6.25E-08	1.86562E-06
Road 9	9	0300-0400	0.107189055	8.133E-09	2.42796E-07	0.0971986	7.375E-09	2.20166E-07	0.6665758	5.058E-08	1.50987E-06	0.6044973	4.587E-08	1.36926E-06	0.7016959	5.324E-08	1.58942E-06
Road 9	9	0400-0500	0.241912248	4.589E-08	1.3699E-06	0.2208814	4.19E-08	1.25081E-06	1.0117839	1.919E-07	5.72952E-06	0.916293	1.738E-07	5.18878E-06	1.1371744	2.157E-07	6.43958E-06
Road 9	9	0500-0600	0.173785109	5.604E-08	1.67299E-06	0.1583647	5.107E-08	1.52454E-06	0.8882187	2.864E-07	8.55066E-06	0.8049764	2.596E-07	7.74931E-06	0.9633411	3.107E-07	9.27384E-06
Road 9	9	0600-0700	0.202435853	1.229E-07	3.66833E-06	0.1876833	1.139E-07	3.401E-06	1.0756359	6.529E-07	1.94915E-05	0.9910595	6.016E-07	1.79589E-05	1.1787428	7.155E-07	2.13599E-05
Road 9	9	0700-0800	0.172603724	1.572E-07	4.69161E-06	0.1624436	1.479E-07	4.41545E-06	1.0060362	9.16E-07	2.73455E-05	0.9396246	8.556E-07	2.55403E-05	1.1020683	1.003E-06	2.99558E-05
Road 9	9	0800-0900	0.263542925	5.749E-07	1.71625E-05	0.2466566	5.381E-07	1.60628E-05	1.291179	2.817E-06	8.40843E-05	1.1979878	2.613E-06	7.80155E-05	1.4446444	3.152E-06	9.40783E-05
Road 9	9	0900-1000	0.271069175	4.422E-07	1.32011E-05	0.2541298	4.146E-07	1.23761E-05	1.2089533	1.972E-06	5.88761E-05	1.1211784	1.829E-06	5.46014E-05	1.3753082	2.244E-06	6.69775E-05
Road 9	9	1000-1100	0.284795045	3.836E-07	1.14504E-05	0.2631634	3.544E-07	1.05807E-05	1.2385549	1.668E-06	4.97971E-05	1.1358744	1.53E-06	4.56688E-05	1.3990378	1.884E-06	5.62495E-05
Road 9	9	1100-1200	0.198711255	2.789E-07	8.32693E-06	0.1826234	2.564E-07	7.65277E-06	1.0725233	1.506E-06	4.49437E-05	0.983388	1.38E-06	4.12086E-05	1.1660114	1.637E-06	4.88613E-05
Road 9	9	1200-1300	0.294402621	4.077E-07	1.21701E-05	0.2750742	3.809E-07	1.13711E-05	1.3660426	1.892E-06	5.647E-05	1.2721641	1.762E-06	5.25892E-05	1.5472383	2.143E-06	6.39603E-05
Road 9	9	1300-1400	0.332932798	3.789E-07	1.1312E-05	0.3100549	3.529E-07	1.05347E-05	1.2901915	1.468E-06	4.38365E-05	1.1936008	1.359E-06	4.05547E-05	1.5036556	1.711E-06	5.10893E-05
Road 9	9	1400-1500	0.215207472	2.776E-07	8.28699E-06	0.2019263	2.605E-07	7.77557E-06	1.0750247	1.387E-06	4.1396E-05	0.9973465	1.287E-06	3.84048E-05	1.1992727	1.547E-06	4.61804E-05
Road 9	9	1500-1600	0.17936864	1.939E-07	5.78965E-06	0.1671037	1.807E-07	5.39376E-06	0.9570075	1.035E-06	3.08902E-05	0.8848201	9.567E-07	2.85602E-05	1.0519237	1.137E-06	3.39539E-05
Road 9	9	1600-1700	0.186426063	2.794E-07	8.33997E-06	0.1754509	2.629E-07	7.84898E-06	1.0673235	1.6E-06	4.77479E-05	0.9987204	1.497E-06	4.46788E-05	1.1741713	1.76E-06	5.25278E-05
Road 9	9	1700-1800	0.162776474	2.1E-07	6.26803E-06	0.1534164	1.979E-07	5.9076E-06	1.0220579	1.318E-06	3.93564E-05	0.958362	1.236E-06	3.69036E-05	1.1117783	1.434E-06	4.28112E-05
Road 9	9	1800-1900	0.160645499	1.341E-07	4.00269E-06	0.1522311	1.271E-07	3.79304E-06	0.9931725	8.29E-07	2.47462E-05	0.9394714	7.841E-07	2.34081E-05	1.0917025	9.112E-07	2.72012E-05
Road 9	9	1900-2000	0.166773742	1.36E-07	4.06094E-06	0.1588405	1.296E-07	3.86777E-06	0.912857	7.446E-07	2.22281E-05	0.8619392	7.031E-07	2.09882E-05	1.0207797	8.326E-07	2.4856E-05
Road 9	9	2000-2100	0.177691619	9.775E-08	2.91807E-06	0.1673494	9.206E-08	2.74823E-06	0.8049976	4.428E-07	1.32198E-05	0.7550146	4.154E-07	1.23989E-05	0.922364	5.074E-07	1.51472E-05
Road 9	9	2100-2200	0.023193322	1.188E-08	3.54615E-07	0.0219841	1.126E-08	3.36127E-07	0.3247343	1.663E-07	4.96504E-06	0.3040543	1.557E-07	4.64885E-06	0.3260384	1.67E-07	4.98498E-06
Road 9	9	2200-2300	0.168571757	1.055E-07	3.15014E-06	0.1614709	1.011E-07	3.01744E-06	0.8341126	5.222E-07	1.55872E-05	0.7956487	4.981E-07	1.48685E-05	0.9571195	5.992E-07	1.78859E-05
Road 9	9	2300-0000	0.136415381	7.763E-08	2.31748E-06	0.1313486	7.475E-08	2.2314E-06	0.7126241	4.055E-07	1.21063E-05	0.6827225	3.885E-07	1.15983E-05	0.8140711	4.633E-07	1.38297E-05
Road 10	10	0000-0100	0.289245288	2.224E-07	4.94473E-06	0.2641547	2.031E-07	4.5158E-06	1.4823745	1.14E-06	2.53416E-05	1.3523217	1.04E-06	2.31183E-05	1.6164763	1.243E-06	2.76341E-05
Road 10	10	0100-0200	0.284183724	1.651E-07	3.67064E-06	0.2590975	1.505E-07	3.34662E-06	1.4441274	8.389E-07	1.8653E-05	1.3153804	7.641E-07	1.699E-05	1.5744779	9.146E-07	2.03366E-05
Road 10	10	0200-0300	0.282853069	9.182E-08	2.04164E-06	0.256081	8.313E-08	1.84839E-06	1.4185666	4.605E-07	1.02392E-05	1.2841959	4.169E-07	9.26934E-06	1.5402769	5E-07	1.11177E-05
Road 10	10	0300-0400	0.256862902	5.266E-08	1.17097E-06	0.2321077	4.759E-08	1.05812E-06	1.3908779	2.852E-07	6.34065E-06	1.2563563	2.576E-07	5.7274E-06	1.488464	3.052E-07	6.78552E-06
Road 10	10	0400-0500	0.302954781	1.191E-07	2.64709E-06	0.2728176	1.072E-07	2.38377E-06	1.4609689	5.741E-07	1.27653E-05	1.3111586	5.152E-07	1.14564E-05	1.5839761	6.225E-07	1.38401E-05
Road 10	10	0500-0600	0.275219205	1.928E-07	4.28673E-06	0.2481434	1.738E-07	3.86501E-06	1.3336244	9.342E-07	2.07721E-05	1.1982843	8.394E-07	1.86641E-05	1.4464277	1.013E-06	2.25291E-05
Road 10	10	0600-0700	0.331461793	4.644E-07	1.03255E-05	0.3058187	4.285E-07	9.52668E-06	1.6623833	2.329E-06	5.17856E-05	1.5335379	2.149E-06	4.77719E-05	1.8393566	2.577E-06	5.72985E-05
Road 10	10	0700-0800	0.323763058	7.136E-07	1.58665E-05	0.3010174	6.635E-07	1.47518E-05	1.6380021	3.61E-06	8.02727E-05	1.5212539	3.353E-06	7.45513E-05	1.8222713	4.016E-06	8.93031E-05
Road 10	10	0800-0900	0.345338625	1.457E-06	3.24045E-05	0.3183701	1.344E-06	2.9874E-05	1.7140575	7.234E-06	0.000160837	1.5767694	6.654E-06	0.000147955	1.8951395	7.998E-06	0.000177829
Road 10	10	0900-1000	0.384270003	1.287E-06	2.86125E-05	0.3564492	1.194E-06	2.6541E-05	1.8613358	6.233E-06	0.000138594	1.7228097	5.769E-06	0.000128279	2.0792589	6.963E-06	0.00015482
Road 10	10	1000-1100	0.384718768	1.4E-06	3.11305E-05	0.3527422	1.284E-06	2.85431E-05	1.7457167	6.353E-06	0.000141259	1.5938376	5.8E-06	0.00012897	1.9465798	7.084E-06	0.000157513
Road 10	10	1100-1200	0.37241868	1.355E-06	3.01353E-05	0.3430695	1.249E-06	2.77604E-05	1.7523115	6.377E-06	0.000141793	1.6105252	5.861E-06	0.00013032	1.9535947	7.11E-06	0.00015808
Road 10	10	1200-1300	0.387403914	1.456E-06	3.2378E-05	0.3570044	1.342E-06	2.98373E-05	1.8480193	6.946E-06	0.000154452	1.7017296	6.397E-06	0.000142225	2.058734	7.738E-06	0.000172063
Road 10	10	1300-1400	0.379367872	1.244E-06	2.7671E-05	0.3483633	1.143E-06	2.54096E-05	1.7674671	5.798E-06	0.000128919	1.6197401	5.313E-06	0.000118144	1.9681034	6.456E-06	0.000143553
Road 10	10	1400-1500	0.351364817	1.081E-06	2.40267E-05	0.3252272	1E-06	2.22394E-05	1.7617594	5.418E-06	0.000120471	1.6282259	5.007E-06	0.00011134	1.9534531	6.008E-06	0.000133579
Road 10	10	1500-1600	0.34805036	1.094E-06	2.4329E-05	0.320626	1.008E-06	2.2412E-05	1.6801144	5.282E-06	0.000117441	1.5460381	4.86E-06	0.000108069	1.866664	5.868E-06	0.000130481
Road 10	10	1600-1700	0.333643552	1.169E-06	2.59837E-05	0.3101167	1.086E-06	2.41514E-05	1.6345385	5.725E-06	0.000127295	1.5158133	5.309E-06	0.000118049	1.82593	6.395E-06	0.000142201
Road 10	10	1700-1800	0.309167471	1.014E-06	2.25506E-05	0.2862093	9.389E-07	2.08761E-05	1.6108033	5.284E-06	0.000117492	1.4920548	4.895E-06	0.00010883	1.7782641	5.834E-06	0.000129706
Road 10	10	1800-1900	0.313515571	6.482E-07	1.44115E-05	0.2902071	6E-07	1.334E-05	1.5873955	3.282E-06	7.29683E-05	1.4689909	3.037E-06	6.75256E-05	1.759198	3.637E-06	8.08656E-05
Road 10	10	1900-2000	0.272477698	5.074E-07	1.12829E-05	0.2555745	4.76E-07	1.0583E-05	1.4495173	2.699E-06	6.00224E-05	1.3580309	2.529E-06	5.62341E-05	1.6136054	3.005E-06	6.68171E-05
Road 10	10	2000-2100	0.314009865	3.863E-07	8.58894E-06	0.2928928	3.603E-07	8.01134E-06	1.5224168	1.873E-06	4.16418E-05	1.4183625	1.745E-06	3.87957E-05	1.7112554	2.105E-06	4.6807E-05
Road 10	10	2100-2200	0.259441599	3.192E-07	7.09636E-06	0.2463982	3.031E-07	6.7396E-06	1.452854	1.787E-06	3.97391E-05	1.3802329	1.698E-06	3.77528E-05	1.6266312	2.001E-06	4.44923E-05
Road 10	10	2200-2300	0.271357534	3.477E-07	7.73156E-06	0.2604766	3.338E-07	7.42154E-06	1.3978624	1.791E-06	3.98281E-05	1.342155	1.72E-06	3.82409E-05	1.6026316	2.054E-06	4.56624E-05
Road 10	10	2300-0000	0.248056235	2.967E-07	6.59648E-06	0.2366732	2.831E-07	6.29377E-06	1.2571888	1.504E-06	3.3432E-05	1.1982092	1.433E-06	3.18636E-05	1.4348824	1.716E-06	3.81573E-05
Road 11	11	0000-0100	0.323878782	2.474E-07	2.05226E-06	0.2956187	2.258E-07	1.87319E-06	1.6258281	1.242E-06	1.03021E-05	1.4816616	1.132E-06	9.38858E-06	1.7772803	1.358E-06	1.12618E-05
Road 11	11	0100-0200	0.32380332	1.743E-07	1.44558E-06	0.294994	1.588E-07	1.31696E-06	1.5982716	8.602E-07	7.13527E-06	1.4533228	7.822E-07	6.48817E-06	1.7483168	9.409E-07	7.80513E-06
Road 11	11	0200-0300	0.282800321	7.365E-08	6.10899E-07	0.2560475	6.668E-08	5.53108E-07	1.5115684	3.936E-07	3.26526E-06	1.368289	3.563E-07	2.95575E-06	1.6243365	4.23E-07	3.50886E-06
Road 11	11	0300-0400	0.302571928	7.354E-08	6.10035E-07	0.2733925	6.645E-08	5.51204E-07	1.5850289	3.853E-07	3.19568E-06	1.4322992	3.481E-07	2.88775E-06	1.7056917	4.146E-07	3.43896E-06
Road 11	11	0400-0500	0.313391033	1.088E-07	9.0264E-07	0.2823757	9.805E-08	8.13309E-07	1.4926428	5.183E-07	4.29916E-06	1.3398565	4.652E-07	3.8591E-06	1.6222322	5.633E-07	4.67241E-06
Road 11	11	0500-0600	0.251758397	1.18E-07	9.78917E-07	0.2267	1.063E-07	8.81482E-07	1.2894673	6.044E-07	5.01386E-06	1.1579963	5.428E-07	4.50266E-06	1.3846962	6.491E-07	5.38414E-06
Road 11	11	0600-0700	0.271783124	2.454E-07	2.03528E-06	0.2498435	2.256E-07	1.87098E-06	1.4173	1.28E-06	1.06136E-05	1.299148	1.173E-06	9.72882E-06	1.5489914	1.398E-06	1.15998E-05
Road 11	11	0700-0800	0.31456934	5.898E-07	4.89258E-06	0.2911232	5.459E-07	4.52792E-06	1.6447733	3.084E-06	2.55816E-05	1.5199873	2.85E-06	2.36408E-05	1.8111106	3.396E-06	2.81687E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (February) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 11	11	0800-0900	0.342059468	1.217E-06	1.00984E-05	0.3164747	1.126E-06	9.3431E-06	1.6939596	6.029E-06	5.00098E-05	1.560834	5.555E-06	4.60796E-05	1.8773087	6.681E-06	5.54227E-05
Road 11	11	0900-1000	0.344426542	8.73E-07	7.24182E-06	0.3193405	8.094E-07	6.71437E-06	1.6362572	4.147E-06	3.44035E-05	1.5088466	3.825E-06	3.17246E-05	1.8281872	4.634E-06	3.8439E-05
Road 11	11	1000-1100	0.358260973	7.402E-07	6.13966E-06	0.3279013	6.774E-07	5.61938E-06	1.6758397	3.462E-06	2.87195E-05	1.5277427	3.156E-06	2.61815E-05	1.855644	3.834E-06	3.18009E-05
Road 11	11	1100-1200	0.31457173	7.318E-07	6.07047E-06	0.2888999	6.721E-07	5.57507E-06	1.6178719	3.764E-06	3.1221E-05	1.4847787	3.454E-06	2.86526E-05	1.7736786	4.126E-06	3.42277E-05
Road 11	11	1200-1300	0.381999468	1.081E-06	8.96703E-06	0.351646	9.951E-07	8.25451E-06	1.8562189	5.253E-06	4.35727E-05	1.7064688	4.829E-06	4.00575E-05	2.0581147	5.824E-06	4.8312E-05
Road 11	11	1300-1400	0.399381173	8.32E-07	6.90187E-06	0.3665673	7.637E-07	6.3348E-06	1.8031832	3.757E-06	3.11616E-05	1.6488048	3.435E-06	2.84937E-05	2.0153722	4.199E-06	3.48285E-05
Road 11	11	1400-1500	0.315013016	6.344E-07	5.26241E-06	0.2911086	5.863E-07	4.86308E-06	1.5777225	3.177E-06	2.63564E-05	1.451132	2.922E-06	2.42417E-05	1.7422407	3.509E-06	2.91048E-05
Road 11	11	1500-1600	0.281162717	5.711E-07	4.73742E-06	0.2586113	5.253E-07	4.35744E-06	1.4596977	2.965E-06	2.4595E-05	1.3397086	2.721E-06	2.25733E-05	1.5983199	3.247E-06	2.69307E-05
Road 11	11	1600-1700	0.268619826	6.482E-07	5.37714E-06	0.2497009	6.026E-07	4.99842E-06	1.4406372	3.477E-06	2.88382E-05	1.3369975	3.226E-06	2.67635E-05	1.5866983	3.829E-06	3.1762E-05
Road 11	11	1700-1800	0.26912399	6.635E-07	5.5035E-06	0.2482002	6.119E-07	5.07561E-06	1.4706648	3.626E-06	3.00746E-05	1.3557174	3.342E-06	2.7724E-05	1.6039176	3.954E-06	3.27996E-05
Road 11	11	1800-1900	0.288785207	5.916E-07	4.90744E-06	0.2666349	5.462E-07	4.53103E-06	1.5451132	3.165E-06	2.62567E-05	1.4276946	2.925E-06	2.42614E-05	1.6943295	3.471E-06	2.87924E-05
Road 11	11	1900-2000	0.275245036	4.348E-07	3.60711E-06	0.2574532	4.067E-07	3.37394E-06	1.4391	2.274E-06	1.88595E-05	1.3425391	2.121E-06	1.75941E-05	1.5999922	2.528E-06	2.0968E-05
Road 11	11	2000-2100	0.282818495	3.977E-07	3.29907E-06	0.2638178	3.71E-07	3.07742E-06	1.4158586	1.991E-06	1.65159E-05	1.3193487	1.855E-06	1.53901E-05	1.5831665	2.226E-06	1.84676E-05
Road 11	11	2100-2200	0.203070521	2.01E-07	1.66694E-06	0.1901872	1.882E-07	1.56118E-06	1.1388636	1.127E-06	9.34856E-06	1.0656731	1.055E-06	8.74776E-06	1.2558603	1.243E-06	1.03089E-05
Road 11	11	2200-2300	0.260755198	2.852E-07	2.36577E-06	0.2496413	2.73E-07	2.26493E-06	1.3213311	1.445E-06	1.19881E-05	1.263181	1.382E-06	1.14605E-05	1.5128223	1.655E-06	1.37255E-05
Road 11	11	2300-0000	0.248937691	2.593E-07	2.151E-06	0.2375654	2.475E-07	2.05273E-06	1.2828571	1.336E-06	1.10848E-05	1.222867	1.274E-06	1.05664E-05	1.4604323	1.521E-06	1.26192E-05
Haul Road 1	HR1	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0700-0800	1.33459	2.509E-06	3.7731E-06	1.22873	2.31E-06	3.47382E-06	6.13315	1.153E-05	1.73394E-05	5.64644	1.061E-05	1.59634E-05	6.87517	1.292E-05	1.94372E-05
Haul Road 1	HR1	0800-0900	1.34109	2.521E-06	3.79148E-06	1.23233	2.316E-06	3.48399E-06	6.16264	1.158E-05	1.74228E-05	5.66323	1.065E-05	1.60109E-05	6.89556	1.296E-05	1.94949E-05
Haul Road 1	HR1	0900-1000	1.34359	2.526E-06	3.79854E-06	1.23383	2.319E-06	3.48824E-06	6.17423	1.161E-05	1.74555E-05	5.67003	1.066E-05	1.60301E-05	6.90386	1.298E-05	1.95183E-05
Haul Road 1	HR1	1000-1100	1.35548	2.548E-06	3.83216E-06	1.23253	2.317E-06	3.48456E-06	6.22902	1.171E-05	1.76104E-05	5.66393	1.065E-05	1.60128E-05	6.89646	1.296E-05	1.94974E-05
Haul Road 1	HR1	1100-1200	1.35368	2.545E-06	3.82707E-06	1.24132	2.333E-06	3.50941E-06	6.22072	1.169E-05	1.7587E-05	5.70432	1.072E-05	1.6127E-05	6.94564	1.306E-05	1.96364E-05
Haul Road 1	HR1	1200-1300	1.34908	2.536E-06	3.81407E-06	1.23243	2.317E-06	3.48428E-06	6.19963	1.165E-05	1.75273E-05	5.66363	1.065E-05	1.6012E-05	6.89606	1.296E-05	1.94963E-05
Haul Road 1	HR1	1300-1400	1.35588	2.549E-06	3.83329E-06	1.23243	2.317E-06	3.48428E-06	6.23082	1.171E-05	1.76155E-05	5.66363	1.065E-05	1.6012E-05	6.89606	1.296E-05	1.94963E-05
Haul Road 1	HR1	1400-1500	1.35248	2.542E-06	3.82368E-06	1.23713	2.325E-06	3.49757E-06	6.21522	1.168E-05	1.75714E-05	5.68512	1.069E-05	1.60727E-05	6.92225	1.301E-05	1.95703E-05
Haul Road 1	HR1	1500-1600	1.34229	2.523E-06	3.79487E-06	1.22773	2.308E-06	3.47099E-06	6.16843	1.159E-05	1.74391E-05	5.64214	1.061E-05	1.59512E-05	6.86987	1.291E-05	1.94222E-05
Haul Road 1	HR1	1600-1700	1.33889	2.517E-06	3.78526E-06	1.23253	2.317E-06	3.48456E-06	6.15274	1.157E-05	1.73948E-05	5.66393	1.065E-05	1.60128E-05	6.89646	1.296E-05	1.94974E-05
Haul Road 1	HR1	1700-1800	1.33889	2.517E-06	3.78526E-06	1.22373	2.3E-06	3.45968E-06	6.15274	1.157E-05	1.73948E-05	5.62365	1.057E-05	1.5899E-05	6.84738	1.287E-05	1.93586E-05
Haul Road 1	HR1	1800-1900	1.33209	2.504E-06	3.76603E-06	1.22143	2.296E-06	3.45318E-06	6.12156	1.151E-05	1.73066E-05	5.61315	1.055E-05	1.58693E-05	6.83458	1.285E-05	1.93225E-05
Haul Road 1	HR1	1900-2000	1.32189	2.485E-06	3.7372E-06	1.22853	2.309E-06	3.47325E-06	6.07448	1.142E-05	1.71735E-05	5.64544	1.061E-05	1.59606E-05	6.87397	1.292E-05	1.94338E-05
Haul Road 1	HR1	2000-2100	1.3123	2.467E-06	3.71008E-06	1.22073	2.295E-06	3.4512E-06	6.03059	1.134E-05	1.70494E-05	5.60995	1.055E-05	1.58602E-05	6.83068	1.284E-05	1.93114E-05
Haul Road 1	HR1	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0700-0800	1.33459	1.729E-06	4.60175E-06	1.22873	1.592E-06	4.23674E-06	6.13315	7.944E-06	2.11475E-05	5.64644	7.314E-06	1.94693E-05	6.87517	8.906E-06	2.3706E-05
Haul Road 2	HR2	0800-0900	1.34109	1.737E-06	4.62416E-06	1.23233	1.596E-06	4.24915E-06	6.16264	7.983E-06	2.12492E-05	5.66323	7.336E-06	1.95272E-05	6.89556	8.932E-06	2.37763E-05
Haul Road 2	HR2	0900-1000	1.34359	1.74E-06	4.63278E-06	1.23383	1.598E-06	4.25432E-06	6.17423	7.998E-06	2.12891E-05	5.67003	7.345E-06	1.95506E-05	6.90386	8.943E-06	2.38049E-05
Haul Road 2	HR2	1000-1100	1.35548	1.756E-06	4.67378E-06	1.23253	1.597E-06	4.24984E-06	6.22902	8.069E-06	2.1478E-05	5.66393	7.337E-06	1.95296E-05	6.89646	8.933E-06	2.37794E-05
Haul Road 2	HR2	1100-1200	1.35368	1.753E-06	4.66757E-06	1.24132	1.608E-06	4.28015E-06	6.22072	8.058E-06	2.14494E-05	5.70432	7.389E-06	1.96688E-05	6.94564	8.997E-06	2.3949E-05
Haul Road 2	HR2	1200-1300	1.34908	1.748E-06	4.65171E-06	1.23243	1.596E-06	4.24949E-06	6.19963	8.031E-06	2.13767E-05	5.66363	7.336E-06	1.95285E-05	6.89606	8.933E-06	2.3778E-05
Haul Road 2	HR2	1300-1400	1.35588	1.756E-06	4.67516E-06	1.23243	1.596E-06	4.24949E-06	6.23082	8.071E-06	2.14842E-05	5.66363	7.336E-06	1.95285E-05	6.89606	8.933E-06	2.3778E-05
Haul Road 2	HR2	1400-1500	1.35248	1.752E-06	4.66343E-06	1.23713	1.603E-06	4.2657E-06	6.21522	8.051E-06	2.14305E-05	5.68512	7.364E-06	1.96026E-05	6.92225	8.967E-06	2.38683E-05
Haul Road 2	HR2	1500-1600	1.34229	1.739E-06	4.6283E-06	1.22773	1.59E-06	4.23329E-06	6.16843	7.99E-06	2.12691E-05	5.64214	7.308E-06	1.94544E-05	6.86987	8.899E-06	2.36877E-05
Haul Road 2	HR2	1600-1700	1.33889	1.734E-06	4.61657E-06	1.23253	1.597E-06	4.24984E-06	6.15274	7.97E-06	2.1215E-05	5.66393	7.337E-06	1.95296E-05	6.89646	8.933E-06	2.37794E-05
Haul Road 2	HR2	1700-1800	1.33889	1.734E-06	4.61657E-06	1.22373	1.585E-06	4.21949E-06	6.15274	7.97E-06	2.1215E-05	5.62365	7.285E-06	1.93907E-05	6.84738	8.87E-06	2.36102E-05
Haul Road 2	HR2	1800-1900	1.33209	1.726E-06	4.59313E-06	1.22143	1.582E-06	4.21156E-06	6.12156	7.929E-06	2.11075E-05	5.61315	7.271E-06	1.93545E-05	6.83458	8.853E-06	2.3566E-05
Haul Road 2	HR2	1900-2000	1.32189	1.712E-06	4.55796E-06	1.22853	1.591E-06	4.23605E-06	6.07448	7.868E-06	2.09452E-05	5.64544	7.313E-06	1.94658E-05	6.87397	8.904E-06	2.37019E-05
Haul Road 2	HR2	2000-2100	1.3123	1.7E-06	4.52489E-06	1.22073	1.581E-06	4.20915E-06	6.03059	7.812E-06	2.07938E-05	5.60995	7.267E-06	1.93434E-05	6.83068	8.848E-06	2.35526E-05
Haul Road 2	HR2	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (February) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Haul Road 2	HR2	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0700-0800	1.33459	1.729E-06	4.59533E-06	1.22873	1.592E-06	4.23083E-06	6.13315	7.944E-06	2.1118E-05	5.64644	7.314E-06	1.94421E-05	6.87517	8.906E-06	2.36729E-05
Haul Road 3	HR3	0800-0900	1.34109	1.737E-06	4.61771E-06	1.23233	1.596E-06	4.24322E-06	6.16264	7.983E-06	2.12195E-05	5.66323	7.336E-06	1.94999E-05	6.89556	8.932E-06	2.37432E-05
Haul Road 3	HR3	0900-1000	1.34359	1.74E-06	4.62632E-06	1.23383	1.598E-06	4.24839E-06	6.17423	7.998E-06	2.12594E-05	5.67003	7.345E-06	1.95233E-05	6.90386	8.943E-06	2.37717E-05
Haul Road 3	HR3	1000-1100	1.35548	1.756E-06	4.66726E-06	1.23253	1.597E-06	4.24391E-06	6.22902	8.069E-06	2.14481E-05	5.66393	7.337E-06	1.95023E-05	6.89646	8.933E-06	2.37463E-05
Haul Road 3	HR3	1100-1200	1.35368	1.753E-06	4.66106E-06	1.24132	1.608E-06	4.27418E-06	6.22072	8.058E-06	2.14195E-05	5.70432	7.389E-06	1.96414E-05	6.94564	8.997E-06	2.39156E-05
Haul Road 3	HR3	1200-1300	1.34908	1.748E-06	4.64522E-06	1.23243	1.596E-06	4.24357E-06	6.19963	8.031E-06	2.13469E-05	5.66363	7.336E-06	1.95013E-05	6.89606	8.933E-06	2.37449E-05
Haul Road 3	HR3	1300-1400	1.35588	1.756E-06	4.66864E-06	1.23243	1.596E-06	4.24357E-06	6.23082	8.071E-06	2.14543E-05	5.66363	7.336E-06	1.95013E-05	6.89606	8.933E-06	2.37449E-05
Haul Road 3	HR3	1400-1500	1.35248	1.752E-06	4.65693E-06	1.23713	1.603E-06	4.25975E-06	6.21522	8.051E-06	2.14006E-05	5.68512	7.364E-06	1.95753E-05	6.92225	8.967E-06	2.38351E-05
Haul Road 3	HR3	1500-1600	1.34229	1.739E-06	4.62184E-06	1.22773	1.59E-06	4.22738E-06	6.16843	7.99E-06	2.12395E-05	5.64214	7.308E-06	1.94273E-05	6.86987	8.899E-06	2.36547E-05
Haul Road 3	HR3	1600-1700	1.33889	1.734E-06	4.61014E-06	1.23253	1.597E-06	4.24391E-06	6.15274	7.97E-06	2.11854E-05	5.66393	7.337E-06	1.95023E-05	6.89646	8.933E-06	2.37463E-05
Haul Road 3	HR3	1700-1800	1.33889	1.734E-06	4.61014E-06	1.22373	1.585E-06	4.21361E-06	6.15274	7.97E-06	2.11854E-05	5.62365	7.285E-06	1.93636E-05	6.84738	8.87E-06	2.35773E-05
Haul Road 3	HR3	1800-1900	1.33209	1.726E-06	4.58672E-06	1.22143	1.582E-06	4.20569E-06	6.12156	7.929E-06	2.10781E-05	5.61315	7.271E-06	1.93275E-05	6.83458	8.853E-06	2.35332E-05
Haul Road 3	HR3	1900-2000	1.32189	1.712E-06	4.5516E-06	1.22853	1.591E-06	4.23014E-06	6.07448	7.868E-06	2.0916E-05	5.64544	7.313E-06	1.94387E-05	6.87397	8.904E-06	2.36688E-05
Haul Road 3	HR3	2000-2100	1.3123	1.7E-06	4.51858E-06	1.22073	1.581E-06	4.20328E-06	6.03059	7.812E-06	2.07648E-05	5.60995	7.267E-06	1.93165E-05	6.83068	8.848E-06	2.35198E-05
Haul Road 3	HR3	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (March) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 1	1	0000-0100	0.100242712	3.33E-07	2.70911E-06	0.0916767	3.046E-07	2.47761E-06	0.5909404	1.963E-06	1.59705E-05	0.5379395	1.787E-06	1.45381E-05	0.6296162	2.092E-06	1.70157E-05
Road 1	1	0100-0200	0.077952407	1.58E-07	1.28545E-06	0.070908	1.437E-07	1.16928E-06	0.4706063	9.539E-07	7.76038E-06	0.4256331	8.628E-07	7.01876E-06	0.4965411	1.007E-06	8.18804E-06
Road 1	1	0200-0300	0.074142208	1.071E-07	8.71681E-07	0.0671596	9.706E-08	7.89587E-07	0.4721204	6.823E-07	5.55066E-06	0.4238638	6.126E-07	4.98331E-06	0.4910234	7.096E-07	5.7729E-06
Road 1	1	0300-0400	0.064184909	6.626E-08	5.3901E-07	0.0572645	5.911E-08	4.80894E-07	0.3903489	4.03E-07	3.27806E-06	0.344942	3.561E-07	2.89674E-06	0.4022065	4.152E-07	3.37764E-06
Road 1	1	0400-0500	0.08451	1.348E-07	1.0968E-06	0.0748146	1.194E-07	9.70971E-07	0.4820982	7.691E-07	6.25685E-06	0.4240418	6.765E-07	5.50337E-06	0.4988564	7.958E-07	6.47434E-06
Road 1	1	0500-0600	0.069148877	2.427E-07	1.97437E-06	0.0612837	2.151E-07	1.7498E-06	0.4083435	1.433E-06	1.16592E-05	0.358033	1.257E-06	1.02227E-05	0.4193168	1.472E-06	1.19725E-05
Road 1	1	0600-0700	0.09515003	5.929E-07	4.82334E-06	0.0833276	5.192E-07	4.22404E-06	0.5110927	3.185E-06	2.59083E-05	0.4441483	2.768E-06	2.25148E-05	0.527476	3.287E-06	2.67388E-05
Road 1	1	0700-0800	0.080835653	8.481E-07	6.89947E-06	0.0704301	7.389E-07	6.01134E-06	0.447245	4.692E-06	3.81732E-05	0.3855395	4.045E-06	3.29065E-05	0.4559696	4.784E-06	3.89179E-05
Road 1	1	0800-0900	0.086233723	1.109E-06	9.01922E-06	0.0757003	9.732E-07	7.91753E-06	0.4594674	5.907E-06	4.80559E-05	0.4007792	5.153E-06	4.19177E-05	0.4764795	6.126E-06	4.98352E-05
Road 1	1	0900-1000	0.089499434	1.188E-06	9.66142E-06	0.0788637	1.046E-06	8.5133E-06	0.5014749	6.654E-06	5.4134E-05	0.4397905	5.836E-06	4.74752E-05	0.5186542	6.882E-06	5.59885E-05
Road 1	1	1000-1100	0.103158617	1.33E-06	1.08209E-05	0.0910089	1.173E-06	9.54645E-06	0.5542664	7.147E-06	5.81402E-05	0.4873888	6.284E-06	5.1125E-05	0.5783977	7.458E-06	6.06715E-05
Road 1	1	1100-1200	0.093983193	1.177E-06	9.57144E-06	0.083037	1.04E-06	8.45665E-06	0.5402494	6.763E-06	5.50201E-05	0.4750502	5.947E-06	4.83801E-05	0.5580872	6.987E-06	5.68367E-05
Road 1	1	1200-1300	0.096237	1.192E-06	9.69811E-06	0.0855292	1.059E-06	8.61905E-06	0.5491493	6.803E-06	5.53395E-05	0.4861405	6.022E-06	4.89899E-05	0.5716697	7.081E-06	5.7609E-05
Road 1	1	1300-1400	0.100513675	1.324E-06	1.07737E-05	0.0881415	1.161E-06	9.44754E-06	0.5613128	7.396E-06	6.01649E-05	0.4898525	6.454E-06	5.25054E-05	0.5779939	7.615E-06	6.19529E-05
Road 1	1	1400-1500	0.09566349	1.374E-06	1.1174E-05	0.0848026	1.218E-06	9.90539E-06	0.5215426	7.488E-06	6.0919E-05	0.4600424	6.605E-06	5.37354E-05	0.544845	7.823E-06	6.36408E-05
Road 1	1	1500-1600	0.102514076	1.364E-06	1.10976E-05	0.0919468	1.224E-06	9.95369E-06	0.5571313	7.414E-06	6.03122E-05	0.4973289	6.618E-06	5.38383E-05	0.5892758	7.842E-06	6.3792E-05
Road 1	1	1600-1700	0.097851404	1.374E-06	1.11756E-05	0.0874656	1.228E-06	9.98941E-06	0.5372409	7.542E-06	6.13581E-05	0.4777759	6.708E-06	5.45666E-05	0.5652415	7.935E-06	6.4556E-05
Road 1	1	1700-1800	0.077700787	1.094E-06	8.89791E-06	0.0700668	9.863E-07	8.02371E-06	0.435044	6.124E-06	4.98191E-05	0.3899129	5.489E-06	4.46509E-05	0.4599797	6.475E-06	5.26746E-05
Road 1	1	1800-1900	0.068480586	9.871E-07	8.03027E-06	0.0616885	8.892E-07	7.2338E-06	0.4074266	5.873E-06	4.77762E-05	0.3639166	5.246E-06	4.26741E-05	0.425605	6.135E-06	4.99079E-05
Road 1	1	1900-2000	0.082612116	9.086E-07	7.39167E-06	0.0744739	8.191E-07	6.66351E-06	0.4737951	5.211E-06	4.23925E-05	0.4237823	4.661E-06	3.79177E-05	0.4982562	5.48E-06	4.45812E-05
Road 1	1	2000-2100	0.074126452	6.901E-07	5.61379E-06	0.0669895	6.236E-07	5.07329E-06	0.4365916	4.064E-06	3.30642E-05	0.3914591	3.644E-06	2.96462E-05	0.4584486	4.268E-06	3.47195E-05
Road 1	1	2100-2200	0.078014194	6.633E-07	5.39601E-06	0.0712233	6.056E-07	4.92631E-06	0.4616827	3.925E-06	3.19332E-05	0.4187568	3.56E-06	2.89642E-05	0.4899801	4.166E-06	3.38905E-05
Road 1	1	2200-2300	0.076102622	6.156E-07	5.00816E-06	0.0692729	5.604E-07	4.55871E-06	0.4488066	3.631E-06	2.95351E-05	0.4055252	3.28E-06	2.66868E-05	0.4747982	3.841E-06	3.12455E-05
Road 1	1	2300-0000	0.066336312	4.793E-07	3.89954E-06	0.0604952	4.371E-07	3.55618E-06	0.4061749	2.935E-06	2.38767E-05	0.3668101	2.651E-06	2.15627E-05	0.4273053	3.088E-06	2.51189E-05
Road 2	2	0000-0100	0.168120588	1.985E-07	1.28174E-06	0.1537437	1.815E-07	1.17213E-06	0.7141553	8.431E-07	5.44466E-06	0.650821	7.683E-07	4.9618E-06	0.8045647	9.498E-07	6.13393E-06
Road 2	2	0100-0200	0.119955152	9.163E-08	5.91753E-07	0.1090703	8.332E-08	5.38057E-07	0.5952773	4.547E-07	2.93657E-06	0.5387079	4.115E-07	2.65751E-06	0.6477782	4.948E-07	3.19557E-06
Road 2	2	0200-0300	0.119274783	6.35E-08	4.10095E-07	0.1081691	5.759E-08	3.71911E-07	0.6506822	3.464E-07	2.2372E-06	0.5865213	3.123E-07	2.0166E-06	0.6946904	3.699E-07	2.38851E-06
Road 2	2	0300-0400	0.106475333	3.697E-08	2.38753E-07	0.0950013	3.299E-08	2.13024E-07	0.3882487	1.348E-07	8.70581E-07	0.3435773	1.193E-07	7.70413E-07	0.4385787	1.523E-07	9.83437E-07
Road 2	2	0400-0500	0.144807778	9.05E-08	5.84472E-07	0.1282074	8.013E-08	5.17469E-07	0.7016522	4.385E-07	2.832E-06	0.6187596	3.867E-07	2.49743E-06	0.746967	4.669E-07	3.0149E-06
Road 2	2	0500-0600	0.116903158	1.542E-07	9.96114E-07	0.1036933	1.368E-07	8.83555E-07	0.5185344	6.842E-07	4.41835E-06	0.4560114	6.017E-07	3.8856E-06	0.5597047	7.385E-07	4.76916E-06
Road 2	2	0600-0700	0.168848641	4.026E-07	2.59982E-06	0.1479182	3.527E-07	2.27754E-06	0.6872767	1.639E-06	1.05822E-05	0.5986057	1.427E-06	9.21692E-06	0.7465239	1.78E-06	1.14945E-05
Road 2	2	0700-0800	0.135728608	4.964E-07	3.2058E-06	0.1182992	4.327E-07	2.79413E-06	0.5753606	2.104E-06	1.35895E-05	0.4968579	1.817E-06	1.17354E-05	0.6151572	2.25E-06	1.45295E-05
Road 2	2	0800-0900	0.152640133	1.06E-06	6.84538E-06	0.1339796	9.304E-07	6.00852E-06	0.6483451	4.502E-06	2.9076E-05	0.5655908	3.928E-06	2.53648E-05	0.6995704	4.858E-06	3.13733E-05
Road 2	2	0900-1000	0.172863659	9.844E-07	6.35692E-06	0.1522393	8.669E-07	5.59847E-06	0.7485682	4.263E-06	2.7528E-05	0.6571542	3.742E-06	2.41663E-05	0.8093935	4.609E-06	2.97648E-05
Road 2	2	1000-1100	0.190568696	8.117E-07	5.24176E-06	0.1681298	7.161E-07	4.62456E-06	0.8184374	3.486E-06	2.25118E-05	0.7203559	3.068E-06	1.9814E-05	0.8884858	3.784E-06	2.44386E-05
Road 2	2	1100-1200	0.232433702	9.739E-07	6.28906E-06	0.2053285	8.603E-07	5.55566E-06	0.9538823	3.997E-06	2.58096E-05	0.8411556	3.524E-06	2.27595E-05	1.0464841	4.385E-06	2.83152E-05
Road 2	2	1200-1300	0.176253298	7.67E-07	4.95339E-06	0.1566832	6.819E-07	4.4034E-06	0.7775026	3.384E-06	2.18508E-05	0.6886227	2.997E-06	1.93529E-05	0.8453059	3.679E-06	2.37563E-05
Road 2	2	1300-1400	0.194985318	9.93E-07	6.41257E-06	0.1708286	8.7E-07	5.61812E-06	0.807268	4.111E-06	2.6549E-05	0.7045158	3.588E-06	2.31697E-05	0.8753444	4.458E-06	2.87879E-05
Road 2	2	1400-1500	0.169133497	6.382E-07	4.12121E-06	0.1498987	5.656E-07	3.65253E-06	0.7326957	2.765E-06	1.78533E-05	0.6473777	2.443E-06	1.57744E-05	0.7972764	3.008E-06	1.94269E-05
Road 2	2	1500-1600	0.207540335	8.599E-07	5.55346E-06	0.1860008	7.707E-07	4.97709E-06	0.8348165	3.459E-06	2.23384E-05	0.7463674	3.093E-06	1.99716E-05	0.9323682	3.863E-06	2.49487E-05
Road 2	2	1600-1700	0.177178584	8.982E-07	5.80047E-06	0.1584224	8.031E-07	5.18643E-06	0.7507295	3.806E-06	2.45774E-05	0.6687081	3.39E-06	2.18922E-05	0.8271305	4.193E-06	2.70786E-05
Road 2	2	1700-1800	0.133062719	6.684E-07	4.31642E-06	0.1200706	6.031E-07	3.89497E-06	0.530838	2.666E-06	1.72199E-05	0.476888	2.395E-06	1.54698E-05	0.5969585	2.999E-06	1.93647E-05
Road 2	2	1800-1900	0.144611613	8.302E-07	5.36121E-06	0.1304036	7.486E-07	4.83447E-06	0.6682781	3.836E-06	2.47752E-05	0.5998024	3.443E-06	2.22366E-05	0.730206	4.192E-06	2.7071E-05
Road 2	2	1900-2000	0.124709277	4.792E-07	3.09467E-06	0.1124649	4.322E-07	2.79083E-06	0.575019	2.21E-06	1.42691E-05	0.5147863	1.978E-06	1.27745E-05	0.6272512	2.41E-06	1.55653E-05
Road 2	2	2000-2100	0.121654795	4.111E-07	2.65515E-06	0.109877	3.713E-07	2.3981E-06	0.5137884	1.736E-06	1.12136E-05	0.4603899	1.556E-06	1.00482E-05	0.5702669	1.927E-06	1.24463E-05
Road 2	2	2100-2200	0.093760921	3.299E-07	2.13046E-06	0.0855891	3.011E-07	1.94478E-06	0.4267189	1.501E-06	9.69601E-06	0.3854525	1.356E-06	8.75835E-06	0.4710416	1.657E-06	1.07031E-05
Road 2	2	2200-2300	0.13475168	3.899E-07	2.51798E-06	0.1227209	3.551E-07	2.29317E-06	0.5771506	1.67E-06	1.07847E-05	0.5222909	1.511E-06	9.75956E-06	0.6450118	1.866E-06	1.20527E-05
Road 2	2	2300-0000	0.121566182	3.095E-07	1.999E-06	0.1108552	2.823E-07	1.82287E-06	0.5490125	1.398E-06	9.02781E-06	0.4970028	1.266E-06	8.17258E-06	0.607858	1.548E-06	9.99545E-06
Road 3	3	0000-0100	0.104269301	3.83E-07	1.48857E-05	0.0952603	3.499E-07	1.35996E-05	0.5719031	2.101E-06	8.16463E-05	0.5202294	1.911E-06	7.42693E-05	0.6154897	2.261E-06	8.78689E-05
Road 3	3	0100-0200	0.078858582	1.783E-07	6.93181E-06	0.0716409	1.62E-07	6.29737E-06	0.4580195	1.036E-06	4.02607E-05	0.4137745	9.358E-07	3.63715E-05	0.4854154	1.098E-06	4.26689E-05
Road 3	3	0200-0300	0.076332828	1.212E-07	4.71113E-06	0.0691625	1.098E-07	4.26859E-06	0.4739992	7.527E-07	2.92544E-05	0.4258429	6.762E-07	2.62823E-05	0.4950055	7.86E-07	3.05509E-05
Road 3	3	0300-0400	0.066685942	7.38E-08	2.86855E-06	0.0593338	6.567E-08	2.55229E-06	0.3622525	4.009E-07	1.55826E-05	0.3192543	3.533E-07	1.3733E-05	0.3785881	4.19E-07	1.62853E-05
Road 3	3	0400-0500	0.090035045	1.603E-07	6.23036E-06	0.0803993	1.431E-07	5.56357E-06	0.496035	8.831E-07	3.43253E-05	0.4400915	7.835E-07	3.0454E-05	0.5204908	9.267E-07	3.60176E-05
Road 3	3	0500-0600	0.073063621	2.848E-07	1.10684E-05	0.0647675	2.524E-07	9.81165E-06	0.4043457	1.576E-06	6.12545E-05	0.3547235	1.383E-06	5.37372E-05	0.4194909	1.635E-06	6.35488E-05
Road 3	3	0600-0700	0.101443014	7.127E-07	2.76997E-05	0.0888527	6.242E-07	2.42618E-05	0.5070873	3.562E-06	0.000138464	0.4407608	3.096E-06	0.000120353	0.5296134	3.721E-06	0.000144614
Road 3	3	0700-0800	0.083916941	9.637E-07	3.74577E-05	0.0730401	8.388E-07	3.26027E-05	0.4379147	5.029E-06	0.000195471	0.3770947	4.331E-06	0.000168323	0.4501348	5.169E-06	0.000200925
Road 3	3	0800-0900	0.092687583	1.47E-06	5.71474E-05	0.0806242	1.279E-06	4.97096E-05	0.4624545	7.336E-06	0.000285131	0.3992322	6.333E-06	0.00024615	0.4798564	7.612E-06	0.00029586
Road 3	3	0900-1000	0.09878674	1.512E-06	5.87524E-05	0.0869439	1.33E-06	5.1709E-05	0.5084923	7.781E-06	0.000302421	0.4455355	6.817E-06	0.000264978	0.5324794	8.148E-06	0.000316687
Road 3	3	1000-1100	0.110527276	1.542E-06	5.9947E-05	0.0971779	1.356E-06	5.27067E-05	0.5618456	7.84E-06	0.00030473	0.492192	6.868E-06	0.000266952	0.5893699	8.224E-06	0.000319658
Road 3	3	1100-1200	0.108642305	1.474E-06	5.72991E-05	0.0955061	1.296E-06	5.03709E-05	0.5669186	7.693E-06	0.000298999	0.4961924	6.733E-06	0.000261697	0.5916985	8.029E-06	0.000312068
Road 3	3	1200-1300	0.102495851	1.391E-06	5.40574E-05	0.0904161	1.227E-06	4.76864E-05	0.546956	7.422E-06	0.000288471	0.4804324	6.519E-06	0.000253385	0.5708484	7.746E-06	0.000301072
Road 3	3	1300-1400	0.10889346	1.605E-06	6.23873E-05	0.0961401	1.417E-06	5.50806E-05	0.5594336	8.246E-06	0.000320511	0.4916735	7.247E-06	0.00028169	0.5878137	8.665E-06	0.00033677

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (March) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 3	3	1400-1500	0.100633344	1.491E-06	5.79686E-05	0.0897933	1.331E-06	5.17243E-05	0.523066	7.752E-06	0.000301306	0.464691	6.887E-06	0.000267679	0.5544843	8.218E-06	0.000319404
Road 3	3	1500-1600	0.111736966	1.595E-06	6.19963E-05	0.1000249	1.428E-06	5.5498E-05	0.5651131	8.067E-06	0.000313548	0.503853	7.193E-06	0.000279558	0.6038779	8.62E-06	0.000335056
Road 3	3	1600-1700	0.104897792	1.63E-06	6.33678E-05	0.0934081	1.452E-06	5.6427E-05	0.5409502	8.408E-06	0.000326783	0.4793292	7.45E-06	0.000289559	0.5727373	8.902E-06	0.000345986
Road 3	3	1700-1800	0.08287299	1.289E-06	5.01145E-05	0.0747336	1.163E-06	4.51925E-05	0.4276949	6.654E-06	0.000258633	0.3834785	5.966E-06	0.000231895	0.4582121	7.129E-06	0.000277088
Road 3	3	1800-1900	0.078078869	1.274E-06	4.95032E-05	0.0708587	1.156E-06	4.49255E-05	0.4321453	7.049E-06	0.000273987	0.3888089	6.342E-06	0.000246511	0.4596676	7.498E-06	0.000291436
Road 3	3	1900-2000	0.083509509	1.009E-06	3.92021E-05	0.0752142	9.084E-07	3.53081E-05	0.4591096	5.545E-06	0.000215521	0.4101605	4.954E-06	0.000192543	0.4853747	5.862E-06	0.000227851
Road 3	3	2000-2100	0.076951925	7.949E-07	3.08947E-05	0.0694486	7.174E-07	2.78823E-05	0.4191616	4.33E-06	0.000168285	0.3753059	3.877E-06	0.000150678	0.4447545	4.594E-06	0.00017856
Road 3	3	2100-2200	0.075490541	7.386E-07	2.87079E-05	0.0692413	6.775E-07	2.63314E-05	0.4249804	4.158E-06	0.000161613	0.3870067	3.787E-06	0.000147173	0.456248	4.464E-06	0.000173504
Road 3	3	2200-2300	0.080949694	7.219E-07	2.80588E-05	0.0738188	6.583E-07	2.55871E-05	0.4399167	3.923E-06	0.000152484	0.3981272	3.55E-06	0.000137999	0.471946	4.209E-06	0.000163586
Road 3	3	2300-0000	0.071299398	5.695E-07	2.21357E-05	0.065108	5.201E-07	2.02135E-05	0.4029493	3.219E-06	0.0001251	0.3646257	2.913E-06	0.000113202	0.4297337	3.433E-06	0.000133416
Road 4	4	0000-0100	0.266444857	2.159E-07	2.31144E-06	0.2433731	1.972E-07	2.11129E-06	1.3574703	1.1E-06	1.17762E-05	1.2394869	1.004E-06	1.07527E-05	1.48286	1.201E-06	1.2864E-05
Road 4	4	0100-0200	0.2534965	1.174E-07	1.25664E-06	0.230326	1.066E-07	1.14177E-06	1.293999	5.991E-07	6.41463E-06	1.1753115	5.441E-07	5.82627E-06	1.4056375	6.508E-07	6.96804E-06
Road 4	4	0200-0300	0.273740769	8.238E-08	8.82044E-07	0.2483362	7.473E-08	8.00186E-07	1.35107	4.066E-07	4.3534E-06	1.2255292	3.688E-07	3.94889E-06	1.4738654	4.435E-07	4.74907E-06
Road 4	4	0300-0400	0.252654286	4.094E-08	4.38361E-07	0.2251971	3.649E-08	3.90722E-07	1.3413043	2.173E-07	2.3272E-06	1.1950943	1.936E-07	2.07352E-06	1.4202914	2.301E-07	2.46424E-06
Road 4	4	0400-0500	0.262482857	8.506E-08	9.10828E-07	0.2344079	7.597E-08	8.13407E-07	1.2962271	4.201E-07	4.49797E-06	1.1574779	3.751E-07	4.0165E-06	1.3918857	4.511E-07	4.82991E-06
Road 4	4	0500-0600	0.243714583	1.354E-07	1.44977E-06	0.2162975	1.202E-07	1.28668E-06	1.15535	6.419E-07	6.87278E-06	1.0244008	5.691E-07	6.09381E-06	1.2406983	6.893E-07	7.38049E-06
Road 4	4	0600-0700	0.274300385	3.302E-07	3.53539E-06	0.2403329	2.893E-07	3.09759E-06	1.3099569	1.577E-06	1.68837E-05	1.1467896	1.38E-06	1.47807E-05	1.3871225	1.67E-06	1.78783E-05
Road 4	4	0700-0800	0.276949674	5.898E-07	6.31533E-06	0.2412537	5.138E-07	5.50135E-06	1.3793376	2.937E-06	3.14533E-05	1.2000497	2.556E-06	2.73649E-05	1.4413034	3.069E-06	3.28663E-05
Road 4	4	0800-0900	0.283028693	1.002E-06	1.07332E-05	0.2462222	8.72E-07	9.3374E-06	1.4122269	5.002E-06	5.35554E-05	1.2278352	4.349E-06	4.65628E-05	1.4740573	5.221E-06	5.59002E-05
Road 4	4	0900-1000	0.286693514	9.822E-07	1.05169E-05	0.2519179	8.631E-07	9.2412E-06	1.3513666	4.63E-06	4.95727E-05	1.1864707	4.065E-06	4.35237E-05	1.4383886	4.928E-06	5.27649E-05
Road 4	4	1000-1100	0.317504895	1.051E-06	1.12537E-05	0.2788037	9.229E-07	9.88194E-06	1.4994475	4.963E-06	5.31465E-05	1.3163953	4.358E-06	4.66584E-05	1.595199	5.28E-06	5.65403E-05
Road 4	4	1100-1200	0.295581742	1.061E-06	1.13558E-05	0.2596106	9.315E-07	9.97382E-06	1.3866963	4.975E-06	5.32746E-05	1.2174799	4.368E-06	4.67736E-05	1.4770906	5.3E-06	5.67474E-05
Road 4	4	1200-1300	0.302066667	1.028E-06	1.1006E-05	0.2663137	9.062E-07	9.70328E-06	1.4825884	5.045E-06	5.40189E-05	1.3065892	4.446E-06	4.76062E-05	1.5729029	5.352E-06	5.73095E-05
Road 4	4	1300-1400	0.309984362	1.069E-06	1.14481E-05	0.2735778	9.436E-07	1.01036E-05	1.4859018	5.125E-06	5.48762E-05	1.3107307	4.521E-06	4.84069E-05	1.5843085	5.464E-06	5.85105E-05
Road 4	4	1400-1500	0.281989565	9.008E-07	9.64539E-06	0.2515101	8.034E-07	8.60284E-06	1.3977596	4.465E-06	4.781E-05	1.2457557	3.979E-06	4.26108E-05	1.4972659	4.783E-06	5.12136E-05
Road 4	4	1500-1600	0.313899758	9.01E-07	9.64762E-06	0.2807881	8.06E-07	8.62994E-06	1.502598	4.313E-06	4.61819E-05	1.3440411	3.858E-06	4.13087E-05	1.6248292	4.664E-06	4.99387E-05
Road 4	4	1600-1700	0.2936875	8.43E-07	9.0264E-06	0.2614385	7.504E-07	8.03524E-06	1.4220124	4.082E-06	4.37051E-05	1.2652121	3.632E-06	3.88859E-05	1.5266506	4.382E-06	4.69212E-05
Road 4	4	1700-1800	0.278106746	8.111E-07	8.68539E-06	0.2509359	7.319E-07	7.83684E-06	1.3691431	3.993E-06	4.27589E-05	1.2346379	3.601E-06	3.85583E-05	1.4855738	4.333E-06	4.63951E-05
Road 4	4	1800-1900	0.305928774	7.507E-07	8.03774E-06	0.2778766	6.818E-07	7.30071E-06	1.526661	3.746E-06	4.01103E-05	1.3862559	3.401E-06	3.64214E-05	1.6641325	4.083E-06	4.37221E-05
Road 4	4	1900-2000	0.276766892	4.741E-07	5.07637E-06	0.2494396	4.273E-07	4.57514E-06	1.3747912	2.355E-06	2.5216E-05	1.2383561	2.121E-06	2.27135E-05	1.4877957	2.549E-06	2.72887E-05
Road 4	4	2000-2100	0.240211633	2.725E-07	2.91741E-06	0.2168418	2.46E-07	2.63358E-06	1.1997612	1.361E-06	1.45713E-05	1.0817633	1.227E-06	1.31382E-05	1.2986051	1.473E-06	1.57718E-05
Road 4	4	2100-2200	0.199575135	1.709E-07	1.83027E-06	0.1832857	1.57E-07	1.68088E-06	1.0148965	8.692E-07	9.30746E-06	0.9307073	7.971E-07	8.53537E-06	1.113993	9.541E-07	1.02163E-05
Road 4	4	2200-2300	0.267006032	3.894E-07	4.16936E-06	0.2436003	3.553E-07	3.80387E-06	1.3097025	1.91E-06	2.04513E-05	1.1941102	1.741E-06	1.86463E-05	1.4377105	2.097E-06	2.24502E-05
Road 4	4	2300-0000	0.247170417	2.746E-07	2.94066E-06	0.2258156	2.509E-07	2.6866E-06	1.2448019	1.383E-06	1.48098E-05	1.1362535	1.263E-06	1.35184E-05	1.3620692	1.513E-06	1.6205E-05
Road 5	5	0000-0100	0.088977513	3.223E-07	4.35865E-06	0.0813144	2.946E-07	3.98327E-06	0.4901881	1.776E-06	2.40124E-05	0.4452366	1.613E-06	2.18104E-05	0.5265509	1.907E-06	2.57936E-05
Road 5	5	0100-0200	0.060716116	1.379E-07	1.86468E-06	0.0551582	1.253E-07	1.69399E-06	0.3662373	8.317E-07	1.12477E-05	0.3300341	7.495E-07	1.01358E-05	0.3851923	8.748E-07	1.18298E-05
Road 5	5	0200-0300	0.056979651	9.197E-08	1.24375E-06	0.0515962	8.328E-08	1.12624E-06	0.385426	6.221E-07	8.41307E-06	0.3448697	5.567E-07	7.5278E-06	0.3964658	6.399E-07	8.65404E-06
Road 5	5	0300-0400	0.053161452	6.186E-08	8.36572E-07	0.0473011	5.504E-08	7.44351E-07	0.2845245	3.311E-07	4.4774E-06	0.2496094	2.905E-07	3.92796E-06	0.2969105	3.455E-07	4.67231E-06
Road 5	5	0400-0500	0.074748454	1.361E-07	1.8403E-06	0.066751	1.215E-07	1.6434E-06	0.4208467	7.662E-07	1.03612E-05	0.3725352	6.782E-07	9.17178E-06	0.4392862	7.998E-07	1.08152E-05
Road 5	5	0500-0600	0.060321376	2.468E-07	3.33766E-06	0.0534518	2.187E-07	2.95756E-06	0.3454944	1.414E-06	1.91167E-05	0.3021018	1.236E-06	1.67157E-05	0.3555536	1.455E-06	1.96733E-05
Road 5	5	0600-0700	0.089217584	6.447E-07	8.71818E-06	0.0781364	5.646E-07	7.63535E-06	0.4445476	3.212E-06	4.34404E-05	0.3855883	2.786E-06	3.7679E-05	0.4637247	3.351E-06	4.53144E-05
Road 5	5	0700-0800	0.069030513	8.085E-07	1.0933E-05	0.0600826	7.037E-07	9.51586E-06	0.3586332	4.2E-06	5.68002E-05	0.3075753	3.602E-06	4.87137E-05	0.3676579	4.306E-06	5.82295E-05
Road 5	5	0800-0900	0.074581507	1.17E-06	1.58253E-05	0.0648717	1.018E-06	1.3765E-05	0.3637959	5.708E-06	7.71932E-05	0.3129946	4.911E-06	6.64137E-05	0.3778663	5.929E-06	8.01787E-05
Road 5	5	0900-1000	0.08049875	1.221E-06	1.65088E-05	0.070908	1.075E-06	1.45419E-05	0.4238115	6.427E-06	8.69158E-05	0.3710136	5.626E-06	7.6088E-05	0.4419215	6.702E-06	9.06299E-05
Road 5	5	1000-1100	0.09077573	1.237E-06	1.67271E-05	0.0798167	1.088E-06	1.47077E-05	0.4686301	6.386E-06	8.63538E-05	0.410193	5.589E-06	7.55857E-05	0.4900096	6.677E-06	9.02934E-05
Road 5	5	1100-1200	0.089072348	1.154E-06	1.55994E-05	0.0783221	1.014E-06	1.37167E-05	0.4784185	6.196E-06	8.37861E-05	0.4181626	5.415E-06	7.32334E-05	0.4964848	6.43E-06	8.69501E-05
Road 5	5	1200-1300	0.083343934	1.093E-06	1.47865E-05	0.0735503	9.649E-07	1.3049E-05	0.4510754	5.918E-06	8.00278E-05	0.395612	5.19E-06	7.01878E-05	0.4691623	6.155E-06	8.32368E-05
Road 5	5	1300-1400	0.08984691	1.293E-06	1.74909E-05	0.0793424	1.142E-06	1.5446E-05	0.4683021	6.742E-06	9.11667E-05	0.4109805	5.916E-06	8.00076E-05	0.4903229	7.059E-06	9.54536E-05
Road 5	5	1400-1500	0.085315153	1.259E-06	1.70202E-05	0.0761588	1.124E-06	1.51935E-05	0.4444633	6.557E-06	8.86693E-05	0.3944014	5.818E-06	7.86821E-05	0.4705602	6.942E-06	9.38756E-05
Road 5	5	1500-1600	0.09529983	1.368E-06	1.85041E-05	0.0853411	1.225E-06	1.65705E-05	0.4851461	6.966E-06	9.41995E-05	0.4320741	6.204E-06	8.38947E-05	0.5174152	7.429E-06	0.000100465
Road 5	5	1600-1700	0.089565546	1.415E-06	1.91411E-05	0.0797572	1.26E-06	1.7045E-05	0.4665335	7.373E-06	9.97034E-05	0.4128717	6.525E-06	8.82352E-05	0.4926289	7.785E-06	0.00010528
Road 5	5	1700-1800	0.066077571	1.047E-06	1.4155E-05	0.0595911	9.44E-07	1.27655E-05	0.3426681	5.428E-06	7.34059E-05	0.3064739	4.855E-06	6.56524E-05	0.366065	5.799E-06	7.8418E-05
Road 5	5	1800-1900	0.061855374	1.056E-06	1.42868E-05	0.0561148	9.584E-07	1.29608E-05	0.3502249	5.982E-06	8.08916E-05	0.3140657	5.364E-06	7.25399E-05	0.3701805	6.323E-06	8.55007E-05
Road 5	5	1900-2000	0.071562954	9.093E-07	1.22968E-05	0.0644166	8.185E-07	1.10688E-05	0.4002128	5.085E-06	6.87693E-05	0.3567912	4.534E-06	6.13081E-05	0.4212078	5.352E-06	7.23769E-05
Road 5	5	2000-2100	0.068161919	7.599E-07	1.02765E-05	0.0615304	6.86E-07	9.27664E-06	0.3743149	4.173E-06	5.64337E-05	0.3346491	3.731E-06	5.04535E-05	0.3961795	4.417E-06	5.97301E-05
Road 5	5	2100-2200	0.070817303	7.589E-07	1.02634E-05	0.06494	6.96E-07	9.41159E-06	0.4012963	4.301E-06	5.81589E-05	0.3651162	3.913E-06	5.29154E-05	0.4300561	4.609E-06	6.2327E-05
Road 5	5	2200-2300	0.068259817	6.303E-07	8.52403E-06	0.0622367	5.747E-07	7.77189E-06	0.3778895	3.49E-06	4.71894E-05	0.3412159	3.151E-06	4.26098E-05	0.4034526	3.726E-06	5.03817E-05
Road 5	5	2300-0000	0.060142656	5.057E-07	6.83873E-06	0.0548902	4.615E-07	6.24148E-06	0.3466042	2.914E-06	3.94118E-05	0.3128433	2.631E-06	3.55729E-05	0.3677334	3.092E-06	4.18144E-05
Road 6	6	0000-0100	0.054060338	1.502E-07	5.36788E-06	0.0493264	1.37E-07	4.89783E-06	0.3405776	9.46E-07	3.38174E-05	0.3073186	8.537E-07	3.0515E-05	0.356645	9.907E-07	3.54128E-05
Road 6	6	0100-0200	0.070671858	1.499E-07	5.35781E-06	0.0641785	1.361E-07	4.86553E-06	0.395102	8.38E-07	2.99537E-05	0.3552035	7.533E-07	2.69289E-05	0.4193819	8.895E-07	3.17944E-05
Road 6	6	0200-0300	0.064820759	9.611E-08	3.43561E-06	0.0588004	8.719E-08	3.11652E-06	0.3633629	5.388E-07	1.92588E-05	0.3263267	4.839E-07	1.72959E-05	0.3851271	5.71E-07	2.04124E-05
Road 6	6	0300-0400	0.066603387	7.75E-08	2.77045E-06	0.0594652	6.92E-08	2.47353E-06	0.4204716	4.893E-07	1.749E-05	0.3718085	4.327E-07	1.54658E-05	0.4312737	5.019E-07	1.79394E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (March) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 6	6	0400-0500	0.073368556	1.239E-07	4.43012E-06	0.0655128	1.107E-07	3.95577E-06	0.4257874	7.192E-07	2.57098E-05	0.3759801	6.351E-07	2.27023E-05	0.4414929	7.458E-07	2.66581E-05
Road 6	6	0500-0600	0.066515776	2.01E-07	7.18477E-06	0.059007	1.783E-07	6.3737E-06	0.3974224	1.201E-06	4.2928E-05	0.347789	1.051E-06	3.75668E-05	0.406796	1.229E-06	4.39405E-05
Road 6	6	0600-0700	0.072073171	3.882E-07	1.38777E-05	0.0631073	3.399E-07	1.21513E-05	0.4434557	2.389E-06	8.53876E-05	0.38271	2.062E-06	7.3691E-05	0.4458173	2.401E-06	8.58423E-05
Road 6	6	0700-0800	0.068333136	5.848E-07	2.09054E-05	0.0595083	5.093E-07	1.82056E-05	0.3840953	3.287E-06	0.000117508	0.3293127	2.818E-06	0.000100748	0.388821	3.328E-06	0.000118953
Road 6	6	0800-0900	0.058316911	7.158E-07	2.55879E-05	0.0506296	6.215E-07	2.22149E-05	0.3420934	4.199E-06	0.000150102	0.2915548	3.579E-06	0.000127927	0.3421845	4.2E-06	0.000150141
Road 6	6	0900-1000	0.059853424	7.055E-07	2.5218E-05	0.0525869	6.198E-07	2.21564E-05	0.3330447	3.926E-06	0.000140322	0.2889471	3.406E-06	0.000121742	0.341534	4.026E-06	0.000143898
Road 6	6	1000-1100	0.079779699	7.966E-07	2.84752E-05	0.0700901	6.998E-07	2.50168E-05	0.4326339	4.32E-06	0.000154417	0.3774962	3.769E-06	0.000134737	0.4475864	4.469E-06	0.000159754
Road 6	6	1100-1200	0.090904034	9.009E-07	3.22018E-05	0.0799459	7.923E-07	2.832E-05	0.4703609	4.661E-06	0.00016662	0.4110893	4.074E-06	0.000145624	0.4910352	4.866E-06	0.000173944
Road 6	6	1200-1300	0.088398081	8.561E-07	3.06024E-05	0.0780246	7.556E-07	2.70112E-05	0.4355592	4.218E-06	0.000150785	0.3825039	3.704E-06	0.000132418	0.4605284	4.46E-06	0.00015943
Road 6	6	1300-1400	0.103054252	9.961E-07	3.5607E-05	0.0910021	8.796E-07	3.14428E-05	0.5175253	5.002E-06	0.000178814	0.4542295	4.391E-06	0.000156944	0.5452316	5.27E-06	0.000188387
Road 6	6	1400-1500	0.097662236	1.041E-06	3.72167E-05	0.0871565	9.291E-07	3.32132E-05	0.4872314	5.194E-06	0.000185672	0.4321552	4.607E-06	0.000164684	0.5193117	5.536E-06	0.000197897
Road 6	6	1500-1600	0.085688072	8.926E-07	3.19063E-05	0.0766724	7.987E-07	2.85492E-05	0.4368327	4.55E-06	0.000162656	0.3882724	4.045E-06	0.000144575	0.4649447	4.843E-06	0.000173124
Road 6	6	1600-1700	0.08973368	9.566E-07	3.41953E-05	0.0799217	8.52E-07	3.04562E-05	0.4376664	4.666E-06	0.000166784	0.3873384	4.129E-06	0.000147605	0.4672601	4.981E-06	0.000178061
Road 6	6	1700-1800	0.066214341	7.444E-07	2.66098E-05	0.0597311	6.715E-07	2.40044E-05	0.3324134	3.737E-06	0.000133588	0.2974502	3.344E-06	0.000119537	0.3571813	4.016E-06	0.000143542
Road 6	6	1800-1900	0.06498795	8.331E-07	2.97794E-05	0.0589471	7.556E-07	2.70113E-05	0.3374326	4.326E-06	0.000154622	0.3031091	3.886E-06	0.000138894	0.3620562	4.641E-06	0.000165905
Road 6	6	1900-2000	0.077308829	7.56E-07	2.70227E-05	0.0695655	6.802E-07	2.43161E-05	0.4008487	3.92E-06	0.000140114	0.3571133	3.492E-06	0.000124826	0.4266788	4.172E-06	0.000149143
Road 6	6	2000-2100	0.061041415	4.697E-07	1.67908E-05	0.0550474	4.236E-07	1.5142E-05	0.3433222	2.642E-06	9.44383E-05	0.3060855	2.355E-06	8.41956E-05	0.3611329	2.779E-06	9.93376E-05
Road 6	6	2100-2200	0.084785702	5.665E-07	2.02505E-05	0.0777627	5.196E-07	1.85731E-05	0.4405062	2.943E-06	0.000105212	0.4012146	2.681E-06	9.58273E-05	0.4789773	3.2E-06	0.0001144
Road 6	6	2200-2300	0.063638382	4.503E-07	1.60962E-05	0.057966	4.102E-07	1.46615E-05	0.3528223	2.497E-06	8.92401E-05	0.3167354	2.241E-06	8.01125E-05	0.3747013	2.651E-06	9.4774E-05
Road 6	6	2300-0000	0.042454633	2.821E-07	1.0083E-05	0.0387449	2.574E-07	9.20196E-06	0.260889	1.733E-06	6.19615E-05	0.2348738	1.561E-06	5.57828E-05	0.2736187	1.818E-06	6.49848E-05
Road 7	7	0000-0100	0.077564381	2.072E-07	5.17256E-06	0.0708238	1.892E-07	4.72305E-06	0.4576927	1.223E-06	3.05223E-05	0.4150826	1.109E-06	2.76808E-05	0.4859063	1.298E-06	3.24038E-05
Road 7	7	0100-0200	0.093986915	1.951E-07	4.87112E-06	0.0854073	1.773E-07	4.42646E-06	0.5165373	1.072E-06	2.67709E-05	0.4664818	9.685E-07	2.41767E-05	0.5518891	1.146E-06	2.86031E-05
Road 7	7	0200-0300	0.081551809	1.113E-07	2.77835E-06	0.0739885	1.01E-07	2.52068E-06	0.4593764	6.269E-07	1.56503E-05	0.4139896	5.65E-07	1.4104E-05	0.4879781	6.66E-07	1.66247E-05
Road 7	7	0300-0400	0.083583588	9.223E-08	2.30229E-06	0.0746558	8.238E-08	2.05638E-06	0.5037041	5.558E-07	1.38744E-05	0.4469822	4.932E-07	1.2312E-05	0.521638	5.756E-07	1.43684E-05
Road 7	7	0400-0500	0.093813065	1.512E-07	3.77409E-06	0.0835279	1.346E-07	3.36032E-06	0.5227887	8.425E-07	2.10317E-05	0.4621397	7.448E-07	1.85918E-05	0.5456675	8.794E-07	2.19521E-05
Road 7	7	0500-0600	0.086168367	2.452E-07	6.1211E-06	0.076464	2.176E-07	5.43174E-06	0.4868569	1.385E-06	3.45846E-05	0.4280166	1.218E-06	3.04048E-05	0.5044806	1.436E-06	3.58365E-05
Road 7	7	0600-0700	0.091658629	4.658E-07	1.1627E-05	0.0802953	4.08E-07	1.01855E-05	0.5287179	2.687E-06	6.70684E-05	0.4583674	2.329E-06	5.81443E-05	0.5386626	2.737E-06	6.83299E-05
Road 7	7	0700-0800	0.088446929	7.191E-07	1.79513E-05	0.077062	6.265E-07	1.56406E-05	0.4807615	3.909E-06	9.75761E-05	0.4145071	3.37E-06	8.4129E-05	0.4915691	3.997E-06	9.97696E-05
Road 7	7	0800-0900	0.08741345	1.074E-06	2.68024E-05	0.0762545	9.366E-07	2.33809E-05	0.4781691	5.873E-06	0.000146615	0.4128437	5.071E-06	0.000126585	0.4890982	6.007E-06	0.000149966
Road 7	7	0900-1000	0.088214101	1.007E-06	2.51296E-05	0.0775528	8.85E-07	2.20926E-05	0.4622696	5.275E-06	0.000131687	0.4034289	4.604E-06	0.000114925	0.4809818	5.489E-06	0.000137018
Road 7	7	1000-1100	0.103697968	1.037E-06	2.5895E-05	0.0912061	9.124E-07	2.27756E-05	0.5460161	5.462E-06	0.000136348	0.478159	4.783E-06	0.000119404	0.5693651	5.696E-06	0.000142179
Road 7	7	1100-1200	0.11392904	1.135E-06	2.83259E-05	0.1003225	9.992E-07	2.4943E-05	0.5886945	5.863E-06	0.000146366	0.5163839	5.143E-06	0.000128387	0.6167064	6.142E-06	0.00015333
Road 7	7	1200-1300	0.112272394	1.117E-06	2.78734E-05	0.0993265	9.878E-07	2.46593E-05	0.5671934	5.641E-06	0.000140815	0.5002199	4.975E-06	0.000124187	0.5995464	5.963E-06	0.000148847
Road 7	7	1300-1400	0.120251867	1.178E-06	2.94185E-05	0.1059168	1.038E-06	2.59116E-05	0.6061919	5.941E-06	0.000148299	0.5316583	5.21E-06	0.000130065	0.6375751	6.248E-06	0.000155977
Road 7	7	1400-1500	0.111881088	1.15E-06	2.87088E-05	0.099601	1.024E-06	2.55577E-05	0.5705371	5.865E-06	0.000146401	0.505663	5.198E-06	0.000129754	0.605264	6.222E-06	0.000155312
Road 7	7	1500-1600	0.103018315	1.035E-06	2.58372E-05	0.0922438	9.268E-07	2.3135E-05	0.529743	5.322E-06	0.000132861	0.471938	4.741E-06	0.000118363	0.5641818	5.668E-06	0.000141498
Road 7	7	1600-1700	0.107422765	1.117E-06	2.78763E-05	0.0957851	9.957E-07	2.48563E-05	0.532426	5.535E-06	0.000138165	0.4726935	4.914E-06	0.000122664	0.5684787	5.91E-06	0.000147521
Road 7	7	1700-1800	0.082344967	9.074E-07	2.26519E-05	0.0742808	8.185E-07	2.04336E-05	0.423233	4.664E-06	0.000116425	0.3796127	4.183E-06	0.000104426	0.4538935	5.002E-06	0.000124859
Road 7	7	1800-1900	0.07570283	8.661E-07	2.16204E-05	0.0685299	7.84E-07	1.95718E-05	0.3979314	4.553E-06	0.000113648	0.3576404	4.092E-06	0.000102141	0.4261703	4.876E-06	0.000121712
Road 7	7	1900-2000	0.088649115	7.684E-07	1.91811E-05	0.0798402	6.92E-07	1.72751E-05	0.4677415	4.054E-06	0.000101206	0.4180873	3.624E-06	9.04622E-05	0.4979275	4.316E-06	0.000107737
Road 7	7	2000-2100	0.080988835	5.738E-07	1.43242E-05	0.0731083	5.18E-07	1.29304E-05	0.437724	3.101E-06	7.74187E-05	0.3919181	2.777E-06	6.93172E-05	0.4650264	3.295E-06	8.22476E-05
Road 7	7	2100-2200	0.093055427	5.539E-07	1.38277E-05	0.0852199	5.073E-07	1.26634E-05	0.4902896	2.919E-06	7.28555E-05	0.4464013	2.657E-06	6.63338E-05	0.5316211	3.165E-06	7.89972E-05
Road 7	7	2200-2300	0.078373667	5.029E-07	1.2555E-05	0.0713791	4.581E-07	1.14345E-05	0.4282474	2.748E-06	6.86029E-05	0.3859732	2.477E-06	6.18308E-05	0.4573523	2.935E-06	7.32654E-05
Road 7	7	2300-0000	0.05389866	3.185E-07	7.95057E-06	0.0491969	2.907E-07	7.25701E-06	0.3198202	1.89E-06	4.71765E-05	0.288942	1.707E-06	4.26217E-05	0.3381388	1.998E-06	4.98787E-05
Road 8	8	0000-0100	0.234239722	1.704E-07	2.80826E-06	0.2139503	1.556E-07	2.56501E-06	1.1967972	8.704E-07	1.43482E-05	1.0925633	7.946E-07	1.30985E-05	1.3065136	9.502E-07	1.56636E-05
Road 8	8	0100-0200	0.244259667	1.48E-07	2.44032E-06	0.2219527	1.345E-07	2.21746E-06	1.2432023	7.535E-07	1.24204E-05	1.129275	6.844E-07	1.12822E-05	1.3512277	8.189E-07	1.34997E-05
Road 8	8	0200-0300	0.230798667	6.994E-08	1.15292E-06	0.2094687	6.348E-08	1.04637E-06	1.237034	3.749E-07	6.17941E-06	1.122382	3.401E-07	5.60668E-06	1.3318507	4.036E-07	6.65305E-06
Road 8	8	0300-0400	0.213875	6.049E-08	9.97153E-07	0.1908364	5.397E-08	8.8974E-07	1.1183993	3.163E-07	5.21433E-06	0.997365	2.821E-07	4.65003E-06	1.1882014	3.361E-07	5.53977E-06
Road 8	8	0400-0500	0.244997143	1.039E-07	1.71338E-06	0.2188767	9.286E-08	1.53071E-06	1.2100957	5.134E-07	8.46278E-06	1.0808338	4.585E-07	7.55879E-06	1.2997105	5.514E-07	9.0895E-06
Road 8	8	0500-0600	0.234460294	1.61E-07	2.65474E-06	0.2081735	1.43E-07	2.3571E-06	1.1367176	7.808E-07	1.28708E-05	1.0086582	6.928E-07	1.14208E-05	1.2168318	8.358E-07	1.37779E-05
Road 8	8	0600-0700	0.265598226	3.327E-07	5.48391E-06	0.2328523	2.917E-07	4.8078E-06	1.2728418	1.594E-06	2.62809E-05	1.1148555	1.396E-06	2.30189E-05	1.3477077	1.688E-06	2.78267E-05
Road 8	8	0700-0800	0.267329406	5.455E-07	8.9917E-06	0.2329279	4.753E-07	7.8346E-06	1.2954513	2.643E-06	4.35729E-05	1.1278106	2.301E-06	3.79342E-05	1.3607385	2.776E-06	4.57688E-05
Road 8	8	0800-0900	0.294657316	1.131E-06	1.86442E-05	0.2565475	9.847E-07	1.62329E-05	1.4327326	5.499E-06	9.06552E-05	1.2464293	4.784E-06	7.8867E-05	1.5029768	5.769E-06	9.50998E-05
Road 8	8	0900-1000	0.310128471	9.836E-07	1.62149E-05	0.272584	8.646E-07	1.42519E-05	1.4345201	4.55E-06	7.50033E-05	1.2605401	3.998E-06	6.59068E-05	1.5331241	4.863E-06	8.01587E-05
Road 8	8	1000-1100	0.295894937	9.445E-07	1.55693E-05	0.2598584	8.294E-07	1.36731E-05	1.4046643	4.484E-06	7.391E-05	1.2327777	3.935E-06	6.48658E-05	1.4926361	4.764E-06	7.85389E-05
Road 8	8	1100-1200	0.303510503	9.749E-07	1.60711E-05	0.2665595	8.562E-07	1.41145E-05	1.4614458	4.694E-06	7.73845E-05	1.2831586	4.122E-06	6.7944E-05	1.5497181	4.978E-06	8.20585E-05
Road 8	8	1200-1300	0.30689355	1.048E-06	1.72722E-05	0.2705835	9.238E-07	1.52287E-05	1.4929568	5.097E-06	8.40249E-05	1.315745	4.492E-06	7.40512E-05	1.5863285	5.416E-06	8.92799E-05
Road 8	8	1300-1400	0.280745563	9.075E-07	1.49591E-05	0.2478097	8.01E-07	1.32042E-05	1.3410258	4.335E-06	7.14547E-05	1.1830959	3.824E-06	6.30396E-05	1.4309056	4.625E-06	7.62438E-05
Road 8	8	1400-1500	0.271531799	7.625E-07	1.25692E-05	0.2422154	6.802E-07	1.12122E-05	1.3582678	3.814E-06	6.28744E-05	1.2110894	3.401E-06	5.60615E-05	1.4533048	4.081E-06	6.72737E-05
Road 8	8	1500-1600	0.277716715	7.686E-07	1.26706E-05	0.248472	6.877E-07	1.13363E-05	1.3520939	3.742E-06	6.16881E-05	1.2086464	3.345E-06	5.51434E-05	1.4571183	4.033E-06	6.64797E-05
Road 8	8	1600-1700	0.279317671	8.238E-07	1.35808E-05	0.248601	7.332E-07	1.20873E-05	1.3431132	3.962E-06	6.53039E-05	1.1948301	3.524E-06	5.80942E-05	1.4434311	4.257E-06	7.01815E-05
Road 8	8	1700-1800	0.225630577	7.111E-07	1.17219E-05	0.2035447	6.415E-07	1.05745E-05	1.1331369	3.571E-06	5.88682E-05	1.0207531	3.217E-06	5.30297E-05	1.2242978	3.858E-06	6.36042E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (March) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 8	8	1800-1900	0.225584299	4.876E-07	8.03834E-06	0.2049706	4.431E-07	7.3038E-06	1.1590711	2.505E-06	4.13017E-05	1.0520373	2.274E-06	3.74877E-05	1.2570079	2.717E-06	4.47915E-05
Road 8	8	1900-2000	0.224917143	3.499E-07	5.76749E-06	0.2027414	3.154E-07	5.19885E-06	1.184746	1.843E-06	3.03801E-05	1.0675083	1.661E-06	2.73738E-05	1.2702497	1.976E-06	3.25727E-05
Road 8	8	2000-2100	0.245195132	3.765E-07	6.20582E-06	0.2213359	3.398E-07	5.60195E-06	1.1733364	1.801E-06	2.96968E-05	1.0581466	1.625E-06	2.67814E-05	1.2794825	1.964E-06	3.23834E-05
Road 8	8	2100-2200	0.200870566	2.151E-07	3.54541E-06	0.1844002	1.974E-07	3.2547E-06	1.056447	1.131E-06	1.86465E-05	0.9681483	1.037E-06	1.7088E-05	1.1525485	1.234E-06	2.03427E-05
Road 8	8	2200-2300	0.242014219	3.129E-07	5.15816E-06	0.2207936	2.855E-07	4.70587E-06	1.1997095	1.551E-06	2.557E-05	1.0933306	1.414E-06	2.33027E-05	1.3141242	1.699E-06	2.80085E-05
Road 8	8	2300-0000	0.193332115	2.031E-07	3.34797E-06	0.1766962	1.856E-07	3.05988E-06	0.996244	1.047E-06	1.72521E-05	0.9094837	9.554E-07	1.57497E-05	1.0861798	1.141E-06	1.88096E-05
Road 9	9	0000-0100	0.20214081	5.368E-08	1.60255E-06	0.1874443	4.978E-08	1.48604E-06	0.9283904	2.466E-07	7.3602E-06	0.8548219	2.27E-07	6.77695E-06	1.0422662	2.768E-07	8.26299E-06
Road 9	9	0100-0200	0.220722991	4.606E-08	1.3749E-06	0.2040871	4.259E-08	1.27127E-06	0.9598031	2.003E-07	5.97868E-06	0.8793949	1.835E-07	5.47781E-06	1.0834819	2.261E-07	6.74909E-06
Road 9	9	0200-0300	0.087226964	8.273E-09	2.46974E-07	0.079389	7.53E-09	2.24782E-07	0.6293651	5.969E-08	1.78198E-06	0.5697737	5.404E-08	1.61326E-06	0.6491627	6.157E-08	1.83804E-06
Road 9	9	0300-0400	0.107064438	8.124E-09	2.42514E-07	0.0959862	7.283E-09	2.1742E-07	0.6658267	5.052E-08	1.50818E-06	0.5964816	4.526E-08	1.3511E-06	0.6924678	5.254E-08	1.56852E-06
Road 9	9	0400-0500	0.242487092	4.6E-08	1.37315E-06	0.2206339	4.185E-08	1.2494E-06	1.0143443	1.924E-07	5.74402E-06	0.9148324	1.735E-07	5.18051E-06	1.1354663	2.154E-07	6.42991E-06
Road 9	9	0500-0600	0.175797455	5.669E-08	1.69236E-06	0.1591323	5.132E-08	1.53193E-06	0.898765	2.898E-07	8.65219E-06	0.8086335	2.608E-07	7.78451E-06	0.9677658	3.121E-07	9.31644E-06
Road 9	9	0600-0700	0.207963513	1.262E-07	3.76849E-06	0.187267	1.137E-07	3.39345E-06	1.1049356	6.707E-07	2.00225E-05	0.9871356	5.992E-07	1.78878E-05	1.1744026	7.129E-07	2.12813E-05
Road 9	9	0700-0800	0.179351151	1.633E-07	4.87502E-06	0.1619657	1.475E-07	4.40246E-06	1.0435637	9.502E-07	2.83655E-05	0.9339413	8.504E-07	2.53858E-05	1.095907	9.979E-07	2.97883E-05
Road 9	9	0800-0900	0.274520307	5.989E-07	1.78773E-05	0.2455506	5.357E-07	1.59908E-05	1.3450068	2.934E-06	8.75897E-05	1.191079	2.598E-06	7.75656E-05	1.4366296	3.134E-06	9.35564E-05
Road 9	9	0900-1000	0.278534446	4.544E-07	1.35646E-05	0.2525683	4.12E-07	1.23001E-05	1.2390913	2.021E-06	6.03438E-05	1.1125989	1.815E-06	5.41836E-05	1.3651672	2.227E-06	6.64837E-05
Road 9	9	1000-1100	0.290983536	3.919E-07	1.16992E-05	0.2606416	3.51E-07	1.04793E-05	1.2620981	1.7E-06	5.07437E-05	1.1244865	1.515E-06	4.52109E-05	1.3851282	1.866E-06	5.56902E-05
Road 9	9	1100-1200	0.203999074	2.864E-07	8.54851E-06	0.1808586	2.539E-07	7.57882E-06	1.0969198	1.54E-06	4.59661E-05	0.9743277	1.368E-06	4.08289E-05	1.1551863	1.622E-06	4.84077E-05
Road 9	9	1200-1300	0.301509475	4.175E-07	1.24639E-05	0.2744924	3.801E-07	1.13471E-05	1.3990906	1.937E-06	5.78362E-05	1.2696314	1.758E-06	5.24845E-05	1.5441238	2.138E-06	6.38316E-05
Road 9	9	1300-1400	0.339518747	3.864E-07	1.15357E-05	0.3082271	3.508E-07	1.04726E-05	1.3179853	1.5E-06	4.47809E-05	1.1861819	1.35E-06	4.03026E-05	1.4944091	1.701E-06	5.07752E-05
Road 9	9	1400-1500	0.218564947	2.819E-07	8.41628E-06	0.2009706	2.592E-07	7.73878E-06	1.095226	1.413E-06	4.21739E-05	0.9922294	1.28E-06	3.82078E-05	1.1932	1.539E-06	4.59465E-05
Road 9	9	1500-1600	0.182630176	1.975E-07	5.89492E-06	0.1671037	1.807E-07	5.39376E-06	0.9767326	1.056E-06	3.15269E-05	0.8848201	9.567E-07	2.85602E-05	1.0519237	1.137E-06	3.39539E-05
Road 9	9	1600-1700	0.189344144	2.838E-07	8.47051E-06	0.174604	2.617E-07	7.8111E-06	1.0860541	1.628E-06	4.85858E-05	0.9935379	1.489E-06	4.4447E-05	1.1681419	1.751E-06	5.22581E-05
Road 9	9	1700-1800	0.164201276	2.118E-07	6.3229E-06	0.1533176	1.978E-07	5.9038E-06	1.0333178	1.333E-06	3.979E-05	0.9578145	1.236E-06	3.68826E-05	1.1111321	1.433E-06	4.27864E-05
Road 9	9	1800-1900	0.16175346	1.35E-07	4.0303E-06	0.1520409	1.269E-07	3.78829E-06	1.0042019	8.382E-07	2.5021E-05	0.9379311	7.829E-07	2.33698E-05	1.089972	9.098E-07	2.71581E-05
Road 9	9	1900-2000	0.169397767	1.382E-07	4.12484E-06	0.1574244	1.284E-07	3.83329E-06	0.9316027	7.599E-07	2.26845E-05	0.8518115	6.948E-07	2.07416E-05	1.0092359	8.232E-07	2.45749E-05
Road 9	9	2000-2100	0.180374435	9.923E-08	2.96213E-06	0.1656814	9.115E-08	2.72084E-06	0.819359	4.507E-07	1.34556E-05	0.7460062	4.104E-07	1.2251E-05	0.9116876	5.015E-07	1.49718E-05
Road 9	9	2100-2200	0.023674988	1.213E-08	3.6198E-07	0.0220434	1.129E-08	3.37033E-07	0.3330731	1.706E-07	5.09254E-06	0.3047617	1.561E-07	4.65967E-06	0.326805	1.674E-07	4.9967E-06
Road 9	9	2200-2300	0.172937647	1.083E-07	3.23172E-06	0.160021	1.002E-07	2.99035E-06	0.8577098	5.369E-07	1.60282E-05	0.7875534	4.93E-07	1.47172E-05	0.9475744	5.932E-07	1.77075E-05
Road 9	9	2300-0000	0.139547461	7.942E-08	2.37069E-06	0.1300002	7.398E-08	2.20849E-06	0.7312441	4.161E-07	1.24227E-05	0.6741779	3.837E-07	1.14532E-05	0.8041781	4.577E-07	1.36617E-05
Road 10	10	0000-0100	0.283724843	2.181E-07	4.85036E-06	0.2600327	1.999E-07	4.44533E-06	1.4542905	1.118E-06	2.48615E-05	1.3308816	1.023E-06	2.27518E-05	1.5909143	1.223E-06	2.71971E-05
Road 10	10	0100-0200	0.280373707	1.629E-07	3.62143E-06	0.2558722	1.486E-07	3.30496E-06	1.4257727	8.283E-07	1.84159E-05	1.2982325	7.542E-07	1.67685E-05	1.5541047	9.028E-07	2.00735E-05
Road 10	10	0200-0300	0.278495174	9.041E-08	2.01018E-06	0.2527338	8.204E-08	1.82423E-06	1.3969908	4.535E-07	1.00835E-05	1.2669881	4.113E-07	9.14513E-06	1.5197219	4.933E-07	1.09694E-05
Road 10	10	0300-0400	0.256862902	5.266E-08	1.17097E-06	0.2290862	4.697E-08	1.04435E-06	1.3908779	2.852E-07	6.34065E-06	1.2394474	2.541E-07	5.65032E-06	1.4685336	3.011E-07	6.69467E-06
Road 10	10	0400-0500	0.304099998	1.195E-07	2.6571E-06	0.273621	1.075E-07	2.39079E-06	1.4666615	5.764E-07	1.28151E-05	1.3147725	5.167E-07	1.14879E-05	1.5883935	6.242E-07	1.38787E-05
Road 10	10	0500-0600	0.278302863	1.95E-07	4.33476E-06	0.2495005	1.748E-07	3.88614E-06	1.3486234	9.447E-07	2.10058E-05	1.2047387	8.439E-07	1.87646E-05	1.4542392	1.019E-06	2.26508E-05
Road 10	10	0600-0700	0.34088411	4.776E-07	1.0619E-05	0.3040272	4.26E-07	9.47087E-06	1.7081445	2.393E-06	5.32111E-05	1.5236282	2.135E-06	4.74632E-05	1.8276554	2.561E-06	5.6934E-05
Road 10	10	0700-0800	0.3390405	7.473E-07	1.66152E-05	0.3000901	6.614E-07	1.47064E-05	1.7131758	3.776E-06	8.39567E-05	1.5153752	3.34E-06	7.42632E-05	1.8154654	4.001E-06	8.89696E-05
Road 10	10	0800-0900	0.362022733	1.528E-06	3.39701E-05	0.3167146	1.337E-06	2.97186E-05	1.7955205	7.577E-06	0.000168481	1.5676573	6.616E-06	0.0001471	1.8843719	7.952E-06	0.000176818
Road 10	10	0900-1000	0.396748959	1.329E-06	2.95417E-05	0.3538837	1.185E-06	2.635E-05	1.9193575	6.428E-06	0.000142914	1.7098257	5.726E-06	0.000127313	2.0637094	6.911E-06	0.000153663
Road 10	10	1000-1100	0.39311609	1.431E-06	3.181E-05	0.3491178	1.271E-06	2.82498E-05	1.7818163	6.484E-06	0.00014418	1.5768853	5.739E-06	0.000127598	1.9260031	7.009E-06	0.000155848
Road 10	10	1100-1200	0.382677774	1.393E-06	3.09654E-05	0.3383188	1.231E-06	2.7376E-05	1.800201	6.551E-06	0.000145668	1.5880015	5.779E-06	0.000128497	1.9263203	7.01E-06	0.000155873
Road 10	10	1200-1300	0.398867869	1.499E-06	3.33362E-05	0.3557468	1.337E-06	2.97322E-05	1.9025733	7.151E-06	0.000159011	1.6959997	6.375E-06	0.000141746	2.0517465	7.712E-06	0.000171479
Road 10	10	1300-1400	0.388394021	1.274E-06	2.83294E-05	0.3472141	1.139E-06	2.53258E-05	1.8105815	5.94E-06	0.000132064	1.6142355	5.295E-06	0.000117742	1.9614496	6.434E-06	0.000143068
Road 10	10	1400-1500	0.358122655	1.101E-06	2.44888E-05	0.3241612	9.969E-07	2.21665E-05	1.796648	5.525E-06	0.000122857	1.6229542	4.991E-06	0.000110979	1.9471154	5.988E-06	0.000133146
Road 10	10	1500-1600	0.355377058	1.117E-06	2.48411E-05	0.320626	1.008E-06	2.2412E-05	1.7159899	5.395E-06	0.000119949	1.5460381	4.86E-06	0.000108069	1.866664	5.868E-06	0.000130481
Road 10	10	1600-1700	0.340431922	1.192E-06	2.65123E-05	0.307039	1.075E-06	2.39117E-05	1.668913	5.845E-06	0.000129972	1.5003363	5.255E-06	0.000116844	1.8073754	6.33E-06	0.000140756
Road 10	10	1700-1800	0.312747015	1.026E-06	2.28117E-05	0.2862093	9.389E-07	2.08761E-05	1.6301301	5.348E-06	0.000118901	1.4920548	4.895E-06	0.00010883	1.7782641	5.834E-06	0.000129706
Road 10	10	1800-1900	0.317272686	6.559E-07	1.45842E-05	0.2910778	6.018E-07	1.33801E-05	1.6083197	3.325E-06	7.39301E-05	1.4732702	3.046E-06	6.77223E-05	1.764348	3.648E-06	8.11023E-05
Road 10	10	1900-2000	0.277007804	5.159E-07	1.14705E-05	0.2527843	4.708E-07	1.04674E-05	1.4744797	2.746E-06	6.10561E-05	1.342416	2.5E-06	5.55875E-05	1.5952003	2.971E-06	6.6055E-05
Road 10	10	2000-2100	0.319194517	3.927E-07	8.73075E-06	0.2892863	3.559E-07	7.91269E-06	1.5482328	1.905E-06	4.2348E-05	1.400158	1.722E-06	3.82978E-05	1.6894443	2.078E-06	4.62104E-05
Road 10	10	2100-2200	0.264045395	3.248E-07	7.22229E-06	0.2469767	3.038E-07	6.75542E-06	1.4788405	1.819E-06	4.04499E-05	1.3834568	1.702E-06	3.78409E-05	1.6304335	2.006E-06	4.45964E-05
Road 10	10	2200-2300	0.278653519	3.571E-07	7.93943E-06	0.2568145	3.291E-07	7.31719E-06	1.4350604	1.839E-06	4.08879E-05	1.3232474	1.696E-06	3.77021E-05	1.5800619	2.025E-06	4.50193E-05
Road 10	10	2300-0000	0.254624957	3.045E-07	6.77116E-06	0.2337389	2.796E-07	6.21574E-06	1.2916032	1.545E-06	3.43472E-05	1.1825433	1.414E-06	3.1447E-05	1.4162822	1.694E-06	3.76627E-05
Road 11	11	0000-0100	0.3176206	2.426E-07	2.01261E-06	0.2909878	2.223E-07	1.84385E-06	1.594214	1.218E-06	1.01018E-05	1.458165	1.114E-06	9.23969E-06	1.7491528	1.336E-06	1.10835E-05
Road 11	11	0100-0200	0.319352902	1.719E-07	1.42571E-06	0.2913163	1.568E-07	1.30054E-06	1.5764472	8.484E-07	7.03784E-06	1.4344103	7.72E-07	6.40373E-06	1.7257266	9.288E-07	7.70428E-06
Road 11	11	0200-0300	0.278448988	7.251E-08	6.01499E-07	0.2527097	6.581E-08	5.45898E-07	1.4885617	3.876E-07	3.21556E-06	1.3499446	3.515E-07	2.91612E-06	1.6026542	4.174E-07	3.46202E-06
Road 11	11	0300-0400	0.302571928	7.354E-08	6.10035E-07	0.2698318	6.558E-08	5.44026E-07	1.5850289	3.853E-07	3.19568E-06	1.4133019	3.435E-07	2.84945E-06	1.6831336	4.091E-07	3.39348E-06
Road 11	11	0400-0500	0.314588533	1.092E-07	9.06089E-07	0.2832047	9.833E-08	8.15696E-07	1.4984083	5.203E-07	4.31577E-06	1.343523	4.665E-07	3.86966E-06	1.6267277	5.648E-07	4.68536E-06
Road 11	11	0500-0600	0.254594694	1.193E-07	9.89945E-07	0.2279611	1.069E-07	8.86386E-07	1.3037928	6.112E-07	5.06956E-06	1.164147	5.457E-07	4.52658E-06	1.3921081	6.526E-07	5.41296E-06
Road 11	11	0600-0700	0.279842931	2.526E-07	2.09564E-06	0.2483066	2.242E-07	1.85947E-06	1.4586604	1.317E-06	1.09233E-05	1.2897065	1.164E-06	9.65812E-06	1.5380131	1.388E-06	1.15176E-05
Road 11	11	0700-0800	0.330244062	6.192E-07	5.13638E-06	0.2901672	5.441E-07	4.51305E-06	1.7255227	3.235E-06	2.68375E-05	1.5137994	2.838E-06	2.35445E-05	1.8039667	3.382E-06	2.80576E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (March) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 11	11	0800-0900	0.357962882	1.274E-06	1.05679E-05	0.3148716	1.121E-06	9.29577E-06	1.7725528	6.309E-06	5.23301E-05	1.5519762	5.524E-06	4.58181E-05	1.8668478	6.644E-06	5.51139E-05
Road 11	11	0900-1000	0.355633229	9.014E-07	7.47745E-06	0.317021	8.036E-07	6.6656E-06	1.6881622	4.279E-06	3.54948E-05	1.4968449	3.794E-06	3.14723E-05	1.8138659	4.598E-06	3.81378E-05
Road 11	11	1000-1100	0.366238412	7.566E-07	6.27638E-06	0.3244228	6.702E-07	5.55977E-06	1.711078	3.535E-06	2.93234E-05	1.5111679	3.122E-06	2.58975E-05	1.8355907	3.792E-06	3.14573E-05
Road 11	11	1100-1200	0.32346541	7.525E-07	6.2421E-06	0.2848548	6.627E-07	5.49701E-06	1.6613146	3.865E-06	3.20594E-05	1.4639444	3.406E-06	2.82506E-05	1.7487992	4.068E-06	3.37476E-05
Road 11	11	1200-1300	0.393419529	1.113E-06	9.2351E-06	0.3504365	9.917E-07	8.22612E-06	1.9120814	5.411E-06	4.48841E-05	1.7005645	4.812E-06	3.99189E-05	2.051001	5.804E-06	4.8145E-05
Road 11	11	1300-1400	0.408959123	8.52E-07	7.06739E-06	0.3653588	7.612E-07	6.31392E-06	1.8482059	3.85E-06	3.19396E-05	1.6430099	3.423E-06	2.83935E-05	2.0083687	4.184E-06	3.47075E-05
Road 11	11	1400-1500	0.321239193	6.469E-07	5.36642E-06	0.2901075	5.842E-07	4.84635E-06	1.6108	3.244E-06	2.6909E-05	1.4462134	2.913E-06	2.41595E-05	1.7363209	3.497E-06	2.90059E-05
Road 11	11	1500-1600	0.287106677	5.832E-07	4.83757E-06	0.2586113	5.253E-07	4.35744E-06	1.4919379	3.03E-06	2.51382E-05	1.3397086	2.721E-06	2.25733E-05	1.5983199	3.247E-06	2.69307E-05
Road 11	11	1600-1700	0.274080485	6.614E-07	5.48645E-06	0.2472483	5.967E-07	4.94933E-06	1.4706998	3.549E-06	2.94399E-05	1.3235147	3.194E-06	2.64936E-05	1.5707631	3.791E-06	3.1443E-05
Road 11	11	1700-1800	0.272422446	6.716E-07	5.57095E-06	0.2482002	6.119E-07	5.07561E-06	1.4894172	3.672E-06	3.04581E-05	1.3557174	3.342E-06	2.7724E-05	1.6039176	3.954E-06	3.27996E-05
Road 11	11	1800-1900	0.292341376	5.989E-07	4.96787E-06	0.2674855	5.48E-07	4.54549E-06	1.5658226	3.208E-06	2.66086E-05	1.4319223	2.933E-06	2.43332E-05	1.6994078	3.481E-06	2.88787E-05
Road 11	11	1900-2000	0.280003868	4.424E-07	3.66947E-06	0.2545127	4.021E-07	3.33541E-06	1.4653602	2.315E-06	1.92037E-05	1.3260883	2.095E-06	1.73785E-05	1.580601	2.497E-06	2.07139E-05
Road 11	11	2000-2100	0.287487019	4.043E-07	3.35352E-06	0.2605705	3.664E-07	3.03954E-06	1.4400601	2.025E-06	1.67982E-05	1.3023071	1.831E-06	1.51914E-05	1.5628776	2.198E-06	1.82309E-05
Road 11	11	2100-2200	0.207659715	2.055E-07	1.70461E-06	0.1907416	1.888E-07	1.56574E-06	1.1648637	1.153E-06	9.56199E-06	1.0690082	1.058E-06	8.77514E-06	1.2597498	1.247E-06	1.03409E-05
Road 11	11	2200-2300	0.268237199	2.934E-07	2.43365E-06	0.2458894	2.689E-07	2.23089E-06	1.3601329	1.488E-06	1.23401E-05	1.2434392	1.36E-06	1.12814E-05	1.4893286	1.629E-06	1.35123E-05
Road 11	11	2300-0000	0.255488653	2.661E-07	2.2076E-06	0.234644	2.444E-07	2.02749E-06	1.3178531	1.373E-06	1.13872E-05	1.2068799	1.257E-06	1.04283E-05	1.441524	1.502E-06	1.24558E-05
Haul Road 1	HR1	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0700-0800	1.40616	2.643E-06	3.97544E-06	1.22463	2.302E-06	3.46223E-06	6.46173	1.215E-05	1.82683E-05	5.62775	1.058E-05	1.59106E-05	6.85238	1.288E-05	1.93728E-05
Haul Road 1	HR1	0800-0900	1.40916	2.649E-06	3.98392E-06	1.22563	2.304E-06	3.46505E-06	6.47542	1.217E-05	1.83071E-05	5.63204	1.059E-05	1.59227E-05	6.85767	1.289E-05	1.93877E-05
Haul Road 1	HR1	0900-1000	1.39327	2.619E-06	3.939E-06	1.22373	2.3E-06	3.45968E-06	6.40255	1.203E-05	1.8101E-05	5.62365	1.057E-05	1.5899E-05	6.84738	1.287E-05	1.93586E-05
Haul Road 1	HR1	1000-1100	1.38827	2.61E-06	3.92486E-06	1.21843	2.29E-06	3.4447E-06	6.37936	1.199E-05	1.80355E-05	5.59916	1.052E-05	1.58297E-05	6.81759	1.282E-05	1.92744E-05
Haul Road 1	HR1	1100-1200	1.39327	2.619E-06	3.939E-06	1.22313	2.299E-06	3.45798E-06	6.40255	1.203E-05	1.8101E-05	5.62065	1.057E-05	1.58905E-05	6.84378	1.286E-05	1.93485E-05
Haul Road 1	HR1	1200-1300	1.39327	2.619E-06	3.939E-06	1.22773	2.308E-06	3.47099E-06	6.40255	1.203E-05	1.8101E-05	5.64214	1.061E-05	1.59512E-05	6.86987	1.291E-05	1.94222E-05
Haul Road 1	HR1	1300-1400	1.39187	2.616E-06	3.93504E-06	1.22773	2.308E-06	3.47099E-06	6.39625	1.202E-05	1.80832E-05	5.64214	1.061E-05	1.59512E-05	6.86987	1.291E-05	1.94222E-05
Haul Road 1	HR1	1400-1500	1.38237	2.598E-06	3.90818E-06	1.23243	2.317E-06	3.48428E-06	6.35237	1.194E-05	1.79592E-05	5.66363	1.065E-05	1.6012E-05	6.89606	1.296E-05	1.94963E-05
Haul Road 1	HR1	1500-1600	1.37277	2.58E-06	3.88104E-06	1.22773	2.308E-06	3.47099E-06	6.30849	1.186E-05	1.78351E-05	5.64214	1.061E-05	1.59512E-05	6.86987	1.291E-05	1.94222E-05
Haul Road 1	HR1	1600-1700	1.36958	2.574E-06	3.87202E-06	1.21843	2.29E-06	3.4447E-06	6.29389	1.183E-05	1.77938E-05	5.59916	1.052E-05	1.58297E-05	6.81759	1.282E-05	1.92744E-05
Haul Road 1	HR1	1700-1800	1.35688	2.551E-06	3.83612E-06	1.22373	2.3E-06	3.45968E-06	6.23531	1.172E-05	1.76282E-05	5.62365	1.057E-05	1.5899E-05	6.84738	1.287E-05	1.93586E-05
Haul Road 1	HR1	1800-1900	1.34948	2.537E-06	3.8152E-06	1.22563	2.304E-06	3.46505E-06	6.20163	1.166E-05	1.7533E-05	5.63204	1.059E-05	1.59227E-05	6.85767	1.289E-05	1.93877E-05
Haul Road 1	HR1	1900-2000	1.34658	2.531E-06	3.807E-06	1.21324	2.281E-06	3.43002E-06	6.18784	1.163E-05	1.7494E-05	5.57526	1.048E-05	1.57622E-05	6.7885	1.276E-05	1.91922E-05
Haul Road 1	HR1	2000-2100	1.33459	2.509E-06	3.7731E-06	1.20494	2.265E-06	3.40656E-06	6.13315	1.153E-05	1.73394E-05	5.53748	1.041E-05	1.56553E-05	6.74242	1.267E-05	1.90619E-05
Haul Road 1	HR1	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0700-0800	1.40616	1.821E-06	4.84852E-06	1.22463	1.586E-06	4.2226E-06	6.46173	8.37E-06	2.22804E-05	5.62775	7.29E-06	1.94048E-05	6.85238	8.876E-06	2.36274E-05
Haul Road 2	HR2	0800-0900	1.40916	1.825E-06	4.85887E-06	1.22563	1.588E-06	4.22605E-06	6.47542	8.388E-06	2.23276E-05	5.63204	7.295E-06	1.94196E-05	6.85767	8.883E-06	2.36457E-05
Haul Road 2	HR2	0900-1000	1.39327	1.805E-06	4.80408E-06	1.22373	1.585E-06	4.21949E-06	6.40255	8.293E-06	2.20764E-05	5.62365	7.285E-06	1.93907E-05	6.84738	8.87E-06	2.36102E-05
Haul Road 2	HR2	1000-1100	1.38827	1.798E-06	4.78684E-06	1.21843	1.578E-06	4.20122E-06	6.37936	8.263E-06	2.19964E-05	5.59916	7.253E-06	1.93062E-05	6.81759	8.831E-06	2.35075E-05
Haul Road 2	HR2	1100-1200	1.39327	1.805E-06	4.80408E-06	1.22313	1.584E-06	4.21743E-06	6.40255	8.293E-06	2.20764E-05	5.62065	7.281E-06	1.93803E-05	6.84378	8.865E-06	2.35978E-05
Haul Road 2	HR2	1200-1300	1.39327	1.805E-06	4.80408E-06	1.22773	1.59E-06	4.23329E-06	6.40255	8.293E-06	2.20764E-05	5.64214	7.308E-06	1.94544E-05	6.86987	8.899E-06	2.36877E-05
Haul Road 2	HR2	1300-1400	1.39187	1.803E-06	4.79925E-06	1.22773	1.59E-06	4.23329E-06	6.39625	8.285E-06	2.20547E-05	5.64214	7.308E-06	1.94544E-05	6.86987	8.899E-06	2.36877E-05
Haul Road 2	HR2	1400-1500	1.38237	1.791E-06	4.7665E-06	1.23243	1.596E-06	4.24949E-06	6.35237	8.228E-06	2.19034E-05	5.66363	7.336E-06	1.95285E-05	6.89606	8.933E-06	2.3778E-05
Haul Road 2	HR2	1500-1600	1.37277	1.778E-06	4.73339E-06	1.22773	1.59E-06	4.23329E-06	6.30849	8.172E-06	2.17521E-05	5.64214	7.308E-06	1.94544E-05	6.86987	8.899E-06	2.36877E-05
Haul Road 2	HR2	1600-1700	1.36958	1.774E-06	4.72239E-06	1.21843	1.578E-06	4.20122E-06	6.29389	8.153E-06	2.17017E-05	5.59916	7.253E-06	1.93062E-05	6.81759	8.831E-06	2.35075E-05
Haul Road 2	HR2	1700-1800	1.35688	1.758E-06	4.6786E-06	1.22373	1.585E-06	4.21949E-06	6.23531	8.077E-06	2.14997E-05	5.62365	7.285E-06	1.93907E-05	6.84738	8.87E-06	2.36102E-05
Haul Road 2	HR2	1800-1900	1.34948	1.748E-06	4.65309E-06	1.22563	1.588E-06	4.22605E-06	6.20163	8.033E-06	2.13836E-05	5.63204	7.295E-06	1.94196E-05	6.85767	8.883E-06	2.36457E-05
Haul Road 2	HR2	1900-2000	1.34658	1.744E-06	4.64309E-06	1.21324	1.572E-06	4.18332E-06	6.18784	8.015E-06	2.1336E-05	5.57526	7.222E-06	1.92238E-05	6.7885	8.793E-06	2.34072E-05
Haul Road 2	HR2	2000-2100	1.33459	1.729E-06	4.60175E-06	1.20494	1.561E-06	4.15471E-06	6.13315	7.944E-06	2.11475E-05	5.53748	7.173E-06	1.90936E-05	6.74242	8.734E-06	2.32483E-05
Haul Road 2	HR2	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (March) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Haul Road 2	HR2	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0700-0800	1.40616	1.821E-06	4.84176E-06	1.22463	1.586E-06	4.21671E-06	6.46173	8.37E-06	2.22494E-05	5.62775	7.29E-06	1.93778E-05	6.85238	8.876E-06	2.35945E-05
Haul Road 3	HR3	0800-0900	1.40916	1.825E-06	4.85209E-06	1.22563	1.588E-06	4.22015E-06	6.47542	8.388E-06	2.22965E-05	5.63204	7.295E-06	1.93925E-05	6.85767	8.883E-06	2.36127E-05
Haul Road 3	HR3	0900-1000	1.39327	1.805E-06	4.79738E-06	1.22373	1.585E-06	4.21361E-06	6.40255	8.293E-06	2.20456E-05	5.62365	7.285E-06	1.93636E-05	6.84738	8.87E-06	2.35773E-05
Haul Road 3	HR3	1000-1100	1.38827	1.798E-06	4.78016E-06	1.21843	1.578E-06	4.19536E-06	6.37936	8.263E-06	2.19657E-05	5.59916	7.253E-06	1.92793E-05	6.81759	8.831E-06	2.34747E-05
Haul Road 3	HR3	1100-1200	1.39327	1.805E-06	4.79738E-06	1.22313	1.584E-06	4.21155E-06	6.40255	8.293E-06	2.20456E-05	5.62065	7.281E-06	1.93533E-05	6.84378	8.865E-06	2.35649E-05
Haul Road 3	HR3	1200-1300	1.39327	1.805E-06	4.79738E-06	1.22773	1.59E-06	4.22738E-06	6.40255	8.293E-06	2.20456E-05	5.64214	7.308E-06	1.94273E-05	6.86987	8.899E-06	2.36547E-05
Haul Road 3	HR3	1300-1400	1.39187	1.803E-06	4.79256E-06	1.22773	1.59E-06	4.22738E-06	6.39625	8.285E-06	2.20239E-05	5.64214	7.308E-06	1.94273E-05	6.86987	8.899E-06	2.36547E-05
Haul Road 3	HR3	1400-1500	1.38237	1.791E-06	4.75985E-06	1.23243	1.596E-06	4.24357E-06	6.35237	8.228E-06	2.18728E-05	5.66363	7.336E-06	1.95013E-05	6.89606	8.933E-06	2.37449E-05
Haul Road 3	HR3	1500-1600	1.37277	1.778E-06	4.72679E-06	1.22773	1.59E-06	4.22738E-06	6.30849	8.172E-06	2.17217E-05	5.64214	7.308E-06	1.94273E-05	6.86987	8.899E-06	2.36547E-05
Haul Road 3	HR3	1600-1700	1.36958	1.774E-06	4.71581E-06	1.21843	1.578E-06	4.19536E-06	6.29389	8.153E-06	2.16715E-05	5.59916	7.253E-06	1.92793E-05	6.81759	8.831E-06	2.34747E-05
Haul Road 3	HR3	1700-1800	1.35688	1.758E-06	4.67208E-06	1.22373	1.585E-06	4.21361E-06	6.23531	8.077E-06	2.14697E-05	5.62365	7.285E-06	1.93636E-05	6.84738	8.87E-06	2.35773E-05
Haul Road 3	HR3	1800-1900	1.34948	1.748E-06	4.6466E-06	1.22563	1.588E-06	4.22015E-06	6.20163	8.033E-06	2.13538E-05	5.63204	7.295E-06	1.93925E-05	6.85767	8.883E-06	2.36127E-05
Haul Road 3	HR3	1900-2000	1.34658	1.744E-06	4.63662E-06	1.21324	1.572E-06	4.17749E-06	6.18784	8.015E-06	2.13063E-05	5.57526	7.222E-06	1.9197E-05	6.7885	8.793E-06	2.33745E-05
Haul Road 3	HR3	2000-2100	1.33459	1.729E-06	4.59533E-06	1.20494	1.561E-06	4.14891E-06	6.13315	7.944E-06	2.1118E-05	5.53748	7.173E-06	1.90669E-05	6.74242	8.734E-06	2.32159E-05
Haul Road 3	HR3	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (April) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 1	1	0000-0100	0.096412203	3.203E-07	2.60559E-06	0.0856837	2.846E-07	2.31565E-06	0.5667697	1.883E-06	1.53173E-05	0.5015575	1.666E-06	1.35549E-05	0.5872412	1.951E-06	1.58705E-05
Road 1	1	0100-0200	0.074337778	1.507E-07	1.22584E-06	0.066268	1.343E-07	1.09277E-06	0.4471653	9.064E-07	7.37383E-06	0.3968397	8.044E-07	6.54395E-06	0.4631077	9.387E-07	7.63672E-06
Road 1	1	0200-0300	0.07070039	1.022E-07	8.31216E-07	0.0629008	9.09E-08	7.39517E-07	0.4477732	6.471E-07	5.26441E-06	0.3953365	5.713E-07	4.64792E-06	0.4582373	6.622E-07	5.38744E-06
Road 1	1	0300-0400	0.060108182	6.205E-08	5.04775E-07	0.0534247	5.515E-08	4.48649E-07	0.3631473	3.749E-07	3.04963E-06	0.3204253	3.308E-07	2.69086E-06	0.37385	3.859E-07	3.13951E-06
Road 1	1	0400-0500	0.078493882	1.252E-07	1.01872E-06	0.0713388	1.138E-07	9.25862E-07	0.4458109	7.112E-07	5.7859E-06	0.4035022	6.437E-07	5.2368E-06	0.4748411	7.575E-07	6.16266E-06
Road 1	1	0500-0600	0.063447005	2.227E-07	1.81157E-06	0.0572259	2.008E-07	1.63394E-06	0.3714979	1.304E-06	1.06072E-05	0.3329637	1.169E-06	9.50692E-06	0.3901896	1.369E-06	1.11409E-05
Road 1	1	0600-0700	0.086506355	5.39E-07	4.38518E-06	0.0766055	4.773E-07	3.88329E-06	0.4618068	2.878E-06	2.34099E-05	0.4068811	2.535E-06	2.06256E-05	0.4834867	3.013E-06	2.45089E-05
Road 1	1	0700-0800	0.073984919	7.762E-07	6.31475E-06	0.0647607	6.795E-07	5.52745E-06	0.4060538	4.26E-06	3.46575E-05	0.3526717	3.7E-06	3.01012E-05	0.4174325	4.38E-06	3.56286E-05
Road 1	1	0800-0900	0.07986565	1.027E-06	8.35318E-06	0.0696587	8.956E-07	7.28563E-06	0.4236368	5.447E-06	4.43083E-05	0.3677516	4.728E-06	3.84633E-05	0.4374103	5.624E-06	4.57489E-05
Road 1	1	0900-1000	0.084843437	1.126E-06	9.15881E-06	0.0740799	9.83E-07	7.99689E-06	0.4743275	6.294E-06	5.12034E-05	0.4123384	5.472E-06	4.45117E-05	0.4864183	6.455E-06	5.25086E-05
Road 1	1	1000-1100	0.098226215	1.267E-06	1.03035E-05	0.0853305	1.1E-06	8.95081E-06	0.5271583	6.797E-06	5.52967E-05	0.4562816	5.883E-06	4.7862E-05	0.5416121	6.984E-06	5.68128E-05
Road 1	1	1100-1200	0.088682999	1.11E-06	9.03166E-06	0.0780097	9.766E-07	7.94467E-06	0.5085358	6.366E-06	5.17903E-05	0.445593	5.578E-06	4.53801E-05	0.5236027	6.555E-06	5.33248E-05
Road 1	1	1200-1300	0.090662621	1.123E-06	9.13637E-06	0.0800372	9.915E-07	8.06561E-06	0.5161741	6.394E-06	5.20165E-05	0.4542353	5.627E-06	4.57748E-05	0.5342725	6.618E-06	5.38404E-05
Road 1	1	1300-1400	0.095720028	1.261E-06	1.02599E-05	0.0837163	1.103E-06	8.97322E-06	0.5332154	7.025E-06	5.71533E-05	0.4646832	6.123E-06	4.98076E-05	0.5483995	7.226E-06	5.87808E-05
Road 1	1	1400-1500	0.091991124	1.321E-06	1.07451E-05	0.0790502	1.135E-06	9.23349E-06	0.5003379	7.184E-06	5.84421E-05	0.4283009	6.15E-06	5.00278E-05	0.5073511	7.285E-06	5.92613E-05
Road 1	1	1500-1600	0.098755501	1.314E-06	1.06908E-05	0.0859888	1.144E-06	9.30871E-06	0.5354669	7.125E-06	5.79669E-05	0.4642237	6.177E-06	5.02545E-05	0.5502125	7.322E-06	5.95632E-05
Road 1	1	1600-1700	0.092771096	1.302E-06	1.05954E-05	0.0812029	1.14E-06	9.27415E-06	0.5076841	7.127E-06	5.79824E-05	0.4425529	6.213E-06	5.05438E-05	0.5237557	7.353E-06	5.9818E-05
Road 1	1	1700-1800	0.075740427	1.066E-06	8.67342E-06	0.0650725	9.16E-07	7.45178E-06	0.4230061	5.954E-06	4.84406E-05	0.3610405	5.082E-06	4.13446E-05	0.426113	5.998E-06	4.87963E-05
Road 1	1	1800-1900	0.066938034	9.649E-07	7.84938E-06	0.0585005	8.432E-07	6.85996E-06	0.396999	5.723E-06	4.65535E-05	0.3441489	4.961E-06	4.03561E-05	0.4026493	5.804E-06	4.7216E-05
Road 1	1	1900-2000	0.078727389	8.659E-07	7.04409E-06	0.0693999	7.633E-07	6.20952E-06	0.4492039	4.941E-06	4.01923E-05	0.3935049	4.328E-06	3.52086E-05	0.4629048	5.091E-06	4.14181E-05
Road 1	1	2000-2100	0.071295181	6.637E-07	5.39937E-06	0.062315	5.801E-07	4.71928E-06	0.4178449	3.89E-06	3.16445E-05	0.362744	3.377E-06	2.74715E-05	0.425059	3.957E-06	3.21908E-05
Road 1	1	2100-2200	0.074470066	6.332E-07	5.15088E-06	0.0654922	5.568E-07	4.5299E-06	0.4388031	3.731E-06	3.03507E-05	0.38353	3.261E-06	2.65277E-05	0.4490222	3.818E-06	3.10576E-05
Road 1	1	2200-2300	0.072228863	5.843E-07	4.75324E-06	0.0650362	5.261E-07	4.2799E-06	0.4238759	3.429E-06	2.78944E-05	0.3793804	3.069E-06	2.49663E-05	0.4444166	3.595E-06	2.92462E-05
Road 1	1	2300-0000	0.064415714	4.655E-07	3.78664E-06	0.0567486	4.101E-07	3.33593E-06	0.3923347	2.835E-06	2.30632E-05	0.3425603	2.475E-06	2.01372E-05	0.3993089	2.885E-06	2.34731E-05
Road 2	2	0000-0100	0.161705686	1.909E-07	1.23283E-06	0.1436973	1.696E-07	1.09554E-06	0.6854376	8.092E-07	5.22572E-06	0.6071459	7.168E-07	4.62883E-06	0.7508431	8.864E-07	5.72436E-06
Road 2	2	0100-0200	0.114380303	8.737E-08	5.64252E-07	0.1019173	7.785E-08	5.0277E-07	0.5659194	4.323E-07	2.79175E-06	0.5023567	3.837E-07	2.47819E-06	0.6042739	4.616E-07	2.98096E-06
Road 2	2	0200-0300	0.113834348	6.061E-08	3.91389E-07	0.1013648	5.397E-08	3.48516E-07	0.618693	3.294E-07	2.12721E-06	0.5480965	2.918E-07	1.88448E-06	0.6494613	3.458E-07	2.233E-06
Road 2	2	0300-0400	0.099734	3.463E-08	2.23636E-07	0.08861	3.077E-08	1.98693E-07	0.3615467	1.255E-07	8.10706E-07	0.319408	1.109E-07	7.16217E-07	0.408018	1.417E-07	9.1491E-07
Road 2	2	0400-0500	0.134534444	8.408E-08	5.43006E-07	0.1222515	7.641E-08	4.9343E-07	0.650023	4.063E-07	2.62362E-06	0.5892685	3.683E-07	2.3784E-06	0.71152	4.447E-07	2.87183E-06
Road 2	2	0500-0600	0.10739	1.417E-07	9.15053E-07	0.0968789	1.278E-07	8.2549E-07	0.4728698	6.239E-07	4.02925E-06	0.4245928	5.602E-07	3.61789E-06	0.5214718	6.881E-07	4.44338E-06
Road 2	2	0600-0700	0.153592427	3.662E-07	2.36491E-06	0.1360057	3.243E-07	2.09412E-06	0.6221415	1.483E-06	9.57931E-06	0.5488942	1.309E-06	8.4515E-06	0.6848999	1.633E-06	1.05456E-05
Road 2	2	0700-0800	0.124228608	4.544E-07	2.93418E-06	0.1087339	3.977E-07	2.5682E-06	0.5231018	1.913E-06	1.23552E-05	0.4548922	1.664E-06	1.07442E-05	0.563626	2.061E-06	1.33124E-05
Road 2	2	0800-0900	0.141338067	9.815E-07	6.33852E-06	0.1232669	8.56E-07	5.52809E-06	0.5979539	4.152E-06	2.68162E-05	0.5188868	3.603E-06	2.32703E-05	0.6421537	4.459E-06	2.87984E-05
Road 2	2	0900-1000	0.16382561	9.329E-07	6.02455E-06	0.1429505	8.14E-07	5.25689E-06	0.7084074	4.034E-06	2.60511E-05	0.6162726	3.509E-06	2.26629E-05	0.7592232	4.323E-06	2.79198E-05
Road 2	2	1000-1100	0.181475543	7.73E-07	4.99164E-06	0.1576015	6.713E-07	4.33497E-06	0.7786831	3.317E-06	2.14184E-05	0.6746484	2.874E-06	1.85568E-05	0.8322499	3.545E-06	2.28918E-05
Road 2	2	1100-1200	0.219362265	9.191E-07	5.93538E-06	0.1928309	8.079E-07	5.21751E-06	0.8993038	3.768E-06	2.43328E-05	0.7896074	3.308E-06	2.13647E-05	0.9824383	4.116E-06	2.65822E-05
Road 2	2	1200-1300	0.166089309	7.228E-07	4.66775E-06	0.1466263	6.381E-07	4.12076E-06	0.7309791	3.181E-06	2.05433E-05	0.6435976	2.801E-06	1.80876E-05	0.7902239	3.439E-06	2.22083E-05
Road 2	2	1300-1400	0.185640591	9.454E-07	6.10525E-06	0.1621856	8.259E-07	5.33387E-06	0.767023	3.906E-06	2.52254E-05	0.6682402	3.403E-06	2.19767E-05	0.8304258	4.229E-06	2.73106E-05
Road 2	2	1400-1500	0.162647423	6.137E-07	3.96317E-06	0.1397552	5.273E-07	3.40536E-06	0.7035073	2.654E-06	1.71421E-05	0.6029705	2.275E-06	1.46924E-05	0.7427256	2.802E-06	1.80977E-05
Road 2	2	1500-1600	0.199904358	8.283E-07	5.34913E-06	0.1738068	7.202E-07	4.6508E-06	0.8030807	3.328E-06	2.14892E-05	0.6969286	2.888E-06	1.86487E-05	0.8707354	3.608E-06	2.32995E-05
Road 2	2	1600-1700	0.167991918	8.516E-07	5.49972E-06	0.1470653	7.455E-07	4.81462E-06	0.7102239	3.6E-06	2.32513E-05	0.6198253	3.142E-06	2.02918E-05	0.7668906	3.888E-06	2.51064E-05
Road 2	2	1700-1800	0.129732258	6.517E-07	4.20838E-06	0.1115328	5.602E-07	3.61801E-06	0.5166718	2.595E-06	1.67603E-05	0.4421126	2.221E-06	1.43417E-05	0.5536454	2.781E-06	1.79597E-05
Road 2	2	1800-1900	0.141415242	8.118E-07	5.24271E-06	0.1237363	7.103E-07	4.58729E-06	0.6523189	3.745E-06	2.41835E-05	0.5681253	3.261E-06	2.10622E-05	0.6918616	3.972E-06	2.56495E-05
Road 2	2	1900-2000	0.11886247	4.567E-07	2.94958E-06	0.1047799	4.026E-07	2.60012E-06	0.5455141	2.096E-06	1.3537E-05	0.4782257	1.838E-06	1.18672E-05	0.5830056	2.24E-06	1.44673E-05
Road 2	2	2000-2100	0.116956986	3.953E-07	2.55262E-06	0.1021676	3.453E-07	2.22984E-06	0.491655	1.662E-06	1.07305E-05	0.4264101	1.441E-06	9.30654E-06	0.5285777	1.786E-06	1.15364E-05
Road 2	2	2100-2200	0.089519474	3.15E-07	2.03408E-06	0.0786749	2.768E-07	1.78767E-06	0.4044647	1.423E-06	9.19035E-06	0.3521373	1.239E-06	8.00135E-06	0.4308122	1.516E-06	9.78902E-06
Road 2	2	2200-2300	0.12797768	3.703E-07	2.3914E-06	0.1152192	3.334E-07	2.15299E-06	0.5456427	1.579E-06	1.01959E-05	0.4890041	1.415E-06	9.13756E-06	0.6042233	1.748E-06	1.12906E-05
Road 2	2	2300-0000	0.118064182	3.006E-07	1.94142E-06	0.1039943	2.648E-07	1.71005E-06	0.5310536	1.352E-06	8.7325E-06	0.4646981	1.183E-06	7.64137E-06	0.5686924	1.448E-06	9.35143E-06
Road 3	3	0000-0100	0.100501048	3.691E-07	1.43478E-05	0.0893241	3.281E-07	1.27521E-05	0.5498656	2.02E-06	7.85002E-05	0.4867183	1.788E-06	6.94851E-05	0.5760424	2.116E-06	8.22373E-05
Road 3	3	0100-0200	0.075580851	1.709E-07	6.64369E-06	0.0669099	1.513E-07	5.8815E-06	0.437427	9.893E-07	3.84506E-05	0.3853841	8.716E-07	3.3876E-05	0.452294	1.023E-06	3.97575E-05
Road 3	3	0200-0300	0.07322899	1.163E-07	4.51957E-06	0.0659236	1.047E-07	4.06869E-06	0.4524519	7.185E-07	2.79246E-05	0.4045207	6.423E-07	2.49663E-05	0.4704443	7.47E-07	2.9035E-05
Road 3	3	0300-0400	0.062100435	6.873E-08	2.6713E-06	0.056319	6.233E-08	2.42261E-06	0.3351338	3.709E-07	1.4416E-05	0.3020871	3.343E-07	1.29945E-05	0.3584061	3.967E-07	1.54171E-05
Road 3	3	0400-0500	0.082761351	1.473E-07	5.72703E-06	0.0751347	1.338E-07	5.19927E-06	0.4534965	8.074E-07	3.13816E-05	0.4102271	7.304E-07	2.83874E-05	0.4853618	8.641E-07	3.35867E-05
Road 3	3	0500-0600	0.067718477	2.639E-07	1.02587E-05	0.0602624	2.349E-07	9.12917E-06	0.3719483	1.45E-06	5.63466E-05	0.3285985	1.281E-06	4.97795E-05	0.3888609	1.516E-06	5.89087E-05
Road 3	3	0600-0700	0.091988151	6.462E-07	2.5118E-05	0.0813627	5.716E-07	2.22166E-05	0.4569079	3.21E-06	0.000124762	0.4020391	2.824E-06	0.000109779	0.4834018	3.396E-06	0.000131996
Road 3	3	0700-0800	0.076954763	8.838E-07	3.435E-05	0.0684808	7.865E-07	3.05675E-05	0.3985083	4.577E-06	0.000177881	0.3522197	4.045E-06	0.000157219	0.4207005	4.831E-06	0.000187787
Road 3	3	0800-0900	0.084878948	1.346E-06	5.23329E-05	0.0753085	1.195E-06	4.64322E-05	0.4210875	6.68E-06	0.000259626	0.371928	5.9E-06	0.000229316	0.4472365	7.095E-06	0.000275748
Road 3	3	0900-1000	0.093622138	1.433E-06	5.56808E-05	0.081577	1.248E-06	4.85171E-05	0.4808493	7.358E-06	0.00028598	0.4173101	6.386E-06	0.000248191	0.4988872	7.634E-06	0.000296708
Road 3	3	1000-1100	0.104656529	1.46E-06	5.67629E-05	0.0909769	1.27E-06	4.93434E-05	0.5311841	7.412E-06	0.0002881	0.4603085	6.423E-06	0.000249659	0.5512854	7.693E-06	0.000299002
Road 3	3	1100-1200	0.102200508	1.387E-06	5.39017E-05	0.0899587	1.221E-06	4.74452E-05	0.5319246	7.218E-06	0.000280543	0.466828	6.335E-06	0.00024621	0.5567867	7.555E-06	0.000293655
Road 3	3	1200-1300	0.096962187	1.316E-06	5.11389E-05	0.0844427	1.146E-06	4.4536E-05	0.5162083	7.005E-06	0.000272254	0.4478807	6.077E-06	0.000236217	0.5323234	7.223E-06	0.000280753
Road 3	3	1300-1400	0.103385386	1.524E-06	5.92316E-05	0.0897889	1.324E-06	5.14419E-05	0.529829	7.81E-06	0.00030355	0.4584298	6.757E-06	0.000262644	0.5482187	8.081E-06	0.000314086

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (April) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 3	3	1400-1500	0.096199675	1.426E-06	5.54146E-05	0.0839593	1.244E-06	4.83637E-05	0.4988453	7.393E-06	0.000287354	0.4337108	6.428E-06	0.000249834	0.5176701	7.672E-06	0.000298197
Road 3	3	1500-1600	0.10755973	1.535E-06	5.96786E-05	0.0934284	1.334E-06	5.18379E-05	0.5429088	7.75E-06	0.000301228	0.4698208	6.707E-06	0.000260676	0.5632492	8.04E-06	0.000312514
Road 3	3	1600-1700	0.099436904	1.545E-06	6.0069E-05	0.0883907	1.374E-06	5.3396E-05	0.5113125	7.947E-06	0.000308879	0.4527224	7.036E-06	0.000273486	0.5411131	8.41E-06	0.000326882
Road 3	3	1700-1800	0.080557062	1.253E-06	4.8714E-05	0.069101	1.075E-06	4.17864E-05	0.4147109	6.452E-06	0.000250782	0.3534022	5.498E-06	0.000213707	0.4225032	6.573E-06	0.000255494
Road 3	3	1800-1900	0.075654405	1.234E-06	4.7966E-05	0.065846	1.074E-06	4.17473E-05	0.4167045	6.797E-06	0.000264197	0.3599616	5.872E-06	0.000228221	0.4258076	6.946E-06	0.000269968
Road 3	3	1900-2000	0.079322576	9.58E-07	3.72366E-05	0.070001	8.455E-07	3.28608E-05	0.4337504	5.239E-06	0.000203617	0.3804514	4.595E-06	0.000178596	0.4504524	5.44E-06	0.000211457
Road 3	3	2000-2100	0.07395278	7.639E-07	2.96906E-05	0.0648009	6.694E-07	2.60163E-05	0.4009	4.141E-06	0.000160954	0.3489637	3.605E-06	0.000140102	0.4137646	4.274E-06	0.000166118
Road 3	3	2100-2200	0.072188984	7.063E-07	2.74523E-05	0.0647878	6.339E-07	2.46378E-05	0.4044224	3.957E-06	0.000153796	0.3607971	3.53E-06	0.000137206	0.4255849	4.164E-06	0.000161843
Road 3	3	2200-2300	0.077197482	6.884E-07	2.67582E-05	0.0692351	6.174E-07	2.39983E-05	0.4175362	3.724E-06	0.000144726	0.3721514	3.319E-06	0.000128995	0.4413865	3.936E-06	0.000152993
Road 3	3	2300-0000	0.069552751	5.556E-07	2.15935E-05	0.0610256	4.875E-07	1.89461E-05	0.3912439	3.125E-06	0.000121466	0.3402614	2.718E-06	0.000105638	0.401287	3.205E-06	0.000124584
Road 4	4	0000-0100	0.256873143	2.081E-07	2.22841E-06	0.2280949	1.848E-07	1.97875E-06	1.3083383	1.06E-06	1.135E-05	1.1615371	9.411E-07	1.00765E-05	1.389632	1.126E-06	1.20552E-05
Road 4	4	0100-0200	0.243043	1.125E-07	1.20482E-06	0.2149875	9.953E-08	1.06574E-06	1.2404655	5.743E-07	6.14925E-06	1.097088	5.079E-07	5.4385E-06	1.3120755	6.074E-07	6.50424E-06
Road 4	4	0200-0300	0.262831538	7.909E-08	8.46893E-07	0.2367477	7.124E-08	7.62846E-07	1.2973708	3.904E-07	4.18037E-06	1.1683462	3.516E-07	3.76463E-06	1.4050938	4.228E-07	4.52748E-06
Road 4	4	0300-0400	0.235625714	3.818E-08	4.08816E-07	0.2138457	3.465E-08	3.71027E-07	1.2507843	2.027E-07	2.17014E-06	1.1349814	1.839E-07	1.96922E-06	1.3488271	2.186E-07	2.34025E-06
Road 4	4	0400-0500	0.241347143	7.821E-08	8.37486E-07	0.2190171	7.098E-08	7.6E-07	1.1917607	3.862E-07	4.13547E-06	1.0814421	3.505E-07	3.75266E-06	1.3004593	4.214E-07	4.51266E-06
Road 4	4	0500-0600	0.226200833	1.257E-07	1.34559E-06	0.2012979	1.118E-07	1.19745E-06	1.0715504	5.953E-07	6.37428E-06	0.9530629	5.295E-07	5.66944E-06	1.1543608	6.413E-07	6.86689E-06
Road 4	4	0600-0700	0.248847692	2.995E-07	3.20734E-06	0.2200581	2.649E-07	2.83627E-06	1.187515	1.429E-06	1.53056E-05	1.049499	1.263E-06	1.35267E-05	1.2695571	1.528E-06	1.6363E-05
Road 4	4	0700-0800	0.254193478	5.413E-07	5.79642E-06	0.2262484	4.818E-07	5.15918E-06	1.2647577	2.693E-06	2.88405E-05	1.124789	2.395E-06	2.56488E-05	1.3510374	2.877E-06	3.08079E-05
Road 4	4	0800-0900	0.25920634	9.18E-07	9.8298E-06	0.2299176	8.143E-07	8.71909E-06	1.2927809	4.579E-06	4.90257E-05	1.1462212	4.06E-06	4.34678E-05	1.3761389	4.874E-06	5.21869E-05
Road 4	4	0900-1000	0.271540743	9.303E-07	9.96103E-06	0.2360708	8.088E-07	8.65987E-06	1.279458	4.383E-06	4.69348E-05	1.1116878	3.809E-06	4.07805E-05	1.3477586	4.617E-06	4.94403E-05
Road 4	4	1000-1100	0.300478182	9.946E-07	1.06502E-05	0.2609642	8.638E-07	9.24963E-06	1.4190049	4.697E-06	5.02953E-05	1.2318002	4.077E-06	4.366E-05	1.4927644	4.941E-06	5.29096E-05
Road 4	4	1100-1200	0.277919419	9.972E-07	1.06772E-05	0.244375	8.768E-07	9.38849E-06	1.3035605	4.677E-06	5.00807E-05	1.1460293	4.112E-06	4.40286E-05	1.3904043	4.989E-06	5.34171E-05
Road 4	4	1200-1300	0.285706531	9.722E-07	1.04099E-05	0.2485437	8.457E-07	9.05582E-06	1.4018961	4.77E-06	5.10788E-05	1.2191984	4.149E-06	4.44221E-05	1.467742	4.994E-06	5.34779E-05
Road 4	4	1300-1400	0.294339195	1.015E-06	1.08703E-05	0.2553223	8.806E-07	9.42937E-06	1.4104815	4.865E-06	5.20908E-05	1.2230742	4.218E-06	4.51696E-05	1.4783964	5.099E-06	5.4599E-05
Road 4	4	1400-1500	0.269586087	8.612E-07	9.22113E-06	0.2349804	7.506E-07	8.03745E-06	1.3356843	4.267E-06	4.56868E-05	1.1636294	3.717E-06	3.98017E-05	1.3986099	4.468E-06	4.78391E-05
Road 4	4	1500-1600	0.302139113	8.673E-07	9.28616E-06	0.2620748	7.523E-07	8.05479E-06	1.4462765	4.151E-06	4.44509E-05	1.2541607	3.6E-06	3.85463E-05	1.5162355	4.352E-06	4.66011E-05
Road 4	4	1600-1700	0.278415565	7.992E-07	8.55702E-06	0.2472404	7.097E-07	7.59886E-06	1.347816	3.869E-06	4.14247E-05	1.1963643	3.434E-06	3.67699E-05	1.4436047	4.144E-06	4.43688E-05
Road 4	4	1700-1800	0.270463095	7.889E-07	8.44668E-06	0.2319799	6.766E-07	7.24483E-06	1.3311183	3.882E-06	4.15714E-05	1.1408311	3.327E-06	3.56287E-05	1.372811	4.004E-06	4.28735E-05
Road 4	4	1800-1900	0.296619906	7.278E-07	7.79316E-06	0.25829	6.338E-07	6.78611E-06	1.4800388	3.632E-06	3.88854E-05	1.2885592	3.162E-06	3.38546E-05	1.5468492	3.796E-06	4.06407E-05
Road 4	4	1900-2000	0.263016081	4.505E-07	4.82416E-06	0.2322524	3.978E-07	4.2599E-06	1.3060518	2.237E-06	2.39552E-05	1.1526716	1.974E-06	2.11419E-05	1.3849241	2.372E-06	2.54018E-05
Road 4	4	2000-2100	0.230882245	2.619E-07	2.8041E-06	0.2023135	2.295E-07	2.45713E-06	1.1526147	1.307E-06	1.39987E-05	1.0086447	1.144E-06	1.22502E-05	1.2109582	1.374E-06	1.47073E-05
Road 4	4	2100-2200	0.191024054	1.636E-07	1.75185E-06	0.1716154	1.47E-07	1.57386E-06	0.9704249	8.312E-07	8.89961E-06	0.8708254	7.458E-07	7.9862E-06	1.0424408	8.928E-07	9.56006E-06
Road 4	4	2200-2300	0.254818095	3.716E-07	3.97904E-06	0.2285171	3.333E-07	3.56835E-06	1.2493429	1.822E-06	1.95088E-05	1.1200194	1.633E-06	1.74893E-05	1.3485365	1.967E-06	2.10577E-05
Road 4	4	2300-0000	0.24126375	2.681E-07	2.87039E-06	0.2116546	2.352E-07	2.51812E-06	1.2143483	1.349E-06	1.44475E-05	1.064739	1.183E-06	1.26675E-05	1.2763935	1.418E-06	1.51856E-05
Road 5	5	0000-0100	0.085780311	3.107E-07	4.20204E-06	0.0762612	2.762E-07	3.73573E-06	0.4708572	1.706E-06	2.30654E-05	0.4162835	1.508E-06	2.03921E-05	0.4925447	1.784E-06	2.41278E-05
Road 5	5	0100-0200	0.058181074	1.321E-07	1.78682E-06	0.0515218	1.17E-07	1.58231E-06	0.3491711	7.93E-07	1.07235E-05	0.3070837	6.974E-07	9.43098E-06	0.3586055	8.144E-07	1.10133E-05
Road 5	5	0200-0300	0.054637558	8.819E-08	1.19263E-06	0.0491726	7.937E-08	1.07334E-06	0.3669963	5.924E-07	8.01078E-06	0.3271121	5.28E-07	7.14019E-06	0.3762847	6.074E-07	8.21353E-06
Road 5	5	0300-0400	0.049510161	5.761E-08	7.79114E-07	0.0448855	5.223E-08	7.06338E-07	0.2623131	3.052E-07	4.12787E-06	0.2357871	2.744E-07	3.71045E-06	0.2806726	3.266E-07	4.41679E-06
Road 5	5	0400-0500	0.068702577	1.251E-07	1.69145E-06	0.0623793	1.136E-07	1.53577E-06	0.383998	6.991E-07	9.454E-06	0.3469743	6.317E-07	8.54248E-06	0.4093536	7.453E-07	1.00783E-05
Road 5	5	0500-0600	0.055882661	2.286E-07	3.09206E-06	0.0497226	2.034E-07	2.75122E-06	0.3170093	1.297E-06	1.75406E-05	0.2794851	1.144E-06	1.54643E-05	0.3292077	1.347E-06	1.82155E-05
Road 5	5	0600-0700	0.080890753	5.845E-07	7.9045E-06	0.0715492	5.17E-07	6.99166E-06	0.3998409	2.889E-06	3.90717E-05	0.351369	2.539E-06	3.43352E-05	0.4229183	3.056E-06	4.13268E-05
Road 5	5	0700-0800	0.063303301	7.414E-07	1.0026E-05	0.0563338	6.598E-07	8.92214E-06	0.3253772	3.811E-06	5.15331E-05	0.2868787	3.36E-06	4.54357E-05	0.3432125	4.02E-06	5.43579E-05
Road 5	5	0800-0900	0.068282309	1.071E-06	1.44887E-05	0.0605907	9.507E-07	1.28566E-05	0.3304193	5.185E-06	7.01111E-05	0.2913169	4.571E-06	6.1814E-05	0.3519076	5.522E-06	7.46706E-05
Road 5	5	0900-1000	0.076324913	1.157E-06	1.56528E-05	0.0665548	1.009E-06	1.36492E-05	0.4005871	6.075E-06	8.21529E-05	0.3474893	5.27E-06	7.12636E-05	0.4140441	6.279E-06	8.49127E-05
Road 5	5	1000-1100	0.085941556	1.171E-06	1.58363E-05	0.0747635	1.019E-06	1.37766E-05	0.4429143	6.035E-06	8.16152E-05	0.3835124	5.226E-06	7.06693E-05	0.4582759	6.245E-06	8.44459E-05
Road 5	5	1100-1200	0.083796928	1.085E-06	1.46755E-05	0.0737899	9.556E-07	1.29229E-05	0.44852	5.809E-06	7.85499E-05	0.3933336	5.094E-06	6.8885E-05	0.4671234	6.049E-06	8.1808E-05
Road 5	5	1200-1300	0.078840258	1.034E-06	1.39875E-05	0.0686957	9.012E-07	1.21877E-05	0.4253897	5.581E-06	7.54708E-05	0.3686764	4.837E-06	6.5409E-05	0.4373721	5.738E-06	7.75967E-05
Road 5	5	1300-1400	0.085310587	1.228E-06	1.66078E-05	0.0741036	1.067E-06	1.44261E-05	0.4431151	6.379E-06	8.62634E-05	0.3830729	5.515E-06	7.45747E-05	0.4571765	6.581E-06	8.90009E-05
Road 5	5	1400-1500	0.081576845	1.203E-06	1.62744E-05	0.071221	1.051E-06	1.42084E-05	0.4235813	6.249E-06	8.45034E-05	0.3680363	5.429E-06	7.34223E-05	0.4392572	6.48E-06	8.76307E-05
Road 5	5	1500-1600	0.091752052	1.317E-06	1.78153E-05	0.0797168	1.145E-06	1.54784E-05	0.465779	6.688E-06	9.04391E-05	0.4027842	5.783E-06	7.82075E-05	0.482501	6.928E-06	9.3686E-05
Road 5	5	1600-1700	0.084912803	1.342E-06	1.81468E-05	0.0754699	1.193E-06	1.61288E-05	0.4405853	6.963E-06	9.41579E-05	0.389807	6.16E-06	8.3306E-05	0.4652769	7.353E-06	9.94348E-05
Road 5	5	1700-1800	0.064232903	1.018E-06	1.37599E-05	0.0550926	8.727E-07	1.18019E-05	0.3319028	5.258E-06	7.10998E-05	0.2821482	4.469E-06	6.04414E-05	0.3372408	5.342E-06	7.22433E-05
Road 5	5	1800-1900	0.059909824	1.023E-06	1.38374E-05	0.0521423	8.906E-07	1.20433E-05	0.3370935	5.757E-06	7.78586E-05	0.2903507	4.959E-06	6.70624E-05	0.342493	5.85E-06	7.91057E-05
Road 5	5	1900-2000	0.067957341	8.635E-07	1.16772E-05	0.0599676	7.62E-07	1.03043E-05	0.3775716	4.798E-06	6.48788E-05	0.3306243	4.201E-06	5.68118E-05	0.390592	4.963E-06	6.71161E-05
Road 5	5	2000-2100	0.065520623	7.305E-07	9.87823E-06	0.057416	6.401E-07	8.65634E-06	0.357671	3.988E-06	5.39244E-05	0.3110117	3.467E-06	4.68898E-05	0.3684277	4.107E-06	5.55461E-05
Road 5	5	2100-2200	0.067708004	7.256E-07	9.81276E-06	0.0607551	6.511E-07	8.80509E-06	0.3816539	4.09E-06	5.53122E-05	0.3402302	3.646E-06	4.93087E-05	0.4009853	4.297E-06	5.81138E-05
Road 5	5	2200-2300	0.065084654	6.01E-07	8.12753E-06	0.0583675	5.39E-07	7.28872E-06	0.35811	3.307E-06	4.47195E-05	0.3186239	2.942E-06	3.97886E-05	0.3769914	3.481E-06	4.70773E-05
Road 5	5	2300-0000	0.058657589	4.932E-07	6.66987E-06	0.0514725	4.328E-07	5.85286E-06	0.3360718	2.826E-06	3.82142E-05	0.2915827	2.452E-06	3.31554E-05	0.3430552	2.885E-06	3.90083E-05
Road 6	6	0000-0100	0.052073446	1.446E-07	5.1706E-06	0.0462114	1.284E-07	4.58852E-06	0.3258626	9.052E-07	3.23563E-05	0.286398	7.955E-07	2.84377E-05	0.3326093	9.239E-07	3.30262E-05
Road 6	6	0100-0200	0.067713363	1.436E-07	5.13352E-06	0.0599412	1.271E-07	4.5443E-06	0.3760441	7.975E-07	2.85089E-05	0.3301993	7.003E-07	2.50332E-05	0.3901405	8.274E-07	2.95775E-05
Road 6	6	0200-0300	0.062208354	9.224E-08	3.29715E-06	0.0560765	8.315E-08	2.97215E-06	0.3466922	5.141E-07	1.83753E-05	0.3100282	4.597E-07	1.6432E-05	0.3661047	5.428E-07	1.94042E-05
Road 6	6	0300-0400	0.062167097	7.234E-08	2.58592E-06	0.0565355	6.579E-08	2.35166E-06	0.3897918	4.536E-07	1.62139E-05	0.3522698	4.099E-07	1.46531E-05	0.4088053	4.757E-07	1.70048E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (April) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 6	6	0400-0500	0.067427556	1.139E-07	4.07139E-06	0.0612252	1.034E-07	3.69688E-06	0.3877008	6.549E-07	2.341E-05	0.3497587	5.908E-07	2.1119E-05	0.4109839	6.942E-07	2.48159E-05
Road 6	6	0500-0600	0.061673416	1.864E-07	6.66172E-06	0.0549289	1.66E-07	5.93321E-06	0.3648003	1.102E-06	3.94043E-05	0.3218894	9.727E-07	3.47692E-05	0.3768183	1.139E-06	4.07024E-05
Road 6	6	0600-0700	0.065322927	3.519E-07	1.2578E-05	0.0578047	3.114E-07	1.11303E-05	0.3970959	2.139E-06	7.6461E-05	0.3481612	1.875E-06	6.70386E-05	0.4059659	2.187E-06	7.81689E-05
Road 6	6	0700-0800	0.062681075	5.365E-07	1.91763E-05	0.0558052	4.776E-07	1.70727E-05	0.3483172	2.981E-06	0.000106562	0.3072511	2.63E-06	9.39985E-05	0.3630563	3.107E-06	0.000111071
Road 6	6	0800-0900	0.053316422	6.544E-07	2.33938E-05	0.047271	5.802E-07	2.07413E-05	0.3084888	3.787E-06	0.000135357	0.2705434	3.321E-06	0.000118707	0.3178144	3.901E-06	0.000139449
Road 6	6	0900-1000	0.056666115	6.679E-07	2.38751E-05	0.0493098	5.812E-07	2.07757E-05	0.3134413	3.694E-06	0.000132062	0.2697258	3.179E-06	0.000113644	0.3190356	3.76E-06	0.000134419
Road 6	6	1000-1100	0.075523778	7.541E-07	2.69562E-05	0.0656118	6.551E-07	2.34184E-05	0.4083405	4.077E-06	0.000145746	0.3525243	3.52E-06	0.000125824	0.4181361	4.175E-06	0.000149242
Road 6	6	1100-1200	0.085508807	8.474E-07	3.02906E-05	0.0753397	7.466E-07	2.66883E-05	0.4409407	4.37E-06	0.000156198	0.3866919	3.832E-06	0.000136981	0.4620316	4.579E-06	0.00016367
Road 6	6	1200-1300	0.083636318	8.1E-07	2.89539E-05	0.0729014	7.06E-07	2.52376E-05	0.4110089	3.98E-06	0.000142286	0.3566563	3.454E-06	0.00012347	0.4295577	4.16E-06	0.000148708
Road 6	6	1300-1400	0.097852	9.458E-07	3.38096E-05	0.0850081	8.217E-07	2.93718E-05	0.4897333	4.734E-06	0.000169211	0.4233917	4.092E-06	0.000146289	0.5083997	4.914E-06	0.000175661
Road 6	6	1400-1500	0.093355352	9.952E-07	3.55754E-05	0.0814899	8.687E-07	3.10538E-05	0.4642273	4.949E-06	0.000176906	0.4031994	4.298E-06	0.000153649	0.4846893	5.167E-06	0.000184703
Road 6	6	1500-1600	0.082458126	8.589E-07	3.07036E-05	0.0716115	7.46E-07	2.66648E-05	0.419009	4.365E-06	0.00015602	0.3616663	3.767E-06	0.000134668	0.4332778	4.513E-06	0.000161333
Road 6	6	1600-1700	0.085076725	9.07E-07	3.24206E-05	0.075629	8.063E-07	2.88204E-05	0.4133803	4.407E-06	0.000157529	0.3657214	3.899E-06	0.000139367	0.4413504	4.705E-06	0.000168188
Road 6	6	1700-1800	0.064356344	7.235E-07	2.58631E-05	0.0552402	6.21E-07	2.21996E-05	0.3220103	3.62E-06	0.000129407	0.2739306	3.08E-06	0.000110085	0.3291708	3.701E-06	0.000132285
Road 6	6	1800-1900	0.062955637	8.07E-07	2.88481E-05	0.0547956	7.024E-07	2.5109E-05	0.3251329	4.168E-06	0.000148986	0.2803809	3.594E-06	0.000128479	0.3351765	4.297E-06	0.000153588
Road 6	6	1900-2000	0.073382802	7.176E-07	2.56504E-05	0.0647393	6.331E-07	2.26291E-05	0.3781272	3.698E-06	0.000132172	0.3307614	3.234E-06	0.000115615	0.3955007	3.867E-06	0.000138244
Road 6	6	2000-2100	0.058635854	4.512E-07	1.61291E-05	0.0513389	3.951E-07	1.41219E-05	0.3275931	2.521E-06	9.01117E-05	0.284095	2.186E-06	7.81466E-05	0.3354339	2.581E-06	9.22685E-05
Road 6	6	2100-2200	0.08107514	5.417E-07	1.93642E-05	0.0727554	4.861E-07	1.73771E-05	0.4192503	2.801E-06	0.000100135	0.374018	2.499E-06	8.93316E-05	0.4467735	2.985E-06	0.000106709
Road 6	6	2200-2300	0.060637692	4.291E-07	1.53372E-05	0.0543355	3.845E-07	1.37432E-05	0.3330637	2.357E-06	8.42425E-05	0.2948919	2.087E-06	7.45876E-05	0.3492274	2.471E-06	8.83308E-05
Road 6	6	2300-0000	0.041404689	2.751E-07	9.83366E-06	0.0363379	2.414E-07	8.63029E-06	0.2526263	1.678E-06	5.9999E-05	0.2186331	1.453E-06	5.19256E-05	0.254971	1.694E-06	6.05559E-05
Road 7	7	0000-0100	0.074674946	1.995E-07	4.97987E-06	0.0662852	1.771E-07	4.42039E-06	0.4388195	1.172E-06	2.92637E-05	0.3871979	1.034E-06	2.58212E-05	0.4534831	1.211E-06	3.02416E-05
Road 7	7	0100-0200	0.089916499	1.867E-07	4.66016E-06	0.0797803	1.656E-07	4.13483E-06	0.4921414	1.022E-06	2.55065E-05	0.4345174	9.021E-07	2.252E-05	0.5142977	1.068E-06	2.66549E-05
Road 7	7	0200-0300	0.078123441	1.066E-07	2.66155E-06	0.0701357	9.572E-08	2.38942E-06	0.4383384	5.982E-07	1.49335E-05	0.3913495	5.341E-07	1.33327E-05	0.4614852	6.298E-07	1.57221E-05
Road 7	7	0300-0400	0.078136228	8.622E-08	2.15224E-06	0.0705442	7.784E-08	1.94312E-06	0.4688004	5.173E-07	1.2913E-05	0.4212499	4.648E-07	1.16032E-05	0.491794	5.427E-07	1.35464E-05
Road 7	7	0400-0500	0.086562525	1.395E-07	3.4824E-06	0.0786254	1.267E-07	3.16309E-06	0.4796616	7.73E-07	1.92967E-05	0.4337804	6.991E-07	1.74509E-05	0.5124057	8.258E-07	2.0614E-05
Road 7	7	0500-0600	0.079654057	2.267E-07	5.65835E-06	0.0712839	2.028E-07	5.06376E-06	0.4468705	1.272E-06	3.17441E-05	0.3974317	1.131E-06	2.82322E-05	0.4687156	1.334E-06	3.32959E-05
Road 7	7	0600-0700	0.083198901	4.228E-07	1.05539E-05	0.0736644	3.743E-07	9.34439E-06	0.4757983	2.418E-06	6.03555E-05	0.4184573	2.126E-06	5.30817E-05	0.4921217	2.501E-06	6.24261E-05
Road 7	7	0700-0800	0.081087321	6.593E-07	1.64576E-05	0.071778	5.836E-07	1.45682E-05	0.4373613	3.556E-06	8.87675E-05	0.3845565	3.127E-06	7.80502E-05	0.4563346	3.71E-06	9.26183E-05
Road 7	7	0800-0900	0.080332826	9.867E-07	2.46314E-05	0.0708246	8.699E-07	2.1716E-05	0.4361865	5.358E-06	0.000133742	0.3820983	4.693E-06	0.000117158	0.4529229	5.563E-06	0.000138874
Road 7	7	0900-1000	0.083565828	9.536E-07	2.38055E-05	0.0727403	8.301E-07	2.07216E-05	0.4362585	4.978E-06	0.000124277	0.3773875	4.307E-06	0.000107507	0.4501278	5.137E-06	0.000128228
Road 7	7	1000-1100	0.098349283	9.838E-07	2.45593E-05	0.0854295	8.546E-07	2.1333E-05	0.5169603	5.171E-06	0.000129093	0.4470287	4.472E-06	0.00011163	0.5324582	5.326E-06	0.000132963
Road 7	7	1100-1200	0.107284214	1.069E-06	2.66738E-05	0.0944081	9.403E-07	2.34725E-05	0.5531393	5.509E-06	0.000137526	0.4854012	4.834E-06	0.000120684	0.5798093	5.775E-06	0.000144157
Road 7	7	1200-1300	0.106046989	1.055E-06	2.63278E-05	0.0928304	9.232E-07	2.30466E-05	0.5349214	5.32E-06	0.000132802	0.4669558	4.644E-06	0.000115929	0.5597862	5.567E-06	0.000138976
Road 7	7	1300-1400	0.114301443	1.12E-06	2.79628E-05	0.0995042	9.751E-07	2.43428E-05	0.5748705	5.634E-06	0.000140637	0.4988264	4.889E-06	0.000122033	0.5983306	5.864E-06	0.000146376
Road 7	7	1400-1500	0.107181831	1.102E-06	2.7503E-05	0.0930289	9.563E-07	2.38713E-05	0.5453109	5.605E-06	0.000139927	0.4715579	4.847E-06	0.000121002	0.5645868	5.803E-06	0.000144874
Road 7	7	1500-1600	0.099181591	9.965E-07	2.4875E-05	0.0861593	8.656E-07	2.1609E-05	0.5087156	5.111E-06	0.000127587	0.440006	4.421E-06	0.000110355	0.5261653	5.286E-06	0.000131964
Road 7	7	1600-1700	0.101845154	1.059E-06	2.64289E-05	0.0900029	9.356E-07	2.33558E-05	0.5034642	5.234E-06	0.000130649	0.4434981	4.61E-06	0.000115088	0.533501	5.546E-06	0.000138444
Road 7	7	1700-1800	0.08013695	8.831E-07	2.20445E-05	0.0688037	7.582E-07	1.89269E-05	0.4108731	4.528E-06	0.000113025	0.3505503	3.863E-06	9.64313E-05	0.419354	4.621E-06	0.000115358
Road 7	7	1800-1900	0.073582614	8.418E-07	2.10149E-05	0.064161	7.34E-07	1.83241E-05	0.3854555	4.41E-06	0.000110084	0.3337903	3.819E-06	9.53291E-05	0.3979513	4.553E-06	0.000113653
Road 7	7	1900-2000	0.084281692	7.305E-07	1.82362E-05	0.0743397	6.443E-07	1.6085E-05	0.4425856	3.836E-06	9.57629E-05	0.3878953	3.362E-06	8.39295E-05	0.462235	4.006E-06	0.000100014
Road 7	7	2000-2100	0.077856325	5.516E-07	1.37702E-05	0.068118	4.826E-07	1.20478E-05	0.4186968	2.966E-06	7.40534E-05	0.3638515	2.578E-06	6.43531E-05	0.4319695	3.061E-06	7.64009E-05
Road 7	7	2100-2200	0.088937943	5.294E-07	1.32159E-05	0.0792501	4.717E-07	1.17763E-05	0.4667761	2.779E-06	6.93614E-05	0.4137895	2.463E-06	6.14878E-05	0.4930397	2.935E-06	7.32641E-05
Road 7	7	2200-2300	0.0745831	4.786E-07	1.19478E-05	0.0669481	4.296E-07	1.07247E-05	0.4047866	2.598E-06	6.48446E-05	0.3602432	2.312E-06	5.7709E-05	0.4271913	2.741E-06	6.84337E-05
Road 7	7	2300-0000	0.052498231	3.102E-07	7.74399E-06	0.0461459	2.727E-07	6.80696E-06	0.3098132	1.831E-06	4.57004E-05	0.2695885	1.593E-06	3.97669E-05	0.3157344	1.866E-06	4.65738E-05
Road 8	8	0000-0100	0.225792222	1.642E-07	2.70698E-06	0.2005183	1.458E-07	2.40398E-06	1.1534336	8.389E-07	1.38283E-05	1.0236942	7.445E-07	1.22729E-05	1.2242125	8.903E-07	1.46769E-05
Road 8	8	0100-0200	0.2342	1.419E-07	2.33982E-06	0.2072003	1.256E-07	2.07007E-06	1.1918107	7.223E-07	1.1907E-05	1.0541783	6.389E-07	1.0532E-05	1.2613787	7.645E-07	1.2602E-05
Road 8	8	0200-0300	0.221634667	6.716E-08	1.10714E-06	0.1997347	6.053E-08	9.97743E-07	1.1879767	3.6E-07	5.93435E-06	1.070174	3.243E-07	5.34588E-06	1.2699087	3.848E-07	6.34363E-06
Road 8	8	0300-0400	0.199595714	5.645E-08	9.30579E-07	0.1813214	5.128E-08	8.45378E-07	1.0434457	2.951E-07	4.86488E-06	0.9475843	2.68E-07	4.41794E-06	1.1289057	3.193E-07	5.26332E-06
Road 8	8	0400-0500	0.225330952	9.559E-08	1.57585E-06	0.20454	8.677E-08	1.43045E-06	1.1127681	4.721E-07	7.78212E-06	1.0100138	4.285E-07	7.06351E-06	1.2145538	5.153E-07	8.49395E-06
Road 8	8	0500-0600	0.217667353	1.495E-07	2.4646E-06	0.1937862	1.331E-07	2.1942E-06	1.0549271	7.246E-07	1.19447E-05	0.9386621	6.447E-07	1.06283E-05	1.1324482	7.778E-07	1.28225E-05
Road 8	8	0600-0700	0.241036774	3.019E-07	4.97678E-06	0.2132756	2.671E-07	4.40359E-06	1.154325	1.446E-06	2.38338E-05	1.0206805	1.278E-06	2.10744E-05	1.2339561	1.546E-06	2.5478E-05
Road 8	8	0700-0800	0.245398218	5.007E-07	8.25404E-06	0.2184664	4.458E-07	7.34818E-06	1.1883604	2.425E-06	3.99709E-05	1.0573876	2.157E-06	3.55655E-05	1.2758541	2.603E-06	4.29137E-05
Road 8	8	0800-0900	0.269965053	1.036E-06	1.70819E-05	0.2396396	9.198E-07	1.5163E-05	1.3121348	5.036E-06	8.30244E-05	1.1639164	4.468E-06	7.3646E-05	1.403556	5.387E-06	8.8809E-05
Road 8	8	0900-1000	0.293767771	9.317E-07	1.53595E-05	0.255476	8.103E-07	1.33575E-05	1.3586804	4.309E-06	7.1038E-05	1.1814817	3.747E-06	6.17733E-05	1.4369576	4.558E-06	7.51307E-05
Road 8	8	1000-1100	0.280036203	8.939E-07	1.47348E-05	0.2432475	7.764E-07	1.27991E-05	1.3291396	4.243E-06	6.99361E-05	1.1533966	3.682E-06	6.06889E-05	1.3966442	4.458E-06	7.3488E-05
Road 8	8	1100-1200	0.285366604	9.166E-07	1.51103E-05	0.2509107	8.06E-07	1.32859E-05	1.3738881	4.413E-06	7.27482E-05	1.2078367	3.88E-06	6.39557E-05	1.4587474	4.686E-06	7.72416E-05
Road 8	8	1200-1300	0.290257988	9.91E-07	1.6336E-05	0.2525281	8.622E-07	1.42125E-05	1.4116983	4.82E-06	7.94516E-05	1.2277625	4.192E-06	6.90995E-05	1.4802906	5.054E-06	8.3312E-05
Road 8	8	1300-1400	0.266586313	8.617E-07	1.42047E-05	0.231296	7.476E-07	1.23243E-05	1.2730229	4.115E-06	6.78313E-05	1.1040799	3.569E-06	5.88294E-05	1.3353759	4.316E-06	7.11537E-05
Road 8	8	1400-1500	0.259600576	7.29E-07	1.2017E-05	0.2263125	6.355E-07	1.0476E-05	1.2982496	3.646E-06	6.00962E-05	1.1314352	3.177E-06	5.23743E-05	1.3577477	3.813E-06	6.28504E-05
Road 8	8	1500-1600	0.267355109	7.4E-07	1.21978E-05	0.2318676	6.417E-07	1.05788E-05	1.3010035	3.601E-06	5.93571E-05	1.1275493	3.121E-06	5.14434E-05	1.3594169	3.762E-06	6.20222E-05
Road 8	8	1600-1700	0.264799041	7.81E-07	1.28749E-05	0.2351189	6.935E-07	1.14318E-05	1.2729134	3.754E-06	6.18907E-05	1.1297577	3.332E-06	5.49303E-05	1.3648766	4.026E-06	6.63621E-05
Road 8	8	1700-1800	0.219398141	6.914E-07	1.13981E-05	0.1880938	5.928E-07	9.77176E-06	1.1013359	3.471E-06	5.72161E-05	0.9427686	2.971E-06	4.89783E-05	1.1308624	3.564E-06	5.875E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (April) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 8	8	1800-1900	0.218738879	4.728E-07	7.79442E-06	0.1905856	4.12E-07	6.79122E-06	1.1233628	2.428E-06	4.00293E-05	0.9778207	2.114E-06	3.48431E-05	1.1684063	2.526E-06	4.16343E-05
Road 8	8	1900-2000	0.213763636	3.325E-07	5.48149E-06	0.1888079	2.937E-07	4.84155E-06	1.1256547	1.751E-06	2.88649E-05	0.9937474	1.546E-06	2.54824E-05	1.1825553	1.84E-06	3.0324E-05
Road 8	8	2000-2100	0.235671711	3.618E-07	5.96479E-06	0.206503	3.171E-07	5.22654E-06	1.1273793	1.731E-06	2.85337E-05	0.9867041	1.515E-06	2.49732E-05	1.1932071	1.832E-06	3.01997E-05
Road 8	8	2100-2200	0.192234906	2.058E-07	3.39299E-06	0.1726134	1.848E-07	3.04666E-06	1.0097309	1.081E-06	1.7822E-05	0.9053934	9.694E-07	1.59804E-05	1.0780068	1.154E-06	1.9027E-05
Road 8	8	2200-2300	0.23096125	2.986E-07	4.92258E-06	0.2071227	2.678E-07	4.4145E-06	1.1441016	1.479E-06	2.43848E-05	1.0252172	1.326E-06	2.18509E-05	1.2323398	1.593E-06	2.62654E-05
Road 8	8	2300-0000	0.188727115	1.983E-07	3.26822E-06	0.1656612	1.74E-07	2.86878E-06	0.9719056	1.021E-06	1.68307E-05	0.8523319	8.954E-07	1.476E-05	1.0179931	1.069E-06	1.76288E-05
Road 9	9	0000-0100	0.195837926	5.201E-08	1.55259E-06	0.1775833	4.716E-08	1.40786E-06	0.8957071	2.379E-07	7.10109E-06	0.8065397	2.142E-07	6.39417E-06	0.984123	2.614E-07	7.80204E-06
Road 9	9	0100-0200	0.212855445	4.442E-08	1.32589E-06	0.1931704	4.031E-08	1.20327E-06	0.9199857	1.92E-07	5.73066E-06	0.8285992	1.729E-07	5.1614E-06	1.0217697	2.132E-07	6.36468E-06
Road 9	9	0200-0300	0.083620546	7.931E-09	2.36763E-07	0.0755227	7.163E-09	2.13835E-07	0.5996793	5.688E-08	1.69793E-06	0.541766	5.139E-08	1.53395E-06	0.6172887	5.855E-08	1.74779E-06
Road 9	9	0300-0400	0.100247255	7.607E-09	2.27072E-07	0.0909728	6.903E-09	2.06064E-07	0.6229005	4.727E-08	1.41094E-06	0.5655909	4.292E-08	1.28113E-06	0.6565637	4.982E-08	1.48719E-06
Road 9	9	0400-0500	0.226817331	4.303E-08	1.28442E-06	0.2098492	3.981E-08	1.18833E-06	0.9419858	1.787E-07	5.33427E-06	0.8664802	1.644E-07	4.9067E-06	1.0763294	2.042E-07	6.09503E-06
Road 9	9	0500-0600	0.164676499	5.311E-08	1.5853E-06	0.150128	4.841E-08	1.44524E-06	0.8369207	2.699E-07	8.05683E-06	0.7605439	2.453E-07	7.32156E-06	0.9106719	2.937E-07	8.76681E-06
Road 9	9	0600-0700	0.192464384	1.168E-07	3.48764E-06	0.1751077	1.063E-07	3.17312E-06	1.0136466	6.153E-07	1.83682E-05	0.9178696	5.572E-07	1.66327E-05	1.0929773	6.635E-07	1.98058E-05
Road 9	9	0700-0800	0.16808183	1.53E-07	4.5687E-06	0.15412	1.403E-07	4.1892E-06	0.9706797	8.838E-07	2.63844E-05	0.8847378	8.056E-07	2.40484E-05	1.0388578	9.459E-07	2.82376E-05
Road 9	9	0800-0900	0.256090261	5.587E-07	1.66771E-05	0.2317741	5.056E-07	1.50936E-05	1.2469436	2.72E-06	8.12036E-05	1.1200497	2.443E-06	7.294E-05	1.3518239	2.949E-06	8.80336E-05
Road 9	9	0900-1000	0.267210828	4.359E-07	1.30132E-05	0.2408288	3.929E-07	1.17284E-05	1.1849107	1.933E-06	5.77052E-05	1.0581806	1.726E-06	5.15334E-05	1.2990094	2.119E-06	6.32618E-05
Road 9	9	1000-1100	0.277929151	3.743E-07	1.11744E-05	0.2465819	3.321E-07	9.91403E-06	1.2031631	1.62E-06	4.83742E-05	1.0620138	1.43E-06	4.26991E-05	1.3085957	1.762E-06	5.26132E-05
Road 9	9	1100-1200	0.192664359	2.705E-07	8.07354E-06	0.1709122	2.399E-07	7.16202E-06	1.0366107	1.455E-06	4.34388E-05	0.92488	1.298E-06	3.87568E-05	1.0957922	1.538E-06	4.59188E-05
Road 9	9	1200-1300	0.28867285	3.998E-07	1.19333E-05	0.2610199	3.615E-07	1.07901E-05	1.3368153	1.851E-06	5.52618E-05	1.2073063	1.672E-06	4.99081E-05	1.4683263	2.033E-06	6.06982E-05
Road 9	9	1300-1400	0.326452465	3.716E-07	1.10918E-05	0.2938406	3.344E-07	9.98375E-06	1.2618669	1.436E-06	4.28741E-05	1.1278642	1.284E-06	3.83212E-05	1.4217048	1.618E-06	4.83049E-05
Road 9	9	1400-1500	0.211674193	2.73E-07	8.15094E-06	0.1916083	2.472E-07	7.37826E-06	1.0525215	1.358E-06	4.05294E-05	0.9425786	1.216E-06	3.62959E-05	1.134187	1.463E-06	4.36741E-05
Road 9	9	1500-1600	0.177011292	1.914E-07	5.71356E-06	0.1584262	1.713E-07	5.11367E-06	0.9403987	1.017E-06	3.03541E-05	0.8398499	9.081E-07	2.71086E-05	0.998276	1.079E-06	3.22223E-05
Road 9	9	1600-1700	0.182250128	2.731E-07	8.15315E-06	0.167546	2.511E-07	7.49535E-06	1.0404998	1.559E-06	4.65479E-05	0.9524876	1.427E-06	4.26105E-05	1.1200336	1.678E-06	5.01059E-05
Road 9	9	1700-1800	0.161123035	2.078E-07	6.20436E-06	0.146228	1.886E-07	5.6308E-06	1.0099624	1.303E-06	3.88906E-05	0.9161302	1.182E-06	3.52774E-05	1.0623582	1.37E-06	4.09082E-05
Road 9	9	1800-1900	0.15866155	1.324E-07	3.95326E-06	0.1461531	1.22E-07	3.64159E-06	0.9796964	8.177E-07	2.44104E-05	0.9030166	7.537E-07	2.24998E-05	1.0491698	8.757E-07	2.61414E-05
Road 9	9	1900-2000	0.163328797	1.332E-07	3.97706E-06	0.1503722	1.227E-07	3.66156E-06	0.888813	7.25E-07	2.16426E-05	0.8101335	6.608E-07	1.97268E-05	0.9605057	7.835E-07	2.33883E-05
Road 9	9	2000-2100	0.174351837	9.591E-08	2.86322E-06	0.1566948	8.62E-08	2.57326E-06	0.785685	4.322E-07	1.29026E-05	0.7064716	3.886E-07	1.16017E-05	0.8631665	4.748E-07	1.4175E-05
Road 9	9	2100-2200	0.022713612	1.163E-08	3.47281E-07	0.0209191	1.071E-08	3.19843E-07	0.3159151	1.618E-07	4.8302E-06	0.2863092	1.466E-07	4.37754E-06	0.3072283	1.574E-07	4.69738E-06
Road 9	9	2200-2300	0.165938578	1.039E-07	3.10093E-06	0.1519037	9.509E-08	2.83866E-06	0.817914	5.12E-07	1.52845E-05	0.7450852	4.664E-07	1.39236E-05	0.8969889	5.615E-07	1.67622E-05
Road 9	9	2300-0000	0.136658449	7.777E-08	2.32161E-06	0.1238483	7.048E-08	2.10398E-06	0.7119387	4.052E-07	1.20947E-05	0.6390922	3.637E-07	1.08571E-05	0.7629405	4.342E-07	1.29611E-05
Road 10	10	0000-0100	0.273791106	2.105E-07	4.68054E-06	0.2444053	1.879E-07	4.17818E-06	1.4016088	1.078E-06	2.39609E-05	1.250178	9.612E-07	2.13721E-05	1.4945833	1.149E-06	2.55503E-05
Road 10	10	0100-0200	0.269200442	1.564E-07	3.47711E-06	0.2397688	1.393E-07	3.09696E-06	1.3662866	7.937E-07	1.76476E-05	1.2158188	7.063E-07	1.5704E-05	1.4555877	8.456E-07	1.8801E-05
Road 10	10	0200-0300	0.267416272	8.681E-08	1.93021E-06	0.2409828	7.823E-08	1.73942E-06	1.3403169	4.351E-07	9.67442E-06	1.2082725	3.922E-07	8.72132E-06	1.4492553	4.705E-07	1.04607E-05
Road 10	10	0300-0400	0.239645997	4.913E-08	1.09248E-06	0.2176257	4.462E-08	9.92099E-07	1.2963413	2.658E-07	5.90969E-06	1.1776669	2.415E-07	5.36868E-06	1.3952927	2.861E-07	6.36078E-06
Road 10	10	0400-0500	0.28111625	1.105E-07	2.45628E-06	0.2568881	1.009E-07	2.24458E-06	1.3517264	5.312E-07	1.18108E-05	1.2319584	4.841E-07	1.07643E-05	1.4888465	5.851E-07	1.30089E-05
Road 10	10	0500-0600	0.259864688	1.82E-07	4.04757E-06	0.2337339	1.637E-07	3.64057E-06	1.2559378	8.798E-07	1.95621E-05	1.1263348	7.89E-07	1.75435E-05	1.3600687	9.527E-07	2.1184E-05
Road 10	10	0600-0700	0.313195993	4.388E-07	9.75649E-06	0.282048	3.952E-07	8.78619E-06	1.5681	2.197E-06	4.88485E-05	1.413434	1.98E-06	4.40305E-05	1.695482	2.375E-06	5.28166E-05
Road 10	10	0700-0800	0.314170819	6.924E-07	1.53964E-05	0.2837353	6.254E-07	1.39049E-05	1.5858758	3.495E-06	7.77182E-05	1.4323313	3.157E-06	7.01935E-05	1.7160666	3.782E-06	8.40984E-05
Road 10	10	0800-0900	0.332685149	1.404E-06	3.12172E-05	0.2966461	1.252E-06	2.78355E-05	1.6479251	6.955E-06	0.000154632	1.4680897	6.196E-06	0.000137757	1.7647358	7.447E-06	0.000165592
Road 10	10	0900-1000	0.378068011	1.266E-06	2.81507E-05	0.3344248	1.12E-06	2.49011E-05	1.8285004	6.123E-06	0.000136149	1.6160491	5.412E-06	0.00012033	1.9504739	6.532E-06	0.000145231
Road 10	10	1000-1100	0.373745039	1.36E-06	3.02426E-05	0.3287639	1.196E-06	2.66028E-05	1.6919382	6.157E-06	0.000136908	1.4831409	5.398E-06	0.000120012	1.8119048	6.594E-06	0.000146615
Road 10	10	1100-1200	0.360888337	1.313E-06	2.92022E-05	0.3195712	1.163E-06	2.5859E-05	1.6958396	6.172E-06	0.000137223	1.4994556	5.457E-06	0.000121332	1.8190268	6.62E-06	0.000147191
Road 10	10	1200-1300	0.379137749	1.425E-06	3.16872E-05	0.3344056	1.257E-06	2.79486E-05	1.8076395	6.795E-06	0.000151077	1.5944459	5.993E-06	0.000133259	1.9288515	7.25E-06	0.000161207
Road 10	10	1300-1400	0.370667688	1.216E-06	2.70365E-05	0.3266058	1.071E-06	2.38226E-05	1.7254554	5.66E-06	0.000125854	1.5174198	4.978E-06	0.00011068	1.8440256	6.049E-06	0.000134503
Road 10	10	1400-1500	0.344260092	1.059E-06	2.35409E-05	0.3058538	9.406E-07	2.09146E-05	1.7246693	5.304E-06	0.000117935	1.5313405	4.71E-06	0.000104715	1.8371943	5.65E-06	0.000125629
Road 10	10	1500-1600	0.342990514	1.078E-06	2.39753E-05	0.3009734	9.462E-07	2.10383E-05	1.6545331	5.201E-06	0.000115653	1.4516592	4.564E-06	0.000101472	1.7526326	5.51E-06	0.00012251
Road 10	10	1600-1700	0.32459783	1.137E-06	2.52792E-05	0.292412	1.024E-06	2.27726E-05	1.5884463	5.564E-06	0.000123706	1.4279807	5.002E-06	0.000111209	1.7203927	6.026E-06	0.000133982
Road 10	10	1700-1800	0.305225403	1.001E-06	2.22631E-05	0.2677942	8.785E-07	1.95329E-05	1.5901017	5.216E-06	0.000115982	1.3997584	4.592E-06	0.000102098	1.6675526	5.47E-06	0.000121631
Road 10	10	1800-1900	0.308514552	6.378E-07	1.41816E-05	0.2729298	5.642E-07	1.25459E-05	1.5615705	3.228E-06	7.17812E-05	1.3823202	2.858E-06	6.35415E-05	1.6552501	3.422E-06	7.60874E-05
Road 10	10	1900-2000	0.264755954	4.931E-07	1.09632E-05	0.237744	4.428E-07	9.84464E-06	1.4065136	2.619E-06	5.82417E-05	1.263414	2.353E-06	5.23162E-05	1.501158	2.796E-06	6.21608E-05
Road 10	10	2000-2100	0.307266443	3.78E-07	8.40449E-06	0.2707305	3.33E-07	7.40514E-06	1.4881835	1.831E-06	4.07055E-05	1.3096409	1.611E-06	3.58219E-05	1.5803714	1.944E-06	4.3227E-05
Road 10	10	2100-2200	0.255035029	3.137E-07	6.97583E-06	0.2348652	2.889E-07	6.42414E-06	1.4271273	1.756E-06	3.90354E-05	1.3169673	1.62E-06	3.60223E-05	1.5518325	1.909E-06	4.24464E-05
Road 10	10	2200-2300	0.267205044	3.424E-07	7.61324E-06	0.2428276	3.112E-07	6.91868E-06	1.3755871	1.763E-06	3.91934E-05	1.2525088	1.605E-06	3.56867E-05	1.4953364	1.916E-06	4.26053E-05
Road 10	10	2300-0000	0.248788413	2.976E-07	6.61595E-06	0.219957	2.631E-07	5.84924E-06	1.2599247	1.507E-06	3.35047E-05	1.1115567	1.329E-06	2.95592E-05	1.3315137	1.592E-06	3.54085E-05
Road 11	11	0000-0100	0.306512067	2.341E-07	1.94222E-06	0.2733765	2.088E-07	1.73226E-06	1.537225	1.174E-06	9.74066E-06	1.3684467	1.045E-06	8.67119E-06	1.6418232	1.254E-06	1.04034E-05
Road 11	11	0100-0200	0.306647218	1.65E-07	1.36899E-06	0.2727907	1.468E-07	1.21784E-06	1.5115702	8.135E-07	6.7482E-06	1.3414674	7.22E-07	5.9888E-06	1.6142581	8.688E-07	7.20664E-06
Road 11	11	0200-0300	0.267354131	6.962E-08	5.77532E-07	0.2409432	6.275E-08	5.2048E-07	1.428105	3.719E-07	3.08496E-06	1.2873756	3.353E-07	2.78096E-06	1.5283188	3.98E-07	3.30144E-06
Road 11	11	0300-0400	0.282306029	6.862E-08	5.69176E-07	0.2563113	6.23E-08	5.16766E-07	1.4784928	3.594E-07	2.98089E-06	1.3427333	3.264E-07	2.70717E-06	1.5990446	3.887E-07	3.22394E-06
Road 11	11	0400-0500	0.290918188	1.01E-07	8.37913E-07	0.2659749	9.235E-08	7.66071E-07	1.3811315	4.796E-07	3.97799E-06	1.2591353	4.372E-07	3.62661E-06	1.5251102	5.296E-07	4.39268E-06
Road 11	11	0500-0600	0.237511364	1.113E-07	9.2352E-07	0.2133677	1E-07	8.29642E-07	1.2134886	5.688E-07	4.71843E-06	1.0881627	5.101E-07	4.23112E-06	1.3015303	6.101E-07	5.06077E-06
Road 11	11	0600-0700	0.256121413	2.312E-07	1.91799E-06	0.2294639	2.072E-07	1.71837E-06	1.3297994	1.201E-06	9.95836E-06	1.188977	1.073E-06	8.90379E-06	1.4184409	1.281E-06	1.06222E-05
Road 11	11	0700-0800	0.304639147	5.712E-07	4.73814E-06	0.2733344	5.125E-07	4.25125E-06	1.5893383	2.98E-06	2.47194E-05	1.424801	2.672E-06	2.21603E-05	1.6981354	3.184E-06	2.64116E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (April) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 11	11	0800-0900	0.33006679	1.175E-06	9.74437E-06	0.295823	1.053E-06	8.73341E-06	1.6296337	5.8E-06	4.81107E-05	1.4556438	5.181E-06	4.29741E-05	1.7514667	6.234E-06	5.17075E-05
Road 11	11	0900-1000	0.338783129	8.587E-07	7.12316E-06	0.299443	7.59E-07	6.29601E-06	1.6053355	4.069E-06	3.37533E-05	1.4116564	3.578E-06	2.96811E-05	1.7110994	4.337E-06	3.59771E-05
Road 11	11	1000-1100	0.347881303	7.187E-07	5.96178E-06	0.3051092	6.303E-07	5.22878E-06	1.6233637	3.354E-06	2.78202E-05	1.4195837	2.933E-06	2.4328E-05	1.7246929	3.563E-06	2.95568E-05
Road 11	11	1100-1200	0.304476021	7.083E-07	5.87565E-06	0.2685184	6.247E-07	5.18176E-06	1.5641889	3.639E-06	3.01851E-05	1.3825381	3.216E-06	2.66796E-05	1.6510565	3.841E-06	3.18614E-05
Road 11	11	1200-1300	0.373739947	1.058E-06	8.77314E-06	0.3291089	9.313E-07	7.72548E-06	1.8148863	5.136E-06	4.26025E-05	1.5966928	4.518E-06	3.74807E-05	1.9258017	5.45E-06	4.52061E-05
Road 11	11	1300-1400	0.390193777	8.129E-07	6.7431E-06	0.3435223	7.157E-07	5.93655E-06	1.7594347	3.665E-06	3.04055E-05	1.5414231	3.211E-06	2.6638E-05	1.8849454	3.927E-06	3.25745E-05
Road 11	11	1400-1500	0.308506146	6.213E-07	5.15371E-06	0.2733269	5.505E-07	4.56603E-06	1.542218	3.106E-06	2.57633E-05	1.3602702	2.739E-06	2.27238E-05	1.6335972	3.29E-06	2.72898E-05
Road 11	11	1500-1600	0.276930313	5.625E-07	4.66611E-06	0.242475	4.925E-07	4.08555E-06	1.4360997	2.917E-06	2.41974E-05	1.2568291	2.553E-06	2.11768E-05	1.4993041	3.045E-06	2.52624E-05
Road 11	11	1600-1700	0.261333526	6.306E-07	5.23128E-06	0.2354671	5.682E-07	4.7135E-06	1.4002754	3.379E-06	2.80302E-05	1.2607561	3.042E-06	2.52374E-05	1.4962233	3.611E-06	2.99509E-05
Road 11	11	1700-1800	0.265539264	6.546E-07	5.43019E-06	0.231469	5.706E-07	4.73347E-06	1.4505363	3.576E-06	2.9663E-05	1.2673195	3.124E-06	2.59163E-05	1.4987886	3.695E-06	3.06497E-05
Road 11	11	1800-1900	0.2840107	5.818E-07	4.82631E-06	0.2502698	5.127E-07	4.25293E-06	1.5195472	3.113E-06	2.58223E-05	1.3414858	2.748E-06	2.27964E-05	1.5917556	3.261E-06	2.70493E-05
Road 11	11	1900-2000	0.267128366	4.22E-07	3.50074E-06	0.2387259	3.772E-07	3.12852E-06	1.3938454	2.202E-06	1.82664E-05	1.2423827	1.963E-06	1.62815E-05	1.4811086	2.34E-06	1.941E-05
Road 11	11	2000-2100	0.276717767	3.891E-07	3.2279E-06	0.2439354	3.43E-07	2.8455E-06	1.3835418	1.946E-06	1.6139E-05	1.2190928	1.714E-06	1.42207E-05	1.4630282	2.057E-06	1.70662E-05
Road 11	11	2100-2200	0.198730496	1.967E-07	1.63131E-06	0.1787293	1.769E-07	1.46713E-06	1.1134527	1.102E-06	9.13997E-06	1.0015175	9.911E-07	8.22113E-06	1.1802468	1.168E-06	9.68826E-06
Road 11	11	2200-2300	0.256520208	2.806E-07	2.32734E-06	0.2315798	2.533E-07	2.10106E-06	1.2980026	1.42E-06	1.17764E-05	1.1696811	1.279E-06	1.06122E-05	1.4012609	1.533E-06	1.27133E-05
Road 11	11	2300-0000	0.249659225	2.601E-07	2.15723E-06	0.2209116	2.301E-07	1.90883E-06	1.2856144	1.339E-06	1.11086E-05	1.1346068	1.182E-06	9.80381E-06	1.3555185	1.412E-06	1.17126E-05
Haul Road 1	HR1	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0700-0800	1.29031	2.425E-06	3.64791E-06	1.14826	2.158E-06	3.24632E-06	5.92963	1.115E-05	1.6764E-05	5.27688	9.919E-06	1.49186E-05	6.42514	1.208E-05	1.81649E-05
Haul Road 1	HR1	0800-0900	1.29031	2.425E-06	3.64791E-06	1.14416	2.151E-06	3.23472E-06	5.92963	1.115E-05	1.6764E-05	5.25809	9.884E-06	1.48655E-05	6.40225	1.203E-05	1.81002E-05
Haul Road 1	HR1	0900-1000	1.31939	2.48E-06	3.73013E-06	1.14666	2.155E-06	3.24179E-06	6.06288	1.14E-05	1.71407E-05	5.26918	9.904E-06	1.48968E-05	6.41584	1.206E-05	1.81386E-05
Haul Road 1	HR1	1000-1100	1.3136	2.469E-06	3.71376E-06	1.13986	2.143E-06	3.22257E-06	6.03629	1.135E-05	1.70656E-05	5.2384	9.847E-06	1.48098E-05	6.37826	1.199E-05	1.80324E-05
Haul Road 1	HR1	1100-1200	1.3097	2.462E-06	3.70273E-06	1.15116	2.164E-06	3.25451E-06	6.01859	1.131E-05	1.70155E-05	5.29007	9.944E-06	1.49559E-05	6.44123	1.211E-05	1.82104E-05
Haul Road 1	HR1	1200-1300	1.3174	2.476E-06	3.7245E-06	1.14556	2.153E-06	3.23868E-06	6.05418	1.138E-05	1.71161E-05	5.26419	9.895E-06	1.48827E-05	6.40975	1.205E-05	1.81214E-05
Haul Road 1	HR1	1300-1400	1.32129	2.484E-06	3.7355E-06	1.14556	2.153E-06	3.23868E-06	6.07188	1.141E-05	1.71662E-05	5.26419	9.895E-06	1.48827E-05	6.40975	1.205E-05	1.81214E-05
Haul Road 1	HR1	1400-1500	1.32129	2.484E-06	3.7355E-06	1.15116	2.164E-06	3.25451E-06	6.07188	1.141E-05	1.71662E-05	5.29007	9.944E-06	1.49559E-05	6.44123	1.211E-05	1.82104E-05
Haul Road 1	HR1	1500-1600	1.32129	2.484E-06	3.7355E-06	1.14556	2.153E-06	3.23868E-06	6.07188	1.141E-05	1.71662E-05	5.26419	9.895E-06	1.48827E-05	6.40975	1.205E-05	1.81214E-05
Haul Road 1	HR1	1600-1700	1.2981	2.44E-06	3.66994E-06	1.15196	2.165E-06	3.25678E-06	5.96532	1.121E-05	1.68649E-05	5.29357	9.95E-06	1.49658E-05	6.44553	1.212E-05	1.82225E-05
Haul Road 1	HR1	1700-1800	1.31939	2.48E-06	3.73013E-06	1.13077	2.126E-06	3.19687E-06	6.06288	1.14E-05	1.71407E-05	5.19631	9.768E-06	1.46908E-05	6.32708	1.189E-05	1.78877E-05
Haul Road 1	HR1	1800-1900	1.3085	2.46E-06	3.69934E-06	1.13926	2.141E-06	3.22087E-06	6.0129	1.13E-05	1.69994E-05	5.2351	9.84E-06	1.48005E-05	6.37436	1.198E-05	1.80213E-05
Haul Road 1	HR1	1900-2000	1.27951	2.405E-06	3.61738E-06	1.12927	2.123E-06	3.19263E-06	5.87965	1.105E-05	1.66227E-05	5.18941	9.755E-06	1.46713E-05	6.31868	1.188E-05	1.78639E-05
Haul Road 1	HR1	2000-2100	1.28311	2.412E-06	3.62756E-06	1.12427	2.113E-06	3.17849E-06	5.89634	1.108E-05	1.66699E-05	5.16652	9.712E-06	1.46066E-05	6.29079	1.182E-05	1.77851E-05
Haul Road 1	HR1	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0700-0800	1.29031	1.671E-06	4.44907E-06	1.14826	1.487E-06	3.95927E-06	5.92963	7.681E-06	2.04457E-05	5.27688	6.835E-06	1.8195E-05	6.42514	8.323E-06	2.21543E-05
Haul Road 2	HR2	0800-0900	1.29031	1.671E-06	4.44907E-06	1.14416	1.482E-06	3.94513E-06	5.92963	7.681E-06	2.04457E-05	5.25809	6.811E-06	1.81302E-05	6.40225	8.293E-06	2.20753E-05
Haul Road 2	HR2	0900-1000	1.31939	1.709E-06	4.54934E-06	1.14666	1.485E-06	3.95375E-06	6.06288	7.853E-06	2.09052E-05	5.26918	6.825E-06	1.81684E-05	6.41584	8.311E-06	2.21222E-05
Haul Road 2	HR2	1000-1100	1.3136	1.702E-06	4.52937E-06	1.13986	1.477E-06	3.93031E-06	6.03629	7.819E-06	2.08135E-05	5.2384	6.785E-06	1.80623E-05	6.37826	8.262E-06	2.19926E-05
Haul Road 2	HR2	1100-1200	1.3097	1.697E-06	4.51592E-06	1.15116	1.491E-06	3.96927E-06	6.01859	7.796E-06	2.07525E-05	5.29007	6.852E-06	1.82405E-05	6.44123	8.344E-06	2.22097E-05
Haul Road 2	HR2	1200-1300	1.3174	1.706E-06	4.54247E-06	1.14556	1.484E-06	3.94996E-06	6.05418	7.842E-06	2.08752E-05	5.26419	6.819E-06	1.81512E-05	6.40975	8.303E-06	2.21012E-05
Haul Road 2	HR2	1300-1400	1.32129	1.712E-06	4.55589E-06	1.14556	1.484E-06	3.94996E-06	6.07188	7.865E-06	2.09362E-05	5.26419	6.819E-06	1.81512E-05	6.40975	8.303E-06	2.21012E-05
Haul Road 2	HR2	1400-1500	1.32129	1.712E-06	4.55589E-06	1.15116	1.491E-06	3.96927E-06	6.07188	7.865E-06	2.09362E-05	5.29007	6.852E-06	1.82405E-05	6.44123	8.344E-06	2.22097E-05
Haul Road 2	HR2	1500-1600	1.32129	1.712E-06	4.55589E-06	1.14556	1.484E-06	3.94996E-06	6.07188	7.865E-06	2.09362E-05	5.26419	6.819E-06	1.81512E-05	6.40975	8.303E-06	2.21012E-05
Haul Road 2	HR2	1600-1700	1.2981	1.681E-06	4.47593E-06	1.15196	1.492E-06	3.97203E-06	5.96532	7.727E-06	2.05688E-05	5.29357	6.857E-06	1.82525E-05	6.44553	8.349E-06	2.22246E-05
Haul Road 2	HR2	1700-1800	1.31939	1.709E-06	4.54934E-06	1.13077	1.465E-06	3.89896E-06	6.06288	7.853E-06	2.09052E-05	5.19631	6.731E-06	1.79172E-05	6.32708	8.196E-06	2.18162E-05
Haul Road 2	HR2	1800-1900	1.3085	1.695E-06	4.51179E-06	1.13926	1.476E-06	3.92824E-06	6.0129	7.789E-06	2.07328E-05	5.2351	6.781E-06	1.80509E-05	6.37436	8.257E-06	2.19792E-05
Haul Road 2	HR2	1900-2000	1.27951	1.657E-06	4.41183E-06	1.12927	1.463E-06	3.89379E-06	5.87965	7.616E-06	2.02734E-05	5.18941	6.722E-06	1.78934E-05	6.31868	8.185E-06	2.17872E-05
Haul Road 2	HR2	2000-2100	1.28311	1.662E-06	4.42424E-06	1.12427	1.456E-06	3.87655E-06	5.89634	7.638E-06	2.03309E-05	5.16652	6.692E-06	1.78145E-05	6.29079	8.149E-06	2.1691E-05
Haul Road 2	HR2	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (April) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Haul Road 2	HR2	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0700-0800	1.29031	1.671E-06	4.44286E-06	1.14826	1.487E-06	3.95375E-06	5.92963	7.681E-06	2.04172E-05	5.27688	6.835E-06	1.81696E-05	6.42514	8.323E-06	2.21234E-05
Haul Road 3	HR3	0800-0900	1.29031	1.671E-06	4.44286E-06	1.14416	1.482E-06	3.93963E-06	5.92963	7.681E-06	2.04172E-05	5.25809	6.811E-06	1.81049E-05	6.40225	8.293E-06	2.20446E-05
Haul Road 3	HR3	0900-1000	1.31939	1.709E-06	4.54299E-06	1.14666	1.485E-06	3.94824E-06	6.06288	7.853E-06	2.0876E-05	5.26918	6.825E-06	1.81431E-05	6.41584	8.311E-06	2.20914E-05
Haul Road 3	HR3	1000-1100	1.3136	1.702E-06	4.52306E-06	1.13986	1.477E-06	3.92483E-06	6.03629	7.819E-06	2.07845E-05	5.2384	6.785E-06	1.80371E-05	6.37826	8.262E-06	2.1962E-05
Haul Road 3	HR3	1100-1200	1.3097	1.697E-06	4.50963E-06	1.15116	1.491E-06	3.96373E-06	6.01859	7.796E-06	2.07235E-05	5.29007	6.852E-06	1.8215E-05	6.44123	8.344E-06	2.21788E-05
Haul Road 3	HR3	1200-1300	1.3174	1.706E-06	4.53614E-06	1.14556	1.484E-06	3.94445E-06	6.05418	7.842E-06	2.08461E-05	5.26419	6.819E-06	1.81259E-05	6.40975	8.303E-06	2.20704E-05
Haul Road 3	HR3	1300-1400	1.32129	1.712E-06	4.54954E-06	1.14556	1.484E-06	3.94445E-06	6.07188	7.865E-06	2.0907E-05	5.26419	6.819E-06	1.81259E-05	6.40975	8.303E-06	2.20704E-05
Haul Road 3	HR3	1400-1500	1.32129	1.712E-06	4.54954E-06	1.15116	1.491E-06	3.96373E-06	6.07188	7.865E-06	2.0907E-05	5.29007	6.852E-06	1.8215E-05	6.44123	8.344E-06	2.21788E-05
Haul Road 3	HR3	1500-1600	1.32129	1.712E-06	4.54954E-06	1.14556	1.484E-06	3.94445E-06	6.07188	7.865E-06	2.0907E-05	5.26419	6.819E-06	1.81259E-05	6.40975	8.303E-06	2.20704E-05
Haul Road 3	HR3	1600-1700	1.2981	1.681E-06	4.46969E-06	1.15196	1.492E-06	3.96649E-06	5.96532	7.727E-06	2.05401E-05	5.29357	6.857E-06	1.82271E-05	6.44553	8.349E-06	2.21936E-05
Haul Road 3	HR3	1700-1800	1.31939	1.709E-06	4.54299E-06	1.13077	1.465E-06	3.89353E-06	6.06288	7.853E-06	2.0876E-05	5.19631	6.731E-06	1.78922E-05	6.32708	8.196E-06	2.17857E-05
Haul Road 3	HR3	1800-1900	1.3085	1.695E-06	4.5055E-06	1.13926	1.476E-06	3.92276E-06	6.0129	7.789E-06	2.07039E-05	5.2351	6.781E-06	1.80258E-05	6.37436	8.257E-06	2.19485E-05
Haul Road 3	HR3	1900-2000	1.27951	1.657E-06	4.40568E-06	1.12927	1.463E-06	3.88836E-06	5.87965	7.616E-06	2.02451E-05	5.18941	6.722E-06	1.78685E-05	6.31868	8.185E-06	2.17568E-05
Haul Road 3	HR3	2000-2100	1.28311	1.662E-06	4.41807E-06	1.12427	1.456E-06	3.87115E-06	5.89634	7.638E-06	2.03026E-05	5.16652	6.692E-06	1.77896E-05	6.29079	8.149E-06	2.16608E-05
Haul Road 3	HR3	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (May) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 1	1	0000-0100	0.096020113	3.19E-07	2.595E-06	0.0841594	2.796E-07	2.27445E-06	0.564451	1.875E-06	1.52546E-05	0.4923947	1.636E-06	1.33072E-05	0.5765542	1.915E-06	1.55817E-05
Road 1	1	0100-0200	0.074258889	1.505E-07	1.22454E-06	0.0648107	1.314E-07	1.06874E-06	0.4466183	9.053E-07	7.36481E-06	0.3877584	7.86E-07	6.3942E-06	0.4525692	9.174E-07	7.46294E-06
Road 1	1	0200-0300	0.071118312	1.028E-07	8.36129E-07	0.0612239	8.848E-08	7.19802E-07	0.4504701	6.51E-07	5.29612E-06	0.3840403	5.55E-07	4.51511E-06	0.4452642	6.435E-07	5.23492E-06
Road 1	1	0300-0400	0.060207091	6.215E-08	5.05605E-07	0.052178	5.386E-08	4.38179E-07	0.36377	3.755E-07	3.05486E-06	0.3127473	3.228E-07	2.62638E-06	0.3649253	3.767E-07	3.06456E-06
Road 1	1	0400-0500	0.080323529	1.281E-07	1.04247E-06	0.0685788	1.094E-07	8.90041E-07	0.4564221	7.282E-07	5.92362E-06	0.3873667	6.18E-07	5.02739E-06	0.4559455	7.274E-07	5.91743E-06
Road 1	1	0500-0600	0.065350374	2.294E-07	1.86591E-06	0.0564708	1.982E-07	1.61238E-06	0.3830049	1.344E-06	1.09357E-05	0.3283561	1.152E-06	9.37536E-06	0.3848269	1.351E-06	1.09877E-05
Road 1	1	0600-0700	0.08881494	5.534E-07	4.50221E-06	0.0755889	4.71E-07	3.83175E-06	0.4744384	2.956E-06	2.40502E-05	0.4012066	2.5E-06	2.0338E-05	0.4767955	2.971E-06	2.41697E-05
Road 1	1	0700-0800	0.075747925	7.947E-07	6.46523E-06	0.0636425	6.677E-07	5.43201E-06	0.4163401	4.368E-06	3.55354E-05	0.346304	3.633E-06	2.95577E-05	0.4099465	4.301E-06	3.49897E-05
Road 1	1	0800-0900	0.081756847	1.051E-06	8.55098E-06	0.0685192	8.809E-07	7.16645E-06	0.4341573	5.582E-06	4.54087E-05	0.361546	4.648E-06	3.78142E-05	0.4300652	5.529E-06	4.49807E-05
Road 1	1	0900-1000	0.083852291	1.113E-06	9.05181E-06	0.0729606	9.682E-07	7.87606E-06	0.4685791	6.218E-06	5.05829E-05	0.4061101	5.389E-06	4.38394E-05	0.4790707	6.357E-06	5.17154E-05
Road 1	1	1000-1100	0.098232533	1.267E-06	1.03042E-05	0.0840453	1.084E-06	8.816E-06	0.5272732	6.799E-06	5.53087E-05	0.4493815	5.794E-06	4.71382E-05	0.5334268	6.878E-06	5.59542E-05
Road 1	1	1100-1200	0.089252924	1.117E-06	9.0897E-06	0.0765115	9.578E-07	7.79208E-06	0.5121005	6.411E-06	5.21534E-05	0.4368285	5.469E-06	4.44875E-05	0.51334	6.426E-06	5.22796E-05
Road 1	1	1200-1300	0.092731576	1.149E-06	9.34486E-06	0.0777513	9.631E-07	7.83525E-06	0.5284107	6.546E-06	5.32497E-05	0.4410307	5.463E-06	4.44441E-05	0.518782	6.426E-06	5.22793E-05
Road 1	1	1300-1400	0.096948889	1.277E-06	1.03916E-05	0.0808669	1.065E-06	8.66781E-06	0.5403823	7.12E-06	5.79215E-05	0.4486482	5.911E-06	4.80888E-05	0.5295151	6.977E-06	5.67566E-05
Road 1	1	1400-1500	0.092903686	1.334E-06	1.08516E-05	0.0770306	1.106E-06	8.99758E-06	0.5055677	7.259E-06	5.9053E-05	0.4170224	5.988E-06	4.87104E-05	0.494053	7.094E-06	5.7708E-05
Road 1	1	1500-1600	0.099697828	1.327E-06	1.07928E-05	0.0842847	1.122E-06	9.12423E-06	0.5407823	7.196E-06	5.85423E-05	0.4549231	6.054E-06	4.92476E-05	0.5392078	7.175E-06	5.83719E-05
Road 1	1	1600-1700	0.096086404	1.349E-06	1.0974E-05	0.0794953	1.116E-06	9.07913E-06	0.5267251	7.395E-06	6.01571E-05	0.4331099	6.08E-06	4.94653E-05	0.5126052	7.196E-06	5.85445E-05
Road 1	1	1700-1800	0.075588667	1.064E-06	8.65604E-06	0.0640287	9.013E-07	7.33225E-06	0.4221116	5.942E-06	4.83381E-05	0.3550668	4.998E-06	4.06605E-05	0.4190956	5.899E-06	4.79927E-05
Road 1	1	1800-1900	0.066479271	9.583E-07	7.79559E-06	0.0572839	8.257E-07	6.71731E-06	0.3941994	5.682E-06	4.62252E-05	0.3365538	4.851E-06	3.94654E-05	0.3938377	5.677E-06	4.61828E-05
Road 1	1	1900-2000	0.079416724	8.735E-07	7.10576E-06	0.0679053	7.469E-07	6.07579E-06	0.4533906	4.987E-06	4.05669E-05	0.3846191	4.23E-06	3.44136E-05	0.4525244	4.977E-06	4.04894E-05
Road 1	1	2000-2100	0.069941915	6.511E-07	5.29688E-06	0.0609063	5.67E-07	4.61259E-06	0.409725	3.814E-06	3.10295E-05	0.3543139	3.298E-06	2.68331E-05	0.4152202	3.865E-06	3.14457E-05
Road 1	1	2100-2200	0.072941832	6.202E-07	5.04517E-06	0.0652132	5.545E-07	4.51061E-06	0.4293753	3.651E-06	2.96986E-05	0.3817172	3.245E-06	2.64023E-05	0.4469305	3.8E-06	3.09129E-05
Road 1	1	2200-2300	0.071916032	5.818E-07	4.73265E-06	0.0633431	5.124E-07	4.16848E-06	0.4218611	3.413E-06	2.77618E-05	0.3690621	2.985E-06	2.42872E-05	0.4324052	3.498E-06	2.84557E-05
Road 1	1	2300-0000	0.063154987	4.564E-07	3.71253E-06	0.0554912	4.01E-07	3.26202E-06	0.3843381	2.777E-06	2.25931E-05	0.3346431	2.418E-06	1.96718E-05	0.3901343	2.819E-06	2.29338E-05
Road 2	2	0000-0100	0.161072941	1.902E-07	1.22801E-06	0.1411284	1.666E-07	1.07595E-06	0.6826214	8.059E-07	5.20425E-06	0.596151	7.038E-07	4.545E-06	0.7372794	8.704E-07	5.62095E-06
Road 2	2	0100-0200	0.11425697	8.728E-08	5.63643E-07	0.0996427	7.612E-08	4.9155E-07	0.5652267	4.318E-07	2.78833E-06	0.4909285	3.75E-07	2.42181E-06	0.5905712	4.511E-07	2.91336E-06
Road 2	2	0200-0300	0.11449087	6.096E-08	3.93647E-07	0.098673	5.253E-08	3.39261E-07	0.6223378	3.313E-07	2.13974E-06	0.532853	2.837E-07	1.83207E-06	0.6315261	3.362E-07	2.17134E-06
Road 2	2	0300-0400	0.0999	3.469E-08	2.24008E-07	0.0866	3.007E-08	1.94186E-07	0.3621953	1.258E-07	8.1216E-07	0.3117947	1.083E-07	6.99146E-07	0.3983947	1.383E-07	8.93331E-07
Road 2	2	0400-0500	0.137665556	8.604E-08	5.55644E-07	0.117513	7.345E-08	4.74305E-07	0.6653059	4.158E-07	2.6853E-06	0.5659819	3.537E-07	2.28441E-06	0.6834948	4.272E-07	2.75871E-06
Road 2	2	0500-0600	0.110523158	1.458E-07	9.41751E-07	0.0956042	1.261E-07	8.14629E-07	0.4873651	6.431E-07	4.15276E-06	0.4187958	5.526E-07	3.56849E-06	0.5144	6.787E-07	4.38312E-06
Road 2	2	0600-0700	0.157638738	3.759E-07	2.42721E-06	0.1341856	3.199E-07	2.0661E-06	0.6390415	1.524E-06	9.83952E-06	0.5413529	1.291E-06	8.33538E-06	0.6755385	1.611E-06	1.04015E-05
Road 2	2	0700-0800	0.127212468	4.653E-07	3.00465E-06	0.1068587	3.908E-07	2.52391E-06	0.5362059	1.961E-06	1.26647E-05	0.4467241	1.634E-06	1.05513E-05	0.5535827	2.025E-06	1.30752E-05
Road 2	2	0800-0900	0.144722433	1.005E-06	6.4903E-06	0.1212167	8.418E-07	5.43615E-06	0.6126175	4.254E-06	2.74738E-05	0.510087	3.542E-06	2.28756E-05	0.6313037	4.384E-06	2.83118E-05
Road 2	2	0900-1000	0.16191435	9.22E-07	5.95427E-06	0.1407895	8.017E-07	5.17742E-06	0.6998842	3.985E-06	2.57377E-05	0.6069631	3.456E-06	2.23206E-05	0.7477526	4.258E-06	2.7498E-05
Road 2	2	1000-1100	0.181484293	7.73E-07	4.99189E-06	0.1552432	6.612E-07	4.2701E-06	0.7788884	3.317E-06	2.1424E-05	0.6644809	2.83E-06	1.82771E-05	0.819724	3.491E-06	2.25472E-05
Road 2	2	1100-1200	0.220760994	9.249E-07	5.97322E-06	0.1890979	7.923E-07	5.1165E-06	0.905301	3.793E-06	2.44951E-05	0.7741906	3.244E-06	2.09476E-05	0.9632885	4.036E-06	2.60641E-05
Road 2	2	1200-1300	0.16985984	7.392E-07	4.77371E-06	0.1424094	6.197E-07	4.00225E-06	0.7482793	3.256E-06	2.10295E-05	0.6249605	2.72E-06	1.75638E-05	0.7673698	3.339E-06	2.1566E-05
Road 2	2	1300-1400	0.188049045	9.577E-07	6.18446E-06	0.1566025	7.975E-07	5.15026E-06	0.7772116	3.958E-06	2.55605E-05	0.6449947	3.285E-06	2.12122E-05	0.8015973	4.082E-06	2.63625E-05
Road 2	2	1400-1500	0.16425773	6.198E-07	4.00241E-06	0.1361384	5.137E-07	3.31723E-06	0.7106945	2.682E-06	1.73172E-05	0.5872031	2.216E-06	1.43082E-05	0.7233415	2.729E-06	1.76254E-05
Road 2	2	1500-1600	0.20181352	8.362E-07	5.40021E-06	0.1703568	7.059E-07	4.55848E-06	0.8110044	3.36E-06	2.17012E-05	0.682957	2.83E-06	1.82749E-05	0.8533138	3.536E-06	2.28333E-05
Road 2	2	1600-1700	0.17403484	8.823E-07	5.69755E-06	0.1439599	7.298E-07	4.71295E-06	0.7364057	3.733E-06	2.41084E-05	0.6066845	3.076E-06	1.98616E-05	0.7506443	3.805E-06	2.45746E-05
Road 2	2	1700-1800	0.12947894	6.504E-07	4.20017E-06	0.1096974	5.51E-07	3.55847E-06	0.5155929	2.59E-06	1.67253E-05	0.4348582	2.184E-06	1.41064E-05	0.5445557	2.735E-06	1.76648E-05
Road 2	2	1800-1900	0.140482863	8.065E-07	5.20814E-06	0.1211247	6.953E-07	4.49047E-06	0.6479257	3.72E-06	2.40206E-05	0.5559963	3.192E-06	2.06125E-05	0.677121	3.887E-06	2.5103E-05
Road 2	2	1900-2000	0.11990741	4.608E-07	2.97551E-06	0.1025177	3.939E-07	2.54399E-06	0.5505475	2.116E-06	1.36619E-05	0.4674959	1.796E-06	1.1601E-05	0.5700136	2.19E-06	1.41449E-05
Road 2	2	2000-2100	0.11476411	3.879E-07	2.50476E-06	0.099877	3.375E-07	2.17985E-06	0.4819623	1.629E-06	1.0519E-05	0.4164251	1.407E-06	9.08861E-06	0.5163021	1.745E-06	1.12685E-05
Road 2	2	2100-2200	0.087664276	3.084E-07	1.99193E-06	0.0783376	2.756E-07	1.78001E-06	0.3954974	1.392E-06	8.98659E-06	0.3503808	1.233E-06	7.96144E-06	0.4287184	1.508E-06	9.74145E-06
Road 2	2	2200-2300	0.12741584	3.687E-07	2.3809E-06	0.112247	3.248E-07	2.09745E-06	0.5431318	1.572E-06	1.0149E-05	0.4757966	1.377E-06	8.89076E-06	0.5880437	1.702E-06	1.09882E-05
Road 2	2	2300-0000	0.115814545	2.949E-07	1.90442E-06	0.1017431	2.591E-07	1.67304E-06	0.5203635	1.325E-06	8.55672E-06	0.4540485	1.156E-06	7.46625E-06	0.5557916	1.415E-06	9.13929E-06
Road 3	3	0000-0100	0.100091965	3.676E-07	1.42894E-05	0.0873657	3.209E-07	1.24726E-05	0.5476294	2.011E-06	7.8181E-05	0.4755956	1.747E-06	6.78972E-05	0.5629613	2.068E-06	8.03698E-05
Road 3	3	0100-0200	0.075275177	1.702E-07	6.61682E-06	0.0656926	1.486E-07	5.77449E-06	0.435622	9.852E-07	3.8292E-05	0.3781921	8.553E-07	3.32438E-05	0.4438847	1.004E-06	3.90183E-05
Road 3	3	0200-0300	0.07322899	1.163E-07	4.51957E-06	0.064534	1.025E-07	3.98293E-06	0.4524519	7.185E-07	2.79246E-05	0.3955361	6.281E-07	2.44118E-05	0.4600701	7.306E-07	2.83947E-05
Road 3	3	0300-0400	0.063172464	6.991E-08	2.71741E-06	0.0551201	6.1E-08	2.37104E-06	0.3412446	3.777E-07	1.46789E-05	0.2952206	3.267E-07	1.26991E-05	0.3503407	3.877E-07	1.50702E-05
Road 3	3	0400-0500	0.084928198	1.512E-07	5.87697E-06	0.0738596	1.315E-07	5.11104E-06	0.4656504	8.29E-07	3.22227E-05	0.4029377	7.174E-07	2.7883E-05	0.4767974	8.489E-07	3.2994E-05
Road 3	3	0500-0600	0.069774403	2.72E-07	1.05701E-05	0.0594535	2.317E-07	9.00664E-06	0.3835901	1.495E-06	5.81102E-05	0.323986	1.263E-06	4.90808E-05	0.3834395	1.494E-06	5.80874E-05
Road 3	3	0600-0700	0.094697831	6.653E-07	2.58579E-05	0.080226	5.636E-07	2.19063E-05	0.470786	3.307E-06	0.000128551	0.3963579	2.785E-06	0.000108228	0.4765839	3.348E-06	0.000130134
Road 3	3	0700-0800	0.078797151	9.049E-07	3.51724E-05	0.0658839	7.566E-07	2.94084E-05	0.408582	4.692E-06	0.000182377	0.338134	3.883E-06	0.000150932	0.4040179	4.64E-06	0.00018034
Road 3	3	0800-0900	0.087392497	1.386E-06	5.38827E-05	0.0744431	1.181E-06	4.58986E-05	0.433984	6.884E-06	0.000267577	0.3675348	5.83E-06	0.000226607	0.4419779	7.011E-06	0.000272506
Road 3	3	0900-1000	0.092772809	1.42E-06	5.51757E-05	0.0799444	1.223E-06	4.75461E-05	0.4763792	7.289E-06	0.000283322	0.4087412	6.254E-06	0.000243095	0.4886856	7.478E-06	0.000290641
Road 3	3	1000-1100	0.104891862	1.464E-06	5.68905E-05	0.0895905	1.25E-06	4.85914E-05	0.5325987	7.432E-06	0.000288867	0.4531843	6.324E-06	0.000245795	0.5427748	7.574E-06	0.000294386
Road 3	3	1100-1200	0.103439645	1.404E-06	5.45552E-05	0.0882001	1.197E-06	4.65177E-05	0.5388805	7.312E-06	0.000284211	0.4574324	6.207E-06	0.000241255	0.5456325	7.404E-06	0.000287773
Road 3	3	1200-1300	0.098793381	1.341E-06	5.21047E-05	0.083634	1.135E-06	4.41095E-05	0.526267	7.141E-06	0.000277559	0.4434907	6.018E-06	0.000233902	0.5271247	7.153E-06	0.000278011
Road 3	3	1300-1400	0.104705974	1.543E-06	5.99882E-05	0.0884526	1.304E-06	5.06763E-05	0.5366955	7.911E-06	0.000307484	0.4514873	6.655E-06	0.000258666	0.5399399	7.959E-06	0.000309343

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (May) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 3	3	1400-1500	0.097430195	1.444E-06	5.61234E-05	0.0823015	1.22E-06	4.74087E-05	0.5053245	7.489E-06	0.000291086	0.4250174	6.299E-06	0.000244826	0.5073189	7.519E-06	0.000292235
Road 3	3	1500-1600	0.109484899	1.563E-06	6.07467E-05	0.0915442	1.307E-06	5.07925E-05	0.5528905	7.893E-06	0.000306766	0.460207	6.57E-06	0.000255342	0.5517512	7.876E-06	0.000306134
Road 3	3	1600-1700	0.102702528	1.596E-06	6.20417E-05	0.084772	1.318E-06	5.121E-05	0.5287251	8.218E-06	0.000319398	0.433895	6.744E-06	0.000262112	0.5186669	8.061E-06	0.000313322
Road 3	3	1700-1800	0.080861825	1.258E-06	4.88983E-05	0.0679609	1.057E-06	4.10969E-05	0.4164004	6.479E-06	0.000251803	0.347403	5.405E-06	0.00021008	0.4153639	6.462E-06	0.000251177
Road 3	3	1800-1900	0.075147463	1.226E-06	4.76446E-05	0.0644556	1.051E-06	4.08658E-05	0.4137991	6.75E-06	0.000262355	0.3519277	5.741E-06	0.000223128	0.4163833	6.792E-06	0.000263993
Road 3	3	1900-2000	0.080229296	9.69E-07	3.76623E-05	0.0687891	8.308E-07	3.22919E-05	0.4389726	5.302E-06	0.000206068	0.3736388	4.513E-06	0.000175398	0.442428	5.344E-06	0.00020769
Road 3	3	2000-2100	0.072766227	7.516E-07	2.92142E-05	0.0630495	6.513E-07	2.53131E-05	0.3942384	4.072E-06	0.000158279	0.3391099	3.503E-06	0.000136146	0.4021593	4.154E-06	0.000161459
Road 3	3	2100-2200	0.071668738	7.012E-07	2.72545E-05	0.0631151	6.175E-07	2.40017E-05	0.4013105	3.926E-06	0.000152612	0.350905	3.433E-06	0.000133444	0.41402	4.051E-06	0.000157445
Road 3	3	2200-2300	0.076633831	6.834E-07	2.65628E-05	0.067413	6.012E-07	2.33667E-05	0.4142409	3.694E-06	0.000143584	0.3618538	3.227E-06	0.000125426	0.4292667	3.828E-06	0.000148792
Road 3	3	2300-0000	0.068001345	5.432E-07	2.11118E-05	0.0596652	4.766E-07	1.85238E-05	0.3820453	3.052E-06	0.00011861	0.3322469	2.654E-06	0.00010315	0.3919121	3.13E-06	0.000121674
Road 4	4	0000-0100	0.255850857	2.073E-07	2.21954E-06	0.2230463	1.807E-07	1.93495E-06	1.3031214	1.056E-06	1.13047E-05	1.135634	9.201E-07	9.85176E-06	1.3586803	1.101E-06	1.17867E-05
Road 4	4	0100-0200	0.2420935	1.121E-07	1.20011E-06	0.2110925	9.773E-08	1.04643E-06	1.235562	5.72E-07	6.12494E-06	1.077105	4.987E-07	5.33944E-06	1.2881975	5.964E-07	6.38587E-06
Road 4	4	0200-0300	0.262831538	7.909E-08	8.46893E-07	0.2317531	6.974E-08	7.46752E-07	1.2973708	3.904E-07	4.18037E-06	1.1437815	3.442E-07	3.68548E-06	1.3755346	4.139E-07	4.43223E-06
Road 4	4	0300-0400	0.239682857	3.884E-08	4.15856E-07	0.2092814	3.391E-08	3.63108E-07	1.27236	2.062E-07	2.20758E-06	1.1107043	1.8E-07	1.9271E-06	1.3199857	2.139E-07	2.29021E-06
Road 4	4	0400-0500	0.247653571	8.026E-08	8.5937E-07	0.2152364	6.975E-08	7.46881E-07	1.2228179	3.963E-07	4.24324E-06	1.0627407	3.444E-07	3.68776E-06	1.2779771	4.142E-07	4.43464E-06
Road 4	4	0500-0600	0.232947917	1.294E-07	1.38573E-06	0.1985946	1.103E-07	1.18137E-06	1.1036438	6.131E-07	6.5652E-06	0.9401371	5.223E-07	5.59255E-06	1.1387317	6.326E-07	6.77392E-06
Road 4	4	0600-0700	0.256155769	3.083E-07	3.30153E-06	0.2169935	2.612E-07	2.79677E-06	1.2226306	1.472E-06	1.57582E-05	1.0349979	1.246E-06	1.33398E-05	1.2519913	1.507E-06	1.61366E-05
Road 4	4	0700-0800	0.260262717	5.543E-07	5.93482E-06	0.2176187	4.634E-07	4.9624E-06	1.2952522	2.758E-06	2.95359E-05	1.0815265	2.303E-06	2.46622E-05	1.2991452	2.767E-06	2.96246E-05
Road 4	4	0800-0900	0.266873137	9.452E-07	1.01205E-05	0.227229	8.048E-07	8.61713E-06	1.3311863	4.715E-06	5.04821E-05	1.1328008	4.012E-06	4.29588E-05	1.3600298	4.817E-06	5.1576E-05
Road 4	4	0900-1000	0.269021284	9.216E-07	9.86861E-06	0.2312416	7.922E-07	8.48272E-06	1.2675916	4.343E-06	4.64995E-05	1.0887663	3.73E-06	3.99396E-05	1.3200078	4.522E-06	4.84223E-05
Road 4	4	1000-1100	0.301183217	9.97E-07	1.06752E-05	0.2568629	8.503E-07	9.10427E-06	1.4222843	4.708E-06	5.04115E-05	1.2127056	4.014E-06	4.29832E-05	1.4695685	4.865E-06	5.20875E-05
Road 4	4	1100-1200	0.281332839	1.009E-06	1.08084E-05	0.2394813	8.593E-07	9.20049E-06	1.3198025	4.735E-06	5.07047E-05	1.123139	4.03E-06	4.31492E-05	1.3626203	4.889E-06	5.23497E-05
Road 4	4	1200-1300	0.29106517	9.904E-07	1.06051E-05	0.2460557	8.373E-07	8.96517E-06	1.428352	4.86E-06	5.20427E-05	1.207087	4.107E-06	4.39808E-05	1.4531427	4.945E-06	5.2946E-05
Road 4	4	1300-1400	0.29800651	1.028E-06	1.10057E-05	0.2514314	8.672E-07	9.28567E-06	1.4282216	4.926E-06	5.2746E-05	1.2045336	4.155E-06	4.44849E-05	1.455965	5.022E-06	5.37706E-05
Road 4	4	1400-1500	0.272945652	8.719E-07	9.33604E-06	0.2302749	7.356E-07	7.8765E-06	1.3525503	4.321E-06	4.62637E-05	1.140352	3.643E-06	3.90055E-05	1.370627	4.378E-06	4.6882E-05
Road 4	4	1500-1600	0.307585887	8.829E-07	9.45356E-06	0.2567502	7.37E-07	7.89114E-06	1.4722977	4.226E-06	4.52506E-05	1.2286064	3.527E-06	3.77609E-05	1.4853565	4.264E-06	4.5652E-05
Road 4	4	1600-1700	0.287600565	8.255E-07	8.83932E-06	0.2370702	6.805E-07	7.28629E-06	1.3922225	3.996E-06	4.27896E-05	1.1469394	3.292E-06	3.52509E-05	1.3840096	3.973E-06	4.25371E-05
Road 4	4	1700-1800	0.271516667	7.919E-07	8.47958E-06	0.2281163	6.653E-07	7.12417E-06	1.3362339	3.897E-06	4.17312E-05	1.1217513	3.272E-06	3.50328E-05	1.3498675	3.937E-06	4.2157E-05
Road 4	4	1800-1900	0.294676415	7.23E-07	7.7421E-06	0.2527848	6.203E-07	6.64147E-06	1.4702139	3.607E-06	3.86273E-05	1.261047	3.094E-06	3.31318E-05	1.5138318	3.714E-06	3.97732E-05
Road 4	4	1900-2000	0.266063514	4.558E-07	4.88005E-06	0.2282095	3.909E-07	4.18575E-06	1.3210653	2.263E-06	2.42306E-05	1.1326219	1.94E-06	2.07742E-05	1.3608314	2.331E-06	2.49599E-05
Road 4	4	2000-2100	0.227216122	2.577E-07	2.75958E-06	0.1967749	2.232E-07	2.38986E-06	1.133991	1.286E-06	1.37725E-05	0.9810496	1.113E-06	1.1915E-05	1.1778245	1.336E-06	1.43049E-05
Road 4	4	2100-2200	0.189667027	1.624E-07	1.73941E-06	0.1672046	1.432E-07	1.53341E-06	0.9633527	8.251E-07	8.83476E-06	0.8480876	7.264E-07	7.77768E-06	1.0152922	8.696E-07	9.31108E-06
Road 4	4	2200-2300	0.252923175	3.688E-07	3.94945E-06	0.2225306	3.245E-07	3.47486E-06	1.2400522	1.808E-06	1.93637E-05	1.0904302	1.59E-06	1.70273E-05	1.3129608	1.915E-06	2.05022E-05
Road 4	4	2300-0000	0.235917708	2.621E-07	2.80679E-06	0.2069488	2.299E-07	2.46213E-06	1.1874358	1.319E-06	1.41273E-05	1.0409531	1.157E-06	1.23845E-05	1.2479019	1.387E-06	1.48467E-05
Road 5	5	0000-0100	0.085428394	3.095E-07	4.1848E-06	0.0745885	2.702E-07	3.65379E-06	0.4689101	1.699E-06	2.297E-05	0.4067062	1.473E-06	1.99229E-05	0.4812947	1.743E-06	2.35767E-05
Road 5	5	0100-0200	0.057943058	1.316E-07	1.77951E-06	0.0505915	1.149E-07	1.55374E-06	0.3476999	7.896E-07	1.06784E-05	0.3012846	6.842E-07	9.25289E-06	0.3518761	7.991E-07	1.08066E-05
Road 5	5	0200-0300	0.054637558	8.819E-08	1.19263E-06	0.0481322	7.769E-08	1.05063E-06	0.3669963	5.924E-07	8.01078E-06	0.3196857	5.16E-07	6.97809E-06	0.3678179	5.937E-07	8.02872E-06
Road 5	5	0300-0400	0.050359839	5.86E-08	7.92485E-07	0.0439305	5.112E-08	6.9131E-07	0.2672161	3.109E-07	4.20503E-06	0.230296	2.68E-07	3.62404E-06	0.2742265	3.191E-07	4.31535E-06
Road 5	5	0400-0500	0.070499485	1.283E-07	1.73569E-06	0.0613243	1.116E-07	1.5098E-06	0.3943895	7.18E-07	9.70984E-06	0.3407567	6.204E-07	8.3894E-06	0.402081	7.32E-07	9.8992E-06
Road 5	5	0500-0600	0.057585183	2.356E-07	3.18627E-06	0.0490571	2.007E-07	2.7144E-06	0.3270625	1.338E-06	1.80968E-05	0.2755178	1.127E-06	1.52448E-05	0.3245749	1.328E-06	1.79592E-05
Road 5	5	0600-0700	0.083273766	6.017E-07	8.13736E-06	0.0705527	5.098E-07	6.89428E-06	0.4120883	2.978E-06	4.02685E-05	0.3463699	2.503E-06	3.38467E-05	0.4169226	3.013E-06	4.07409E-05
Road 5	5	0700-0800	0.064810801	7.59E-07	1.02647E-05	0.0542	6.348E-07	8.58419E-06	0.3337671	3.909E-06	5.28619E-05	0.2752465	3.224E-06	4.35934E-05	0.3294465	3.858E-06	5.21776E-05
Road 5	5	0800-0900	0.070284737	1.103E-06	1.49136E-05	0.0598987	9.399E-07	1.27098E-05	0.3407228	5.346E-06	7.22973E-05	0.2878635	4.517E-06	6.10812E-05	0.3477622	5.457E-06	7.3791E-05
Road 5	5	0900-1000	0.075627871	1.147E-06	1.55099E-05	0.065237	9.893E-07	1.33789E-05	0.3968693	6.019E-06	8.13905E-05	0.3403706	5.162E-06	6.98037E-05	0.4056077	6.151E-06	8.31826E-05
Road 5	5	1000-1100	0.086143499	1.174E-06	1.58735E-05	0.0736252	1.003E-06	1.35668E-05	0.444121	6.052E-06	8.18376E-05	0.3775491	5.145E-06	6.95705E-05	0.4511743	6.148E-06	8.31373E-05
Road 5	5	1100-1200	0.084797957	1.098E-06	1.48508E-05	0.0723527	9.37E-07	1.26712E-05	0.4545062	5.886E-06	7.95983E-05	0.3854098	4.991E-06	6.74973E-05	0.4577625	5.928E-06	8.01686E-05
Road 5	5	1200-1300	0.080306423	1.054E-06	1.42476E-05	0.0680229	8.924E-07	1.20683E-05	0.433815	5.691E-06	7.69656E-05	0.3650999	4.79E-06	6.47745E-05	0.4331229	5.682E-06	7.68428E-05
Road 5	5	1300-1400	0.08636678	1.243E-06	1.68135E-05	0.0730156	1.051E-06	1.42143E-05	0.4489804	6.463E-06	8.74053E-05	0.3772622	5.431E-06	7.34435E-05	0.4502778	6.482E-06	8.76578E-05
Road 5	5	1400-1500	0.082586896	1.218E-06	1.64759E-05	0.0698137	1.03E-06	1.39277E-05	0.4291926	6.332E-06	8.56228E-05	0.3606283	5.32E-06	7.19444E-05	0.430442	6.35E-06	8.58721E-05
Road 5	5	1500-1600	0.093372889	1.341E-06	1.813E-05	0.0781292	1.122E-06	1.51701E-05	0.4744263	6.812E-06	9.21181E-05	0.3945221	5.665E-06	7.66033E-05	0.4726513	6.786E-06	9.17735E-05
Road 5	5	1600-1700	0.087670784	1.385E-06	1.87362E-05	0.0724077	1.144E-06	1.54743E-05	0.4557775	7.203E-06	9.74047E-05	0.3735463	5.903E-06	7.9831E-05	0.445954	7.048E-06	9.53053E-05
Road 5	5	1700-1800	0.06447013	1.021E-06	1.38107E-05	0.0541809	8.583E-07	1.16066E-05	0.3332651	5.279E-06	7.13916E-05	0.2773677	4.394E-06	5.94173E-05	0.3315486	5.252E-06	7.10239E-05
Road 5	5	1800-1900	0.05951867	1.017E-06	1.3747E-05	0.0510529	8.72E-07	1.17917E-05	0.3346566	5.716E-06	7.72958E-05	0.2837536	4.846E-06	6.55387E-05	0.3348066	5.718E-06	7.73304E-05
Road 5	5	1900-2000	0.068739823	8.734E-07	1.18117E-05	0.0589318	7.488E-07	1.01264E-05	0.3821576	4.856E-06	6.56668E-05	0.3246579	4.125E-06	5.57865E-05	0.3835896	4.874E-06	6.59129E-05
Road 5	5	2000-2100	0.064448872	7.185E-07	9.71665E-06	0.0558688	6.229E-07	8.42308E-06	0.3517118	3.921E-06	5.30259E-05	0.3021446	3.369E-06	4.55529E-05	0.3580135	3.991E-06	5.3976E-05
Road 5	5	2100-2200	0.067218301	7.204E-07	9.74178E-06	0.059185	6.343E-07	8.57753E-06	0.3786951	4.058E-06	5.48834E-05	0.3308382	3.546E-06	4.79476E-05	0.3900232	4.18E-06	5.65251E-05
Road 5	5	2200-2300	0.064610386	5.966E-07	8.0683E-06	0.0568338	5.248E-07	7.09719E-06	0.3552377	3.28E-06	4.43608E-05	0.3096784	2.86E-06	3.86715E-05	0.3665122	3.384E-06	4.57687E-05
Road 5	5	2300-0000	0.057344464	4.822E-07	6.52055E-06	0.0503193	4.231E-07	5.72173E-06	0.3280367	2.758E-06	3.73006E-05	0.2846098	2.393E-06	3.23625E-05	0.3349291	2.816E-06	3.80843E-05
Road 6	6	0000-0100	0.051850405	1.44E-07	5.14845E-06	0.0451951	1.255E-07	4.48761E-06	0.324458	9.013E-07	3.22168E-05	0.2795103	7.764E-07	2.77538E-05	0.3247054	9.02E-07	3.22414E-05
Road 6	6	0100-0200	0.06743292	1.43E-07	5.11226E-06	0.0588592	1.248E-07	4.46227E-06	0.3744553	7.942E-07	2.83884E-05	0.3238974	6.869E-07	2.45555E-05	0.3827566	8.118E-07	2.90178E-05
Road 6	6	0200-0300	0.062208354	9.224E-08	3.29715E-06	0.0549099	8.142E-08	2.91032E-06	0.3466922	5.141E-07	1.83753E-05	0.3031684	4.495E-07	1.60684E-05	0.3580782	5.309E-07	1.89787E-05
Road 6	6	0300-0400	0.063206935	7.355E-08	2.62917E-06	0.0553637	6.442E-08	2.30292E-06	0.3967492	4.617E-07	1.65033E-05	0.3444739	4.009E-07	1.43288E-05	0.3998376	4.653E-07	1.66317E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (May) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 6	6	0400-0500	0.069186556	1.169E-07	4.1776E-06	0.0601922	1.017E-07	3.63451E-06	0.3982843	6.728E-07	2.40491E-05	0.3434244	5.801E-07	2.07365E-05	0.4036167	6.818E-07	2.4371E-05
Road 6	6	0500-0600	0.063522298	1.919E-07	6.86143E-06	0.0542043	1.638E-07	5.85494E-06	0.3763075	1.137E-06	4.06473E-05	0.3173423	9.589E-07	3.42781E-05	0.3715466	1.123E-06	4.0133E-05
Road 6	6	0600-0700	0.067238258	3.622E-07	1.29468E-05	0.0570111	3.071E-07	1.09775E-05	0.4095475	2.206E-06	7.88586E-05	0.343117	1.848E-06	6.60673E-05	0.4001282	2.155E-06	7.70448E-05
Road 6	6	0700-0800	0.064177961	5.493E-07	1.96342E-05	0.0536882	4.595E-07	1.6425E-05	0.3573412	3.058E-06	0.000109323	0.2948622	2.524E-06	9.02083E-05	0.3485505	2.983E-06	0.000106633
Road 6	6	0800-0900	0.054903746	6.739E-07	2.40903E-05	0.046716	5.734E-07	2.04977E-05	0.3186476	3.911E-06	0.000139814	0.2673298	3.281E-06	0.000117297	0.3140458	3.855E-06	0.000137795
Road 6	6	0900-1000	0.056160621	6.62E-07	2.36621E-05	0.0482983	5.693E-07	2.03495E-05	0.3103953	3.659E-06	0.000130779	0.2640335	3.112E-06	0.000111245	0.3123318	3.681E-06	0.000131595
Road 6	6	1000-1100	0.075681955	7.557E-07	2.70126E-05	0.0646228	6.453E-07	2.30654E-05	0.4097145	4.091E-06	0.000146236	0.3470132	3.465E-06	0.000123857	0.411636	4.11E-06	0.000146922
Road 6	6	1100-1200	0.086553769	8.577E-07	3.06607E-05	0.0738687	7.32E-07	2.61672E-05	0.4468865	4.429E-06	0.000158305	0.3789444	3.755E-06	0.000134237	0.452813	4.487E-06	0.000160404
Road 6	6	1200-1300	0.085194167	8.251E-07	2.94932E-05	0.0721951	6.992E-07	2.49931E-05	0.4190966	4.059E-06	0.000145086	0.3531987	3.421E-06	0.000122273	0.4253938	4.12E-06	0.000147266
Road 6	6	1300-1400	0.09908468	9.577E-07	3.42355E-05	0.0837419	8.094E-07	2.89343E-05	0.496181	4.796E-06	0.000171439	0.4169924	4.031E-06	0.000144078	0.5007343	4.84E-06	0.000173012
Road 6	6	1400-1500	0.094531655	1.008E-06	3.60237E-05	0.0798912	8.517E-07	3.04446E-05	0.4703631	5.014E-06	0.000179244	0.3950805	4.212E-06	0.000150555	0.4749717	5.064E-06	0.000181
Road 6	6	1500-1600	0.083939063	8.744E-07	3.1255E-05	0.0701813	7.311E-07	2.61322E-05	0.4268834	4.447E-06	0.000158952	0.354165	3.689E-06	0.000131875	0.4243463	4.42E-06	0.000158007
Road 6	6	1600-1700	0.087861673	9.367E-07	3.34819E-05	0.0725524	7.735E-07	2.76479E-05	0.4275129	4.558E-06	0.000162915	0.3504436	3.736E-06	0.000133545	0.4229961	4.509E-06	0.000161193
Road 6	6	1700-1800	0.064609349	7.264E-07	2.59648E-05	0.0543453	6.11E-07	2.18399E-05	0.3233521	3.635E-06	0.000129947	0.2692754	3.027E-06	0.000108215	0.3236207	3.638E-06	0.000130055
Road 6	6	1800-1900	0.062540293	8.017E-07	2.86578E-05	0.0536297	6.875E-07	2.45747E-05	0.3227842	4.138E-06	0.000147909	0.2740672	3.513E-06	0.000125586	0.3276969	4.201E-06	0.00015016
Road 6	6	1900-2000	0.074223551	7.258E-07	2.59443E-05	0.0636152	6.221E-07	2.22362E-05	0.3827072	3.742E-06	0.000133773	0.3247309	3.175E-06	0.000113507	0.3883462	3.797E-06	0.000135744
Road 6	6	2000-2100	0.057686951	4.439E-07	1.58681E-05	0.0499705	3.845E-07	1.37455E-05	0.3219794	2.478E-06	8.85675E-05	0.2758279	2.123E-06	7.58725E-05	0.3257984	2.507E-06	8.9618E-05
Road 6	6	2100-2200	0.080485787	5.378E-07	1.92235E-05	0.070855	4.734E-07	1.69232E-05	0.4160162	2.78E-06	9.93626E-05	0.3638181	2.431E-06	8.68954E-05	0.4346731	2.904E-06	0.000103819
Road 6	6	2200-2300	0.060198355	4.26E-07	1.52261E-05	0.052893	3.743E-07	1.33783E-05	0.3302459	2.337E-06	8.35298E-05	0.2862901	2.026E-06	7.24119E-05	0.3391831	2.4E-06	8.57903E-05
Road 6	6	2300-0000	0.040467288	2.689E-07	9.61103E-06	0.0355296	2.361E-07	8.43832E-06	0.24647	1.638E-06	5.85369E-05	0.2133209	1.417E-06	5.0664E-05	0.2488505	1.653E-06	5.91023E-05
Road 7	7	0000-0100	0.074365163	1.987E-07	4.95922E-06	0.0649179	1.734E-07	4.3292E-06	0.4369838	1.167E-06	2.91413E-05	0.3787907	1.012E-06	2.52605E-05	0.4437086	1.185E-06	2.95898E-05
Road 7	7	0100-0200	0.089646294	1.861E-07	4.64616E-06	0.0782197	1.624E-07	4.05394E-06	0.4906231	1.019E-06	2.54279E-05	0.4257261	8.839E-07	2.20644E-05	0.5039457	1.046E-06	2.61183E-05
Road 7	7	0200-0300	0.07828266	1.068E-07	2.66698E-06	0.0685385	9.354E-08	2.33501E-06	0.4392544	5.995E-07	1.49648E-05	0.3820119	5.213E-07	1.30146E-05	0.4505504	6.149E-07	1.53496E-05
Road 7	7	0300-0400	0.079034446	8.721E-08	2.17699E-06	0.0690432	7.618E-08	1.90178E-06	0.4744021	5.235E-07	1.30673E-05	0.4118565	4.544E-07	1.13445E-05	0.4808997	5.306E-07	1.32463E-05
Road 7	7	0400-0500	0.088733694	1.43E-07	3.56974E-06	0.0766867	1.236E-07	3.0851E-06	0.4920188	7.929E-07	1.97939E-05	0.422613	6.811E-07	1.70017E-05	0.4992998	8.047E-07	2.00868E-05
Road 7	7	0500-0600	0.082029097	2.334E-07	5.82706E-06	0.0703426	2.002E-07	4.99689E-06	0.4606406	1.311E-06	3.27223E-05	0.3919377	1.115E-06	2.78419E-05	0.4622803	1.315E-06	3.28388E-05
Road 7	7	0600-0700	0.085555029	4.347E-07	1.08527E-05	0.0726498	3.692E-07	9.21569E-06	0.4899019	2.489E-06	6.21445E-05	0.4125673	2.096E-06	5.23345E-05	0.4852171	2.466E-06	6.15502E-05
Road 7	7	0700-0800	0.083015536	6.75E-07	1.6849E-05	0.0695733	5.657E-07	1.41207E-05	0.4484183	3.646E-06	9.10117E-05	0.3722508	3.027E-06	7.55526E-05	0.4418241	3.592E-06	8.96733E-05
Road 7	7	0800-0900	0.082544669	1.014E-06	2.53096E-05	0.0698885	8.584E-07	2.1429E-05	0.4489479	5.514E-06	0.000137655	0.3768913	4.629E-06	0.000115561	0.4467799	5.488E-06	0.00013699
Road 7	7	0900-1000	0.082719695	9.44E-07	2.35644E-05	0.0713973	8.148E-07	2.0339E-05	0.4316992	4.926E-06	0.000122979	0.3702541	4.225E-06	0.000105475	0.4416513	5.04E-06	0.000125814
Road 7	7	1000-1100	0.098500509	9.853E-07	2.45971E-05	0.0841239	8.415E-07	2.1007E-05	0.5180123	5.182E-06	0.000129356	0.440118	4.403E-06	0.000109904	0.524242	5.244E-06	0.000130911
Road 7	7	1100-1200	0.108362536	1.079E-06	2.69419E-05	0.0925662	9.219E-07	2.30145E-05	0.5591861	5.569E-06	0.000139029	0.4757507	4.738E-06	0.000118285	0.568317	5.66E-06	0.000141299
Road 7	7	1200-1300	0.108194453	1.076E-06	2.68609E-05	0.0912869	9.079E-07	2.26634E-05	0.5460449	5.431E-06	0.000135564	0.4591998	4.567E-06	0.000114003	0.5504868	5.475E-06	0.000136667
Road 7	7	1300-1400	0.115747359	1.134E-06	2.83166E-05	0.0973285	9.538E-07	2.38106E-05	0.5823995	5.708E-06	0.000142479	0.4878227	4.781E-06	0.000119341	0.5851512	5.735E-06	0.000143152
Road 7	7	1400-1500	0.108419812	1.114E-06	2.78207E-05	0.0909886	9.353E-07	2.33478E-05	0.5519078	5.673E-06	0.00014162	0.4610651	4.739E-06	0.00011831	0.5520537	5.675E-06	0.000141658
Road 7	7	1500-1600	0.10066346	1.011E-06	2.52466E-05	0.0844396	8.484E-07	2.11777E-05	0.5166088	5.19E-06	0.000129567	0.430981	4.33E-06	0.000108091	0.5154206	5.178E-06	0.000129269
Road 7	7	1600-1700	0.105272567	1.094E-06	2.73183E-05	0.0869727	9.041E-07	2.25695E-05	0.5210929	5.417E-06	0.000135224	0.428178	4.451E-06	0.000111113	0.5151507	5.355E-06	0.000133682
Road 7	7	1700-1800	0.080270245	8.845E-07	2.20812E-05	0.0676816	7.458E-07	1.86182E-05	0.4116314	4.536E-06	0.000113234	0.3446666	3.798E-06	9.48127E-05	0.4123482	4.544E-06	0.000113431
Road 7	7	1800-1900	0.073084264	8.361E-07	2.08726E-05	0.0628115	7.186E-07	1.79387E-05	0.3827382	4.379E-06	0.000109308	0.3264076	3.734E-06	9.32206E-05	0.3892191	4.453E-06	0.000111159
Road 7	7	1900-2000	0.085167102	7.382E-07	1.84277E-05	0.0729382	6.322E-07	1.57817E-05	0.4474463	3.878E-06	9.68146E-05	0.3802712	3.296E-06	8.22798E-05	0.4532093	3.928E-06	9.80616E-05
Road 7	7	2000-2100	0.076504959	5.42E-07	1.35312E-05	0.0663783	4.703E-07	1.17401E-05	0.4112546	2.914E-06	7.27371E-05	0.3541535	2.509E-06	6.26379E-05	0.4205318	2.979E-06	7.4378E-05
Road 7	7	2100-2200	0.087872481	5.231E-07	1.30576E-05	0.0777882	4.63E-07	1.15591E-05	0.4609203	2.744E-06	6.84913E-05	0.4058468	2.416E-06	6.03075E-05	0.483635	2.879E-06	7.18666E-05
Road 7	7	2200-2300	0.074116989	4.756E-07	1.18731E-05	0.0651815	4.183E-07	1.04417E-05	0.401941	2.579E-06	6.43888E-05	0.3500982	2.247E-06	5.60838E-05	0.4152797	2.665E-06	6.65256E-05
Road 7	7	2300-0000	0.051370227	3.035E-07	7.5776E-06	0.0451244	2.666E-07	6.65628E-06	0.3028166	1.789E-06	4.46683E-05	0.2632493	1.556E-06	3.88318E-05	0.3083737	1.822E-06	4.54881E-05
Road 8	8	0000-0100	0.224909444	1.636E-07	2.6964E-06	0.1960442	1.426E-07	2.35034E-06	1.1488136	8.355E-07	1.37729E-05	1.0008233	7.279E-07	1.19987E-05	1.1968675	8.704E-07	1.4349E-05
Road 8	8	0100-0200	0.233290667	1.414E-07	2.33073E-06	0.2034447	1.233E-07	2.03255E-06	1.1870977	7.195E-07	1.18599E-05	1.035	6.273E-07	1.03404E-05	1.2384447	7.506E-07	1.23729E-05
Road 8	8	0200-0300	0.221634667	6.716E-08	1.10714E-06	0.1955467	5.926E-08	9.76822E-07	1.1879767	3.6E-07	5.93435E-06	1.047736	3.175E-07	5.2338E-06	1.2432827	3.768E-07	6.21062E-06
Road 8	8	0300-0400	0.202993571	5.741E-08	9.46421E-07	0.1774943	5.02E-08	8.27535E-07	1.0613157	3.002E-07	4.94819E-06	0.9274864	2.623E-07	4.32424E-06	1.1049807	3.125E-07	5.15177E-06
Road 8	8	0400-0500	0.231194762	9.808E-08	1.61686E-06	0.2010314	8.529E-08	1.40591E-06	1.1417095	4.844E-07	7.98452E-06	0.9925852	4.211E-07	6.94162E-06	1.1936167	5.064E-07	8.34753E-06
Road 8	8	0500-0600	0.224136765	1.54E-07	2.53785E-06	0.1911968	1.313E-07	2.16488E-06	1.0863541	7.462E-07	1.23005E-05	0.9259735	6.36E-07	1.04846E-05	1.1171703	7.673E-07	1.26495E-05
Road 8	8	0600-0700	0.248113548	3.108E-07	5.1229E-06	0.2103211	2.634E-07	4.34259E-06	1.1883171	1.488E-06	2.45357E-05	1.0065853	1.261E-06	2.07834E-05	1.2169065	1.524E-06	2.5126E-05
Road 8	8	0700-0800	0.251243465	5.126E-07	8.45065E-06	0.2101491	4.288E-07	7.06843E-06	1.2169174	2.483E-06	4.09314E-05	1.0168761	2.075E-06	3.42029E-05	1.2270252	2.504E-06	4.12714E-05
Road 8	8	0800-0900	0.277895895	1.067E-06	1.75837E-05	0.2368496	9.091E-07	1.49865E-05	1.3509138	5.185E-06	8.54781E-05	1.1503613	4.416E-06	7.27883E-05	1.3872109	5.325E-06	8.77748E-05
Road 8	8	0900-1000	0.291056433	9.231E-07	1.52178E-05	0.2502582	7.937E-07	1.30846E-05	1.34621	4.27E-06	7.0386E-05	1.1572406	3.67E-06	6.05058E-05	1.4074987	4.464E-06	7.35905E-05
Road 8	8	1000-1100	0.280695127	8.96E-07	1.47695E-05	0.2394278	7.642E-07	1.25981E-05	1.3321233	4.252E-06	7.00931E-05	1.1354783	3.624E-06	5.97461E-05	1.3749061	4.389E-06	7.23442E-05
Road 8	8	1100-1200	0.288868679	9.279E-07	1.52958E-05	0.2458797	7.898E-07	1.30195E-05	1.3909573	4.468E-06	7.3652E-05	1.1836981	3.802E-06	6.26775E-05	1.4295778	4.592E-06	7.5697E-05
Road 8	8	1200-1300	0.295723609	1.01E-06	1.66436E-05	0.2500017	8.535E-07	1.40703E-05	1.4383547	4.911E-06	8.09518E-05	1.2155562	4.15E-06	6.84125E-05	1.4655579	5.004E-06	8.24828E-05
Road 8	8	1300-1400	0.269905438	8.724E-07	1.43815E-05	0.2277711	7.362E-07	1.21365E-05	1.2890167	4.167E-06	6.86835E-05	1.0873757	3.515E-06	5.79393E-05	1.3151468	4.251E-06	7.00758E-05
Road 8	8	1400-1500	0.262831655	7.381E-07	1.21665E-05	0.2217806	6.228E-07	1.02663E-05	1.314593	3.691E-06	6.08527E-05	1.1088503	3.114E-06	5.13289E-05	1.3306309	3.737E-06	6.15951E-05
Road 8	8	1500-1600	0.272136131	7.532E-07	1.2416E-05	0.2271209	6.286E-07	1.03622E-05	1.3245009	3.666E-06	6.04292E-05	1.1045453	3.057E-06	5.03939E-05	1.3316663	3.686E-06	6.07561E-05
Road 8	8	1600-1700	0.27351637	8.067E-07	1.32987E-05	0.2254526	6.65E-07	1.09618E-05	1.3148879	3.878E-06	6.39316E-05	1.0830029	3.194E-06	5.2657E-05	1.3084555	3.859E-06	6.36188E-05
Road 8	8	1700-1800	0.220222692	6.94E-07	1.14409E-05	0.1849735	5.829E-07	9.60966E-06	1.1054811	3.484E-06	5.74314E-05	0.9268573	2.921E-06	4.81517E-05	1.1118308	3.504E-06	5.77613E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (May) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 8	8	1800-1900	0.217302243	4.697E-07	7.74322E-06	0.1865505	4.033E-07	6.64743E-06	1.1158368	2.412E-06	3.97611E-05	0.9569497	2.069E-06	3.40994E-05	1.1435002	2.472E-06	4.07468E-05
Road 8	8	1900-2000	0.216226104	3.364E-07	5.54463E-06	0.1855234	2.886E-07	4.75733E-06	1.1386003	1.771E-06	2.91968E-05	0.9765101	1.519E-06	2.50404E-05	1.1620335	1.808E-06	2.97977E-05
Road 8	8	2000-2100	0.231933421	3.561E-07	5.87017E-06	0.2008512	3.084E-07	5.08349E-06	1.1091745	1.703E-06	2.80729E-05	0.9597199	1.474E-06	2.42902E-05	1.1605711	1.782E-06	2.93737E-05
Road 8	8	2100-2200	0.190849245	2.043E-07	3.36853E-06	0.1681349	1.8E-07	2.96762E-06	1.0023292	1.073E-06	1.76913E-05	0.8816225	9.44E-07	1.55608E-05	1.0497574	1.124E-06	1.85284E-05
Road 8	8	2200-2300	0.229243438	2.964E-07	4.88597E-06	0.2016972	2.608E-07	4.29886E-06	1.1355255	1.468E-06	2.4202E-05	0.9980458	1.29E-06	2.12718E-05	1.199743	1.551E-06	2.55707E-05
Road 8	8	2300-0000	0.184555962	1.939E-07	3.19599E-06	0.1619946	1.702E-07	2.80529E-06	0.9503608	9.984E-07	1.64576E-05	0.8333462	8.754E-07	1.44312E-05	0.9953408	1.046E-06	1.72365E-05
Road 9	9	0000-0100	0.195156725	5.183E-08	1.54719E-06	0.1745283	4.635E-08	1.38364E-06	0.8919093	2.369E-07	7.07098E-06	0.791712	2.103E-07	6.27662E-06	0.9662403	2.566E-07	7.66027E-06
Road 9	9	0100-0200	0.212268803	4.429E-08	1.32224E-06	0.1902118	3.969E-08	1.18484E-06	0.9167217	1.913E-07	5.71033E-06	0.814865	1.7E-07	5.07585E-06	1.0050768	2.097E-07	6.2607E-06
Road 9	9	0200-0300	0.083742394	7.943E-09	2.37108E-07	0.0738912	7.008E-09	2.09215E-07	0.6005151	5.696E-08	1.7003E-06	0.5303503	5.03E-08	1.50163E-06	0.6042415	5.731E-08	1.71085E-06
Road 9	9	0300-0400	0.101470804	7.699E-09	2.29843E-07	0.0891155	6.762E-09	2.01857E-07	0.6300335	4.781E-08	1.4271E-06	0.5540452	4.204E-08	1.25498E-06	0.6431607	4.88E-08	1.45683E-06
Road 9	9	0400-0500	0.231411683	4.39E-08	1.31044E-06	0.2059414	3.907E-08	1.1662E-06	0.9611722	1.823E-07	5.44292E-06	0.8491363	1.611E-07	4.80848E-06	1.0550776	2.001E-07	5.97469E-06
Road 9	9	0500-0600	0.168504237	5.434E-08	1.62215E-06	0.1485572	4.791E-08	1.43012E-06	0.8539863	2.754E-07	8.22111E-06	0.7522043	2.426E-07	7.24128E-06	0.9007614	2.905E-07	8.6714E-06
Road 9	9	0600-0700	0.196658459	1.194E-07	3.56364E-06	0.1732963	1.052E-07	3.14029E-06	1.0325582	6.268E-07	1.87109E-05	0.9084618	5.515E-07	1.64622E-05	1.0817582	6.567E-07	1.96025E-05
Road 9	9	0700-0800	0.17088478	1.556E-07	4.64489E-06	0.1506228	1.371E-07	4.09414E-06	0.9829585	8.95E-07	2.67182E-05	0.865424	7.88E-07	2.35234E-05	1.0160468	9.252E-07	2.76176E-05
Road 9	9	0800-0900	0.261785009	5.711E-07	1.7048E-05	0.2293968	5.004E-07	1.49388E-05	1.273012	2.777E-06	8.29012E-05	1.1079965	2.417E-06	7.21551E-05	1.3373932	2.918E-06	8.70939E-05
Road 9	9	0900-1000	0.265099987	4.325E-07	1.29104E-05	0.2374896	3.874E-07	1.15658E-05	1.1702317	1.909E-06	5.69903E-05	1.0429309	1.701E-06	5.07908E-05	1.2804206	2.089E-06	6.23565E-05
Road 9	9	1000-1100	0.278292687	3.748E-07	1.1189E-05	0.2434101	3.278E-07	9.78651E-06	1.2026505	1.62E-06	4.83536E-05	1.0481579	1.412E-06	4.21421E-05	1.291568	1.74E-06	5.19286E-05
Road 9	9	1100-1200	0.194485088	2.73E-07	8.14983E-06	0.167804	2.356E-07	7.03177E-06	1.0420966	1.463E-06	4.36687E-05	0.9095411	1.277E-06	3.8114E-05	1.0773451	1.512E-06	4.51458E-05
Road 9	9	1200-1300	0.292947217	4.057E-07	1.211E-05	0.2581236	3.574E-07	1.06704E-05	1.3550998	1.877E-06	5.60176E-05	1.1942983	1.654E-06	4.93704E-05	1.4524219	2.011E-06	6.00408E-05
Road 9	9	1300-1400	0.329558083	3.751E-07	1.11973E-05	0.2893891	3.294E-07	9.8325E-06	1.272859	1.449E-06	4.32476E-05	1.1099175	1.263E-06	3.77114E-05	1.3993066	1.593E-06	4.75439E-05
Road 9	9	1400-1500	0.213364152	2.752E-07	8.21601E-06	0.1888013	2.435E-07	7.27017E-06	1.0586875	1.366E-06	4.07669E-05	0.9278549	1.197E-06	3.57289E-05	1.1166562	1.44E-06	4.29991E-05
Road 9	9	1500-1600	0.179166983	1.937E-07	5.78314E-06	0.1559808	1.687E-07	5.03473E-06	0.9487777	1.026E-06	3.06246E-05	0.8274198	8.947E-07	2.67074E-05	0.9834005	1.063E-06	3.17421E-05
Road 9	9	1600-1700	0.186517039	2.795E-07	8.34404E-06	0.1635476	2.451E-07	7.31648E-06	1.0636587	1.594E-06	4.75839E-05	0.9296993	1.393E-06	4.15911E-05	1.093247	1.638E-06	4.89076E-05
Road 9	9	1700-1800	0.161161971	2.079E-07	6.20586E-06	0.1447573	1.867E-07	5.57417E-06	1.0050831	1.296E-06	3.87027E-05	0.9077798	1.171E-06	3.49559E-05	1.0525371	1.358E-06	4.053E-05
Road 9	9	1800-1900	0.1578739	1.318E-07	3.93363E-06	0.1443709	1.205E-07	3.59719E-06	0.9710561	8.105E-07	2.41951E-05	0.8927834	7.452E-07	2.22448E-05	1.0371543	8.657E-07	2.5842E-05
Road 9	9	1900-2000	0.164295295	1.34E-07	4.00059E-06	0.148616	1.212E-07	3.6188E-06	0.8918183	7.275E-07	2.17158E-05	0.8002569	6.528E-07	1.94863E-05	0.9488729	7.74E-07	2.31051E-05
Road 9	9	2000-2100	0.171777562	9.45E-08	2.82095E-06	0.1535393	8.447E-08	2.52144E-06	0.7711155	4.242E-07	1.26633E-05	0.6931679	3.813E-07	1.13833E-05	0.8467072	4.658E-07	1.39047E-05
Road 9	9	2100-2200	0.022484332	1.152E-08	3.43775E-07	0.0206103	1.056E-08	3.15122E-07	0.3116131	1.596E-07	4.76442E-06	0.2816833	1.443E-07	4.30681E-06	0.3022936	1.548E-07	4.62193E-06
Road 9	9	2200-2300	0.164985011	1.033E-07	3.08311E-06	0.148675	9.307E-08	2.77832E-06	0.8118466	5.082E-07	1.51712E-05	0.729042	4.564E-07	1.36238E-05	0.877717	5.495E-07	1.64021E-05
Road 9	9	2300-0000	0.134286361	7.642E-08	2.28131E-06	0.1218168	6.932E-08	2.06947E-06	0.6968178	3.966E-07	1.18378E-05	0.6281512	3.575E-07	1.06713E-05	0.749968	4.268E-07	1.27407E-05
Road 10	10	0000-0100	0.272722725	2.097E-07	4.66227E-06	0.2392157	1.839E-07	4.08946E-06	1.3955298	1.073E-06	2.3857E-05	1.2236969	9.408E-07	2.09194E-05	1.4629126	1.125E-06	2.50089E-05
Road 10	10	0100-0200	0.268155736	1.558E-07	3.46362E-06	0.2357079	1.369E-07	3.04451E-06	1.3603354	7.902E-07	1.75707E-05	1.1950756	6.942E-07	1.54361E-05	1.4307835	8.312E-07	1.84806E-05
Road 10	10	0200-0300	0.267416272	8.681E-08	1.93021E-06	0.235913	7.658E-08	1.70282E-06	1.3403169	4.351E-07	9.67442E-06	1.1830461	3.84E-07	8.53924E-06	1.4189591	4.606E-07	1.02421E-05
Road 10	10	0300-0400	0.243735164	4.997E-08	1.11113E-06	0.2130136	4.367E-08	9.71074E-07	1.3181521	2.703E-07	6.00912E-06	1.1527364	2.363E-07	5.25503E-06	1.3657499	2.8E-07	6.2261E-06
Road 10	10	0400-0500	0.287896384	1.131E-07	2.51552E-06	0.2527618	9.933E-08	2.20853E-06	1.3848504	5.442E-07	1.21003E-05	1.2116152	4.761E-07	1.05866E-05	1.4643771	5.755E-07	1.27951E-05
Road 10	10	0500-0600	0.266858995	1.869E-07	4.15652E-06	0.2308664	1.617E-07	3.59591E-06	1.2891287	9.031E-07	2.00791E-05	1.1123048	7.792E-07	1.73249E-05	1.3431712	9.409E-07	2.09208E-05
Road 10	10	0600-0700	0.321045069	4.498E-07	1.0001E-05	0.2787332	3.905E-07	8.68293E-06	1.6050497	2.249E-06	4.99995E-05	1.397485	1.958E-06	4.35336E-05	1.6762183	2.348E-06	5.22165E-05
Road 10	10	0700-0800	0.320709437	7.069E-07	1.57168E-05	0.2743455	6.047E-07	1.34447E-05	1.6167779	3.563E-06	7.92326E-05	1.3860402	3.055E-06	6.79249E-05	1.6603857	3.66E-06	8.13696E-05
Road 10	10	0800-0900	0.342067968	1.444E-06	3.20976E-05	0.2933417	1.238E-06	2.75255E-05	1.6926015	7.143E-06	0.000158824	1.4517598	6.127E-06	0.000136225	1.7451015	7.365E-06	0.00016375
Road 10	10	0900-1000	0.374920245	1.256E-06	2.79164E-05	0.3284401	1.1E-06	2.44555E-05	1.8111049	6.065E-06	0.000134854	1.5875126	5.316E-06	0.000118205	1.9159527	6.416E-06	0.000142661
Road 10	10	1000-1100	0.374527074	1.363E-06	3.03059E-05	0.3241733	1.18E-06	2.62313E-05	1.6940846	6.165E-06	0.000137081	1.4620187	5.321E-06	0.000118303	1.7861921	6.5E-06	0.000144534
Road 10	10	1100-1200	0.365094968	1.329E-06	2.95426E-05	0.3136065	1.141E-06	2.53763E-05	1.7145662	6.24E-06	0.000138739	1.4711148	5.354E-06	0.000119039	1.7847213	6.495E-06	0.000144415
Road 10	10	1200-1300	0.385552571	1.449E-06	3.22233E-05	0.3313858	1.246E-06	2.76962E-05	1.8373428	6.906E-06	0.000153559	1.5804933	5.941E-06	0.000132093	1.9118792	7.186E-06	0.000159789
Road 10	10	1300-1400	0.37480206	1.23E-06	2.7338E-05	0.3222478	1.057E-06	2.35047E-05	1.7439006	5.721E-06	0.0001272	1.4969402	4.911E-06	0.000109187	1.819188	5.968E-06	0.000132691
Road 10	10	1400-1500	0.347968848	1.07E-06	2.37945E-05	0.3006521	9.246E-07	2.05589E-05	1.7418208	5.357E-06	0.000119108	1.5055498	4.63E-06	0.000102951	1.8062019	5.555E-06	0.00012351
Road 10	10	1500-1600	0.348642095	1.096E-06	2.43703E-05	0.2953931	9.286E-07	2.06482E-05	1.6812354	5.285E-06	0.00011752	1.4249199	4.48E-06	9.96029E-05	1.720313	5.408E-06	0.000120251
Road 10	10	1600-1700	0.333994704	1.17E-06	2.6011E-05	0.2819473	9.875E-07	2.19576E-05	1.6342677	5.724E-06	0.000127274	1.3762329	4.82E-06	0.000107179	1.6581802	5.808E-06	0.000129137
Road 10	10	1700-1800	0.306154744	1.004E-06	2.23309E-05	0.2640547	8.662E-07	1.92601E-05	1.5926713	5.225E-06	0.000116169	1.3810632	4.531E-06	0.000100735	1.6451179	5.397E-06	0.000119995
Road 10	10	1800-1900	0.30663393	6.339E-07	1.40951E-05	0.2678476	5.537E-07	1.23122E-05	1.5503659	3.205E-06	7.12662E-05	1.3569075	2.805E-06	6.23734E-05	1.6247551	3.359E-06	7.46856E-05
Road 10	10	1900-2000	0.267303263	4.978E-07	1.10686E-05	0.2342035	4.362E-07	9.69803E-06	1.4184624	2.642E-06	5.87365E-05	1.2452076	2.319E-06	5.15623E-05	1.4794111	2.755E-06	6.12603E-05
Road 10	10	2000-2100	0.302484059	3.721E-07	8.27368E-06	0.2637235	3.244E-07	7.21348E-06	1.4643172	1.801E-06	4.00527E-05	1.2755767	1.569E-06	3.48901E-05	1.5393002	1.894E-06	4.21036E-05
Road 10	10	2100-2200	0.253565449	3.119E-07	6.93564E-06	0.2302558	2.833E-07	6.29806E-06	1.4185522	1.745E-06	3.88009E-05	1.2922838	1.59E-06	3.53471E-05	1.5225396	1.873E-06	4.16452E-05
Road 10	10	2200-2300	0.265418005	3.401E-07	7.56233E-06	0.2372514	3.04E-07	6.7598E-06	1.366105	1.751E-06	3.89232E-05	1.224675	1.569E-06	3.48936E-05	1.4619264	1.873E-06	4.16534E-05
Road 10	10	2300-0000	0.243519926	2.912E-07	6.47584E-06	0.215389	2.576E-07	5.72777E-06	1.2321114	1.474E-06	3.27651E-05	1.0882916	1.302E-06	2.89406E-05	1.3036805	1.559E-06	3.46683E-05
Road 11	11	0000-0100	0.305340776	2.332E-07	1.9348E-06	0.2675076	2.043E-07	1.69507E-06	1.5310393	1.17E-06	9.70146E-06	1.3386557	1.023E-06	8.48242E-06	1.6061633	1.227E-06	1.01775E-05
Road 11	11	0100-0200	0.30548893	1.644E-07	1.36381E-06	0.2681268	1.443E-07	1.19702E-06	1.5054819	8.102E-07	6.72102E-06	1.3177198	7.092E-07	5.88278E-06	1.5858466	8.535E-07	7.0798E-06
Road 11	11	0200-0300	0.267354131	6.962E-08	5.77532E-07	0.2358989	6.143E-08	5.09583E-07	1.428105	3.719E-07	3.08496E-06	1.2604691	3.282E-07	2.72284E-06	1.496368	3.897E-07	3.23242E-06
Road 11	11	0300-0400	0.2871346	6.979E-08	5.78911E-07	0.2508606	6.097E-08	5.05776E-07	1.5036942	3.655E-07	3.0317E-06	1.3141889	3.194E-07	2.64962E-06	1.5650495	3.804E-07	3.1554E-06
Road 11	11	0400-0500	0.297885842	1.034E-07	8.57982E-07	0.2617246	9.088E-08	7.53829E-07	1.4147811	4.912E-07	4.0749E-06	1.2384002	4.3E-07	3.56689E-06	1.5001248	5.209E-07	4.32071E-06
Road 11	11	0500-0600	0.24393814	1.143E-07	9.48509E-07	0.2107388	9.878E-08	8.1942E-07	1.2446818	5.834E-07	4.83972E-06	1.0746716	5.038E-07	4.17867E-06	1.2854105	6.025E-07	4.99809E-06
Road 11	11	0600-0700	0.262851359	2.373E-07	1.96839E-06	0.22669	2.047E-07	1.69759E-06	1.3626012	1.23E-06	1.0204E-05	1.1745077	1.06E-06	8.79544E-06	1.4011977	1.265E-06	1.0493E-05
Road 11	11	0700-0800	0.311378606	5.838E-07	4.84296E-06	0.2636987	4.944E-07	4.10138E-06	1.6225817	3.042E-06	2.52365E-05	1.3751902	2.578E-06	2.13887E-05	1.6388888	3.073E-06	2.54901E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (May) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 11	11	0800-0900	0.338955684	1.206E-06	1.00068E-05	0.2926386	1.042E-06	8.6394E-06	1.6727499	5.953E-06	4.93836E-05	1.4398883	5.125E-06	4.2509E-05	1.7325269	6.166E-06	5.11484E-05
Road 11	11	0900-1000	0.335979582	8.516E-07	7.06421E-06	0.2940836	7.454E-07	6.18332E-06	1.5887345	4.027E-06	3.34043E-05	1.3857529	3.512E-06	2.91365E-05	1.6798365	4.258E-06	3.53198E-05
Road 11	11	1000-1100	0.348606189	7.202E-07	5.97421E-06	0.3007296	6.213E-07	5.15373E-06	1.6255746	3.358E-06	2.78581E-05	1.3990182	2.89E-06	2.39755E-05	1.6997478	3.512E-06	2.91293E-05
Road 11	11	1100-1200	0.308094153	7.167E-07	5.94547E-06	0.2633105	6.126E-07	5.08126E-06	1.5804016	3.677E-06	3.04979E-05	1.35655	3.156E-06	2.61781E-05	1.6198605	3.768E-06	3.12594E-05
Road 11	11	1200-1300	0.38015775	1.076E-06	8.9238E-06	0.3261862	9.231E-07	7.65687E-06	1.845303	5.222E-06	4.33165E-05	1.5823338	4.478E-06	3.71436E-05	1.9085201	5.401E-06	4.48005E-05
Road 11	11	1300-1400	0.39457548	8.22E-07	6.81882E-06	0.3388875	7.06E-07	5.85646E-06	1.7790697	3.706E-06	3.07448E-05	1.5199498	3.167E-06	2.62669E-05	1.8588373	3.873E-06	3.21233E-05
Road 11	11	1400-1500	0.311871327	6.281E-07	5.20993E-06	0.2685866	5.409E-07	4.48684E-06	1.5578111	3.137E-06	2.60238E-05	1.3361027	2.691E-06	2.23201E-05	1.6046894	3.232E-06	2.68069E-05
Road 11	11	1500-1600	0.281627621	5.721E-07	4.74525E-06	0.2379493	4.833E-07	4.0093E-06	1.4588473	2.963E-06	2.45807E-05	1.233363	2.505E-06	2.07814E-05	1.4713123	2.989E-06	2.47907E-05
Road 11	11	1600-1700	0.26891887	6.49E-07	5.38312E-06	0.2270529	5.479E-07	4.54506E-06	1.4398232	3.475E-06	2.88219E-05	1.2159622	2.934E-06	2.43407E-05	1.4430151	3.482E-06	2.88858E-05
Road 11	11	1700-1800	0.266394204	6.567E-07	5.44768E-06	0.2280234	5.621E-07	4.66301E-06	1.4523831	3.581E-06	2.97008E-05	1.2494629	3.08E-06	2.55511E-05	1.4774863	3.642E-06	3.02141E-05
Road 11	11	1800-1900	0.282251239	5.782E-07	4.79641E-06	0.2453921	5.027E-07	4.17005E-06	1.5085917	3.091E-06	2.56361E-05	1.3162259	2.696E-06	2.23671E-05	1.561618	3.199E-06	2.65372E-05
Road 11	11	1900-2000	0.269783274	4.262E-07	3.53553E-06	0.234997	3.713E-07	3.07965E-06	1.4066993	2.222E-06	1.84349E-05	1.2230963	1.932E-06	1.60288E-05	1.4580933	2.304E-06	1.91084E-05
Road 11	11	2000-2100	0.272389859	3.83E-07	3.17742E-06	0.2376517	3.342E-07	2.7722E-06	1.360934	1.914E-06	1.58752E-05	1.1879181	1.671E-06	1.3857E-05	1.4255698	2.005E-06	1.66292E-05
Road 11	11	2100-2200	0.197284402	1.952E-07	1.61944E-06	0.174164	1.723E-07	1.42966E-06	1.105031	1.094E-06	9.07084E-06	0.9761994	9.66E-07	8.0133E-06	1.1503633	1.138E-06	9.44296E-06
Road 11	11	2200-2300	0.254675313	2.786E-07	2.3106E-06	0.2258867	2.471E-07	2.04941E-06	1.2881071	1.409E-06	1.16867E-05	1.1406823	1.248E-06	1.03491E-05	1.366569	1.495E-06	1.23985E-05
Road 11	11	2300-0000	0.244382195	2.546E-07	2.11164E-06	0.216344	2.254E-07	1.86937E-06	1.2572889	1.31E-06	1.08639E-05	1.1109293	1.157E-06	9.59922E-06	1.3272734	1.383E-06	1.14686E-05
Haul Road 1	HR1	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0700-0800	1.32129	2.484E-06	3.7355E-06	1.10428	2.076E-06	3.12198E-06	6.07188	1.141E-05	1.71662E-05	5.07475	9.539E-06	1.43471E-05	6.17903	1.161E-05	1.74691E-05
Haul Road 1	HR1	0800-0900	1.32859	2.497E-06	3.75614E-06	1.13077	2.126E-06	3.19687E-06	6.10566	1.148E-05	1.72617E-05	5.19631	9.768E-06	1.46908E-05	6.32708	1.189E-05	1.78877E-05
Haul Road 1	HR1	0900-1000	1.3072	2.457E-06	3.69566E-06	1.12307	2.111E-06	3.1751E-06	6.007	1.129E-05	1.69828E-05	5.16072	9.701E-06	1.45902E-05	6.28379	1.181E-05	1.77653E-05
Haul Road 1	HR1	1000-1100	1.3166	2.475E-06	3.72224E-06	1.12217	2.109E-06	3.17255E-06	6.05038	1.137E-05	1.71054E-05	5.15653	9.693E-06	1.45783E-05	6.2787	1.18E-05	1.77509E-05
Haul Road 1	HR1	1100-1200	1.32599	2.492E-06	3.74879E-06	1.12807	2.12E-06	3.18924E-06	6.09337	1.145E-05	1.72269E-05	5.18411	9.745E-06	1.46563E-05	6.31218	1.187E-05	1.78455E-05
Haul Road 1	HR1	1200-1300	1.34229	2.523E-06	3.79487E-06	1.13407	2.132E-06	3.2062E-06	6.16853	1.159E-05	1.74394E-05	5.2115	9.796E-06	1.47337E-05	6.34557	1.193E-05	1.79399E-05
Haul Road 1	HR1	1300-1400	1.33789	2.515E-06	3.78243E-06	1.12807	2.12E-06	3.18924E-06	6.14834	1.156E-05	1.73823E-05	5.18411	9.745E-06	1.46563E-05	6.31218	1.187E-05	1.78455E-05
Haul Road 1	HR1	1400-1500	1.33789	2.515E-06	3.78243E-06	1.12807	2.12E-06	3.18924E-06	6.14834	1.156E-05	1.73823E-05	5.18411	9.745E-06	1.46563E-05	6.31218	1.187E-05	1.78455E-05
Haul Road 1	HR1	1500-1600	1.34508	2.528E-06	3.80276E-06	1.12217	2.109E-06	3.17255E-06	6.18144	1.162E-05	1.74759E-05	5.15653	9.693E-06	1.45783E-05	6.2787	1.18E-05	1.77509E-05
Haul Road 1	HR1	1600-1700	1.34099	2.521E-06	3.79119E-06	1.10418	2.076E-06	3.12169E-06	6.16244	1.158E-05	1.74222E-05	5.07425	9.538E-06	1.43457E-05	6.17843	1.161E-05	1.74674E-05
Haul Road 1	HR1	1700-1800	1.32449	2.49E-06	3.74455E-06	1.11177	2.09E-06	3.14315E-06	6.08667	1.144E-05	1.7208E-05	5.10915	9.604E-06	1.44444E-05	6.22092	1.169E-05	1.75875E-05
Haul Road 1	HR1	1800-1900	1.2998	2.443E-06	3.67474E-06	1.11487	2.096E-06	3.15192E-06	5.97302	1.123E-05	1.68867E-05	5.12334	9.63E-06	1.44845E-05	6.23821	1.173E-05	1.76364E-05
Haul Road 1	HR1	1900-2000	1.2942	2.433E-06	3.65891E-06	1.10958	2.086E-06	3.13696E-06	5.94753	1.118E-05	1.68146E-05	5.09904	9.585E-06	1.44158E-05	6.20862	1.167E-05	1.75528E-05
Haul Road 1	HR1	2000-2100	1.26272	2.374E-06	3.56991E-06	1.09368	2.056E-06	3.09201E-06	5.80257	1.091E-05	1.64048E-05	5.02608	9.448E-06	1.42095E-05	6.11976	1.15E-05	1.73015E-05
Haul Road 1	HR1	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0700-0800	1.32129	1.712E-06	4.55589E-06	1.10428	1.43E-06	3.80762E-06	6.07188	7.865E-06	2.09362E-05	5.07475	6.574E-06	1.7498E-05	6.17903	8.004E-06	2.13057E-05
Haul Road 2	HR2	0800-0900	1.32859	1.721E-06	4.58106E-06	1.13077	1.465E-06	3.89896E-06	6.10566	7.909E-06	2.10527E-05	5.19631	6.731E-06	1.79172E-05	6.32708	8.196E-06	2.18162E-05
Haul Road 2	HR2	0900-1000	1.3072	1.693E-06	4.5073E-06	1.12307	1.455E-06	3.87241E-06	6.007	7.781E-06	2.07125E-05	5.16072	6.685E-06	1.77945E-05	6.28379	8.14E-06	2.16669E-05
Haul Road 2	HR2	1000-1100	1.3166	1.705E-06	4.53972E-06	1.12217	1.454E-06	3.86931E-06	6.05038	7.837E-06	2.08621E-05	5.15653	6.679E-06	1.778E-05	6.2787	8.133E-06	2.16493E-05
Haul Road 2	HR2	1100-1200	1.32599	1.718E-06	4.57209E-06	1.12807	1.461E-06	3.88965E-06	6.09337	7.893E-06	2.10103E-05	5.18411	6.715E-06	1.78751E-05	6.31218	8.176E-06	2.17648E-05
Haul Road 2	HR2	1200-1300	1.34229	1.739E-06	4.6283E-06	1.13407	1.469E-06	3.91034E-06	6.16853	7.99E-06	2.12695E-05	5.2115	6.751E-06	1.79696E-05	6.34557	8.22E-06	2.18799E-05
Haul Road 2	HR2	1300-1400	1.33789	1.733E-06	4.61313E-06	1.12807	1.461E-06	3.88965E-06	6.14834	7.964E-06	2.11998E-05	5.18411	6.715E-06	1.78751E-05	6.31218	8.176E-06	2.17648E-05
Haul Road 2	HR2	1400-1500	1.33789	1.733E-06	4.61313E-06	1.12807	1.461E-06	3.88965E-06	6.14834	7.964E-06	2.11998E-05	5.18411	6.715E-06	1.78751E-05	6.31218	8.176E-06	2.17648E-05
Haul Road 2	HR2	1500-1600	1.34508	1.742E-06	4.63792E-06	1.12217	1.454E-06	3.86931E-06	6.18144	8.007E-06	2.1314E-05	5.15653	6.679E-06	1.778E-05	6.2787	8.133E-06	2.16493E-05
Haul Road 2	HR2	1600-1700	1.34099	1.737E-06	4.62381E-06	1.10418	1.43E-06	3.80728E-06	6.16244	7.982E-06	2.12485E-05	5.07425	6.573E-06	1.74963E-05	6.17843	8.003E-06	2.13036E-05
Haul Road 2	HR2	1700-1800	1.32449	1.716E-06	4.56692E-06	1.11177	1.44E-06	3.83345E-06	6.08667	7.884E-06	2.09872E-05	5.10915	6.618E-06	1.76167E-05	6.22092	8.058E-06	2.14501E-05
Haul Road 2	HR2	1800-1900	1.2998	1.684E-06	4.48179E-06	1.11487	1.444E-06	3.84414E-06	5.97302	7.737E-06	2.05953E-05	5.12334	6.636E-06	1.76656E-05	6.23821	8.081E-06	2.15097E-05
Haul Road 2	HR2	1900-2000	1.2942	1.676E-06	4.46248E-06	1.10958	1.437E-06	3.8259E-06	5.94753	7.704E-06	2.05074E-05	5.09904	6.605E-06	1.75818E-05	6.20862	8.042E-06	2.14077E-05
Haul Road 2	HR2	2000-2100	1.26272	1.636E-06	4.35393E-06	1.09368	1.417E-06	3.77107E-06	5.80257	7.516E-06	2.00076E-05	5.02608	6.51E-06	1.73302E-05	6.11976	7.927E-06	2.11013E-05
Haul Road 2	HR2	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (May) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Haul Road 2	HR2	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0700-0800	1.32129	1.712E-06	4.54954E-06	1.10428	1.43E-06	3.80232E-06	6.07188	7.865E-06	2.0907E-05	5.07475	6.574E-06	1.74736E-05	6.17903	8.004E-06	2.1276E-05
Haul Road 3	HR3	0800-0900	1.32859	1.721E-06	4.57467E-06	1.13077	1.465E-06	3.89353E-06	6.10566	7.909E-06	2.10233E-05	5.19631	6.731E-06	1.78922E-05	6.32708	8.196E-06	2.17857E-05
Haul Road 3	HR3	0900-1000	1.3072	1.693E-06	4.50102E-06	1.12307	1.455E-06	3.86701E-06	6.007	7.781E-06	2.06836E-05	5.16072	6.685E-06	1.77697E-05	6.28379	8.14E-06	2.16367E-05
Haul Road 3	HR3	1000-1100	1.3166	1.705E-06	4.53339E-06	1.12217	1.454E-06	3.86392E-06	6.05038	7.837E-06	2.0833E-05	5.15653	6.679E-06	1.77552E-05	6.2787	8.133E-06	2.16192E-05
Haul Road 3	HR3	1100-1200	1.32599	1.718E-06	4.56572E-06	1.12807	1.461E-06	3.88423E-06	6.09337	7.893E-06	2.0981E-05	5.18411	6.715E-06	1.78502E-05	6.31218	8.176E-06	2.17344E-05
Haul Road 3	HR3	1200-1300	1.34229	1.739E-06	4.62184E-06	1.13407	1.469E-06	3.90489E-06	6.16853	7.99E-06	2.12398E-05	5.2115	6.751E-06	1.79445E-05	6.34557	8.22E-06	2.18494E-05
Haul Road 3	HR3	1300-1400	1.33789	1.733E-06	4.60669E-06	1.12807	1.461E-06	3.88423E-06	6.14834	7.964E-06	2.11703E-05	5.18411	6.715E-06	1.78502E-05	6.31218	8.176E-06	2.17344E-05
Haul Road 3	HR3	1400-1500	1.33789	1.733E-06	4.60669E-06	1.12807	1.461E-06	3.88423E-06	6.14834	7.964E-06	2.11703E-05	5.18411	6.715E-06	1.78502E-05	6.31218	8.176E-06	2.17344E-05
Haul Road 3	HR3	1500-1600	1.34508	1.742E-06	4.63145E-06	1.12217	1.454E-06	3.86392E-06	6.18144	8.007E-06	2.12843E-05	5.15653	6.679E-06	1.77552E-05	6.2787	8.133E-06	2.16192E-05
Haul Road 3	HR3	1600-1700	1.34099	1.737E-06	4.61737E-06	1.10418	1.43E-06	3.80197E-06	6.16244	7.982E-06	2.12188E-05	5.07425	6.573E-06	1.74719E-05	6.17843	8.003E-06	2.12739E-05
Haul Road 3	HR3	1700-1800	1.32449	1.716E-06	4.56055E-06	1.11177	1.44E-06	3.82811E-06	6.08667	7.884E-06	2.09579E-05	5.10915	6.618E-06	1.75921E-05	6.22092	8.058E-06	2.14202E-05
Haul Road 3	HR3	1800-1900	1.2998	1.684E-06	4.47554E-06	1.11487	1.444E-06	3.83878E-06	5.97302	7.737E-06	2.05666E-05	5.12334	6.636E-06	1.7641E-05	6.23821	8.081E-06	2.14797E-05
Haul Road 3	HR3	1900-2000	1.2942	1.676E-06	4.45626E-06	1.10958	1.437E-06	3.82056E-06	5.94753	7.704E-06	2.04788E-05	5.09904	6.605E-06	1.75573E-05	6.20862	8.042E-06	2.13778E-05
Haul Road 3	HR3	2000-2100	1.26272	1.636E-06	4.34786E-06	1.09368	1.417E-06	3.76582E-06	5.80257	7.516E-06	1.99797E-05	5.02608	6.51E-06	1.73061E-05	6.11976	7.927E-06	2.10719E-05
Haul Road 3	HR3	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (June) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 1	1	0000-0100	0.088281582	2.933E-07	2.38586E-06	0.0770634	2.56E-07	2.08268E-06	0.5175531	1.719E-06	1.39872E-05	0.4495564	1.493E-06	1.21495E-05	0.5266198	1.749E-06	1.42322E-05
Road 1	1	0100-0200	0.068986111	1.398E-07	1.13759E-06	0.0609894	1.236E-07	1.00573E-06	0.4138064	8.388E-07	6.82374E-06	0.3642423	7.383E-07	6.00642E-06	0.4252318	8.62E-07	7.01214E-06
Road 1	1	0200-0300	0.06484974	9.372E-08	7.6243E-07	0.0578173	8.356E-08	6.79751E-07	0.4086671	5.906E-07	4.80465E-06	0.3616866	5.227E-07	4.25231E-06	0.4195039	6.063E-07	4.93206E-06
Road 1	1	0300-0400	0.055516909	5.731E-08	4.66218E-07	0.0493016	5.089E-08	4.14024E-07	0.3341611	3.449E-07	2.80621E-06	0.294626	3.041E-07	2.4742E-06	0.3439276	3.55E-07	2.88822E-06
Road 1	1	0400-0500	0.072262235	1.153E-07	9.37846E-07	0.0641716	1.024E-07	8.32843E-07	0.4092712	6.529E-07	5.31167E-06	0.3616834	5.77E-07	4.69406E-06	0.4258551	6.794E-07	5.5269E-06
Road 1	1	0500-0600	0.058588128	2.056E-07	1.67283E-06	0.0516367	1.812E-07	1.47435E-06	0.3414894	1.199E-06	9.75035E-06	0.2988473	1.049E-06	8.53281E-06	0.3504841	1.23E-06	1.00072E-05
Road 1	1	0600-0700	0.081053584	5.051E-07	4.10877E-06	0.0708519	4.415E-07	3.59163E-06	0.4314802	2.689E-06	2.18726E-05	0.3752205	2.338E-06	1.90207E-05	0.4460725	2.78E-06	2.26123E-05
Road 1	1	0700-0800	0.070121199	7.357E-07	5.98498E-06	0.0599247	6.287E-07	5.11468E-06	0.383822	4.027E-06	3.27599E-05	0.3251395	3.411E-06	2.77513E-05	0.3850641	4.04E-06	3.28659E-05
Road 1	1	0800-0900	0.076728496	9.865E-07	8.02506E-06	0.0641691	8.25E-07	6.71147E-06	0.4065851	5.227E-06	4.25249E-05	0.3378749	4.344E-06	3.53385E-05	0.402044	5.169E-06	4.20499E-05
Road 1	1	0900-1000	0.08121488	1.078E-06	8.76711E-06	0.068277	9.06E-07	7.37047E-06	0.4533933	6.016E-06	4.89436E-05	0.3791608	5.031E-06	4.09302E-05	0.4474378	5.937E-06	4.83007E-05
Road 1	1	1000-1100	0.095135371	1.227E-06	9.9793E-06	0.0789236	1.018E-06	8.27875E-06	0.5101401	6.578E-06	5.35115E-05	0.4214149	5.434E-06	4.42046E-05	0.5003385	6.451E-06	5.24834E-05
Road 1	1	1100-1200	0.084466957	1.057E-06	8.60229E-06	0.0714838	8.949E-07	7.28006E-06	0.4835618	6.054E-06	4.92469E-05	0.4072966	5.099E-06	4.14799E-05	0.4787804	5.994E-06	4.876E-05
Road 1	1	1200-1300	0.086967985	1.077E-06	8.76404E-06	0.0742595	9.199E-07	7.48337E-06	0.4946871	6.128E-06	4.98512E-05	0.4206515	5.211E-06	4.23904E-05	0.4949111	6.131E-06	4.98738E-05
Road 1	1	1300-1400	0.091766567	1.209E-06	9.8361E-06	0.0776785	1.023E-06	8.32605E-06	0.5109639	6.732E-06	5.47682E-05	0.4304542	5.672E-06	4.61387E-05	0.5081327	6.695E-06	5.44647E-05
Road 1	1	1400-1500	0.087924471	1.262E-06	1.027E-05	0.0730532	1.049E-06	8.53301E-06	0.4779814	6.863E-06	5.58308E-05	0.3950045	5.672E-06	4.61386E-05	0.4680578	6.72E-06	5.46716E-05
Road 1	1	1500-1600	0.093854316	1.249E-06	1.01602E-05	0.0796654	1.06E-06	8.62417E-06	0.5083946	6.765E-06	5.50362E-05	0.4293573	5.713E-06	4.648E-05	0.5090227	6.774E-06	5.51042E-05
Road 1	1	1600-1700	0.08875242	1.246E-06	1.01364E-05	0.0753647	1.058E-06	8.60738E-06	0.4856955	6.819E-06	5.54711E-05	0.4101078	5.758E-06	4.68383E-05	0.4854725	6.816E-06	5.54456E-05
Road 1	1	1700-1800	0.072341987	1.018E-06	8.28425E-06	0.0607236	8.548E-07	6.95377E-06	0.4034975	5.68E-06	4.62065E-05	0.336228	4.733E-06	3.85032E-05	0.3969517	5.588E-06	4.54569E-05
Road 1	1	1800-1900	0.061631328	8.884E-07	7.2271E-06	0.0529001	7.625E-07	6.20324E-06	0.3641994	5.25E-06	4.27073E-05	0.3095989	4.463E-06	3.63046E-05	0.3624989	5.225E-06	4.25079E-05
Road 1	1	1900-2000	0.072757389	8.002E-07	6.50992E-06	0.0650294	7.152E-07	5.81847E-06	0.414019	4.554E-06	3.70441E-05	0.3678902	4.046E-06	3.29168E-05	0.4329196	4.761E-06	3.87352E-05
Road 1	1	2000-2100	0.066446452	6.186E-07	5.03216E-06	0.0579091	5.391E-07	4.38561E-06	0.3883685	3.615E-06	2.94122E-05	0.3362403	3.13E-06	2.54644E-05	0.3941494	3.669E-06	2.985E-05
Road 1	1	2100-2200	0.068995673	5.866E-07	4.77223E-06	0.0607828	5.168E-07	4.20417E-06	0.4053567	3.446E-06	2.80373E-05	0.3548872	3.017E-06	2.45465E-05	0.41567	3.534E-06	2.87507E-05
Road 1	1	2200-2300	0.066473248	5.377E-07	4.37447E-06	0.0589834	4.771E-07	3.88158E-06	0.3885568	3.143E-06	2.55701E-05	0.3426166	2.772E-06	2.25469E-05	0.4016	3.249E-06	2.64285E-05
Road 1	1	2300-0000	0.056850468	4.108E-07	3.34192E-06	0.051403	3.714E-07	3.02169E-06	0.343684	2.483E-06	2.02033E-05	0.3085759	2.23E-06	1.81394E-05	0.3599789	2.601E-06	2.11611E-05
Road 2	2	0000-0100	0.148051765	1.748E-07	1.12873E-06	0.129179	1.525E-07	9.8485E-07	0.6263112	7.394E-07	4.77494E-06	0.5446292	6.43E-07	4.15221E-06	0.6738082	7.955E-07	5.13706E-06
Road 2	2	0100-0200	0.106104545	8.105E-08	5.23426E-07	0.0937415	7.161E-08	4.62438E-07	0.5237985	4.001E-07	2.58396E-06	0.4611994	3.523E-07	2.27515E-06	0.5549409	4.239E-07	2.73759E-06
Road 2	2	0200-0300	0.10447	5.562E-08	3.59192E-07	0.09322	4.963E-08	3.20512E-07	0.56586	3.013E-07	1.94556E-06	0.502517	2.675E-07	1.72777E-06	0.595737	3.172E-07	2.04828E-06
Road 2	2	0300-0400	0.092144	3.199E-08	2.06617E-07	0.0817753	2.839E-08	1.83367E-07	0.3329153	1.156E-07	7.46505E-07	0.2938367	1.02E-07	6.58878E-07	0.375612	1.304E-07	8.42245E-07
Road 2	2	0400-0500	0.123842593	7.74E-08	4.99852E-07	0.1099478	6.872E-08	4.4377E-07	0.5973896	3.734E-07	2.41118E-06	0.5288811	3.306E-07	2.13466E-06	0.6388289	3.993E-07	2.57843E-06
Road 2	2	0500-0600	0.099155439	1.308E-07	8.44888E-07	0.0874544	1.154E-07	7.45185E-07	0.4352547	5.743E-07	3.70874E-06	0.3816667	5.036E-07	3.25212E-06	0.4691211	6.19E-07	3.99731E-06
Road 2	2	0600-0700	0.143877961	3.43E-07	2.21533E-06	0.1257764	2.999E-07	1.93662E-06	0.581725	1.387E-06	8.957E-06	0.5065873	1.208E-06	7.80008E-06	0.6323637	1.508E-06	9.7367E-06
Road 2	2	0700-0800	0.11779038	4.308E-07	2.78211E-06	0.1006089	3.68E-07	2.3763E-06	0.4946525	1.809E-06	1.16833E-05	0.4195891	1.535E-06	9.91035E-06	0.520198	1.903E-06	1.22867E-05
Road 2	2	0800-0900	0.1358138	9.432E-07	6.09078E-06	0.1134924	7.881E-07	5.08974E-06	0.5736927	3.984E-06	2.57281E-05	0.4766081	3.31E-06	2.13742E-05	0.5901005	4.098E-06	2.6464E-05
Road 2	2	0900-1000	0.156771789	8.927E-07	5.76515E-06	0.1316691	7.498E-07	4.84202E-06	0.6773198	3.857E-06	2.49079E-05	0.5668988	3.228E-06	2.08472E-05	0.6985679	3.978E-06	2.56893E-05
Road 2	2	1000-1100	0.175760543	7.486E-07	4.83445E-06	0.1457571	6.208E-07	4.00918E-06	0.7537662	3.21E-06	2.0733E-05	0.6233689	2.655E-06	1.71463E-05	0.769126	3.276E-06	2.11555E-05
Road 2	2	1100-1200	0.20882337	8.749E-07	5.65022E-06	0.1765987	7.399E-07	4.7783E-06	0.8557942	3.586E-06	2.31556E-05	0.7225359	3.027E-06	1.955E-05	0.8991346	3.767E-06	2.43283E-05
Road 2	2	1200-1300	0.159282819	6.932E-07	4.47646E-06	0.1360054	5.919E-07	3.82227E-06	0.7006989	3.049E-06	1.96923E-05	0.5962045	2.595E-06	1.67556E-05	0.7322099	3.186E-06	2.05779E-05
Road 2	2	1300-1400	0.17788	9.059E-07	5.85002E-06	0.1503582	7.657E-07	4.9449E-06	0.7347624	3.742E-06	2.41645E-05	0.6188035	3.151E-06	2.03509E-05	0.7691618	3.917E-06	2.52958E-05
Road 2	2	1400-1500	0.155422761	5.864E-07	3.78713E-06	0.129082	4.87E-07	3.14529E-06	0.672071	2.536E-06	1.63761E-05	0.5563921	2.099E-06	1.35574E-05	0.6854741	2.586E-06	1.67027E-05
Road 2	2	1500-1600	0.189841844	7.866E-07	5.07987E-06	0.1608964	6.667E-07	4.30534E-06	0.7625058	3.159E-06	2.04035E-05	0.6446842	2.671E-06	1.72507E-05	0.8055806	3.338E-06	2.15561E-05
Road 2	2	1600-1700	0.160727945	8.148E-07	5.26191E-06	0.1364918	6.919E-07	4.46846E-06	0.6793347	3.444E-06	2.224E-05	0.574617	2.913E-06	1.88118E-05	0.7111088	3.605E-06	2.32803E-05
Road 2	2	1700-1800	0.123917558	6.225E-07	4.01976E-06	0.1040889	5.229E-07	3.37654E-06	0.4930508	2.477E-06	1.59941E-05	0.4120335	2.07E-06	1.3366E-05	0.5161224	2.593E-06	1.67425E-05
Road 2	2	1800-1900	0.130279274	7.479E-07	4.82986E-06	0.1118801	6.423E-07	4.14775E-06	0.5998107	3.443E-06	2.22369E-05	0.5126056	2.943E-06	1.90039E-05	0.6244857	3.585E-06	2.31516E-05
Road 2	2	1900-2000	0.109848916	4.221E-07	2.72591E-06	0.0981745	3.772E-07	2.43621E-06	0.5029697	1.933E-06	1.24812E-05	0.4472299	1.719E-06	1.1098E-05	0.5454043	2.096E-06	1.35343E-05
Road 2	2	2000-2100	0.108957945	3.682E-07	2.37804E-06	0.094916	3.208E-07	2.07157E-06	0.4567599	1.544E-06	9.96893E-06	0.3950701	1.335E-06	8.62253E-06	0.489986	1.656E-06	1.06941E-05
Road 2	2	2100-2200	0.082923355	2.918E-07	1.88421E-06	0.072978	2.568E-07	1.65822E-06	0.3728386	1.312E-06	8.47173E-06	0.3252526	1.144E-06	7.39047E-06	0.3982305	1.401E-06	9.04869E-06
Road 2	2	2200-2300	0.117798	3.409E-07	2.20118E-06	0.1044984	3.024E-07	1.95266E-06	0.5005801	1.448E-06	9.35387E-06	0.4419535	1.279E-06	8.25837E-06	0.5464519	1.581E-06	1.0211E-05
Road 2	2	2300-0000	0.104179	2.653E-07	1.71309E-06	0.0941906	2.398E-07	1.54885E-06	0.4660261	1.187E-06	7.66321E-06	0.4190914	1.067E-06	6.89143E-06	0.513282	1.307E-06	8.44027E-06
Road 3	3	0000-0100	0.092425939	3.395E-07	1.3195E-05	0.0822214	3.02E-07	1.17381E-05	0.5043859	1.853E-06	7.20074E-05	0.4468078	1.641E-06	6.37874E-05	0.5290292	1.943E-06	7.55255E-05
Road 3	3	0100-0200	0.06965461	1.575E-07	6.12277E-06	0.0614865	1.391E-07	5.40478E-06	0.4019398	9.09E-07	3.53312E-05	0.3532564	7.989E-07	3.10519E-05	0.4147429	9.38E-07	3.64567E-05
Road 3	3	0200-0300	0.06678697	1.061E-07	4.12198E-06	0.0592383	9.407E-08	3.65609E-06	0.4106218	6.52E-07	2.53429E-05	0.3614794	5.74E-07	2.23099E-05	0.4207177	6.681E-07	2.5966E-05
Road 3	3	0300-0400	0.05752087	6.366E-08	2.47431E-06	0.050808	5.623E-08	2.18554E-06	0.3093035	3.423E-07	1.33049E-05	0.2710383	3E-07	1.16589E-05	0.3218462	3.562E-07	1.38445E-05
Road 3	3	0400-0500	0.076406667	1.36E-07	5.28729E-06	0.0678516	1.208E-07	4.69528E-06	0.4176709	7.436E-07	2.89025E-05	0.3692468	6.574E-07	2.55516E-05	0.4370985	7.782E-07	3.02469E-05
Road 3	3	0500-0600	0.061924527	2.414E-07	9.38097E-06	0.0545887	2.128E-07	8.26966E-06	0.338409	1.319E-06	5.12657E-05	0.2962411	1.155E-06	4.48777E-05	0.3508298	1.367E-06	5.31473E-05
Road 3	3	0600-0700	0.085725571	6.022E-07	2.34079E-05	0.0751359	5.279E-07	2.05164E-05	0.4247494	2.984E-06	0.000115981	0.3703168	2.602E-06	0.000101117	0.4454526	3.129E-06	0.000121634
Road 3	3	0700-0800	0.072403492	8.315E-07	3.23185E-05	0.0616159	7.076E-07	2.75033E-05	0.3736114	4.291E-06	0.000166768	0.3151595	3.619E-06	0.000140677	0.3767754	4.327E-06	0.00016818
Road 3	3	0800-0900	0.081081618	1.286E-06	4.99916E-05	0.0699951	1.11E-06	4.31562E-05	0.4016562	6.372E-06	0.000247645	0.3447668	5.469E-06	0.000212569	0.4147619	6.579E-06	0.000255725
Road 3	3	0900-1000	0.089194969	1.365E-06	5.30478E-05	0.0746252	1.142E-06	4.43826E-05	0.4575138	7.001E-06	0.000272102	0.3808567	5.828E-06	0.000226511	0.4554819	6.97E-06	0.000270893
Road 3	3	1000-1100	0.101220529	1.412E-06	5.48993E-05	0.0856904	1.196E-06	4.64761E-05	0.5133278	7.163E-06	0.000278415	0.4327779	6.039E-06	0.000234727	0.5184682	7.235E-06	0.000281203
Road 3	3	1100-1200	0.097498168	1.323E-06	5.14216E-05	0.0822959	1.117E-06	4.34038E-05	0.5069183	6.879E-06	0.000267354	0.4261459	5.783E-06	0.000224754	0.5084418	6.899E-06	0.000268158
Road 3	3	1200-1300	0.0922424	1.252E-06	4.86496E-05	0.0781135	1.06E-06	4.11979E-05	0.4905917	6.657E-06	0.000258743	0.4135415	5.612E-06	0.000218106	0.4916551	6.671E-06	0.000259304
Road 3	3	1300-1400	0.09938407	1.465E-06	5.69392E-05	0.0830556	1.224E-06	4.75842E-05	0.5091875	7.506E-06	0.000291724	0.4233487	6.24E-06	0.000242545	0.5064044	7.465E-06	0.000290129

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (June) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 3	3	1400-1500	0.093553712	1.387E-06	5.38904E-05	0.077777	1.153E-06	4.48025E-05	0.4849492	7.187E-06	0.000279349	0.4011058	5.945E-06	0.000231052	0.4788829	7.097E-06	0.000275854
Road 3	3	1500-1600	0.101600629	1.45E-06	5.63722E-05	0.0864405	1.234E-06	4.79607E-05	0.5122713	7.313E-06	0.000284229	0.433858	6.193E-06	0.000240722	0.5202985	7.427E-06	0.000288683
Road 3	3	1600-1700	0.096006945	1.492E-06	5.79969E-05	0.0802919	1.248E-06	4.85036E-05	0.4934353	7.669E-06	0.00029808	0.4104112	6.379E-06	0.000247926	0.4907031	7.627E-06	0.000296429
Road 3	3	1700-1800	0.076513784	1.19E-06	4.6269E-05	0.0644145	1.002E-06	3.89524E-05	0.3932943	6.119E-06	0.000237831	0.3286531	5.113E-06	0.000198741	0.3930676	6.115E-06	0.000237694
Road 3	3	1800-1900	0.069074061	1.127E-06	4.3794E-05	0.0611046	9.968E-07	3.87413E-05	0.378877	6.18E-06	0.000240214	0.3327288	5.428E-06	0.000210955	0.3938334	6.424E-06	0.000249696
Road 3	3	1900-2000	0.074652709	9.016E-07	3.50445E-05	0.0655065	7.912E-07	3.07509E-05	0.4072342	4.918E-06	0.000191169	0.3552278	4.29E-06	0.000166756	0.4207342	5.082E-06	0.000197507
Road 3	3	2000-2100	0.068829534	7.11E-07	2.76337E-05	0.0598749	6.185E-07	2.40386E-05	0.3720263	3.843E-06	0.000149361	0.3214689	3.321E-06	0.000129064	0.3813438	3.939E-06	0.000153102
Road 3	3	2100-2200	0.067102377	6.565E-07	2.5518E-05	0.0587528	5.748E-07	2.23428E-05	0.3745597	3.665E-06	0.000142439	0.3257166	3.187E-06	0.000123865	0.3844694	3.762E-06	0.000146208
Road 3	3	2200-2300	0.071043094	6.336E-07	2.4625E-05	0.0626903	5.591E-07	2.17297E-05	0.3828212	3.414E-06	0.000132693	0.3355314	2.992E-06	0.000116302	0.3982217	3.551E-06	0.000138032
Road 3	3	2300-0000	0.062345141	4.98E-07	1.93558E-05	0.0551913	4.409E-07	1.71348E-05	0.3484474	2.783E-06	0.00010818	0.3059996	2.444E-06	9.50011E-05	0.3611908	2.885E-06	0.000112136
Road 4	4	0000-0100	0.236055714	1.912E-07	2.04781E-06	0.209808	1.7E-07	1.82011E-06	1.202264	9.741E-07	1.04298E-05	1.0680811	8.653E-07	9.26573E-06	1.2778891	1.035E-06	1.10858E-05
Road 4	4	0100-0200	0.2238715	1.036E-07	1.10978E-06	0.1975195	9.144E-08	9.79146E-07	1.14262	5.29E-07	5.66421E-06	1.0076325	4.665E-07	4.99505E-06	1.205152	5.579E-07	5.97419E-06
Road 4	4	0200-0300	0.239851538	7.218E-08	7.72847E-07	0.2128523	6.405E-08	6.8585E-07	1.1836608	3.562E-07	3.81398E-06	1.0502869	3.161E-07	3.38422E-06	1.2631392	3.801E-07	4.07007E-06
Road 4	4	0300-0400	0.218425714	3.539E-08	3.78974E-07	0.1930171	3.128E-08	3.34889E-07	1.1591743	1.878E-07	2.0112E-06	1.0241686	1.66E-07	1.77696E-06	1.2171857	1.972E-07	2.11185E-06
Road 4	4	0400-0500	0.222760714	7.219E-08	7.7299E-07	0.1976814	6.406E-08	6.85964E-07	1.0998129	3.564E-07	3.8164E-06	0.9758414	3.162E-07	3.38622E-06	1.1735229	3.803E-07	4.07218E-06
Road 4	4	0500-0600	0.206832083	1.149E-07	1.23037E-06	0.1823779	1.013E-07	1.0849E-06	0.9795071	5.442E-07	5.82675E-06	0.8629571	4.794E-07	5.13343E-06	1.045335	5.807E-07	6.21834E-06
Road 4	4	0600-0700	0.231931923	2.792E-07	2.98931E-06	0.2031906	2.446E-07	2.61887E-06	1.1064596	1.332E-06	1.42609E-05	0.9688377	1.166E-06	1.24871E-05	1.1720283	1.411E-06	1.5106E-05
Road 4	4	0700-0800	0.239114239	5.092E-07	5.45256E-06	0.2035214	4.334E-07	4.64093E-06	1.1892693	2.533E-06	2.71191E-05	1.0109223	2.153E-06	2.30522E-05	1.2144437	2.586E-06	2.76932E-05
Road 4	4	0800-0900	0.247620261	8.77E-07	9.39042E-06	0.2135425	7.563E-07	8.0981E-06	1.2347189	4.373E-06	4.68238E-05	1.0643173	3.769E-06	4.03618E-05	1.2778597	4.526E-06	4.84599E-05
Road 4	4	0900-1000	0.258469189	8.855E-07	9.48152E-06	0.2155753	7.385E-07	7.90803E-06	1.217727	4.172E-06	4.46703E-05	1.014845	3.477E-06	3.72279E-05	1.2304203	4.215E-06	4.5136E-05
Road 4	4	1000-1100	0.290564825	9.618E-07	1.02988E-05	0.2455031	8.127E-07	8.70163E-06	1.3718415	4.541E-06	4.86236E-05	1.1588768	3.836E-06	4.10753E-05	1.4043799	4.649E-06	4.97769E-05
Road 4	4	1100-1200	0.264986258	9.508E-07	1.01803E-05	0.2233044	8.012E-07	8.579E-06	1.2429699	4.46E-06	4.77529E-05	1.047147	3.757E-06	4.02297E-05	1.2704514	4.558E-06	4.88087E-05
Road 4	4	1200-1300	0.271647619	9.244E-07	9.89762E-06	0.2297028	7.816E-07	8.36934E-06	1.3328888	4.536E-06	4.85645E-05	1.1265924	3.834E-06	4.1048E-05	1.3562952	4.615E-06	4.94173E-05
Road 4	4	1300-1400	0.282800134	9.754E-07	1.04442E-05	0.2359736	8.139E-07	8.7148E-06	1.3550409	4.674E-06	5.00433E-05	1.1301704	3.898E-06	4.17386E-05	1.366144	4.712E-06	5.04534E-05
Road 4	4	1400-1500	0.262050507	8.371E-07	8.96338E-06	0.2174982	6.948E-07	7.43947E-06	1.2982996	4.147E-06	4.4408E-05	1.0766283	3.439E-06	3.68258E-05	1.2941265	4.134E-06	4.42653E-05
Road 4	4	1500-1600	0.28515	8.185E-07	8.764E-06	0.2422028	6.952E-07	7.44403E-06	1.3648769	3.918E-06	4.19491E-05	1.1588918	3.326E-06	3.56182E-05	1.4010946	4.022E-06	4.30622E-05
Road 4	4	1600-1700	0.268716371	7.713E-07	8.25892E-06	0.224403	6.441E-07	6.89696E-06	1.3005277	3.733E-06	3.99713E-05	1.0854877	3.116E-06	3.33622E-05	1.3098907	3.76E-06	4.02591E-05
Road 4	4	1700-1800	0.256829841	7.491E-07	8.02091E-06	0.2161223	6.304E-07	6.74959E-06	1.2636067	3.686E-06	3.9463E-05	1.0626475	3.099E-06	3.31869E-05	1.2787698	3.73E-06	3.99365E-05
Road 4	4	1800-1900	0.270751509	6.643E-07	7.11352E-06	0.2395504	5.878E-07	6.29376E-06	1.350871	3.315E-06	3.54917E-05	1.1949173	2.932E-06	3.13943E-05	1.4344676	3.52E-06	3.76881E-05
Road 4	4	1900-2000	0.247512568	4.24E-07	4.5398E-06	0.2173054	3.722E-07	3.98575E-06	1.2289639	2.105E-06	2.25413E-05	1.0784122	1.847E-06	1.97799E-05	1.2957176	2.22E-06	2.37656E-05
Road 4	4	2000-2100	0.21486551	2.437E-07	2.60958E-06	0.1868751	2.12E-07	2.26963E-06	1.0718102	1.216E-06	1.30173E-05	0.9311433	1.056E-06	1.13089E-05	1.1180184	1.268E-06	1.35785E-05
Road 4	4	2100-2200	0.177645946	1.522E-07	1.62916E-06	0.155693	1.333E-07	1.42784E-06	0.9017403	7.723E-07	8.26972E-06	0.7893914	6.761E-07	7.23938E-06	0.9450843	8.094E-07	8.66722E-06
Road 4	4	2200-2300	0.234543016	3.42E-07	3.66244E-06	0.206857	3.017E-07	3.23012E-06	1.1495671	1.676E-06	1.79507E-05	1.0135951	1.478E-06	1.58275E-05	1.2204521	1.78E-06	1.90576E-05
Road 4	4	2300-0000	0.216223958	2.402E-07	2.57248E-06	0.1913106	2.126E-07	2.27608E-06	1.0880544	1.209E-06	1.29449E-05	0.9618898	1.069E-06	1.14439E-05	1.1532004	1.281E-06	1.372E-05
Road 5	5	0000-0100	0.078891762	2.858E-07	3.86459E-06	0.0702094	2.543E-07	3.43928E-06	0.4316203	1.563E-06	2.11434E-05	0.3819284	1.383E-06	1.87092E-05	0.4521378	1.638E-06	2.21484E-05
Road 5	5	0100-0200	0.053624298	1.218E-07	1.64688E-06	0.0473627	1.076E-07	1.45458E-06	0.3204912	7.278E-07	9.84275E-06	0.2812074	6.386E-07	8.63628E-06	0.3285701	7.462E-07	1.00909E-05
Road 5	5	0200-0300	0.049822209	8.042E-08	1.08752E-06	0.0441809	7.131E-08	9.6438E-07	0.3323128	5.364E-07	7.25371E-06	0.2915559	4.706E-07	6.36407E-06	0.3357369	5.419E-07	7.32845E-06
Road 5	5	0300-0400	0.045847581	5.335E-08	7.21478E-07	0.0404926	4.712E-08	6.37209E-07	0.2416792	2.812E-07	3.80317E-06	0.2110397	2.456E-07	3.32101E-06	0.2515323	2.927E-07	3.95822E-06
Road 5	5	0400-0500	0.063437938	1.155E-07	1.56184E-06	0.0563514	1.026E-07	1.38737E-06	0.3534093	6.434E-07	8.70091E-06	0.3120319	5.681E-07	7.6822E-06	0.3683833	6.707E-07	9.06957E-06
Road 5	5	0500-0600	0.05109445	2.091E-07	2.82713E-06	0.0450467	1.843E-07	2.4925E-06	0.2880151	1.178E-06	1.59363E-05	0.2516138	1.03E-06	1.39221E-05	0.2966606	1.214E-06	1.64146E-05
Road 5	5	0600-0700	0.075382026	5.447E-07	7.3662E-06	0.0660776	4.775E-07	6.45699E-06	0.3714458	2.684E-06	3.6297E-05	0.3234314	2.337E-06	3.16051E-05	0.389509	2.815E-06	3.80621E-05
Road 5	5	0700-0800	0.05955766	6.975E-07	9.43272E-06	0.0506923	5.937E-07	8.02863E-06	0.3047087	3.569E-06	4.82597E-05	0.2562695	3.001E-06	4.05879E-05	0.3069618	3.595E-06	4.86165E-05
Road 5	5	0800-0900	0.065219199	1.023E-06	1.38387E-05	0.0563108	8.836E-07	1.19485E-05	0.3150189	4.943E-06	6.68433E-05	0.2698654	4.234E-06	5.72622E-05	0.3261762	5.118E-06	6.92107E-05
Road 5	5	0900-1000	0.072755	1.103E-06	1.49207E-05	0.0609369	9.241E-07	1.2497E-05	0.3810602	5.779E-06	7.81483E-05	0.3171129	4.809E-06	6.50339E-05	0.3780498	5.733E-06	7.7531E-05
Road 5	5	1000-1100	0.08315314	1.133E-06	1.53225E-05	0.0704238	9.596E-07	1.29769E-05	0.4279142	5.831E-06	7.88512E-05	0.3604894	4.912E-06	6.64269E-05	0.4309132	5.872E-06	7.94038E-05
Road 5	5	1100-1200	0.079932507	1.035E-06	1.39987E-05	0.0675363	8.746E-07	1.18277E-05	0.427368	5.535E-06	7.48455E-05	0.3589221	4.648E-06	6.28585E-05	0.4264585	5.523E-06	7.46863E-05
Road 5	5	1200-1300	0.074997654	9.839E-07	1.33058E-05	0.0635796	8.341E-07	1.128E-05	0.4042108	5.303E-06	7.17133E-05	0.3402687	4.464E-06	6.0369E-05	0.4038483	5.298E-06	7.1649E-05
Road 5	5	1300-1400	0.082022686	1.181E-06	1.59678E-05	0.0685961	9.875E-07	1.33539E-05	0.4259251	6.131E-06	8.2917E-05	0.353656	5.091E-06	6.8848E-05	0.4222521	6.079E-06	8.22019E-05
Road 5	5	1400-1500	0.079331298	1.17E-06	1.58264E-05	0.065996	9.736E-07	1.3166E-05	0.4118283	6.075E-06	8.21587E-05	0.3402887	5.02E-06	6.78867E-05	0.4062846	5.994E-06	8.10528E-05
Road 5	5	1500-1600	0.086675856	1.245E-06	1.68296E-05	0.0737963	1.06E-06	1.43288E-05	0.4394787	6.31E-06	8.53324E-05	0.3718839	5.34E-06	7.22077E-05	0.4456802	6.399E-06	8.65366E-05
Road 5	5	1600-1700	0.08198652	1.296E-06	1.75214E-05	0.0685904	1.084E-06	1.46585E-05	0.4252053	6.72E-06	9.08711E-05	0.3532938	5.583E-06	7.55028E-05	0.4218842	6.667E-06	9.01613E-05
Road 5	5	1700-1800	0.061006363	9.664E-07	1.30687E-05	0.0513496	8.134E-07	1.1E-05	0.3146216	4.984E-06	6.73978E-05	0.2622673	4.155E-06	5.61826E-05	0.3136169	4.968E-06	6.71826E-05
Road 5	5	1800-1900	0.054705088	9.343E-07	1.26353E-05	0.0483897	8.265E-07	1.11766E-05	0.3060697	5.228E-06	7.0693E-05	0.2680711	4.579E-06	6.19165E-05	0.3164609	5.405E-06	7.30931E-05
Road 5	5	1900-2000	0.06394065	8.125E-07	1.0987E-05	0.056105	7.129E-07	9.64062E-06	0.3542948	4.502E-06	6.08791E-05	0.3085404	3.92E-06	5.3017E-05	0.3646453	4.633E-06	6.26577E-05
Road 5	5	2000-2100	0.060967054	6.797E-07	9.19171E-06	0.0530554	5.915E-07	7.99892E-06	0.3317773	3.699E-06	5.00205E-05	0.2863463	3.192E-06	4.31711E-05	0.3394017	3.784E-06	5.117E-05
Road 5	5	2100-2200	0.062926883	6.744E-07	9.11984E-06	0.0550722	5.902E-07	7.98147E-06	0.3533227	3.787E-06	5.12062E-05	0.3069865	3.29E-06	4.44908E-05	0.3620587	3.88E-06	5.24723E-05
Road 5	5	2200-2300	0.059893963	5.531E-07	7.47934E-06	0.0528531	4.881E-07	6.6001E-06	0.3279704	3.029E-06	4.09557E-05	0.2869378	2.65E-06	3.58317E-05	0.3397909	3.138E-06	4.24318E-05
Road 5	5	2300-0000	0.052585335	4.422E-07	5.9794E-06	0.046523	3.912E-07	5.29006E-06	0.2988098	2.513E-06	3.39772E-05	0.261928	2.202E-06	2.97834E-05	0.308451	2.594E-06	3.50735E-05
Road 6	6	0000-0100	0.047830068	1.329E-07	4.74925E-06	0.0425007	1.181E-07	4.22008E-06	0.2976514	8.268E-07	2.95551E-05	0.2618093	7.272E-07	2.59962E-05	0.30431	8.453E-07	3.02162E-05
Road 6	6	0100-0200	0.062400619	1.323E-07	4.73075E-06	0.0550961	1.169E-07	4.17698E-06	0.3448346	7.313E-07	2.61428E-05	0.302094	6.407E-07	2.29025E-05	0.3571901	7.576E-07	2.70795E-05
Road 6	6	0200-0300	0.056806456	8.423E-08	3.01084E-06	0.0504661	7.483E-08	2.67479E-06	0.314773	4.667E-07	1.66835E-05	0.2771792	4.11E-07	1.4691E-05	0.3276453	4.858E-07	1.73658E-05
Road 6	6	0300-0400	0.057712419	6.716E-08	2.40062E-06	0.0511687	5.954E-08	2.12843E-06	0.3604387	4.194E-07	1.49929E-05	0.3169744	3.689E-07	1.31849E-05	0.3681431	4.284E-07	1.53134E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (June) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 6	6	0400-0500	0.062267	1.052E-07	3.75979E-06	0.0553176	9.344E-08	3.34017E-06	0.3563848	6.02E-07	2.15191E-05	0.3141291	5.306E-07	1.89676E-05	0.3694467	6.241E-07	2.23078E-05
Road 6	6	0500-0600	0.056434348	1.705E-07	6.09582E-06	0.0498141	1.505E-07	5.38072E-06	0.3316225	1.002E-06	3.58206E-05	0.2900212	8.764E-07	3.1327E-05	0.3398353	1.027E-06	3.67077E-05
Road 6	6	0600-0700	0.060895889	3.28E-07	1.17255E-05	0.0534159	2.877E-07	1.02852E-05	0.3685271	1.985E-06	7.09601E-05	0.3201189	1.724E-06	6.1639E-05	0.3735347	2.012E-06	7.19243E-05
Road 6	6	0700-0800	0.058968443	5.047E-07	1.80404E-05	0.0502331	4.299E-07	1.5368E-05	0.3263736	2.793E-06	9.98487E-05	0.2745995	2.35E-06	8.40093E-05	0.3248326	2.78E-06	9.93773E-05
Road 6	6	0800-0900	0.050931009	6.252E-07	2.23472E-05	0.043924	5.392E-07	1.92727E-05	0.2936687	3.605E-06	0.000128854	0.2500106	3.069E-06	0.000109698	0.2939345	3.608E-06	0.000128971
Road 6	6	0900-1000	0.053945796	6.358E-07	2.2729E-05	0.0450714	5.312E-07	1.89899E-05	0.2974621	3.506E-06	0.00012533	0.2450705	2.889E-06	0.000103256	0.2901419	3.42E-06	0.000122245
Road 6	6	1000-1100	0.073034831	7.293E-07	2.60678E-05	0.0617882	6.17E-07	2.20536E-05	0.3943349	3.937E-06	0.000140747	0.330971	3.305E-06	0.000118131	0.3927592	3.922E-06	0.000140185
Road 6	6	1100-1200	0.081597784	8.086E-07	2.89051E-05	0.0689569	6.834E-07	2.44272E-05	0.4201619	4.164E-06	0.000148838	0.3529151	3.497E-06	0.000125016	0.421872	4.181E-06	0.000149444
Road 6	6	1200-1300	0.079593643	7.708E-07	2.75544E-05	0.0674592	6.533E-07	2.33536E-05	0.390699	3.784E-06	0.000135255	0.3294173	3.19E-06	0.00011404	0.3968765	3.844E-06	0.000137394
Road 6	6	1300-1400	0.094074524	9.093E-07	3.25044E-05	0.0786344	7.601E-07	2.71695E-05	0.4707287	4.55E-06	0.000162645	0.39091	3.779E-06	0.000135066	0.4695444	4.539E-06	0.000162236
Road 6	6	1400-1500	0.090807095	9.681E-07	3.46044E-05	0.0755075	8.05E-07	2.87741E-05	0.4513154	4.811E-06	0.000171985	0.3727642	3.974E-06	0.000142051	0.4482717	4.779E-06	0.000170825
Road 6	6	1500-1600	0.077867856	8.111E-07	2.89944E-05	0.0662348	6.899E-07	2.46628E-05	0.3951975	4.117E-06	0.000147153	0.3336721	3.476E-06	0.000124244	0.3999068	4.166E-06	0.000148907
Road 6	6	1600-1700	0.082140158	8.757E-07	3.13016E-05	0.0687217	7.326E-07	2.61882E-05	0.3988571	4.252E-06	0.000151995	0.3314123	3.533E-06	0.000126293	0.400134	4.266E-06	0.000152481
Road 6	6	1700-1800	0.061136711	6.873E-07	2.45692E-05	0.0515102	5.791E-07	2.07006E-05	0.3053457	3.433E-06	0.00012271	0.2547002	2.863E-06	0.000102357	0.3062103	3.443E-06	0.000123058
Road 6	6	1800-1900	0.057471127	7.367E-07	2.6335E-05	0.050813	6.514E-07	2.3284E-05	0.2953306	3.786E-06	0.000135329	0.2590088	3.32E-06	0.000118686	0.3098217	3.972E-06	0.00014197
Road 6	6	1900-2000	0.069036987	6.751E-07	2.41314E-05	0.0605579	5.922E-07	2.11676E-05	0.3545258	3.467E-06	0.000123922	0.3084682	3.016E-06	0.000107823	0.3690261	3.609E-06	0.00012899
Road 6	6	2000-2100	0.054553146	4.198E-07	1.5006E-05	0.0474395	3.651E-07	1.30493E-05	0.303457	2.335E-06	8.34725E-05	0.2611709	2.01E-06	7.18408E-05	0.3086104	2.375E-06	8.48901E-05
Road 6	6	2100-2200	0.075322247	5.033E-07	1.79902E-05	0.06595	4.407E-07	1.57517E-05	0.3882997	2.594E-06	9.27427E-05	0.3376441	2.256E-06	8.06439E-05	0.4035941	2.697E-06	9.63956E-05
Road 6	6	2200-2300	0.055772334	3.946E-07	1.41066E-05	0.0491678	3.479E-07	1.24361E-05	0.3040018	2.151E-06	7.68918E-05	0.2646221	1.872E-06	6.69314E-05	0.3137899	2.22E-06	7.93675E-05
Road 6	6	2300-0000	0.03712096	2.466E-07	8.81627E-06	0.0328556	2.183E-07	7.80326E-06	0.2241925	1.49E-06	5.3246E-05	0.1961259	1.303E-06	4.65801E-05	0.2289815	1.521E-06	5.43834E-05
Road 7	7	0000-0100	0.0685013	1.83E-07	4.56817E-06	0.0604605	1.615E-07	4.03195E-06	0.4011094	1.072E-06	2.67489E-05	0.3517409	9.396E-07	2.34567E-05	0.4122014	1.101E-06	2.74886E-05
Road 7	7	0100-0200	0.083065923	1.725E-07	4.30511E-06	0.0733458	1.523E-07	3.80134E-06	0.4532419	9.41E-07	2.34905E-05	0.3983771	8.271E-07	2.0647E-05	0.4717229	9.794E-07	2.44483E-05
Road 7	7	0200-0300	0.07147383	9.754E-08	2.43501E-06	0.0636072	8.681E-08	2.16701E-06	0.3995244	5.452E-07	1.36112E-05	0.3535003	4.824E-07	1.20432E-05	0.4171076	5.692E-07	1.42102E-05
Road 7	7	0300-0400	0.072448947	7.994E-08	1.99559E-06	0.0643092	7.096E-08	1.77138E-06	0.4334449	4.783E-07	1.19391E-05	0.3826603	4.222E-07	1.05403E-05	0.4469694	4.932E-07	1.23117E-05
Road 7	7	0400-0500	0.079844685	1.287E-07	3.21214E-06	0.0709146	1.143E-07	2.85288E-06	0.4410856	7.108E-07	1.77448E-05	0.3897309	6.281E-07	1.56788E-05	0.4606455	7.424E-07	1.85317E-05
Road 7	7	0500-0600	0.073143112	2.081E-07	5.19583E-06	0.0645364	1.836E-07	4.58444E-06	0.4084908	1.162E-06	2.90178E-05	0.3582063	1.019E-06	2.54457E-05	0.4227427	1.203E-06	3.00302E-05
Road 7	7	0600-0700	0.07770718	3.949E-07	9.85723E-06	0.0680889	3.46E-07	8.63714E-06	0.4429779	2.251E-06	5.61922E-05	0.3854819	1.959E-06	4.88987E-05	0.4535707	2.305E-06	5.75359E-05
Road 7	7	0700-0800	0.076491926	6.219E-07	1.55249E-05	0.0652391	5.304E-07	1.3241E-05	0.4115059	3.346E-06	8.35199E-05	0.3480569	2.83E-06	7.06422E-05	0.4132961	3.36E-06	8.38832E-05
Road 7	7	0800-0900	0.076883569	9.443E-07	2.35738E-05	0.0655972	8.057E-07	2.01132E-05	0.4167976	5.119E-06	0.000127797	0.3527815	4.333E-06	0.000108169	0.4183787	5.139E-06	0.000128282
Road 7	7	0900-1000	0.07968854	9.094E-07	2.2701E-05	0.0666369	7.604E-07	1.89829E-05	0.4153032	4.739E-06	0.000118308	0.3446258	3.933E-06	9.81739E-05	0.4112627	4.693E-06	0.000117157
Road 7	7	1000-1100	0.09515266	9.518E-07	2.37611E-05	0.079904	7.993E-07	1.99532E-05	0.4996722	4.998E-06	0.000124776	0.4173577	4.175E-06	0.000104221	0.4972617	4.974E-06	0.000124174
Road 7	7	1100-1200	0.102278212	1.019E-06	2.54292E-05	0.086411	8.606E-07	2.14842E-05	0.526844	5.247E-06	0.000130988	0.4434443	4.417E-06	0.000110253	0.5298554	5.277E-06	0.000131737
Road 7	7	1200-1300	0.101187329	1.006E-06	2.51213E-05	0.0859524	8.548E-07	2.1339E-05	0.5100499	5.073E-06	0.000126628	0.4318464	4.295E-06	0.000107213	0.5177988	5.15E-06	0.000128552
Road 7	7	1300-1400	0.109751185	1.076E-06	2.68497E-05	0.0921252	9.028E-07	2.25376E-05	0.5519026	5.409E-06	0.000135018	0.461211	4.52E-06	0.000112831	0.5533362	5.423E-06	0.000135369
Road 7	7	1400-1500	0.103586886	1.065E-06	2.65805E-05	0.0860904	8.849E-07	2.20909E-05	0.5268643	5.416E-06	0.000135194	0.4357069	4.479E-06	0.000111803	0.5217973	5.364E-06	0.000133894
Road 7	7	1500-1600	0.093849933	9.429E-07	2.35378E-05	0.0797154	8.009E-07	1.99928E-05	0.4809297	4.832E-06	0.000120618	0.4063206	4.082E-06	0.000101906	0.486036	4.883E-06	0.000121899
Road 7	7	1600-1700	0.097990441	1.019E-06	2.54286E-05	0.0823882	8.565E-07	2.13798E-05	0.4842715	5.034E-06	0.000125669	0.4051864	4.212E-06	0.000105146	0.4875746	5.068E-06	0.000126526
Road 7	7	1700-1800	0.076271587	8.405E-07	2.09812E-05	0.0641619	7.07E-07	1.765E-05	0.3904854	4.303E-06	0.000107417	0.3262501	3.595E-06	8.97466E-05	0.3904119	4.302E-06	0.000107397
Road 7	7	1800-1900	0.067377325	7.708E-07	1.92427E-05	0.0589789	6.748E-07	1.68441E-05	0.3517564	4.024E-06	0.00010046	0.3057885	3.498E-06	8.73319E-05	0.3647674	4.173E-06	0.000104176
Road 7	7	1900-2000	0.078792711	6.829E-07	1.70485E-05	0.069579	6.031E-07	1.50549E-05	0.4126383	3.577E-06	8.92832E-05	0.3622395	3.14E-06	7.83783E-05	0.4318185	3.743E-06	9.34332E-05
Road 7	7	2000-2100	0.072459695	5.134E-07	1.28157E-05	0.0630434	4.467E-07	1.11503E-05	0.3885655	2.753E-06	6.87242E-05	0.3357399	2.379E-06	5.93811E-05	0.3987833	2.825E-06	7.05314E-05
Road 7	7	2100-2200	0.082551098	4.914E-07	1.22668E-05	0.07244	4.312E-07	1.07644E-05	0.4321168	2.572E-06	6.42112E-05	0.3770284	2.244E-06	5.60252E-05	0.4494685	2.676E-06	6.67896E-05
Road 7	7	2200-2300	0.068612783	4.403E-07	1.09914E-05	0.0606262	3.891E-07	9.712E-06	0.3703159	2.376E-06	5.93226E-05	0.3242733	2.081E-06	5.19468E-05	0.3848995	2.47E-06	6.16588E-05
Road 7	7	2300-0000	0.046814533	2.766E-07	6.90559E-06	0.0417609	2.468E-07	6.16013E-06	0.2741408	1.62E-06	4.04384E-05	0.2425107	1.433E-06	3.57726E-05	0.2842716	1.68E-06	4.19328E-05
Road 8	8	0000-0100	0.207524722	1.509E-07	2.48798E-06	0.1843917	1.341E-07	2.21064E-06	1.0596092	7.706E-07	1.27035E-05	0.9411394	6.845E-07	1.12831E-05	1.1255311	8.186E-07	1.34938E-05
Road 8	8	0100-0200	0.215745	1.308E-07	2.15544E-06	0.1903763	1.154E-07	1.90199E-06	1.097893	6.654E-07	1.09687E-05	0.968312	5.869E-07	9.6741E-06	1.1586883	7.022E-07	1.15761E-05
Road 8	8	0200-0300	0.202349333	6.132E-08	1.0108E-06	0.179676	5.445E-08	8.97543E-07	1.0841553	3.285E-07	5.41573E-06	0.96238	2.916E-07	4.80742E-06	1.142056	3.461E-07	5.70496E-06
Road 8	8	0300-0400	0.185163571	5.237E-08	8.63291E-07	0.1638629	4.635E-08	7.63981E-07	0.9676207	2.737E-07	4.51136E-06	0.8558379	2.421E-07	3.99019E-06	1.0197007	2.884E-07	4.75417E-06
Road 8	8	0400-0500	0.208027619	8.825E-08	1.45484E-06	0.1846814	7.835E-08	1.29157E-06	1.0271267	4.358E-07	7.18319E-06	0.9116471	3.868E-07	6.37558E-06	1.0963286	4.651E-07	7.66715E-06
Road 8	8	0500-0600	0.199088529	1.367E-07	2.25423E-06	0.1756424	1.206E-07	1.98876E-06	0.9645435	6.625E-07	1.09213E-05	0.8502335	5.84E-07	9.627E-06	1.0258759	7.046E-07	1.16158E-05
Road 8	8	0600-0700	0.224746452	2.815E-07	4.64043E-06	0.1970053	2.468E-07	4.06765E-06	1.0757789	1.347E-06	2.2212E-05	0.9425092	1.181E-06	1.94604E-05	1.1395145	1.427E-06	2.3528E-05
Road 8	8	0700-0800	0.230861584	4.711E-07	7.7651E-06	0.1965639	4.011E-07	6.61148E-06	1.1177305	2.281E-06	3.75952E-05	0.9507651	1.94E-06	3.19793E-05	1.147329	2.341E-06	3.85907E-05
Road 8	8	0800-0900	0.257966579	9.902E-07	1.63227E-05	0.2226371	8.546E-07	1.40872E-05	1.2534128	4.811E-06	7.93088E-05	1.0811053	4.15E-06	6.84062E-05	1.3037424	5.004E-06	8.24934E-05
Road 8	8	0900-1000	0.279660318	8.87E-07	1.46219E-05	0.2333455	7.401E-07	1.22004E-05	1.2935227	4.103E-06	6.76313E-05	1.0790855	3.423E-06	5.64195E-05	1.312431	4.163E-06	6.86199E-05
Road 8	8	1000-1100	0.270806899	8.644E-07	1.42492E-05	0.2288537	7.305E-07	1.20417E-05	1.2848051	4.101E-06	6.76033E-05	1.0849671	3.463E-06	5.70884E-05	1.3138208	4.194E-06	6.91301E-05
Road 8	8	1100-1200	0.272082704	8.74E-07	1.44069E-05	0.2292652	7.364E-07	1.21397E-05	1.3100052	4.208E-06	6.93656E-05	1.1035938	3.545E-06	5.8436E-05	1.3328589	4.281E-06	7.05757E-05
Road 8	8	1200-1300	0.275975444	9.422E-07	1.55321E-05	0.2333615	7.967E-07	1.31338E-05	1.3422464	4.583E-06	7.55428E-05	1.1344767	3.873E-06	6.38493E-05	1.3678383	4.67E-06	7.69831E-05
Road 8	8	1300-1400	0.256151813	8.28E-07	1.36487E-05	0.2137974	6.911E-07	1.13919E-05	1.2230463	3.953E-06	6.51684E-05	1.0203396	3.298E-06	5.43674E-05	1.2341371	3.989E-06	6.57593E-05
Road 8	8	1400-1500	0.252352734	7.086E-07	1.16814E-05	0.2094886	5.883E-07	9.69726E-06	1.261963	3.544E-06	5.84165E-05	1.0470245	2.94E-06	4.84669E-05	1.256513	3.528E-06	5.81642E-05
Road 8	8	1500-1600	0.252308467	6.983E-07	1.15113E-05	0.2142745	5.93E-07	9.77608E-06	1.2275282	3.397E-06	5.60049E-05	1.0416213	2.883E-06	4.7523E-05	1.2558958	3.476E-06	5.72991E-05
Road 8	8	1600-1700	0.255541233	7.537E-07	1.24248E-05	0.2133968	6.294E-07	1.03756E-05	1.2281892	3.623E-06	5.97162E-05	1.0249251	3.023E-06	4.98332E-05	1.2383219	3.652E-06	6.02088E-05
Road 8	8	1700-1800	0.208285577	6.564E-07	1.08208E-05	0.1752219	5.522E-07	9.10305E-06	1.044975	3.293E-06	5.42881E-05	0.8777563	2.766E-06	4.56008E-05	1.0529782	3.318E-06	5.47038E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (June) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 8	8	1800-1900	0.199736636	4.318E-07	7.1173E-06	0.1768347	3.822E-07	6.30123E-06	1.0252188	2.216E-06	3.65321E-05	0.906762	1.96E-06	3.2311E-05	1.0835966	2.342E-06	3.86123E-05
Road 8	8	1900-2000	0.201215325	3.13E-07	5.15971E-06	0.1766825	2.748E-07	4.53062E-06	1.0593288	1.648E-06	2.71641E-05	0.9298416	1.446E-06	2.38437E-05	1.106524	1.721E-06	2.83743E-05
Road 8	8	2000-2100	0.219311184	3.367E-07	5.55071E-06	0.1907316	2.928E-07	4.82736E-06	1.0484037	1.61E-06	2.65348E-05	0.9109414	1.399E-06	2.30557E-05	1.101673	1.691E-06	2.7883E-05
Road 8	8	2100-2200	0.17868	1.913E-07	3.15374E-06	0.1565132	1.676E-07	2.76249E-06	0.937796	1.004E-06	1.65523E-05	0.8201747	8.782E-07	1.44763E-05	0.9766879	1.046E-06	1.72387E-05
Road 8	8	2200-2300	0.21258125	2.749E-07	4.53084E-06	0.187495	2.424E-07	3.99617E-06	1.0523634	1.361E-06	2.24295E-05	0.9274995	1.199E-06	1.97682E-05	1.1149945	1.442E-06	2.37644E-05
Road 8	8	2300-0000	0.169219615	1.778E-07	2.93041E-06	0.1498173	1.574E-07	2.59441E-06	0.8709488	9.149E-07	1.50824E-05	0.7701892	8.091E-07	1.33375E-05	0.9200065	9.665E-07	1.59319E-05
Road 9	9	0000-0100	0.182433212	4.845E-08	1.44631E-06	0.1651414	4.386E-08	1.30923E-06	0.8295705	2.203E-07	6.57676E-06	0.7465564	1.983E-07	5.91863E-06	0.9116977	2.421E-07	7.22786E-06
Road 9	9	0100-0200	0.19950583	4.163E-08	1.24274E-06	0.1807879	3.772E-08	1.12614E-06	0.8573584	1.789E-07	5.34055E-06	0.771814	1.611E-07	4.80769E-06	0.9526019	1.988E-07	5.93383E-06
Road 9	9	0200-0300	0.076722301	7.277E-09	2.17231E-07	0.0687672	6.522E-09	1.94707E-07	0.5493559	5.211E-08	1.55544E-06	0.4950198	4.695E-08	1.4016E-06	0.563787	5.347E-08	1.5963E-06
Road 9	9	0300-0400	0.093172111	7.07E-09	2.11046E-07	0.0831166	6.307E-09	1.88269E-07	0.5784791	4.389E-08	1.31032E-06	0.5175071	3.927E-08	1.17221E-06	0.6006237	4.557E-08	1.36048E-06
Road 9	9	0400-0500	0.212452032	4.03E-08	1.20307E-06	0.1934305	3.669E-08	1.09536E-06	0.8772408	1.664E-07	4.96763E-06	0.7943619	1.507E-07	4.49831E-06	0.9877923	1.874E-07	5.59366E-06
Road 9	9	0500-0600	0.153314628	4.944E-08	1.47592E-06	0.1388344	4.477E-08	1.33652E-06	0.7753426	2.5E-07	7.46403E-06	0.7043659	2.271E-07	6.78075E-06	0.8432003	2.719E-07	8.11728E-06
Road 9	9	0600-0700	0.182372876	1.107E-07	3.30477E-06	0.1650568	1.002E-07	2.99098E-06	0.9549047	5.797E-07	1.73038E-05	0.8664864	5.26E-07	1.57015E-05	1.0315432	6.262E-07	1.86925E-05
Road 9	9	0700-0800	0.160966236	1.466E-07	4.37529E-06	0.1441133	1.312E-07	3.9172E-06	0.9223987	8.399E-07	2.50721E-05	0.8301528	7.559E-07	2.25647E-05	0.9742661	8.871E-07	2.64819E-05
Road 9	9	0800-0900	0.247039537	5.389E-07	1.60877E-05	0.2183788	4.764E-07	1.42213E-05	1.1973606	2.612E-06	7.79747E-05	1.0528431	2.297E-06	6.85634E-05	1.2712219	2.773E-06	8.27847E-05
Road 9	9	0900-1000	0.257662258	4.203E-07	1.25482E-05	0.2259569	3.686E-07	1.10041E-05	1.1358488	1.853E-06	5.53159E-05	0.9903967	1.616E-06	4.82323E-05	1.2163536	1.984E-06	5.92364E-05
Road 9	9	1000-1100	0.270123294	3.638E-07	1.08605E-05	0.2334647	3.144E-07	9.38664E-06	1.1664508	1.571E-06	4.68981E-05	1.0044907	1.353E-06	4.03864E-05	1.2379553	1.667E-06	4.9773E-05
Road 9	9	1100-1200	0.184133517	2.585E-07	7.71605E-06	0.1574376	2.21E-07	6.59737E-06	0.9907325	1.391E-06	4.15163E-05	0.8587303	1.205E-06	3.59848E-05	1.0161679	1.426E-06	4.25822E-05
Road 9	9	1200-1300	0.278382061	3.855E-07	1.15079E-05	0.2467629	3.417E-07	1.02008E-05	1.2872844	1.783E-06	5.32143E-05	1.1427585	1.582E-06	4.72398E-05	1.3895215	1.924E-06	5.74406E-05
Road 9	9	1300-1400	0.316466139	3.602E-07	1.07525E-05	0.2776341	3.16E-07	9.43311E-06	1.2196386	1.388E-06	4.14394E-05	1.0622649	1.209E-06	3.60923E-05	1.339899	1.525E-06	4.55254E-05
Road 9	9	1400-1500	0.206632725	2.665E-07	7.95681E-06	0.1817909	2.345E-07	7.00022E-06	1.0223126	1.319E-06	3.93662E-05	0.8918275	1.15E-06	3.43416E-05	1.0736184	1.385E-06	4.13418E-05
Road 9	9	1500-1600	0.169267257	1.83E-07	5.4636E-06	0.1492872	1.614E-07	4.81868E-06	0.8959591	9.688E-07	2.89197E-05	0.7938558	8.584E-07	2.5624E-05	0.9431429	1.02E-06	3.04427E-05
Road 9	9	1600-1700	0.177452149	2.659E-07	7.93851E-06	0.1578289	2.365E-07	7.06065E-06	1.0098649	1.513E-06	4.51774E-05	0.897335	1.345E-06	4.01432E-05	1.055164	1.581E-06	4.72039E-05
Road 9	9	1700-1800	0.155806373	2.01E-07	5.99964E-06	0.1402208	1.809E-07	5.39948E-06	0.9714291	1.253E-06	3.74068E-05	0.8822152	1.138E-06	3.39715E-05	1.0224361	1.319E-06	3.93709E-05
Road 9	9	1800-1900	0.150299828	1.255E-07	3.74491E-06	0.1395695	1.165E-07	3.47755E-06	0.9260672	7.73E-07	2.30742E-05	0.8664413	7.232E-07	2.15885E-05	1.0060108	8.397E-07	2.50661E-05
Road 9	9	1900-2000	0.156131818	1.274E-07	3.80181E-06	0.1443498	1.177E-07	3.51492E-06	0.8417694	6.866E-07	2.04971E-05	0.777585	6.343E-07	1.89342E-05	0.9219347	7.52E-07	2.24491E-05
Road 9	9	2000-2100	0.164404915	9.044E-08	2.69987E-06	0.1475911	8.119E-08	2.42376E-06	0.7382888	4.061E-07	1.21243E-05	0.6694988	3.683E-07	1.09946E-05	0.8170898	4.495E-07	1.34183E-05
Road 9	9	2100-2200	0.021416503	1.097E-08	3.27449E-07	0.0197003	1.009E-08	3.01209E-07	0.2945135	1.508E-07	4.50298E-06	0.2675837	1.371E-07	4.09123E-06	0.2872841	1.471E-07	4.39244E-06
Road 9	9	2200-2300	0.154937309	9.699E-08	2.89535E-06	0.1403791	8.788E-08	2.6233E-06	0.7597429	4.756E-07	1.41975E-05	0.6886155	4.311E-07	1.28683E-05	0.8289947	5.19E-07	1.54916E-05
Road 9	9	2300-0000	0.12529327	7.13E-08	2.12853E-06	0.1151884	6.555E-08	1.95686E-06	0.6463106	3.678E-07	1.09798E-05	0.5933045	3.376E-07	1.00793E-05	0.7084929	4.032E-07	1.20361E-05
Road 10	10	0000-0100	0.252517029	1.941E-07	4.31685E-06	0.2256712	1.735E-07	3.85791E-06	1.2913543	9.929E-07	2.20761E-05	1.1549988	8.88E-07	1.9745E-05	1.38067	1.062E-06	2.36029E-05
Road 10	10	0100-0200	0.249106176	1.447E-07	3.21756E-06	0.2215066	1.287E-07	2.86108E-06	1.2627594	7.336E-07	1.63104E-05	1.123398	6.526E-07	1.45103E-05	1.3449046	7.813E-07	1.73714E-05
Road 10	10	0200-0300	0.244099249	7.924E-08	1.76191E-06	0.2167895	7.038E-08	1.56479E-06	1.2233479	3.971E-07	8.83013E-06	1.0878311	3.531E-07	7.85197E-06	1.3046205	4.235E-07	9.41676E-06
Road 10	10	0300-0400	0.222208459	4.556E-08	1.01299E-06	0.1966138	4.031E-08	8.96312E-07	1.2016658	2.464E-07	5.47808E-06	1.0648113	2.183E-07	4.8542E-06	1.2614251	2.586E-07	5.75051E-06
Road 10	10	0400-0500	0.260907405	1.025E-07	2.2797E-06	0.2337385	9.185E-08	2.04231E-06	1.2513845	4.918E-07	1.09341E-05	1.1177537	4.392E-07	9.76647E-06	1.3514922	5.311E-07	1.18088E-05
Road 10	10	0500-0600	0.239521012	1.678E-07	3.73071E-06	0.2139285	1.499E-07	3.33209E-06	1.1541768	8.085E-07	1.79771E-05	1.0297691	7.214E-07	1.60394E-05	1.2436976	8.712E-07	1.93715E-05
Road 10	10	0600-0700	0.294843402	4.131E-07	9.18479E-06	0.2638546	3.697E-07	8.21944E-06	1.4756312	2.067E-06	4.5968E-05	1.3252017	1.857E-06	4.12819E-05	1.5890563	2.226E-06	4.95013E-05
Road 10	10	0700-0800	0.297703534	6.562E-07	1.45894E-05	0.2590417	5.709E-07	1.26947E-05	1.5009928	3.308E-06	7.35584E-05	1.3110361	2.89E-06	6.42493E-05	1.5700778	3.461E-06	7.6944E-05
Road 10	10	0800-0900	0.318399728	1.344E-06	2.98768E-05	0.2765463	1.167E-06	2.59495E-05	1.5751572	6.647E-06	0.000147803	1.3690976	5.778E-06	0.000128468	1.6456439	6.945E-06	0.000154418
Road 10	10	0900-1000	0.361960204	1.212E-06	2.69514E-05	0.3092165	1.036E-06	2.30241E-05	1.7487016	5.856E-06	0.000130207	1.4952973	5.007E-06	0.000111339	1.8045138	6.043E-06	0.000134363
Road 10	10	1000-1100	0.362399609	1.319E-06	2.93245E-05	0.3112522	1.133E-06	2.51858E-05	1.638318	5.962E-06	0.000132569	1.4025707	5.104E-06	0.000113493	1.7138229	6.237E-06	0.000138679
Road 10	10	1100-1200	0.344966846	1.255E-06	2.79139E-05	0.2936868	1.069E-06	2.37644E-05	1.619404	5.893E-06	0.000131038	1.3773344	5.012E-06	0.000111451	1.6710212	6.081E-06	0.000135215
Road 10	10	1200-1300	0.362193334	1.361E-06	3.0271E-05	0.3117178	1.172E-06	2.60524E-05	1.7262881	6.489E-06	0.000144278	1.4875111	5.591E-06	0.000124322	1.7992289	6.763E-06	0.000150374
Road 10	10	1300-1400	0.357610267	1.173E-06	2.6084E-05	0.3047928	9.999E-07	2.22315E-05	1.6629827	5.455E-06	0.000121298	1.4150617	4.642E-06	0.000103214	1.7198545	5.642E-06	0.000125446
Road 10	10	1400-1500	0.335845613	1.033E-06	2.29655E-05	0.2864517	8.81E-07	1.95879E-05	1.6810913	5.17E-06	0.000114955	1.4351312	4.414E-06	9.81359E-05	1.7215829	5.295E-06	0.000117724
Road 10	10	1500-1600	0.325177862	1.022E-06	2.27302E-05	0.2801849	8.808E-07	1.95851E-05	1.5676652	4.928E-06	0.000109581	1.3522679	4.251E-06	9.45245E-05	1.6324528	5.132E-06	0.00011411
Road 10	10	1600-1700	0.314531907	1.102E-06	2.44953E-05	0.2688833	9.418E-07	2.09402E-05	1.5371941	5.384E-06	0.000119714	1.3121342	4.596E-06	0.000102187	1.5810175	5.538E-06	0.000123127
Road 10	10	1700-1800	0.29189855	9.576E-07	2.1291E-05	0.2524674	8.282E-07	1.84149E-05	1.520042	4.986E-06	0.000110872	1.3234313	4.341E-06	9.65309E-05	1.5758987	5.17E-06	0.000114946
Road 10	10	1800-1900	0.284456078	5.881E-07	1.30757E-05	0.2555853	5.284E-07	1.17486E-05	1.4394932	2.976E-06	6.61696E-05	1.2963502	2.68E-06	5.95897E-05	1.5519356	3.208E-06	7.13383E-05
Road 10	10	1900-2000	0.251070616	4.676E-07	1.03965E-05	0.22472	4.185E-07	9.30533E-06	1.332179	2.481E-06	5.51636E-05	1.1966685	2.229E-06	4.95523E-05	1.4213885	2.647E-06	5.88577E-05
Road 10	10	2000-2100	0.286720493	3.527E-07	7.84251E-06	0.2510544	3.088E-07	6.86695E-06	1.3871647	1.706E-06	3.79424E-05	1.2144131	1.494E-06	3.32172E-05	1.4654676	1.803E-06	4.00841E-05
Road 10	10	2100-2200	0.241042844	2.965E-07	6.59311E-06	0.2183702	2.686E-07	5.97296E-06	1.3499362	1.661E-06	3.69241E-05	1.2289858	1.512E-06	3.36158E-05	1.447356	1.78E-06	3.95887E-05
Road 10	10	2200-2300	0.248356994	3.183E-07	7.07622E-06	0.2227585	2.854E-07	6.34687E-06	1.2798552	1.64E-06	3.64658E-05	1.1529327	1.477E-06	3.28495E-05	1.3756912	1.763E-06	3.91964E-05
Road 10	10	2300-0000	0.224354821	2.683E-07	5.96619E-06	0.2002087	2.394E-07	5.32408E-06	1.133913	1.356E-06	3.01538E-05	1.0116056	1.21E-06	2.69013E-05	1.2118143	1.449E-06	3.22254E-05
Road 11	11	0000-0100	0.282537603	2.158E-07	1.79031E-06	0.2521695	1.926E-07	1.59788E-06	1.4149	1.081E-06	8.96554E-06	1.2612211	9.634E-07	7.99175E-06	1.5133906	1.156E-06	9.58963E-06
Road 11	11	0100-0200	0.283551984	1.526E-07	1.26588E-06	0.2517469	1.355E-07	1.12389E-06	1.3952058	7.509E-07	6.22871E-06	1.2356766	6.65E-07	5.51651E-06	1.4874235	8.005E-07	6.6404E-06
Road 11	11	0200-0300	0.244087434	6.356E-08	5.27272E-07	0.2168164	5.646E-08	4.68362E-07	1.3034253	3.394E-07	2.81563E-06	1.1590084	3.018E-07	2.50366E-06	1.3758248	3.583E-07	2.97203E-06
Road 11	11	0300-0400	0.261742032	6.362E-08	5.27715E-07	0.2314927	5.627E-08	4.66728E-07	1.3707512	3.332E-07	2.76366E-06	1.2128925	2.948E-07	2.44539E-06	1.4443853	3.511E-07	2.91212E-06
Road 11	11	0400-0500	0.270111016	9.379E-08	7.77984E-07	0.2421602	8.408E-08	6.97479E-07	1.2788504	4.44E-07	3.68339E-06	1.1428459	3.968E-07	3.29167E-06	1.3850062	4.809E-07	3.98915E-06
Road 11	11	0500-0600	0.218705506	1.025E-07	8.50397E-07	0.1951513	9.148E-08	7.58811E-07	1.1146453	5.225E-07	4.3341E-06	0.9958341	4.668E-07	3.87212E-06	1.1909854	5.583E-07	4.63093E-06
Road 11	11	0600-0700	0.240453703	2.171E-07	1.80067E-06	0.2139206	1.931E-07	1.60197E-06	1.2450109	1.124E-06	9.32341E-06	1.1093851	1.002E-06	8.30776E-06	1.3233058	1.195E-06	9.90973E-06
Road 11	11	0700-0800	0.287747094	5.395E-07	4.47541E-06	0.2479044	4.648E-07	3.85573E-06	1.4984862	2.81E-06	2.33064E-05	1.2946741	2.428E-06	2.01364E-05	1.5425785	2.892E-06	2.39922E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (June) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 11	11	0800-0900	0.316438327	1.126E-06	9.34203E-06	0.2766778	9.847E-07	8.1682E-06	1.5591863	5.549E-06	4.6031E-05	1.3599837	4.84E-06	4.015E-05	1.6366615	5.825E-06	4.83182E-05
Road 11	11	0900-1000	0.324317421	8.221E-07	6.81901E-06	0.2767862	7.016E-07	5.81963E-06	1.5320288	3.883E-06	3.2212E-05	1.3021755	3.301E-06	2.73792E-05	1.5789617	4.002E-06	3.31988E-05
Road 11	11	1000-1100	0.337105684	6.965E-07	5.77712E-06	0.2884953	5.96E-07	4.94406E-06	1.5710528	3.246E-06	2.69238E-05	1.3409754	2.77E-06	2.29808E-05	1.6294707	3.366E-06	2.79249E-05
Road 11	11	1100-1200	0.290578626	6.76E-07	5.60747E-06	0.2459613	5.722E-07	4.74646E-06	1.4929278	3.473E-06	2.88099E-05	1.270492	2.956E-06	2.45174E-05	1.5164532	3.528E-06	2.92639E-05
Road 11	11	1200-1300	0.356858201	1.01E-06	8.37686E-06	0.3065272	8.674E-07	7.1954E-06	1.731606	4.9E-06	4.06476E-05	1.4872349	4.209E-06	3.49112E-05	1.7937621	5.076E-06	4.21066E-05
Road 11	11	1300-1400	0.376380653	7.841E-07	6.50439E-06	0.3203277	6.673E-07	5.53572E-06	1.6942555	3.53E-06	2.92791E-05	1.4339475	2.987E-06	2.47806E-05	1.7542753	3.655E-06	3.03164E-05
Road 11	11	1400-1500	0.300806868	6.058E-07	5.02509E-06	0.2555695	5.147E-07	4.26938E-06	1.500695	3.022E-06	2.50697E-05	1.270249	2.558E-06	2.122E-05	1.5258185	3.073E-06	2.54894E-05
Road 11	11	1500-1600	0.262339029	5.329E-07	4.42025E-06	0.2254503	4.579E-07	3.7987E-06	1.3586425	2.76E-06	2.28923E-05	1.1697458	2.376E-06	1.97095E-05	1.3951961	2.834E-06	2.35082E-05
Road 11	11	1600-1700	0.253254053	6.112E-07	5.06955E-06	0.2165832	5.227E-07	4.33549E-06	1.3554158	3.271E-06	2.71322E-05	1.1605223	2.801E-06	2.32309E-05	1.3771055	3.323E-06	2.75664E-05
Road 11	11	1700-1800	0.253381708	6.247E-07	5.18157E-06	0.217482	5.362E-07	4.44744E-06	1.3826249	3.409E-06	2.82742E-05	1.1942425	2.944E-06	2.44219E-05	1.4117245	3.48E-06	2.88693E-05
Road 11	11	1800-1900	0.261228723	5.352E-07	4.43916E-06	0.2337495	4.789E-07	3.9722E-06	1.3983358	2.865E-06	2.37625E-05	1.256004	2.573E-06	2.13438E-05	1.4897535	3.052E-06	2.5316E-05
Road 11	11	1900-2000	0.252737907	3.993E-07	3.31215E-06	0.2250129	3.555E-07	2.94881E-06	1.3153866	2.078E-06	1.72382E-05	1.1715201	1.851E-06	1.53529E-05	1.396533	2.206E-06	1.83017E-05
Road 11	11	2000-2100	0.25825404	3.632E-07	3.01252E-06	0.2262736	3.182E-07	2.63947E-06	1.2899743	1.814E-06	1.50475E-05	1.1321622	1.592E-06	1.32066E-05	1.3584357	1.91E-06	1.58461E-05
Road 11	11	2100-2200	0.184865712	1.829E-07	1.5175E-06	0.1623175	1.606E-07	1.33241E-06	1.0353222	1.025E-06	8.49862E-06	0.9111492	9.017E-07	7.47933E-06	1.0734667	1.062E-06	8.81174E-06
Road 11	11	2200-2300	0.237238591	2.595E-07	2.15241E-06	0.2110539	2.308E-07	1.91484E-06	1.1981796	1.311E-06	1.08708E-05	1.0659758	1.166E-06	9.67133E-06	1.2770296	1.397E-06	1.15862E-05
Road 11	11	2300-0000	0.225339373	2.347E-07	1.94709E-06	0.2011741	2.096E-07	1.73829E-06	1.1573245	1.206E-06	1.00001E-05	1.0330231	1.076E-06	8.92605E-06	1.2341972	1.286E-06	1.06643E-05
Haul Road 1	HR1	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0700-0800	1.21374	2.281E-06	3.43144E-06	1.0325	1.941E-06	2.91904E-06	5.57766	1.048E-05	1.57689E-05	4.74489	8.919E-06	1.34146E-05	5.77739	1.086E-05	1.63336E-05
Haul Road 1	HR1	0800-0900	1.23243	2.317E-06	3.48428E-06	1.06239	1.997E-06	3.00355E-06	5.66363	1.065E-05	1.6012E-05	4.88213	9.177E-06	1.38026E-05	5.94452	1.117E-05	1.68061E-05
Haul Road 1	HR1	0900-1000	1.25582	2.361E-06	3.5504E-06	1.0468	1.968E-06	2.95947E-06	5.77109	1.085E-05	1.63158E-05	4.81056	9.042E-06	1.36002E-05	5.85736	1.101E-05	1.65597E-05
Haul Road 1	HR1	1000-1100	1.26981	2.387E-06	3.58996E-06	1.07219	2.015E-06	3.03125E-06	5.83557	1.097E-05	1.64981E-05	4.92711	9.261E-06	1.39297E-05	5.9993	1.128E-05	1.6961E-05
Haul Road 1	HR1	1100-1200	1.24872	2.347E-06	3.53033E-06	1.0516	1.977E-06	2.97304E-06	5.7382	1.079E-05	1.62228E-05	4.83245	9.084E-06	1.36621E-05	5.88405	1.106E-05	1.66352E-05
Haul Road 1	HR1	1200-1300	1.25252	2.354E-06	3.54108E-06	1.05829	1.989E-06	2.99196E-06	5.7556	1.082E-05	1.6272E-05	4.86344	9.142E-06	1.37497E-05	5.92173	1.113E-05	1.67417E-05
Haul Road 1	HR1	1300-1400	1.26931	2.386E-06	3.58854E-06	1.05829	1.989E-06	2.99196E-06	5.83277	1.096E-05	1.64902E-05	4.86344	9.142E-06	1.37497E-05	5.92173	1.113E-05	1.67417E-05
Haul Road 1	HR1	1400-1500	1.28421	2.414E-06	3.63067E-06	1.06499	2.002E-06	3.0109E-06	5.90154	1.109E-05	1.66846E-05	4.89433	9.2E-06	1.38371E-05	5.95932	1.12E-05	1.6848E-05
Haul Road 1	HR1	1500-1600	1.24672	2.343E-06	3.52468E-06	1.05829	1.989E-06	2.99196E-06	5.72941	1.077E-05	1.6198E-05	4.86344	9.142E-06	1.37497E-05	5.92173	1.113E-05	1.67417E-05
Haul Road 1	HR1	1600-1700	1.25252	2.354E-06	3.54108E-06	1.0449	1.964E-06	2.9541E-06	5.7556	1.082E-05	1.6272E-05	4.80156	9.025E-06	1.35748E-05	5.84646	1.099E-05	1.65289E-05
Haul Road 1	HR1	1700-1800	1.25252	2.354E-06	3.54108E-06	1.0532	1.98E-06	2.97757E-06	5.7556	1.082E-05	1.6272E-05	4.83964	9.097E-06	1.36824E-05	5.89284	1.108E-05	1.666E-05
Haul Road 1	HR1	1800-1900	1.19424	2.245E-06	3.37631E-06	1.0564	1.986E-06	2.98661E-06	5.4881	1.032E-05	1.55157E-05	4.85464	9.125E-06	1.37248E-05	5.91104	1.111E-05	1.67115E-05
Haul Road 1	HR1	1900-2000	1.20394	2.263E-06	3.40373E-06	1.0564	1.986E-06	2.98661E-06	5.53238	1.04E-05	1.56409E-05	4.85464	9.125E-06	1.37248E-05	5.91104	1.111E-05	1.67115E-05
Haul Road 1	HR1	2000-2100	1.19394	2.244E-06	3.37546E-06	1.0385	1.952E-06	2.93601E-06	5.4867	1.031E-05	1.55118E-05	4.77228	8.97E-06	1.3492E-05	5.81078	1.092E-05	1.6428E-05
Haul Road 1	HR1	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0700-0800	1.21374	1.572E-06	4.18505E-06	1.0325	1.337E-06	3.56012E-06	5.57766	7.225E-06	1.92321E-05	4.74489	6.146E-06	1.63607E-05	5.77739	7.484E-06	1.99208E-05
Haul Road 2	HR2	0800-0900	1.23243	1.596E-06	4.24949E-06	1.06239	1.376E-06	3.66318E-06	5.66363	7.336E-06	1.95285E-05	4.88213	6.324E-06	1.68339E-05	5.94452	7.7E-06	2.04971E-05
Haul Road 2	HR2	0900-1000	1.25582	1.627E-06	4.33014E-06	1.0468	1.356E-06	3.60943E-06	5.77109	7.476E-06	1.98991E-05	4.81056	6.231E-06	1.65871E-05	5.85736	7.587E-06	2.01965E-05
Haul Road 2	HR2	1000-1100	1.26981	1.645E-06	4.37838E-06	1.07219	1.389E-06	3.69698E-06	5.83557	7.559E-06	2.01214E-05	4.92711	6.382E-06	1.6989E-05	5.9993	7.771E-06	2.06859E-05
Haul Road 2	HR2	1100-1200	1.24872	1.618E-06	4.30566E-06	1.0516	1.362E-06	3.62598E-06	5.7382	7.433E-06	1.97857E-05	4.83245	6.26E-06	1.66626E-05	5.88405	7.622E-06	2.02886E-05
Haul Road 2	HR2	1200-1300	1.25252	1.622E-06	4.31876E-06	1.05829	1.371E-06	3.64905E-06	5.7556	7.455E-06	1.98457E-05	4.86344	6.3E-06	1.67694E-05	5.92173	7.671E-06	2.04185E-05
Haul Road 2	HR2	1300-1400	1.26931	1.644E-06	4.37666E-06	1.05829	1.371E-06	3.64905E-06	5.83277	7.555E-06	2.01117E-05	4.86344	6.3E-06	1.67694E-05	5.92173	7.671E-06	2.04185E-05
Haul Road 2	HR2	1400-1500	1.28421	1.663E-06	4.42803E-06	1.06499	1.38E-06	3.67215E-06	5.90154	7.644E-06	2.03489E-05	4.89433	6.34E-06	1.68759E-05	5.95932	7.719E-06	2.05481E-05
Haul Road 2	HR2	1500-1600	1.24672	1.615E-06	4.29877E-06	1.05829	1.371E-06	3.64905E-06	5.72941	7.422E-06	1.97554E-05	4.86344	6.3E-06	1.67694E-05	5.92173	7.671E-06	2.04185E-05
Haul Road 2	HR2	1600-1700	1.25252	1.622E-06	4.31876E-06	1.0449	1.353E-06	3.60288E-06	5.7556	7.455E-06	1.98457E-05	4.80156	6.22E-06	1.65561E-05	5.84646	7.573E-06	2.01589E-05
Haul Road 2	HR2	1700-1800	1.25252	1.622E-06	4.31876E-06	1.0532	1.364E-06	3.6315E-06	5.7556	7.455E-06	1.98457E-05	4.83964	6.269E-06	1.66874E-05	5.89284	7.633E-06	2.03189E-05
Haul Road 2	HR2	1800-1900	1.19424	1.547E-06	4.11781E-06	1.0564	1.368E-06	3.64253E-06	5.4881	7.109E-06	1.89233E-05	4.85464	6.288E-06	1.67391E-05	5.91104	7.657E-06	2.03816E-05
Haul Road 2	HR2	1900-2000	1.20394	1.56E-06	4.15126E-06	1.0564	1.368E-06	3.64253E-06	5.53238	7.166E-06	1.9076E-05	4.85464	6.288E-06	1.67391E-05	5.91104	7.657E-06	2.03816E-05
Haul Road 2	HR2	2000-2100	1.19394	1.547E-06	4.11678E-06	1.0385	1.345E-06	3.58081E-06	5.4867	7.107E-06	1.89185E-05	4.77228	6.182E-06	1.64551E-05	5.81078	7.527E-06	2.00359E-05
Haul Road 2	HR2	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (June) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Haul Road 2	HR2	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0700-0800	1.21374	1.572E-06	4.17921E-06	1.0325	1.337E-06	3.55516E-06	5.57766	7.225E-06	1.92053E-05	4.74489	6.146E-06	1.63379E-05	5.77739	7.484E-06	1.9893E-05
Haul Road 3	HR3	0800-0900	1.23243	1.596E-06	4.24357E-06	1.06239	1.376E-06	3.65808E-06	5.66363	7.336E-06	1.95013E-05	4.88213	6.324E-06	1.68104E-05	5.94452	7.7E-06	2.04685E-05
Haul Road 3	HR3	0900-1000	1.25582	1.627E-06	4.32411E-06	1.0468	1.356E-06	3.6044E-06	5.77109	7.476E-06	1.98713E-05	4.81056	6.231E-06	1.6564E-05	5.85736	7.587E-06	2.01684E-05
Haul Road 3	HR3	1000-1100	1.26981	1.645E-06	4.37228E-06	1.07219	1.389E-06	3.69182E-06	5.83557	7.559E-06	2.00933E-05	4.92711	6.382E-06	1.69653E-05	5.9993	7.771E-06	2.06571E-05
Haul Road 3	HR3	1100-1200	1.24872	1.618E-06	4.29966E-06	1.0516	1.362E-06	3.62092E-06	5.7382	7.433E-06	1.97581E-05	4.83245	6.26E-06	1.66393E-05	5.88405	7.622E-06	2.02603E-05
Haul Road 3	HR3	1200-1300	1.25252	1.622E-06	4.31274E-06	1.05829	1.371E-06	3.64396E-06	5.7556	7.455E-06	1.9818E-05	4.86344	6.3E-06	1.67461E-05	5.92173	7.671E-06	2.039E-05
Haul Road 3	HR3	1300-1400	1.26931	1.644E-06	4.37056E-06	1.05829	1.371E-06	3.64396E-06	5.83277	7.555E-06	2.00837E-05	4.86344	6.3E-06	1.67461E-05	5.92173	7.671E-06	2.039E-05
Haul Road 3	HR3	1400-1500	1.28421	1.663E-06	4.42186E-06	1.06499	1.38E-06	3.66703E-06	5.90154	7.644E-06	2.03205E-05	4.89433	6.34E-06	1.68524E-05	5.95932	7.719E-06	2.05194E-05
Haul Road 3	HR3	1500-1600	1.24672	1.615E-06	4.29277E-06	1.05829	1.371E-06	3.64396E-06	5.72941	7.422E-06	1.97278E-05	4.86344	6.3E-06	1.67461E-05	5.92173	7.671E-06	2.039E-05
Haul Road 3	HR3	1600-1700	1.25252	1.622E-06	4.31274E-06	1.0449	1.353E-06	3.59785E-06	5.7556	7.455E-06	1.9818E-05	4.80156	6.22E-06	1.6533E-05	5.84646	7.573E-06	2.01308E-05
Haul Road 3	HR3	1700-1800	1.25252	1.622E-06	4.31274E-06	1.0532	1.364E-06	3.62643E-06	5.7556	7.455E-06	1.9818E-05	4.83964	6.269E-06	1.66641E-05	5.89284	7.633E-06	2.02905E-05
Haul Road 3	HR3	1800-1900	1.19424	1.547E-06	4.11207E-06	1.0564	1.368E-06	3.63745E-06	5.4881	7.109E-06	1.88969E-05	4.85464	6.288E-06	1.67158E-05	5.91104	7.657E-06	2.03532E-05
Haul Road 3	HR3	1900-2000	1.20394	1.56E-06	4.14547E-06	1.0564	1.368E-06	3.63745E-06	5.53238	7.166E-06	1.90494E-05	4.85464	6.288E-06	1.67158E-05	5.91104	7.657E-06	2.03532E-05
Haul Road 3	HR3	2000-2100	1.19394	1.547E-06	4.11104E-06	1.0385	1.345E-06	3.57582E-06	5.4867	7.107E-06	1.88921E-05	4.77228	6.182E-06	1.64322E-05	5.81078	7.527E-06	2.0008E-05
Haul Road 3	HR3	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (July) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 1	1	0000-0100	0.087773277	2.916E-07	2.37212E-06	0.0797382	2.649E-07	2.15497E-06	0.5145912	1.71E-06	1.39071E-05	0.4660437	1.548E-06	1.25951E-05	0.5457819	1.813E-06	1.47501E-05
Road 1	1	0100-0200	0.065897407	1.336E-07	1.08666E-06	0.0613428	1.243E-07	1.01155E-06	0.3949229	8.005E-07	6.51234E-06	0.3665045	7.429E-07	6.04372E-06	0.4278473	8.673E-07	7.05527E-06
Road 1	1	0200-0300	0.061627143	8.906E-08	7.24543E-07	0.0578352	8.358E-08	6.79961E-07	0.3873522	5.598E-07	4.55405E-06	0.361954	5.231E-07	4.25545E-06	0.4197892	6.067E-07	4.93541E-06
Road 1	1	0300-0400	0.052013273	5.369E-08	4.36795E-07	0.0490195	5.06E-08	4.11654E-07	0.3119182	3.22E-07	2.61942E-06	0.2930033	3.025E-07	2.46057E-06	0.3420227	3.531E-07	2.87223E-06
Road 1	1	0400-0500	0.069045294	1.102E-07	8.96095E-07	0.064524	1.029E-07	8.37416E-07	0.3905369	6.23E-07	5.06853E-06	0.3638868	5.805E-07	4.72266E-06	0.4284108	6.835E-07	5.56007E-06
Road 1	1	0500-0600	0.057075134	2.003E-07	1.62963E-06	0.0516196	1.812E-07	1.47386E-06	0.3324209	1.167E-06	9.49142E-06	0.2989571	1.049E-06	8.53595E-06	0.3505767	1.23E-06	1.00098E-05
Road 1	1	0600-0700	0.076950422	4.795E-07	3.90077E-06	0.070869	4.416E-07	3.59249E-06	0.4091305	2.549E-06	2.07396E-05	0.3754693	2.34E-06	1.90333E-05	0.4463383	2.781E-06	2.26258E-05
Road 1	1	0700-0800	0.068793417	7.218E-07	5.87165E-06	0.0600657	6.302E-07	5.12672E-06	0.3764069	3.949E-06	3.2127E-05	0.3262928	3.423E-06	2.78497E-05	0.3863586	4.054E-06	3.29764E-05
Road 1	1	0800-0900	0.075501051	9.707E-07	7.89669E-06	0.064437	8.284E-07	6.73949E-06	0.3999753	5.142E-06	4.18336E-05	0.3396866	4.367E-06	3.5528E-05	0.4041236	5.196E-06	4.22674E-05
Road 1	1	0900-1000	0.079078119	1.049E-06	8.53644E-06	0.0686396	9.108E-07	7.40961E-06	0.4413648	5.857E-06	4.76451E-05	0.381465	5.062E-06	4.1179E-05	0.4501047	5.973E-06	4.85886E-05
Road 1	1	1000-1100	0.093170131	1.201E-06	9.77315E-06	0.0789851	1.018E-06	8.2852E-06	0.4995699	6.442E-06	5.24028E-05	0.421973	5.441E-06	4.42632E-05	0.5009581	6.459E-06	5.25484E-05
Road 1	1	1100-1200	0.084010435	1.052E-06	8.55579E-06	0.0725038	9.077E-07	7.38393E-06	0.4812692	6.025E-06	4.90134E-05	0.4136262	5.178E-06	4.21245E-05	0.48613	6.086E-06	4.95085E-05
Road 1	1	1200-1300	0.086598061	1.073E-06	8.72677E-06	0.0743737	9.213E-07	7.49488E-06	0.4927742	6.104E-06	4.96585E-05	0.4215763	5.222E-06	4.24836E-05	0.49595	6.144E-06	4.99785E-05
Road 1	1	1300-1400	0.090965313	1.199E-06	9.75021E-06	0.0782867	1.031E-06	8.39124E-06	0.5063255	6.671E-06	5.4271E-05	0.4343768	5.723E-06	4.65591E-05	0.5126634	6.755E-06	5.49504E-05
Road 1	1	1400-1500	0.087496693	1.256E-06	1.02201E-05	0.0750007	1.077E-06	8.76048E-06	0.475335	6.825E-06	5.55217E-05	0.4061181	5.831E-06	4.74368E-05	0.4811187	6.908E-06	5.61972E-05
Road 1	1	1500-1600	0.094217574	1.254E-06	1.01995E-05	0.0797596	1.061E-06	8.63437E-06	0.5102324	6.79E-06	5.52351E-05	0.4301344	5.724E-06	4.65641E-05	0.5098941	6.785E-06	5.51985E-05
Road 1	1	1600-1700	0.089925922	1.262E-06	1.02704E-05	0.0754118	1.059E-06	8.61276E-06	0.4920776	6.908E-06	5.62E-05	0.4105995	5.764E-06	4.68944E-05	0.4860113	6.823E-06	5.55072E-05
Road 1	1	1700-1800	0.069918133	9.842E-07	8.00668E-06	0.0602933	8.487E-07	6.90449E-06	0.389396	5.481E-06	4.45917E-05	0.3339052	4.7E-06	3.82372E-05	0.3941985	5.549E-06	4.51416E-05
Road 1	1	1800-1900	0.061372344	8.846E-07	7.19673E-06	0.0545472	7.863E-07	6.39639E-06	0.3624555	5.225E-06	4.25028E-05	0.319977	4.612E-06	3.75216E-05	0.3745241	5.399E-06	4.3918E-05
Road 1	1	1900-2000	0.073085171	8.038E-07	6.53925E-06	0.0648546	7.133E-07	5.80283E-06	0.4159833	4.575E-06	3.72199E-05	0.3672599	4.039E-06	3.28604E-05	0.4321145	4.753E-06	3.86632E-05
Road 1	1	2000-2100	0.06500004	6.051E-07	4.92262E-06	0.057704	5.372E-07	4.37008E-06	0.3798121	3.536E-06	2.87642E-05	0.3352547	3.121E-06	2.53897E-05	0.3929587	3.658E-06	2.97598E-05
Road 1	1	2100-2200	0.069606755	5.918E-07	4.8145E-06	0.0605291	5.146E-07	4.18662E-06	0.4092691	3.48E-06	2.8308E-05	0.3537133	3.007E-06	2.44653E-05	0.4142424	3.522E-06	2.86519E-05
Road 1	1	2200-2300	0.069432111	5.617E-07	4.56919E-06	0.0603407	4.881E-07	3.9709E-06	0.4070776	3.293E-06	2.67889E-05	0.351182	2.841E-06	2.31106E-05	0.4115227	3.329E-06	2.70815E-05
Road 1	1	2300-0000	0.058690364	4.241E-07	3.45008E-06	0.0525903	3.8E-07	3.09149E-06	0.3558464	2.571E-06	2.09182E-05	0.3164069	2.286E-06	1.85998E-05	0.3689972	2.666E-06	2.16913E-05
Road 2	2	0000-0100	0.147192941	1.738E-07	1.12219E-06	0.1337178	1.579E-07	1.01945E-06	0.6227029	7.351E-07	4.74743E-06	0.5643512	6.662E-07	4.30256E-06	0.698069	8.241E-07	5.32202E-06
Road 2	2	0100-0200	0.10135697	7.743E-08	5.00006E-07	0.09429	7.203E-08	4.65144E-07	0.4998264	3.818E-07	2.4657E-06	0.4639976	3.544E-07	2.28896E-06	0.5582876	4.265E-07	2.7541E-06
Road 2	2	0200-0300	0.099284783	5.286E-08	3.41364E-07	0.0932296	4.964E-08	3.20545E-07	0.5369278	2.859E-07	1.84608E-06	0.5026839	2.676E-07	1.72835E-06	0.5959135	3.173E-07	2.04889E-06
Road 2	2	0300-0400	0.086265333	2.995E-08	1.93435E-07	0.0812973	2.823E-08	1.82295E-07	0.310886	1.079E-07	6.97108E-07	0.2922073	1.015E-07	6.55224E-07	0.3735047	1.297E-07	8.3752E-07
Road 2	2	0400-0500	0.118300741	7.394E-08	4.77484E-07	0.1105356	6.908E-08	4.46142E-07	0.5703126	3.564E-07	2.30189E-06	0.5319337	3.325E-07	2.14698E-06	0.6424693	4.015E-07	2.59313E-06
Road 2	2	0500-0600	0.096607719	1.275E-07	8.23179E-07	0.0874035	1.153E-07	7.44752E-07	0.4238067	5.592E-07	3.61119E-06	0.381734	5.037E-07	3.2527E-06	0.4691375	6.19E-07	3.99745E-06
Road 2	2	0600-0700	0.136590388	3.257E-07	2.10313E-06	0.1257927	2.999E-07	1.93687E-06	0.5517583	1.316E-06	8.4956E-06	0.5068778	1.209E-06	7.80456E-06	0.6326705	1.508E-06	9.74143E-06
Road 2	2	0700-0800	0.115504177	4.224E-07	2.72811E-06	0.1008398	3.688E-07	2.38175E-06	0.4851167	1.774E-06	1.14581E-05	0.421002	1.54E-06	9.94372E-06	0.5218418	1.909E-06	1.23255E-05
Road 2	2	0800-0900	0.1336065	9.278E-07	5.99179E-06	0.1139845	7.916E-07	5.11181E-06	0.5642981	3.919E-06	2.53068E-05	0.4790346	3.327E-06	2.1483E-05	0.5930191	4.118E-06	2.65949E-05
Road 2	2	0900-1000	0.152637602	8.692E-07	5.61312E-06	0.1323434	7.536E-07	4.86682E-06	0.6593064	3.754E-06	2.42454E-05	0.5702252	3.247E-06	2.09696E-05	0.7025686	4.001E-06	2.58364E-05
Road 2	2	1000-1100	0.172123207	7.331E-07	4.7344E-06	0.1458664	6.213E-07	4.01218E-06	0.7381801	3.144E-06	2.03043E-05	0.6241416	2.658E-06	1.71676E-05	0.770008	3.28E-06	2.11797E-05
Road 2	2	1100-1200	0.207701989	8.702E-07	5.61988E-06	0.179056	7.502E-07	4.84479E-06	0.8513623	3.567E-06	2.30357E-05	0.7331021	3.072E-06	1.98358E-05	0.9121581	3.822E-06	2.46806E-05
Road 2	2	1200-1300	0.15860633	6.902E-07	4.45745E-06	0.1361903	5.927E-07	3.82747E-06	0.6979714	3.037E-06	1.96157E-05	0.5974898	2.6E-06	1.67918E-05	0.7336801	3.193E-06	2.06192E-05
Road 2	2	1300-1400	0.176312409	8.979E-07	5.79847E-06	0.1515621	7.718E-07	4.98449E-06	0.7280856	3.708E-06	2.39449E-05	0.6243155	3.179E-06	2.05322E-05	0.7758775	3.951E-06	2.55166E-05
Road 2	2	1400-1500	0.154661534	5.836E-07	3.76858E-06	0.1325358	5.001E-07	3.22945E-06	0.6685163	2.522E-06	1.62895E-05	0.5717473	2.157E-06	1.39316E-05	0.7042831	2.657E-06	1.7161E-05
Road 2	2	1500-1600	0.190575475	7.897E-07	5.0995E-06	0.1610605	6.674E-07	4.30973E-06	0.7653995	3.171E-06	2.04809E-05	0.6456623	2.675E-06	1.72769E-05	0.8067228	3.343E-06	2.15866E-05
Road 2	2	1600-1700	0.162863333	8.256E-07	5.33182E-06	0.1365455	6.922E-07	4.47022E-06	0.6883119	3.489E-06	2.25339E-05	0.5751123	2.915E-06	1.8828E-05	0.7116578	3.608E-06	2.32982E-05
Road 2	2	1700-1800	0.119782304	6.017E-07	3.88562E-06	0.1033242	5.19E-07	3.35173E-06	0.4761016	2.392E-06	1.54443E-05	0.4091202	2.055E-06	1.32715E-05	0.5124444	2.574E-06	1.66232E-05
Road 2	2	1800-1900	0.129708347	7.446E-07	4.8087E-06	0.1153277	6.621E-07	4.27556E-06	0.5970598	3.428E-06	2.21349E-05	0.5290042	3.037E-06	1.96118E-05	0.644332	3.699E-06	2.38874E-05
Road 2	2	1900-2000	0.110329699	4.24E-07	2.73784E-06	0.0979357	3.763E-07	2.43028E-06	0.5053316	1.942E-06	1.25398E-05	0.4463828	1.715E-06	1.1077E-05	0.5443184	2.092E-06	1.35073E-05
Road 2	2	2000-2100	0.106622877	3.603E-07	2.32708E-06	0.0945576	3.196E-07	2.06375E-06	0.4465696	1.509E-06	9.74652E-06	0.3939286	1.331E-06	8.59762E-06	0.4884862	1.651E-06	1.06614E-05
Road 2	2	2100-2200	0.083627434	2.942E-07	1.9002E-06	0.0726941	2.558E-07	1.65177E-06	0.3766344	1.325E-06	8.55798E-06	0.3242646	1.141E-06	7.36802E-06	0.3969588	1.397E-06	9.0198E-06
Road 2	2	2200-2300	0.12297272	3.558E-07	2.29788E-06	0.106901	3.093E-07	1.99756E-06	0.5241245	1.517E-06	9.79382E-06	0.4528074	1.31E-06	8.46119E-06	0.5597085	1.62E-06	1.04587E-05
Road 2	2	2300-0000	0.107589909	2.74E-07	1.76918E-06	0.096374	2.454E-07	1.58475E-06	0.4821741	1.228E-06	7.92874E-06	0.4295098	1.094E-06	7.06274E-06	0.5258838	1.339E-06	8.64749E-06
Road 3	3	0000-0100	0.091094279	3.346E-07	1.30048E-05	0.0826923	3.037E-07	1.18054E-05	0.4969531	1.825E-06	7.09463E-05	0.4495989	1.651E-06	6.41859E-05	0.5322912	1.955E-06	7.59912E-05
Road 3	3	0100-0200	0.066468936	1.503E-07	5.84274E-06	0.0618208	1.398E-07	5.43416E-06	0.3831548	8.665E-07	3.368E-05	0.3553406	8.036E-07	3.12351E-05	0.4171613	9.434E-07	3.66692E-05
Road 3	3	0200-0300	0.06313697	1.003E-07	3.89671E-06	0.0592181	9.403E-08	3.65484E-06	0.3871446	6.148E-07	2.38939E-05	0.361616	5.742E-07	2.23183E-05	0.420834	6.682E-07	2.59732E-05
Road 3	3	0300-0400	0.053591449	5.931E-08	2.30528E-06	0.0507862	5.621E-08	2.18461E-06	0.287073	3.177E-07	1.23487E-05	0.2711567	3.001E-07	1.1664E-05	0.3219429	3.563E-07	1.38486E-05
Road 3	3	0400-0500	0.072644324	1.293E-07	5.02694E-06	0.0678273	1.208E-07	4.6936E-06	0.3964935	7.059E-07	2.74371E-05	0.3692562	6.574E-07	2.55523E-05	0.4370835	7.782E-07	3.02459E-05
Road 3	3	0500-0600	0.06005177	2.341E-07	9.09726E-06	0.0557744	2.174E-07	8.44929E-06	0.3277871	1.278E-06	4.96566E-05	0.3032041	1.182E-06	4.59325E-05	0.3589786	1.399E-06	5.43818E-05
Road 3	3	0600-0700	0.083310183	5.853E-07	2.27484E-05	0.0755623	5.308E-07	2.06328E-05	0.4124124	2.897E-06	0.000112612	0.3726727	2.618E-06	0.000101761	0.4482349	3.149E-06	0.000122394
Road 3	3	0700-0800	0.071243687	8.182E-07	3.18008E-05	0.0621003	7.132E-07	2.77195E-05	0.3676544	4.222E-06	0.000164109	0.3180995	3.653E-06	0.000141989	0.3801998	4.366E-06	0.000169708
Road 3	3	0800-0900	0.080312568	1.274E-06	4.95175E-05	0.069809	1.107E-06	4.30414E-05	0.3980239	6.314E-06	0.000245405	0.3440668	5.458E-06	0.000212138	0.4138757	6.565E-06	0.000255179
Road 3	3	0900-1000	0.087510126	1.339E-06	5.20458E-05	0.0754457	1.154E-06	4.48706E-05	0.4486789	6.866E-06	0.000266847	0.3853632	5.897E-06	0.000229191	0.4608089	7.051E-06	0.000274061
Road 3	3	1000-1100	0.099448782	1.388E-06	5.39383E-05	0.0856522	1.195E-06	4.64554E-05	0.5042577	7.037E-06	0.000273496	0.4328544	6.04E-06	0.000234768	0.5185066	7.235E-06	0.000281224
Road 3	3	1100-1200	0.097359716	1.321E-06	5.13486E-05	0.0823381	1.117E-06	4.3426E-05	0.5065119	6.873E-06	0.00026714	0.4265566	5.788E-06	0.000224971	0.5088946	6.905E-06	0.000268397
Road 3	3	1200-1300	0.0922424	1.252E-06	4.86496E-05	0.0781854	1.061E-06	4.12359E-05	0.4905917	6.657E-06	0.000258743	0.4141033	5.619E-06	0.000218403	0.4922887	6.68E-06	0.000259638
Road 3	3	1300-1400	0.098081708	1.446E-06	5.6193E-05	0.0836775	1.233E-06	4.79405E-05	0.5022618	7.404E-06	0.000287756	0.426881	6.292E-06	0.000244569	0.5105585	7.526E-06	0.000292509

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (July) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 3	3	1400-1500	0.091646234	1.358E-06	5.27917E-05	0.0778599	1.154E-06	4.48502E-05	0.4747103	7.035E-06	0.000273451	0.4018517	5.956E-06	0.000231482	0.4797116	7.11E-06	0.000276332
Road 3	3	1500-1600	0.102894472	1.469E-06	5.70901E-05	0.0865066	1.235E-06	4.79974E-05	0.5188959	7.407E-06	0.000287905	0.4344535	6.202E-06	0.000241053	0.5209601	7.437E-06	0.00028905
Road 3	3	1600-1700	0.095608359	1.486E-06	5.77562E-05	0.0818236	1.272E-06	4.94289E-05	0.4913054	7.636E-06	0.000296793	0.4186569	6.507E-06	0.000252907	0.5004805	7.779E-06	0.000302336
Road 3	3	1700-1800	0.074557515	1.16E-06	4.5086E-05	0.0639189	9.945E-07	3.86527E-05	0.3829566	5.958E-06	0.000231579	0.3262236	5.076E-06	0.000197272	0.3901425	6.07E-06	0.000235925
Road 3	3	1800-1900	0.070472842	1.15E-06	4.46809E-05	0.0613098	1E-06	3.88713E-05	0.3869499	6.312E-06	0.000245332	0.3341878	5.451E-06	0.00021188	0.3954976	6.451E-06	0.000250751
Road 3	3	1900-2000	0.073728606	8.905E-07	3.46106E-05	0.0653225	7.89E-07	3.06645E-05	0.4021334	4.857E-06	0.000188775	0.354468	4.281E-06	0.000166399	0.4197905	5.07E-06	0.000197064
Road 3	3	2000-2100	0.067301491	6.952E-07	2.70202E-05	0.0596259	6.159E-07	2.39387E-05	0.3636823	3.757E-06	0.000146011	0.3204231	3.31E-06	0.000128644	0.380049	3.926E-06	0.000152582
Road 3	3	2100-2200	0.067374361	6.592E-07	2.56214E-05	0.060093	5.88E-07	2.28524E-05	0.376407	3.683E-06	0.000143142	0.3338447	3.266E-06	0.000126956	0.3939377	3.854E-06	0.000149808
Road 3	3	2200-2300	0.073887932	6.589E-07	2.5611E-05	0.0641303	5.719E-07	2.22288E-05	0.3991525	3.56E-06	0.000138354	0.3439166	3.067E-06	0.000119208	0.4080469	3.639E-06	0.000141437
Road 3	3	2300-0000	0.063084076	5.039E-07	1.95852E-05	0.056462	4.51E-07	1.75293E-05	0.3532418	2.822E-06	0.000109668	0.3138064	2.507E-06	9.74249E-05	0.3702684	2.958E-06	0.000114954
Road 4	4	0000-0100	0.232614286	1.885E-07	2.01796E-06	0.2109526	1.709E-07	1.83004E-06	1.1846689	9.598E-07	1.02771E-05	1.074084	8.702E-07	9.31781E-06	1.2850366	1.041E-06	1.11478E-05
Road 4	4	0100-0200	0.2135925	9.889E-08	1.05882E-06	0.1985495	9.192E-08	9.84252E-07	1.089792	5.045E-07	5.40233E-06	1.012975	4.69E-07	5.02153E-06	1.2115245	5.609E-07	6.00578E-06
Road 4	4	0200-0300	0.226714615	6.822E-08	7.30517E-07	0.2126985	6.401E-08	6.85354E-07	1.1190038	3.367E-07	3.60564E-06	1.0498377	3.159E-07	3.38277E-06	1.2625362	3.799E-07	4.06813E-06
Road 4	4	0300-0400	0.203525714	3.298E-08	3.53122E-07	0.19286	3.125E-08	3.34617E-07	1.0800443	1.75E-07	1.8739E-06	1.0237486	1.659E-07	1.77623E-06	1.2166086	1.971E-07	2.11085E-06
Road 4	4	0400-0500	0.211672143	6.86E-08	7.34513E-07	0.1975386	6.402E-08	6.85468E-07	1.0450393	3.387E-07	3.62634E-06	0.9754286	3.161E-07	3.38478E-06	1.1729671	3.801E-07	4.07025E-06
Road 4	4	0500-0600	0.200580417	1.114E-07	1.19318E-06	0.1863279	1.035E-07	1.1084E-06	0.9496108	5.276E-07	5.64891E-06	0.8819271	4.9E-07	5.24628E-06	1.068255	5.935E-07	6.35468E-06
Road 4	4	0600-0700	0.225308846	2.712E-07	2.90395E-06	0.204325	2.459E-07	2.63349E-06	1.0748975	1.294E-06	1.38541E-05	0.9743087	1.173E-06	1.25576E-05	1.1786337	1.419E-06	1.51911E-05
Road 4	4	0700-0800	0.235300217	5.011E-07	5.36559E-06	0.2050889	4.368E-07	4.67668E-06	1.1701453	2.492E-06	2.6683E-05	1.0188136	2.17E-06	2.32322E-05	1.2239025	2.606E-06	2.79089E-05
Road 4	4	0800-0900	0.245250327	8.686E-07	9.30055E-06	0.2129569	7.542E-07	8.0759E-06	1.223075	4.332E-06	4.63823E-05	1.0615007	3.759E-06	4.02549E-05	1.2744576	4.514E-06	4.83308E-05
Road 4	4	0900-1000	0.253447027	8.683E-07	9.29729E-06	0.217945	7.467E-07	7.99496E-06	1.1939457	4.09E-06	4.3798E-05	1.0260812	3.515E-06	3.76401E-05	1.2440262	4.262E-06	4.56351E-05
Road 4	4	1000-1100	0.285387203	9.447E-07	1.01153E-05	0.2454107	8.124E-07	8.69835E-06	1.3474485	4.46E-06	4.77591E-05	1.1584202	3.835E-06	4.10591E-05	1.4038309	4.647E-06	4.97575E-05
Road 4	4	1100-1200	0.264615742	9.494E-07	1.01661E-05	0.2233915	8.015E-07	8.58234E-06	1.2411317	4.453E-06	4.76823E-05	1.0474734	3.758E-06	4.02422E-05	1.2708648	4.56E-06	4.88246E-05
Road 4	4	1200-1300	0.271647619	9.244E-07	9.89762E-06	0.2298681	7.822E-07	8.37536E-06	1.3328888	4.536E-06	4.85645E-05	1.1273484	3.836E-06	4.10755E-05	1.3572165	4.618E-06	4.94509E-05
Road 4	4	1300-1400	0.279047651	9.625E-07	1.03056E-05	0.2377026	8.199E-07	8.77865E-06	1.3370714	4.612E-06	4.93797E-05	1.1385384	3.927E-06	4.20476E-05	1.376241	4.747E-06	5.08263E-05
Road 4	4	1400-1500	0.256651159	8.199E-07	8.77869E-06	0.217703	6.954E-07	7.44648E-06	1.2715109	4.062E-06	4.34917E-05	1.0778738	3.443E-06	3.68684E-05	1.2955768	4.139E-06	4.43149E-05
Road 4	4	1500-1600	0.288836048	8.291E-07	8.87729E-06	0.2423493	6.956E-07	7.44854E-06	1.38266	3.969E-06	4.24957E-05	1.1597055	3.329E-06	3.56432E-05	1.4020548	4.024E-06	4.30918E-05
Road 4	4	1600-1700	0.26757621	7.68E-07	8.22388E-06	0.2286996	6.565E-07	7.02902E-06	1.2950578	3.717E-06	3.98032E-05	1.1064298	3.176E-06	3.40058E-05	1.3351294	3.832E-06	4.10348E-05
Road 4	4	1700-1800	0.250324524	7.301E-07	7.81774E-06	0.214458	6.255E-07	6.69762E-06	1.2316061	3.592E-06	3.84636E-05	1.054289	3.075E-06	3.29259E-05	1.268747	3.701E-06	3.96235E-05
Road 4	4	1800-1900	0.27633717	6.78E-07	7.26027E-06	0.2402694	5.896E-07	6.31265E-06	1.3786206	3.383E-06	3.62208E-05	1.1984365	2.941E-06	3.14868E-05	1.4387059	3.53E-06	3.77994E-05
Road 4	4	1900-2000	0.244462027	4.188E-07	4.48385E-06	0.216623	3.711E-07	3.97323E-06	1.2137534	2.079E-06	2.22623E-05	1.075172	1.842E-06	1.97205E-05	1.291795	2.213E-06	2.36937E-05
Road 4	4	2000-2100	0.210157143	2.384E-07	2.55239E-06	0.1860692	2.111E-07	2.25984E-06	1.0481657	1.189E-06	1.27302E-05	0.927349	1.052E-06	1.12628E-05	1.1134182	1.263E-06	1.35227E-05
Road 4	4	2100-2200	0.178339459	1.527E-07	1.63552E-06	0.1592843	1.364E-07	1.46077E-06	0.9054551	7.755E-07	8.30379E-06	0.8077749	6.918E-07	7.40798E-06	0.9670592	8.283E-07	8.86875E-06
Road 4	4	2200-2300	0.24382	3.556E-07	3.8073E-06	0.211704	3.087E-07	3.3058E-06	1.1952213	1.743E-06	1.86636E-05	1.0372152	1.513E-06	1.61963E-05	1.2489192	1.821E-06	1.95021E-05
Road 4	4	2300-0000	0.218788958	2.431E-07	2.603E-06	0.1957731	2.175E-07	2.32917E-06	1.1010413	1.223E-06	1.30994E-05	0.9844971	1.094E-06	1.17129E-05	1.1802702	1.311E-06	1.4042E-05
Road 5	5	0000-0100	0.077771295	2.817E-07	3.80971E-06	0.0706128	2.558E-07	3.45904E-06	0.4252727	1.54E-06	2.08324E-05	0.3843959	1.392E-06	1.883E-05	0.4550088	1.648E-06	2.22891E-05
Road 5	5	0100-0200	0.051194545	1.163E-07	1.57226E-06	0.0476208	1.081E-07	1.4625E-06	0.3054169	6.936E-07	9.3798E-06	0.2829492	6.426E-07	8.68978E-06	0.33057	7.507E-07	1.01523E-05
Road 5	5	0200-0300	0.04709593	7.602E-08	1.02801E-06	0.044167	7.129E-08	9.64075E-07	0.3129563	5.051E-07	6.8312E-06	0.2917812	4.71E-07	6.36899E-06	0.3359481	5.423E-07	7.33307E-06
Road 5	5	0300-0400	0.042710806	4.97E-08	6.72116E-07	0.0404748	4.71E-08	6.3693E-07	0.223936	2.606E-07	3.52396E-06	0.2112079	2.458E-07	3.32366E-06	0.2516827	2.929E-07	3.96059E-06
Road 5	5	0400-0500	0.060324227	1.098E-07	1.48518E-06	0.0563319	1.026E-07	1.38689E-06	0.3353857	6.106E-07	8.25717E-06	0.3121024	5.682E-07	7.68393E-06	0.3684342	6.708E-07	9.07082E-06
Road 5	5	0500-0600	0.049555321	2.028E-07	2.74196E-06	0.0460209	1.883E-07	2.5464E-06	0.2788916	1.141E-06	1.54315E-05	0.2576526	1.054E-06	1.42563E-05	0.3036735	1.243E-06	1.68027E-05
Road 5	5	0600-0700	0.073265532	5.294E-07	7.15938E-06	0.066451	4.802E-07	6.49347E-06	0.3605985	2.606E-06	3.5237E-05	0.3255584	2.352E-06	3.1813E-05	0.3920093	2.833E-06	3.83065E-05
Road 5	5	0700-0800	0.058613942	6.865E-07	9.28326E-06	0.0510865	5.983E-07	8.09107E-06	0.2998556	3.512E-06	4.7491E-05	0.2588109	3.031E-06	4.09904E-05	0.3098974	3.629E-06	4.90815E-05
Road 5	5	0800-0900	0.064621722	1.014E-06	1.3712E-05	0.0561853	8.816E-07	1.19218E-05	0.3121765	4.898E-06	6.62401E-05	0.2693802	4.227E-06	5.71593E-05	0.3255655	5.108E-06	6.90811E-05
Road 5	5	0900-1000	0.071341163	1.082E-06	1.46307E-05	0.0616105	9.343E-07	1.26352E-05	0.3738244	5.669E-06	7.66644E-05	0.3209788	4.868E-06	6.58268E-05	0.3825893	5.802E-06	7.84619E-05
Road 5	5	1000-1100	0.081681446	1.113E-06	1.50513E-05	0.0704012	9.593E-07	1.29727E-05	0.4204182	5.729E-06	7.74699E-05	0.3606428	4.914E-06	6.64552E-05	0.4310439	5.873E-06	7.94279E-05
Road 5	5	1100-1200	0.079828362	1.034E-06	1.39805E-05	0.0675842	8.752E-07	1.18361E-05	0.4271262	5.531E-06	7.48032E-05	0.3593564	4.654E-06	6.29346E-05	0.4269406	5.529E-06	7.47707E-05
Road 5	5	1200-1300	0.074997654	9.839E-07	1.33058E-05	0.0636206	8.347E-07	1.12873E-05	0.4042108	5.303E-06	7.17133E-05	0.3408733	4.472E-06	6.04763E-05	0.4044939	5.307E-06	7.17636E-05
Road 5	5	1300-1400	0.080951969	1.165E-06	1.57593E-05	0.0690969	9.947E-07	1.34514E-05	0.4200787	6.047E-06	8.17788E-05	0.3567694	5.136E-06	6.94541E-05	0.4258663	6.131E-06	8.29055E-05
Road 5	5	1400-1500	0.077716997	1.147E-06	1.55043E-05	0.0660661	9.746E-07	1.318E-05	0.4030636	5.946E-06	8.04102E-05	0.3410316	5.031E-06	6.8035E-05	0.4070977	6.006E-06	8.1215E-05
Road 5	5	1500-1600	0.087785333	1.26E-06	1.7045E-05	0.0738464	1.06E-06	1.43386E-05	0.4451434	6.391E-06	8.64323E-05	0.3724732	5.348E-06	7.23221E-05	0.4463196	6.408E-06	8.66607E-05
Road 5	5	1600-1700	0.081666473	1.291E-06	1.7453E-05	0.0698953	1.105E-06	1.49374E-05	0.423326	6.69E-06	9.04694E-05	0.3604551	5.696E-06	7.70332E-05	0.4303504	6.801E-06	9.19706E-05
Road 5	5	1700-1800	0.059450877	9.418E-07	1.27355E-05	0.050957	8.072E-07	1.09159E-05	0.3062056	4.851E-06	6.55949E-05	0.2603951	4.125E-06	5.57815E-05	0.3113521	4.932E-06	6.66974E-05
Road 5	5	1800-1900	0.055814209	9.533E-07	1.28914E-05	0.0485639	8.295E-07	1.12168E-05	0.3126471	5.34E-06	7.22122E-05	0.269393	4.601E-06	6.22218E-05	0.3179569	5.431E-06	7.34386E-05
Road 5	5	1900-2000	0.063162083	8.026E-07	1.08533E-05	0.055967	7.111E-07	9.61691E-06	0.3498419	4.445E-06	6.0114E-05	0.3079346	3.913E-06	5.2913E-05	0.3639016	4.624E-06	6.25299E-05
Road 5	5	2000-2100	0.05962771	6.648E-07	8.98979E-06	0.0528341	5.89E-07	7.96554E-06	0.3242869	3.615E-06	4.88912E-05	0.2854696	3.183E-06	4.30389E-05	0.3383037	3.772E-06	5.10044E-05
Road 5	5	2100-2200	0.063191926	6.772E-07	9.15825E-06	0.0563468	6.039E-07	8.16621E-06	0.355101	3.806E-06	5.14639E-05	0.3146915	3.373E-06	4.56075E-05	0.3710383	3.976E-06	5.37737E-05
Road 5	5	2200-2300	0.062301768	5.753E-07	7.78001E-06	0.0540707	4.993E-07	6.75215E-06	0.3422665	3.161E-06	4.2741E-05	0.2942451	2.717E-06	3.67442E-05	0.3483158	3.216E-06	4.34964E-05
Road 5	5	2300-0000	0.053208906	4.474E-07	6.0503E-06	0.0476179	4.004E-07	5.41456E-06	0.3030568	2.548E-06	3.44601E-05	0.268702	2.259E-06	3.05537E-05	0.31632	2.66E-06	3.59683E-05
Road 6	6	0000-0100	0.047158514	1.31E-07	4.68257E-06	0.0427545	1.188E-07	4.24527E-06	0.2931822	8.144E-07	2.91113E-05	0.2637599	7.327E-07	2.61899E-05	0.3065143	8.514E-07	3.04351E-05
Road 6	6	0100-0200	0.059565664	1.263E-07	4.51582E-06	0.0554013	1.175E-07	4.20012E-06	0.3285671	6.968E-07	2.49095E-05	0.304074	6.449E-07	2.30526E-05	0.3594753	7.624E-07	2.72527E-05
Road 6	6	0200-0300	0.053744304	7.969E-08	2.84854E-06	0.0504484	7.48E-08	2.67385E-06	0.2968735	4.402E-07	1.57348E-05	0.2773451	4.112E-07	1.46998E-05	0.3277934	4.86E-07	1.73736E-05
Road 6	6	0300-0400	0.053880645	6.27E-08	2.24123E-06	0.0511494	5.952E-08	2.12762E-06	0.335149	3.9E-07	1.39409E-05	0.3170613	3.69E-07	1.31886E-05	0.3682106	4.285E-07	1.53162E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (July) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 6	6	0400-0500	0.059214111	1E-07	3.57545E-06	0.0552998	9.341E-08	3.33909E-06	0.3380214	5.71E-07	2.04103E-05	0.3142367	5.308E-07	1.89741E-05	0.3695364	6.242E-07	2.23132E-05
Road 6	6	0500-0600	0.054736646	1.654E-07	5.91244E-06	0.0508871	1.538E-07	5.49662E-06	0.3212139	9.706E-07	3.46963E-05	0.2969255	8.972E-07	3.20727E-05	0.3478125	1.051E-06	3.75694E-05
Road 6	6	0600-0700	0.059207875	3.189E-07	1.14005E-05	0.0537267	2.894E-07	1.03451E-05	0.3577242	1.927E-06	6.88799E-05	0.3224163	1.737E-06	6.20814E-05	0.376143	2.026E-06	7.24265E-05
Road 6	6	0700-0800	0.058054386	4.969E-07	1.77608E-05	0.0506214	4.332E-07	1.54868E-05	0.321263	2.75E-06	9.82852E-05	0.2774368	2.374E-06	8.48773E-05	0.3280582	2.808E-06	0.000100364
Road 6	6	0800-0900	0.050458394	6.194E-07	2.21398E-05	0.0438019	5.377E-07	1.92191E-05	0.2911886	3.574E-06	0.000127766	0.2498424	3.067E-06	0.000109624	0.2936443	3.604E-06	0.000128843
Road 6	6	0900-1000	0.052924634	6.238E-07	2.22987E-05	0.0455792	5.372E-07	1.92039E-05	0.291703	3.438E-06	0.000122903	0.2486014	2.93E-06	0.000104743	0.2941806	3.467E-06	0.000123947
Road 6	6	1000-1100	0.07173032	7.162E-07	2.56022E-05	0.0617604	6.167E-07	2.20437E-05	0.3874343	3.869E-06	0.000138284	0.3313673	3.309E-06	0.000118273	0.3931277	3.925E-06	0.000140316
Road 6	6	1100-1200	0.081481288	8.075E-07	2.88639E-05	0.069	6.838E-07	2.44425E-05	0.4200124	4.162E-06	0.000148785	0.3534325	3.502E-06	0.0001252	0.4224325	4.186E-06	0.000149642
Road 6	6	1200-1300	0.079593643	7.708E-07	2.75544E-05	0.0675348	6.541E-07	2.33797E-05	0.390699	3.784E-06	0.000135255	0.329969	3.196E-06	0.000114231	0.3975037	3.85E-06	0.000137611
Road 6	6	1300-1400	0.092832951	8.973E-07	3.20754E-05	0.0792432	7.66E-07	2.73799E-05	0.464278	4.488E-06	0.000160416	0.3943083	3.811E-06	0.00013624	0.4735516	4.577E-06	0.00016362
Road 6	6	1400-1500	0.08893125	9.481E-07	3.38895E-05	0.0756017	8.06E-07	2.881E-05	0.4417071	4.709E-06	0.000168324	0.3735623	3.982E-06	0.000142355	0.449164	4.788E-06	0.000171165
Road 6	6	1500-1600	0.078883676	8.217E-07	2.93726E-05	0.0663099	6.907E-07	2.46907E-05	0.400272	4.169E-06	0.000149043	0.3343047	3.482E-06	0.00012448	0.4006145	4.173E-06	0.00014917
Road 6	6	1600-1700	0.081778732	8.718E-07	3.11639E-05	0.0700383	7.467E-07	2.66899E-05	0.3971508	4.234E-06	0.000151344	0.3381124	3.605E-06	0.000128846	0.4081507	4.351E-06	0.000155536
Road 6	6	1700-1800	0.05960611	6.701E-07	2.39541E-05	0.0511246	5.748E-07	2.05456E-05	0.2971931	3.341E-06	0.000119434	0.252892	2.843E-06	0.000101631	0.3040166	3.418E-06	0.000122176
Road 6	6	1800-1900	0.058634993	7.516E-07	2.68683E-05	0.0509709	6.534E-07	2.33564E-05	0.3016728	3.867E-06	0.000138235	0.260211	3.336E-06	0.000119236	0.3111819	3.989E-06	0.000142593
Road 6	6	1900-2000	0.068187678	6.668E-07	2.38345E-05	0.0603845	5.905E-07	2.1107E-05	0.3500367	3.423E-06	0.000122353	0.3078438	3.01E-06	0.000107605	0.3682283	3.601E-06	0.000128712
Road 6	6	2000-2100	0.053351512	4.106E-07	1.46755E-05	0.047242	3.635E-07	1.2995E-05	0.2964992	2.282E-06	8.15587E-05	0.2604076	2.004E-06	7.16308E-05	0.3076496	2.367E-06	8.46258E-05
Road 6	6	2100-2200	0.075656798	5.055E-07	1.80701E-05	0.0674769	4.509E-07	1.61164E-05	0.390193	2.607E-06	9.31949E-05	0.3460922	2.312E-06	8.26617E-05	0.413569	2.763E-06	9.87781E-05
Road 6	6	2200-2300	0.058038833	4.107E-07	1.46799E-05	0.0503222	3.561E-07	1.27281E-05	0.3179959	2.25E-06	8.04314E-05	0.2716922	1.922E-06	6.87197E-05	0.3220144	2.279E-06	8.14478E-05
Road 6	6	2300-0000	0.037558446	2.495E-07	8.92018E-06	0.0336255	2.234E-07	7.98611E-06	0.2274818	1.511E-06	5.40272E-05	0.2013027	1.337E-06	4.78096E-05	0.2349282	1.561E-06	5.57957E-05
Road 7	7	0000-0100	0.067726866	1.809E-07	4.51653E-06	0.0614337	1.641E-07	4.09685E-06	0.3964532	1.059E-06	2.64384E-05	0.357922	9.562E-07	2.38689E-05	0.4193557	1.12E-06	2.79657E-05
Road 7	7	0100-0200	0.079284058	1.646E-07	4.10911E-06	0.0737578	1.531E-07	3.8227E-06	0.432236	8.974E-07	2.24018E-05	0.4008243	8.322E-07	2.07738E-05	0.4745821	9.853E-07	2.45965E-05
Road 7	7	0200-0300	0.067738222	9.245E-08	2.30774E-06	0.0635971	8.679E-08	2.16666E-06	0.3778516	5.157E-07	1.28729E-05	0.353614	4.826E-07	1.20471E-05	0.4172111	5.694E-07	1.42138E-05
Road 7	7	0300-0400	0.067739944	7.475E-08	1.86588E-06	0.0641683	7.08E-08	1.7675E-06	0.404154	4.459E-07	1.11323E-05	0.381917	4.214E-07	1.05198E-05	0.4460853	4.922E-07	1.22873E-05
Road 7	7	0400-0500	0.076050815	1.226E-07	3.05951E-06	0.0710393	1.145E-07	2.8579E-06	0.4194239	6.759E-07	1.68734E-05	0.3905808	6.294E-07	1.5713E-05	0.46162	7.439E-07	1.85709E-05
Road 7	7	0500-0600	0.071050032	2.022E-07	5.04715E-06	0.0654317	1.862E-07	4.64804E-06	0.3964962	1.128E-06	2.81657E-05	0.3635738	1.035E-06	2.5827E-05	0.4290055	1.221E-06	3.04751E-05
Road 7	7	0600-0700	0.074916618	3.807E-07	9.50324E-06	0.0683468	3.473E-07	8.66986E-06	0.4265332	2.167E-06	5.41061E-05	0.387271	1.968E-06	4.91257E-05	0.4556178	2.315E-06	5.77955E-05
Road 7	7	0700-0800	0.075209001	6.115E-07	1.52645E-05	0.0656311	5.336E-07	1.33206E-05	0.4045039	3.289E-06	8.20987E-05	0.3505765	2.85E-06	7.11535E-05	0.4162076	3.384E-06	8.44741E-05
Road 7	7	0800-0900	0.075992058	9.334E-07	2.33004E-05	0.0655955	8.057E-07	2.01127E-05	0.4119763	5.06E-06	0.000126319	0.3531227	4.337E-06	0.000108273	0.4187183	5.143E-06	0.000128386
Road 7	7	0900-1000	0.07794916	8.895E-07	2.22055E-05	0.0672669	7.676E-07	1.91624E-05	0.4061443	4.635E-06	0.000115699	0.3483264	3.975E-06	9.92281E-05	0.4155933	4.743E-06	0.00011839
Road 7	7	1000-1100	0.093359246	9.339E-07	2.33132E-05	0.0799091	7.994E-07	1.99545E-05	0.4903024	4.905E-06	0.000122436	0.4177732	4.179E-06	0.000104324	0.4976824	4.978E-06	0.000124279
Road 7	7	1100-1200	0.101989286	1.016E-06	2.53574E-05	0.0868864	8.654E-07	2.16024E-05	0.5256577	5.235E-06	0.000130693	0.4461285	4.443E-06	0.00011092	0.533015	5.309E-06	0.000132522
Road 7	7	1200-1300	0.101033205	1.005E-06	2.5083E-05	0.0860418	8.557E-07	2.13612E-05	0.5093411	5.066E-06	0.000126452	0.4325252	4.302E-06	0.000107381	0.518567	5.157E-06	0.000128742
Road 7	7	1300-1400	0.108482518	1.063E-06	2.65393E-05	0.0928414	9.098E-07	2.27128E-05	0.5453224	5.344E-06	0.000133408	0.4651326	4.558E-06	0.000113791	0.557974	5.468E-06	0.000136503
Road 7	7	1400-1500	0.102036486	1.049E-06	2.61827E-05	0.0869602	8.939E-07	2.23141E-05	0.5186395	5.331E-06	0.000133084	0.4405347	4.528E-06	0.000113042	0.5274949	5.422E-06	0.000135356
Road 7	7	1500-1600	0.094777587	9.522E-07	2.37704E-05	0.0797919	8.017E-07	2.0012E-05	0.4855199	4.878E-06	0.00012177	0.4069964	4.089E-06	0.000102076	0.4867883	4.891E-06	0.000122088
Road 7	7	1600-1700	0.098187185	1.021E-06	2.54797E-05	0.0834203	8.672E-07	2.16476E-05	0.4851806	5.044E-06	0.000125905	0.4104997	4.267E-06	0.000106525	0.49392	5.134E-06	0.000128173
Road 7	7	1700-1800	0.074119763	8.168E-07	2.03893E-05	0.0636854	7.018E-07	1.75189E-05	0.3790599	4.177E-06	0.000104274	0.3238883	3.569E-06	8.90969E-05	0.3875736	4.271E-06	0.000106616
Road 7	7	1800-1900	0.068160449	7.798E-07	1.94663E-05	0.059732	6.834E-07	1.70592E-05	0.3559424	4.072E-06	0.000101656	0.3101242	3.548E-06	8.85702E-05	0.3698562	4.231E-06	0.000105629
Road 7	7	1900-2000	0.078287327	6.786E-07	1.69391E-05	0.0693857	6.014E-07	1.50131E-05	0.4099658	3.553E-06	8.87049E-05	0.3614607	3.133E-06	7.82098E-05	0.4308463	3.734E-06	9.32229E-05
Road 7	7	2000-2100	0.070867601	5.021E-07	1.25341E-05	0.0627921	4.449E-07	1.11058E-05	0.379844	2.691E-06	6.71817E-05	0.3346538	2.371E-06	5.9189E-05	0.3974458	2.816E-06	7.02948E-05
Road 7	7	2100-2200	0.083042573	4.943E-07	1.23399E-05	0.073408	4.37E-07	1.09082E-05	0.4348851	2.589E-06	6.46225E-05	0.3825584	2.277E-06	5.6847E-05	0.4559664	2.714E-06	6.77552E-05
Road 7	7	2200-2300	0.071486266	4.587E-07	1.14517E-05	0.062036	3.981E-07	9.93783E-06	0.387328	2.486E-06	6.20479E-05	0.3326233	2.135E-06	5.32845E-05	0.3946593	2.533E-06	6.32223E-05
Road 7	7	2300-0000	0.047701081	2.819E-07	7.03636E-06	0.0427305	2.525E-07	6.30315E-06	0.2800271	1.655E-06	4.13067E-05	0.248694	1.47E-06	3.66847E-05	0.2914245	1.722E-06	4.29879E-05
Road 8	8	0000-0100	0.204475556	1.487E-07	2.45142E-06	0.1854136	1.348E-07	2.22289E-06	1.0440511	7.593E-07	1.25169E-05	0.9463858	6.883E-07	1.1346E-05	1.1317994	8.231E-07	1.35689E-05
Road 8	8	0100-0200	0.205854	1.248E-07	2.05662E-06	0.191366	1.16E-07	1.91188E-06	1.0471663	6.346E-07	1.04619E-05	0.973452	5.9E-07	9.72545E-06	1.164818	7.06E-07	1.16373E-05
Road 8	8	0200-0300	0.191313333	5.797E-08	9.55675E-07	0.1795433	5.441E-08	8.9688E-07	1.0251287	3.106E-07	5.12087E-06	0.9619807	2.915E-07	4.80542E-06	1.141524	3.459E-07	5.7023E-06
Road 8	8	0300-0400	0.172663571	4.883E-08	8.05012E-07	0.1637357	4.631E-08	7.63388E-07	0.9020993	2.551E-07	4.20587E-06	0.8554879	2.42E-07	3.98856E-06	1.0192236	2.883E-07	4.75194E-06
Road 8	8	0400-0500	0.197709048	8.388E-08	1.38267E-06	0.1845533	7.83E-08	1.29067E-06	0.9761052	4.141E-07	6.82637E-06	0.91126	3.866E-07	6.37288E-06	1.0958133	4.649E-07	7.66355E-06
Road 8	8	0500-0600	0.193095588	1.326E-07	2.18638E-06	0.1794276	1.232E-07	2.03162E-06	0.9351703	6.423E-07	1.05887E-05	0.8688221	5.968E-07	9.83747E-06	1.0482497	7.2E-07	1.18691E-05
Road 8	8	0600-0700	0.218378548	2.735E-07	4.50895E-06	0.198115	2.481E-07	4.09056E-06	1.0452411	1.309E-06	2.15815E-05	0.9477965	1.187E-06	1.95695E-05	1.1459115	1.435E-06	2.36601E-05
Road 8	8	0700-0800	0.227186733	4.636E-07	7.64149E-06	0.1980737	4.042E-07	6.66227E-06	1.0998047	2.244E-06	3.69923E-05	0.9581272	1.955E-06	3.22269E-05	1.1562009	2.359E-06	3.88892E-05
Road 8	8	0800-0900	0.255494579	9.807E-07	1.61662E-05	0.2220642	8.524E-07	1.4051E-05	1.2415574	4.766E-06	7.85587E-05	1.078186	4.138E-06	6.82215E-05	1.3002502	4.991E-06	8.22724E-05
Road 8	8	0900-1000	0.274232548	8.698E-07	1.43381E-05	0.2358965	7.482E-07	1.23337E-05	1.2683457	4.023E-06	6.63149E-05	1.0908875	3.46E-06	5.70366E-05	1.326784	4.208E-06	6.93703E-05
Road 8	8	1000-1100	0.265987405	8.49E-07	1.39956E-05	0.228767	7.302E-07	1.20372E-05	1.2619006	4.028E-06	6.63982E-05	1.0845228	3.462E-06	5.7065E-05	1.3132897	4.192E-06	6.91021E-05
Road 8	8	1100-1200	0.271696604	8.727E-07	1.43865E-05	0.2293531	7.367E-07	1.21444E-05	1.3080119	4.201E-06	6.926E-05	1.1038994	3.546E-06	5.84521E-05	1.3332525	4.283E-06	7.05965E-05
Road 8	8	1200-1300	0.275975444	9.422E-07	1.55321E-05	0.2335295	7.973E-07	1.31432E-05	1.3422464	4.583E-06	7.55428E-05	1.1352848	3.876E-06	6.38948E-05	1.3688143	4.673E-06	7.7038E-05
Road 8	8	1300-1400	0.252755438	8.17E-07	1.34677E-05	0.2153601	6.961E-07	1.14752E-05	1.2068498	3.901E-06	6.43053E-05	1.0278911	3.322E-06	5.47698E-05	1.2432513	4.019E-06	6.62449E-05
Road 8	8	1400-1500	0.24715482	6.94E-07	1.14408E-05	0.2096878	5.888E-07	9.70648E-06	1.2360083	3.471E-06	5.7215E-05	1.0481739	2.943E-06	4.85201E-05	1.2578617	3.532E-06	5.82266E-05
Road 8	8	1500-1600	0.25557365	7.073E-07	1.16603E-05	0.2144294	5.935E-07	9.78315E-06	1.2435412	3.442E-06	5.67355E-05	1.0423628	2.885E-06	4.75569E-05	1.2567923	3.478E-06	5.734E-05
Road 8	8	1600-1700	0.25447089	7.506E-07	1.23727E-05	0.2174999	6.415E-07	1.05751E-05	1.2230311	3.607E-06	5.94654E-05	1.0446618	3.081E-06	5.07928E-05	1.2621618	3.723E-06	6.1368E-05
Road 8	8	1700-1800	0.203008846	6.398E-07	1.05466E-05	0.1738707	5.48E-07	9.03285E-06	1.0183417	3.209E-06	5.29044E-05	0.8707955	2.744E-06	4.52392E-05	1.0446662	3.292E-06	5.4272E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (July) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 8	8	1800-1900	0.203831589	4.406E-07	7.26322E-06	0.1773603	3.834E-07	6.31996E-06	1.0462781	2.262E-06	3.72825E-05	0.9095012	1.966E-06	3.24086E-05	1.0868615	2.349E-06	3.87286E-05
Road 8	8	1900-2000	0.198751169	3.092E-07	5.09653E-06	0.1761471	2.74E-07	4.5169E-06	1.0462109	1.627E-06	2.68277E-05	0.9270526	1.442E-06	2.37722E-05	1.1031997	1.716E-06	2.82891E-05
Road 8	8	2000-2100	0.214512763	3.294E-07	5.42926E-06	0.1899111	2.916E-07	4.8066E-06	1.0252863	1.574E-06	2.59497E-05	0.9071887	1.393E-06	2.29607E-05	1.0970997	1.684E-06	2.77673E-05
Road 8	8	2100-2200	0.179398679	1.921E-07	3.16642E-06	0.1601389	1.715E-07	2.82648E-06	0.9416772	1.008E-06	1.66208E-05	0.8394191	8.988E-07	1.48159E-05	0.9995579	1.07E-06	1.76424E-05
Road 8	8	2200-2300	0.220991094	2.857E-07	4.71008E-06	0.1918906	2.481E-07	4.08985E-06	1.0943038	1.415E-06	2.33234E-05	0.9491919	1.227E-06	2.02306E-05	1.1410825	1.475E-06	2.43204E-05
Road 8	8	2300-0000	0.1712125	1.799E-07	2.96492E-06	0.1532983	1.61E-07	2.65469E-06	0.8813162	9.258E-07	1.52619E-05	0.7882406	8.281E-07	1.36501E-05	0.9415388	9.891E-07	1.63048E-05
Road 9	9	0000-0100	0.180610229	4.797E-08	1.43186E-06	0.1669302	4.433E-08	1.32341E-06	0.8206304	2.179E-07	6.50588E-06	0.755365	2.006E-07	5.98847E-06	0.9222952	2.449E-07	7.31187E-06
Road 9	9	0100-0200	0.192188991	4.01E-08	1.19716E-06	0.1815418	3.788E-08	1.13084E-06	0.8237893	1.719E-07	5.13144E-06	0.7754931	1.618E-07	4.8306E-06	0.957035	1.997E-07	5.96144E-06
Road 9	9	0200-0300	0.072919305	6.916E-09	2.06463E-07	0.0687576	6.522E-09	1.9468E-07	0.5233325	4.964E-08	1.48176E-06	0.4953807	4.699E-08	1.40262E-06	0.5641383	5.351E-08	1.5973E-06
Road 9	9	0300-0400	0.087335382	6.627E-09	1.97825E-07	0.0829746	6.296E-09	1.87947E-07	0.5428519	4.119E-08	1.22962E-06	0.5167229	3.921E-08	1.17044E-06	0.5996975	4.55E-08	1.35839E-06
Road 9	9	0400-0500	0.204275982	3.875E-08	1.15677E-06	0.1936027	3.673E-08	1.09633E-06	0.8415438	1.596E-07	4.76549E-06	0.7953773	1.509E-07	4.50406E-06	0.98898	1.876E-07	5.60039E-06
Road 9	9	0500-0600	0.149720477	4.828E-08	1.44132E-06	0.1405099	4.531E-08	1.35265E-06	0.7574165	2.443E-07	7.29146E-06	0.7126931	2.298E-07	6.86092E-06	0.853203	2.751E-07	8.21357E-06
Road 9	9	0600-0700	0.177540756	1.078E-07	3.21721E-06	0.1655583	1.005E-07	3.00007E-06	0.9301159	5.646E-07	1.68546E-05	0.8693472	5.277E-07	1.57534E-05	1.0349054	6.282E-07	1.87535E-05
Road 9	9	0700-0800	0.159018416	1.448E-07	4.32234E-06	0.1447301	1.318E-07	3.93397E-06	0.9116547	8.301E-07	2.47801E-05	0.834101	7.595E-07	2.2672E-05	0.9788311	8.913E-07	2.6606E-05
Road 9	9	0800-0900	0.24479167	5.34E-07	1.59414E-05	0.2182249	4.761E-07	1.42113E-05	1.1857809	2.587E-06	7.72206E-05	1.0526668	2.296E-06	6.85519E-05	1.2708917	2.772E-06	8.27632E-05
Road 9	9	0900-1000	0.253514428	4.136E-07	1.23462E-05	0.2274458	3.711E-07	1.10766E-05	1.116579	1.822E-06	5.43774E-05	0.9979259	1.628E-06	4.8599E-05	1.2253717	1.999E-06	5.96756E-05
Road 9	9	1000-1100	0.265831169	3.58E-07	1.0688E-05	0.2334354	3.144E-07	9.38546E-06	1.1472672	1.545E-06	4.61268E-05	1.0049871	1.354E-06	4.04063E-05	1.2384225	1.668E-06	4.97918E-05
Road 9	9	1100-1200	0.183715194	2.579E-07	7.69852E-06	0.1580609	2.219E-07	6.62349E-06	0.9884691	1.388E-06	4.14215E-05	0.8622437	1.21E-06	3.6132E-05	1.0203046	1.432E-06	4.27555E-05
Road 9	9	1200-1300	0.278139998	3.852E-07	1.14979E-05	0.2469563	3.42E-07	1.02088E-05	1.2862026	1.781E-06	5.31695E-05	1.1442733	1.585E-06	4.73024E-05	1.3912296	1.927E-06	5.75112E-05
Road 9	9	1300-1400	0.313577622	3.569E-07	1.06544E-05	0.2791374	3.177E-07	9.48418E-06	1.2080096	1.375E-06	4.10443E-05	1.0685963	1.216E-06	3.63074E-05	1.3477337	1.534E-06	4.57916E-05
Road 9	9	1400-1500	0.204264198	2.635E-07	7.8656E-06	0.1828162	2.358E-07	7.0397E-06	1.0096103	1.302E-06	3.88771E-05	0.8977986	1.158E-06	3.45715E-05	1.0806148	1.394E-06	4.16112E-05
Road 9	9	1500-1600	0.170658405	1.845E-07	5.5085E-06	0.1494043	1.615E-07	4.82246E-06	0.902986	9.764E-07	2.91465E-05	0.7951821	8.598E-07	2.56668E-05	0.9445863	1.021E-06	3.04893E-05
Road 9	9	1600-1700	0.177525139	2.66E-07	7.94178E-06	0.1592612	2.387E-07	7.12472E-06	1.010271	1.514E-06	4.51956E-05	0.9057323	1.357E-06	4.05189E-05	1.0649935	1.596E-06	4.76436E-05
Road 9	9	1700-1800	0.153109766	1.975E-07	5.8958E-06	0.1395929	1.801E-07	5.3753E-06	0.9558694	1.233E-06	3.68077E-05	0.8790623	1.134E-06	3.385E-05	1.0186552	1.314E-06	3.92254E-05
Road 9	9	1800-1900	0.151483518	1.264E-07	3.77441E-06	0.1403847	1.172E-07	3.49787E-06	0.9329269	7.787E-07	2.32451E-05	0.8715383	7.274E-07	2.17155E-05	1.011923	8.446E-07	2.52134E-05
Road 9	9	1900-2000	0.155352046	1.267E-07	3.78282E-06	0.1440991	1.175E-07	3.50882E-06	0.8373666	6.83E-07	2.03899E-05	0.7771555	6.339E-07	1.89237E-05	0.9212546	7.515E-07	2.24326E-05
Road 9	9	2000-2100	0.161579562	8.889E-08	2.65348E-06	0.14715	8.095E-08	2.41651E-06	0.7263619	3.996E-07	1.19284E-05	0.6686656	3.678E-07	1.09809E-05	0.8158157	4.488E-07	1.33974E-05
Road 9	9	2100-2200	0.021499675	1.101E-08	3.2872E-07	0.0199134	1.02E-08	3.04467E-07	0.2952799	1.512E-07	4.51469E-06	0.2708402	1.387E-07	4.14102E-06	0.2907536	1.489E-07	4.44549E-06
Road 9	9	2200-2300	0.160033963	1.002E-07	2.99059E-06	0.1429373	8.948E-08	2.6711E-06	0.7845063	4.911E-07	1.46602E-05	0.7011923	4.389E-07	1.31033E-05	0.8441296	5.284E-07	1.57744E-05
Road 9	9	2300-0000	0.126880309	7.221E-08	2.15549E-06	0.1170731	6.663E-08	1.98888E-06	0.654607	3.725E-07	1.11207E-05	0.6033604	3.434E-07	1.02501E-05	0.7204335	4.1E-07	1.2239E-05
Road 10	10	0000-0100	0.248961407	1.914E-07	4.25607E-06	0.2268894	1.744E-07	3.87874E-06	1.2733866	9.791E-07	2.17689E-05	1.1611576	8.928E-07	1.98503E-05	1.388047	1.067E-06	2.37291E-05
Road 10	10	0100-0200	0.238271567	1.384E-07	3.07762E-06	0.2225908	1.293E-07	2.87508E-06	1.2081815	7.018E-07	1.56054E-05	1.1289725	6.558E-07	1.45823E-05	1.3515634	7.851E-07	1.74574E-05
Road 10	10	0200-0300	0.230850525	7.494E-08	1.66628E-06	0.216675	7.034E-08	1.56396E-06	1.1576411	3.758E-07	8.35586E-06	1.0874704	3.53E-07	7.84937E-06	1.3041454	4.234E-07	9.41333E-06
Road 10	10	0300-0400	0.207185479	4.248E-08	9.44505E-07	0.1964992	4.029E-08	8.95789E-07	1.1213688	2.299E-07	5.11203E-06	1.0645409	2.183E-07	4.85297E-06	1.2610401	2.585E-07	5.74876E-06
Road 10	10	0400-0500	0.248908025	9.781E-08	2.17486E-06	0.2336265	9.181E-08	2.04133E-06	1.1923181	4.685E-07	1.0418E-05	1.1173693	4.391E-07	9.76311E-06	1.3509958	5.309E-07	1.18044E-05
Road 10	10	0500-0600	0.232926008	1.632E-07	3.62799E-06	0.2180658	1.528E-07	3.39653E-06	1.1220119	7.86E-07	1.74761E-05	1.0499374	7.355E-07	1.63535E-05	1.2680032	8.883E-07	1.975E-05
Road 10	10	0600-0700	0.287719526	4.031E-07	8.96287E-06	0.2650431	3.713E-07	8.25646E-06	1.4409578	2.019E-06	4.48879E-05	1.3313262	1.865E-06	4.14727E-05	1.5963693	2.237E-06	4.97291E-05
Road 10	10	0700-0800	0.293520798	6.469E-07	1.43844E-05	0.2607223	5.746E-07	1.27771E-05	1.480475	3.263E-06	7.25529E-05	1.3197315	2.909E-06	6.46754E-05	1.5804538	3.483E-06	7.74525E-05
Road 10	10	0800-0900	0.31549357	1.331E-06	2.96041E-05	0.2758166	1.164E-06	2.5881E-05	1.5608453	6.587E-06	0.000146461	1.3658034	5.764E-06	0.000128159	1.64162	6.928E-06	0.00015404
Road 10	10	0900-1000	0.355772621	1.191E-06	2.64906E-05	0.3121267	1.045E-06	2.32408E-05	1.7188666	5.756E-06	0.000127986	1.5095161	5.055E-06	0.000112398	1.8216428	6.1E-06	0.000135639
Road 10	10	1000-1100	0.356540035	1.298E-06	2.88504E-05	0.311113	1.132E-06	2.51745E-05	1.6111013	5.863E-06	0.000130367	1.4023303	5.103E-06	0.000113473	1.7134432	6.236E-06	0.000138648
Road 10	10	1100-1200	0.344491863	1.254E-06	2.78755E-05	0.2937395	1.069E-06	2.37687E-05	1.6170563	5.885E-06	0.000130848	1.3779392	5.015E-06	0.0001115	1.6716786	6.084E-06	0.000135268
Road 10	10	1200-1300	0.362193334	1.361E-06	3.0271E-05	0.3119169	1.172E-06	2.60691E-05	1.7262881	6.489E-06	0.000144278	1.4886948	5.596E-06	0.000124421	1.8006117	6.768E-06	0.00015049
Road 10	10	1300-1400	0.353376153	1.159E-06	2.57752E-05	0.3067473	1.006E-06	2.23741E-05	1.6431302	5.39E-06	0.00011985	1.4244755	4.673E-06	0.000103901	1.7312228	5.679E-06	0.000126275
Road 10	10	1400-1500	0.329880613	1.015E-06	2.25576E-05	0.2867156	8.818E-07	1.96059E-05	1.6512953	5.078E-06	0.000112917	1.4368271	4.419E-06	9.82519E-05	1.7235427	5.301E-06	0.000117858
Road 10	10	1500-1600	0.329049335	1.034E-06	2.30008E-05	0.280379	8.814E-07	1.95987E-05	1.5862753	4.987E-06	0.000110882	1.3533986	4.255E-06	9.46035E-05	1.6337776	5.136E-06	0.000114202
Road 10	10	1600-1700	0.313353175	1.098E-06	2.44035E-05	0.2733231	9.573E-07	2.1286E-05	1.531475	5.364E-06	0.000119269	1.3340586	4.673E-06	0.000103894	1.6073817	5.63E-06	0.00012518
Road 10	10	1700-1800	0.285607717	9.369E-07	2.08322E-05	0.2508417	8.229E-07	1.82964E-05	1.4886918	4.884E-06	0.000108585	1.3155127	4.315E-06	9.59533E-05	1.5663543	5.138E-06	0.00011425
Road 10	10	1800-1900	0.289642066	5.988E-07	1.33141E-05	0.2562183	5.297E-07	1.17777E-05	1.4650816	3.029E-06	6.73459E-05	1.2998175	2.687E-06	5.97491E-05	1.5560358	3.217E-06	7.15268E-05
Road 10	10	1900-2000	0.248397725	4.626E-07	1.02858E-05	0.2241338	4.174E-07	9.28106E-06	1.318356	2.455E-06	5.45912E-05	1.1942126	2.224E-06	4.94506E-05	1.4183464	2.641E-06	5.87317E-05
Road 10	10	2000-2100	0.28071902	3.453E-07	7.67835E-06	0.2500562	3.076E-07	6.83965E-06	1.3579806	1.671E-06	3.71441E-05	1.209893	1.488E-06	3.30935E-05	1.4599492	1.796E-06	3.99332E-05
Road 10	10	2100-2200	0.241753509	2.974E-07	6.61255E-06	0.2220785	2.732E-07	6.07439E-06	1.3536253	1.665E-06	3.7025E-05	1.2487505	1.536E-06	3.41564E-05	1.4708291	1.809E-06	4.02308E-05
Road 10	10	2200-2300	0.256911693	3.292E-07	7.31996E-06	0.2272226	2.912E-07	6.47406E-06	1.3222939	1.694E-06	3.7675E-05	1.1749848	1.506E-06	3.34778E-05	1.4022074	1.797E-06	3.99519E-05
Road 10	10	2300-0000	0.226846163	2.713E-07	6.03244E-06	0.2045206	2.446E-07	5.43875E-06	1.1463012	1.371E-06	3.04832E-05	1.0335472	1.236E-06	2.74848E-05	1.2380678	1.481E-06	3.29235E-05
Road 11	11	0000-0100	0.27850666	2.127E-07	1.76476E-06	0.2535628	1.937E-07	1.60671E-06	1.3947302	1.065E-06	8.83774E-06	1.2680795	9.687E-07	8.03521E-06	1.5216423	1.162E-06	9.64192E-06
Road 11	11	0100-0200	0.271074018	1.459E-07	1.21017E-06	0.2529783	1.362E-07	1.12939E-06	1.3327337	7.173E-07	5.94981E-06	1.2420517	6.685E-07	5.54497E-06	1.4950301	8.046E-07	6.67436E-06
Road 11	11	0200-0300	0.230861717	6.012E-08	4.98702E-07	0.216678	5.643E-08	4.68063E-07	1.2334204	3.212E-07	2.66441E-06	1.1586521	3.017E-07	2.50289E-06	1.3753301	3.582E-07	2.97096E-06
Road 11	11	0300-0400	0.24397846	5.93E-08	4.91901E-07	0.2313427	5.623E-08	4.66425E-07	1.2781111	3.107E-07	2.57688E-06	1.2123708	2.947E-07	2.44434E-06	1.4437136	3.509E-07	2.91077E-06
Road 11	11	0400-0500	0.257764728	8.95E-08	7.42423E-07	0.2420264	8.404E-08	6.97093E-07	1.2187274	4.232E-07	3.51022E-06	1.1424833	3.967E-07	3.29062E-06	1.3845098	4.807E-07	3.98772E-06
Road 11	11	0500-0600	0.212646419	9.968E-08	8.26837E-07	0.1989543	9.326E-08	7.73598E-07	1.08386	5.081E-07	4.21439E-06	1.0150908	4.758E-07	3.947E-06	1.214045	5.691E-07	4.72059E-06
Road 11	11	0600-0700	0.23432643	2.115E-07	1.75478E-06	0.2149935	1.941E-07	1.61E-06	1.213777	1.096E-06	9.08951E-06	1.1149137	1.007E-06	8.34916E-06	1.3299072	1.201E-06	9.95916E-06
Road 11	11	0700-0800	0.283441348	5.315E-07	4.40844E-06	0.2496467	4.681E-07	3.88282E-06	1.476493	2.768E-06	2.29643E-05	1.3039355	2.445E-06	2.02805E-05	1.5535822	2.913E-06	2.41633E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (July) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 11	11	0800-0900	0.313719719	1.117E-06	9.26177E-06	0.2759918	9.823E-07	8.14795E-06	1.54533	5.5E-06	4.56219E-05	1.3568883	4.829E-06	4.00586E-05	1.6328801	5.811E-06	4.82066E-05
Road 11	11	0900-1000	0.318693019	8.078E-07	6.70075E-06	0.2793886	7.082E-07	5.87435E-06	1.5049538	3.815E-06	3.16427E-05	1.3152058	3.334E-06	2.76532E-05	1.5945944	4.042E-06	3.35275E-05
Road 11	11	1000-1100	0.331476689	6.848E-07	5.68065E-06	0.2883695	5.958E-07	4.94191E-06	1.5445442	3.191E-06	2.64695E-05	1.3408457	2.77E-06	2.29786E-05	1.6292152	3.366E-06	2.79205E-05
Road 11	11	1100-1200	0.29016839	6.75E-07	5.59955E-06	0.2460571	5.724E-07	4.74831E-06	1.4907321	3.468E-06	2.87675E-05	1.2710852	2.957E-06	2.45289E-05	1.5171423	3.529E-06	2.92772E-05
Road 11	11	1200-1300	0.356858201	1.01E-06	8.37686E-06	0.3067538	8.681E-07	7.20072E-06	1.731606	4.9E-06	4.06476E-05	1.4884722	4.212E-06	3.49403E-05	1.795226	5.08E-06	4.2141E-05
Road 11	11	1300-1400	0.37185357	7.747E-07	6.42616E-06	0.3224236	6.717E-07	5.57194E-06	1.6734653	3.486E-06	2.89199E-05	1.4436931	3.008E-06	2.49491E-05	1.7661168	3.679E-06	3.0521E-05
Road 11	11	1400-1500	0.295332385	5.948E-07	4.93364E-06	0.2558176	5.152E-07	4.27353E-06	1.4727342	2.966E-06	2.46026E-05	1.2720054	2.562E-06	2.12493E-05	1.527823	3.077E-06	2.55229E-05
Road 11	11	1500-1600	0.265479736	5.393E-07	4.47317E-06	0.2256022	4.583E-07	3.80126E-06	1.3749983	2.793E-06	2.31679E-05	1.1708791	2.378E-06	1.97286E-05	1.3964814	2.837E-06	2.35299E-05
Road 11	11	1600-1700	0.252318082	6.089E-07	5.05081E-06	0.2201562	5.313E-07	4.40701E-06	1.3504009	3.259E-06	2.70318E-05	1.1795141	2.846E-06	2.36111E-05	1.3996703	3.378E-06	2.80181E-05
Road 11	11	1700-1800	0.247643187	6.105E-07	5.06422E-06	0.2160093	5.325E-07	4.41732E-06	1.3525777	3.334E-06	2.76598E-05	1.1866385	2.925E-06	2.42664E-05	1.4026478	3.458E-06	2.86837E-05
Road 11	11	1800-1900	0.266101499	5.451E-07	4.52197E-06	0.234385	4.802E-07	3.983E-06	1.4238556	2.917E-06	2.41961E-05	1.2594657	2.58E-06	2.14026E-05	1.4938508	3.06E-06	2.53856E-05
Road 11	11	1900-2000	0.249930412	3.949E-07	3.27536E-06	0.2244112	3.545E-07	2.94093E-06	1.3007394	2.055E-06	1.70463E-05	1.1688238	1.847E-06	1.53175E-05	1.393235	2.201E-06	1.82585E-05
Road 11	11	2000-2100	0.252854915	3.556E-07	2.94954E-06	0.2254005	3.17E-07	2.62929E-06	1.2632466	1.776E-06	1.47357E-05	1.1281441	1.586E-06	1.31598E-05	1.3535446	1.903E-06	1.5789E-05
Road 11	11	2100-2200	0.185579992	1.836E-07	1.52337E-06	0.1659881	1.643E-07	1.36254E-06	1.0390794	1.028E-06	8.52946E-06	0.9314153	9.217E-07	7.64568E-06	1.0974034	1.086E-06	9.00823E-06
Road 11	11	2200-2300	0.245973232	2.69E-07	2.23165E-06	0.2156278	2.358E-07	1.95634E-06	1.2424421	1.359E-06	1.12724E-05	1.0889421	1.191E-06	9.87969E-06	1.3045699	1.427E-06	1.1836E-05
Road 11	11	2300-0000	0.227768939	2.373E-07	1.96809E-06	0.2055161	2.141E-07	1.7758E-06	1.1699226	1.219E-06	1.0109E-05	1.0552395	1.099E-06	9.11802E-06	1.2607556	1.313E-06	1.08938E-05
Haul Road 1	HR1	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0700-0800	1.19424	2.245E-06	3.37631E-06	1.0405	1.956E-06	2.94166E-06	5.4881	1.032E-05	1.55157E-05	4.78147	8.988E-06	1.3518E-05	5.82197	1.094E-05	1.64596E-05
Haul Road 1	HR1	0800-0900	1.22073	2.295E-06	3.4512E-06	1.05949	1.992E-06	2.99535E-06	5.60965	1.054E-05	1.58594E-05	4.86884	9.152E-06	1.3765E-05	5.92833	1.114E-05	1.67603E-05
Haul Road 1	HR1	0900-1000	1.23133	2.315E-06	3.48117E-06	1.05829	1.989E-06	2.99196E-06	5.65833	1.064E-05	1.5997E-05	4.86344	9.142E-06	1.37497E-05	5.92173	1.113E-05	1.67417E-05
Haul Road 1	HR1	1000-1100	1.24722	2.344E-06	3.52609E-06	1.07179	2.015E-06	3.03012E-06	5.73131	1.077E-05	1.62033E-05	4.92521	9.258E-06	1.39244E-05	5.997	1.127E-05	1.69545E-05
Haul Road 1	HR1	1100-1200	1.24672	2.343E-06	3.52468E-06	1.0519	1.977E-06	2.97389E-06	5.72941	1.077E-05	1.6198E-05	4.83375	9.086E-06	1.36658E-05	5.88565	1.106E-05	1.66397E-05
Haul Road 1	HR1	1200-1300	1.25252	2.354E-06	3.54108E-06	1.05899	1.991E-06	2.99393E-06	5.7556	1.082E-05	1.6272E-05	4.86654	9.148E-06	1.37585E-05	5.92553	1.114E-05	1.67524E-05
Haul Road 1	HR1	1300-1400	1.25242	2.354E-06	3.54079E-06	1.06609	2.004E-06	3.01401E-06	5.7552	1.082E-05	1.62709E-05	4.89933	9.209E-06	1.38512E-05	5.96542	1.121E-05	1.68652E-05
Haul Road 1	HR1	1400-1500	1.25772	2.364E-06	3.55578E-06	1.06609	2.004E-06	3.01401E-06	5.77999	1.086E-05	1.6341E-05	4.89933	9.209E-06	1.38512E-05	5.96542	1.121E-05	1.68652E-05
Haul Road 1	HR1	1500-1600	1.26302	2.374E-06	3.57076E-06	1.05899	1.991E-06	2.99393E-06	5.80427	1.091E-05	1.64096E-05	4.86654	9.148E-06	1.37585E-05	5.92553	1.114E-05	1.67524E-05
Haul Road 1	HR1	1600-1700	1.24722	2.344E-06	3.52609E-06	1.06499	2.002E-06	3.0109E-06	5.73131	1.077E-05	1.62033E-05	4.89433	9.2E-06	1.38371E-05	5.95932	1.12E-05	1.6848E-05
Haul Road 1	HR1	1700-1800	1.22073	2.295E-06	3.4512E-06	1.0449	1.964E-06	2.9541E-06	5.60965	1.054E-05	1.58594E-05	4.80156	9.025E-06	1.35748E-05	5.84646	1.099E-05	1.65289E-05
Haul Road 1	HR1	1800-1900	1.21883	2.291E-06	3.44583E-06	1.05949	1.992E-06	2.99535E-06	5.60096	1.053E-05	1.58348E-05	4.86884	9.152E-06	1.3765E-05	5.92833	1.114E-05	1.67603E-05
Haul Road 1	HR1	1900-2000	1.18894	2.235E-06	3.36132E-06	1.0532	1.98E-06	2.97757E-06	5.46381	1.027E-05	1.54471E-05	4.83964	9.097E-06	1.36824E-05	5.89284	1.108E-05	1.666E-05
Haul Road 1	HR1	2000-2100	1.16785	2.195E-06	3.3017E-06	1.0341	1.944E-06	2.92357E-06	5.36645	1.009E-05	1.51718E-05	4.75238	8.933E-06	1.34357E-05	5.78648	1.088E-05	1.63593E-05
Haul Road 1	HR1	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0700-0800	1.19424	1.547E-06	4.11781E-06	1.0405	1.348E-06	3.58771E-06	5.4881	7.109E-06	1.89233E-05	4.78147	6.194E-06	1.64868E-05	5.82197	7.541E-06	2.00745E-05
Haul Road 2	HR2	0800-0900	1.22073	1.581E-06	4.20915E-06	1.05949	1.372E-06	3.65319E-06	5.60965	7.266E-06	1.93424E-05	4.86884	6.307E-06	1.67881E-05	5.92833	7.679E-06	2.04412E-05
Haul Road 2	HR2	0900-1000	1.23133	1.595E-06	4.2457E-06	1.05829	1.371E-06	3.64905E-06	5.65833	7.329E-06	1.95103E-05	4.86344	6.3E-06	1.67694E-05	5.92173	7.671E-06	2.04185E-05
Haul Road 2	HR2	1000-1100	1.24722	1.616E-06	4.30049E-06	1.07179	1.388E-06	3.6956E-06	5.73131	7.424E-06	1.97619E-05	4.92521	6.38E-06	1.69824E-05	5.997	7.768E-06	2.0678E-05
Haul Road 2	HR2	1100-1200	1.24672	1.615E-06	4.29877E-06	1.0519	1.363E-06	3.62701E-06	5.72941	7.422E-06	1.97554E-05	4.83375	6.261E-06	1.66671E-05	5.88565	7.624E-06	2.02941E-05
Haul Road 2	HR2	1200-1300	1.25252	1.622E-06	4.31876E-06	1.05899	1.372E-06	3.65146E-06	5.7556	7.455E-06	1.98457E-05	4.86654	6.304E-06	1.67801E-05	5.92553	7.676E-06	2.04316E-05
Haul Road 2	HR2	1300-1400	1.25242	1.622E-06	4.31842E-06	1.06609	1.381E-06	3.67594E-06	5.7552	7.455E-06	1.98443E-05	4.89933	6.346E-06	1.68932E-05	5.96542	7.727E-06	2.05691E-05
Haul Road 2	HR2	1400-1500	1.25772	1.629E-06	4.33669E-06	1.06609	1.381E-06	3.67594E-06	5.77999	7.487E-06	1.99298E-05	4.89933	6.346E-06	1.68932E-05	5.96542	7.727E-06	2.05691E-05
Haul Road 2	HR2	1500-1600	1.26302	1.636E-06	4.35497E-06	1.05899	1.372E-06	3.65146E-06	5.80427	7.518E-06	2.00135E-05	4.86654	6.304E-06	1.67801E-05	5.92553	7.676E-06	2.04316E-05
Haul Road 2	HR2	1600-1700	1.24722	1.616E-06	4.30049E-06	1.06499	1.38E-06	3.67215E-06	5.73131	7.424E-06	1.97619E-05	4.89433	6.34E-06	1.68759E-05	5.95932	7.719E-06	2.05481E-05
Haul Road 2	HR2	1700-1800	1.22073	1.581E-06	4.20915E-06	1.0449	1.353E-06	3.60288E-06	5.60965	7.266E-06	1.93424E-05	4.80156	6.22E-06	1.65561E-05	5.84646	7.573E-06	2.01589E-05
Haul Road 2	HR2	1800-1900	1.21883	1.579E-06	4.2026E-06	1.05949	1.372E-06	3.65319E-06	5.60096	7.255E-06	1.93124E-05	4.86884	6.307E-06	1.67881E-05	5.92833	7.679E-06	2.04412E-05
Haul Road 2	HR2	1900-2000	1.18894	1.54E-06	4.09954E-06	1.0532	1.364E-06	3.6315E-06	5.46381	7.077E-06	1.88395E-05	4.83964	6.269E-06	1.66874E-05	5.89284	7.633E-06	2.03189E-05
Haul Road 2	HR2	2000-2100	1.16785	1.513E-06	4.02682E-06	1.0341	1.34E-06	3.56564E-06	5.36645	6.951E-06	1.85038E-05	4.75238	6.156E-06	1.63865E-05	5.78648	7.495E-06	1.99521E-05
Haul Road 2	HR2	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (July) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Haul Road 2	HR2	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0700-0800	1.19424	1.547E-06	4.11207E-06	1.0405	1.348E-06	3.5827E-06	5.4881	7.109E-06	1.88969E-05	4.78147	6.194E-06	1.64638E-05	5.82197	7.541E-06	2.00465E-05
Haul Road 3	HR3	0800-0900	1.22073	1.581E-06	4.20328E-06	1.05949	1.372E-06	3.64809E-06	5.60965	7.266E-06	1.93154E-05	4.86884	6.307E-06	1.67646E-05	5.92833	7.679E-06	2.04127E-05
Haul Road 3	HR3	0900-1000	1.23133	1.595E-06	4.23978E-06	1.05829	1.371E-06	3.64396E-06	5.65833	7.329E-06	1.94831E-05	4.86344	6.3E-06	1.67461E-05	5.92173	7.671E-06	2.039E-05
Haul Road 3	HR3	1000-1100	1.24722	1.616E-06	4.29449E-06	1.07179	1.388E-06	3.69044E-06	5.73131	7.424E-06	1.97343E-05	4.92521	6.38E-06	1.69587E-05	5.997	7.768E-06	2.06492E-05
Haul Road 3	HR3	1100-1200	1.24672	1.615E-06	4.29277E-06	1.0519	1.363E-06	3.62196E-06	5.72941	7.422E-06	1.97278E-05	4.83375	6.261E-06	1.66438E-05	5.88565	7.624E-06	2.02658E-05
Haul Road 3	HR3	1200-1300	1.25252	1.622E-06	4.31274E-06	1.05899	1.372E-06	3.64637E-06	5.7556	7.455E-06	1.9818E-05	4.86654	6.304E-06	1.67567E-05	5.92553	7.676E-06	2.04031E-05
Haul Road 3	HR3	1300-1400	1.25242	1.622E-06	4.3124E-06	1.06609	1.381E-06	3.67082E-06	5.7552	7.455E-06	1.98166E-05	4.89933	6.346E-06	1.68696E-05	5.96542	7.727E-06	2.05404E-05
Haul Road 3	HR3	1400-1500	1.25772	1.629E-06	4.33065E-06	1.06609	1.381E-06	3.67082E-06	5.77999	7.487E-06	1.9902E-05	4.89933	6.346E-06	1.68696E-05	5.96542	7.727E-06	2.05404E-05
Haul Road 3	HR3	1500-1600	1.26302	1.636E-06	4.3489E-06	1.05899	1.372E-06	3.64637E-06	5.80427	7.518E-06	1.99856E-05	4.86654	6.304E-06	1.67567E-05	5.92553	7.676E-06	2.04031E-05
Haul Road 3	HR3	1600-1700	1.24722	1.616E-06	4.29449E-06	1.06499	1.38E-06	3.66703E-06	5.73131	7.424E-06	1.97343E-05	4.89433	6.34E-06	1.68524E-05	5.95932	7.719E-06	2.05194E-05
Haul Road 3	HR3	1700-1800	1.22073	1.581E-06	4.20328E-06	1.0449	1.353E-06	3.59785E-06	5.60965	7.266E-06	1.93154E-05	4.80156	6.22E-06	1.6533E-05	5.84646	7.573E-06	2.01308E-05
Haul Road 3	HR3	1800-1900	1.21883	1.579E-06	4.19674E-06	1.05949	1.372E-06	3.64809E-06	5.60096	7.255E-06	1.92855E-05	4.86884	6.307E-06	1.67646E-05	5.92833	7.679E-06	2.04127E-05
Haul Road 3	HR3	1900-2000	1.18894	1.54E-06	4.09382E-06	1.0532	1.364E-06	3.62643E-06	5.46381	7.077E-06	1.88133E-05	4.83964	6.269E-06	1.66641E-05	5.89284	7.633E-06	2.02905E-05
Haul Road 3	HR3	2000-2100	1.16785	1.513E-06	4.0212E-06	1.0341	1.34E-06	3.56067E-06	5.36645	6.951E-06	1.8478E-05	4.75238	6.156E-06	1.63636E-05	5.78648	7.495E-06	1.99243E-05
Haul Road 3	HR3	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (August) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 1	1	0000-0100	0.088570113	2.942E-07	2.39366E-06	0.0793169	2.635E-07	2.14358E-06	0.5194586	1.726E-06	1.40387E-05	0.4632649	1.539E-06	1.252E-05	0.5425819	1.802E-06	1.46636E-05
Road 1	1	0100-0200	0.06849213	1.388E-07	1.12945E-06	0.0613428	1.243E-07	1.01155E-06	0.4109846	8.331E-07	6.7772E-06	0.3665045	7.429E-07	6.04372E-06	0.4278473	8.673E-07	7.05527E-06
Road 1	1	0200-0300	0.063874675	9.231E-08	7.50967E-07	0.0578352	8.358E-08	6.79961E-07	0.402343	5.815E-07	4.7303E-06	0.361954	5.231E-07	4.25545E-06	0.4197892	6.067E-07	4.93541E-06
Road 1	1	0300-0400	0.055288909	5.707E-08	4.64303E-07	0.0501089	5.173E-08	4.20803E-07	0.3326444	3.434E-07	2.79347E-06	0.2998087	3.095E-07	2.51772E-06	0.3499176	3.612E-07	2.93853E-06
Road 1	1	0400-0500	0.070535412	1.125E-07	9.15435E-07	0.0655624	1.046E-07	8.50893E-07	0.3991735	6.368E-07	5.18062E-06	0.3699347	5.902E-07	4.80115E-06	0.4354971	6.948E-07	5.65204E-06
Road 1	1	0500-0600	0.056802888	1.994E-07	1.62186E-06	0.0530491	1.862E-07	1.51468E-06	0.3307731	1.161E-06	9.44437E-06	0.3076448	1.08E-06	8.784E-06	0.3606939	1.266E-06	1.02987E-05
Road 1	1	0600-0700	0.077768434	4.846E-07	3.94224E-06	0.070869	4.416E-07	3.59249E-06	0.413577	2.577E-06	2.0965E-05	0.3754693	2.34E-06	1.90333E-05	0.4463383	2.781E-06	2.26258E-05
Road 1	1	0700-0800	0.066656619	6.993E-07	5.68927E-06	0.0600657	6.302E-07	5.12672E-06	0.3642956	3.822E-06	3.10933E-05	0.3262928	3.423E-06	2.78497E-05	0.3863586	4.054E-06	3.29764E-05
Road 1	1	0800-0900	0.075501051	9.707E-07	7.89669E-06	0.0664937	8.549E-07	6.9546E-06	0.3999753	5.142E-06	4.18336E-05	0.3507976	4.51E-06	3.66901E-05	0.4172913	5.365E-06	4.36447E-05
Road 1	1	0900-1000	0.078985332	1.048E-06	8.52643E-06	0.0703396	9.334E-07	7.59312E-06	0.4411747	5.854E-06	4.76246E-05	0.3913503	5.193E-06	4.22461E-05	0.4616899	6.126E-06	4.98392E-05
Road 1	1	1000-1100	0.094599156	1.22E-06	9.92305E-06	0.0805664	1.039E-06	8.45108E-06	0.5077003	6.546E-06	5.32556E-05	0.4306932	5.553E-06	4.51779E-05	0.5112596	6.592E-06	5.3629E-05
Road 1	1	1100-1200	0.085508741	1.07E-06	8.70838E-06	0.0732589	9.171E-07	7.46083E-06	0.4906484	6.142E-06	4.99686E-05	0.4185426	5.24E-06	4.26252E-05	0.4918015	6.157E-06	5.00861E-05
Road 1	1	1200-1300	0.088730818	1.099E-06	8.94169E-06	0.0746283	9.245E-07	7.52054E-06	0.5055267	6.262E-06	5.09436E-05	0.4234293	5.245E-06	4.26703E-05	0.4980576	6.17E-06	5.01909E-05
Road 1	1	1300-1400	0.093622934	1.234E-06	1.00351E-05	0.0780778	1.029E-06	8.36885E-06	0.5220095	6.878E-06	5.59522E-05	0.4333232	5.709E-06	4.64462E-05	0.511401	6.738E-06	5.48151E-05
Road 1	1	1400-1500	0.089851582	1.29E-06	1.04951E-05	0.07477	1.074E-06	8.73353E-06	0.4888485	7.019E-06	5.71001E-05	0.4051677	5.817E-06	4.73257E-05	0.4799377	6.891E-06	5.60593E-05
Road 1	1	1500-1600	0.096549972	1.285E-06	1.0452E-05	0.0807933	1.075E-06	8.74627E-06	0.5233834	6.965E-06	5.66588E-05	0.4360724	5.803E-06	4.7207E-05	0.5168657	6.878E-06	5.59532E-05
Road 1	1	1600-1700	0.09035373	1.268E-06	1.03193E-05	0.075918	1.066E-06	8.67057E-06	0.4947616	6.946E-06	5.65066E-05	0.4135019	5.805E-06	4.72259E-05	0.4894198	6.871E-06	5.58965E-05
Road 1	1	1700-1800	0.071416093	1.005E-06	8.17822E-06	0.0610796	8.598E-07	6.99453E-06	0.3983198	5.607E-06	4.56136E-05	0.3384096	4.764E-06	3.8753E-05	0.3994891	5.623E-06	4.57475E-05
Road 1	1	1800-1900	0.061482122	8.862E-07	7.2096E-06	0.0541904	7.811E-07	6.35455E-06	0.3634963	5.24E-06	4.26248E-05	0.3179129	4.583E-06	3.72795E-05	0.3721033	5.364E-06	4.36341E-05
Road 1	1	1900-2000	0.075027986	8.252E-07	6.71309E-06	0.0644674	7.09E-07	5.76818E-06	0.4276348	4.703E-06	3.82624E-05	0.3648947	4.013E-06	3.26487E-05	0.4293621	4.722E-06	3.84169E-05
Road 1	1	2000-2100	0.065073226	6.058E-07	4.92817E-06	0.0580481	5.404E-07	4.39613E-06	0.3802705	3.54E-06	2.87989E-05	0.3374707	3.142E-06	2.55575E-05	0.3955188	3.682E-06	2.99537E-05
Road 1	1	2100-2200	0.070232428	5.971E-07	4.85777E-06	0.062167	5.286E-07	4.29991E-06	0.4131182	3.512E-06	2.85742E-05	0.3636694	3.092E-06	2.5154E-05	0.4258364	3.621E-06	2.94539E-05
Road 1	1	2200-2300	0.070186891	5.678E-07	4.61886E-06	0.0603407	4.881E-07	3.9709E-06	0.4115498	3.329E-06	2.70833E-05	0.351182	2.841E-06	2.31106E-05	0.4115227	3.329E-06	2.70815E-05
Road 1	1	2300-0000	0.059990416	4.335E-07	3.5265E-06	0.0525903	3.8E-07	3.09149E-06	0.3639724	2.63E-06	2.13959E-05	0.3164069	2.286E-06	1.85998E-05	0.3689972	2.666E-06	2.16913E-05
Road 2	2	0000-0100	0.148521961	1.753E-07	1.13232E-06	0.1329716	1.57E-07	1.01376E-06	0.6285471	7.42E-07	4.79199E-06	0.561059	6.624E-07	4.27746E-06	0.6940306	8.193E-07	5.29123E-06
Road 2	2	0100-0200	0.105342727	8.047E-08	5.19668E-07	0.09429	7.203E-08	4.65144E-07	0.5201848	3.974E-07	2.56613E-06	0.4639976	3.544E-07	2.28896E-06	0.5582876	4.265E-07	2.7541E-06
Road 2	2	0200-0300	0.102919565	5.48E-08	3.53862E-07	0.0932296	4.964E-08	3.20545E-07	0.5572283	2.967E-07	1.91588E-06	0.5026839	2.676E-07	1.72835E-06	0.5959135	3.173E-07	2.04889E-06
Road 2	2	0300-0400	0.091751333	3.186E-08	2.05737E-07	0.0831187	2.886E-08	1.86379E-07	0.3314107	1.151E-07	7.43131E-07	0.298954	1.038E-07	6.70353E-07	0.3820727	1.327E-07	8.56732E-07
Road 2	2	0400-0500	0.12088037	7.555E-08	4.87896E-07	0.1123544	7.022E-08	4.53484E-07	0.5828222	3.643E-07	2.35238E-06	0.5406878	3.379E-07	2.18232E-06	0.6530422	4.082E-07	2.6358E-06
Road 2	2	0500-0600	0.096167544	1.269E-07	8.19429E-07	0.0898174	1.185E-07	7.6532E-07	0.4217023	5.564E-07	3.59326E-06	0.3927065	5.182E-07	3.34619E-06	0.4825239	6.367E-07	4.11151E-06
Road 2	2	0600-0700	0.138075437	3.292E-07	2.12599E-06	0.1257927	2.999E-07	1.93687E-06	0.5577329	1.33E-06	8.58759E-06	0.5068778	1.209E-06	7.80456E-06	0.6326705	1.508E-06	9.74143E-06
Road 2	2	0700-0800	0.111960063	4.095E-07	2.6444E-06	0.1008398	3.688E-07	2.38175E-06	0.4695792	1.717E-06	1.10911E-05	0.421002	1.54E-06	9.94372E-06	0.5218418	1.909E-06	1.23255E-05
Road 2	2	0800-0900	0.1336065	9.278E-07	5.99179E-06	0.1176067	8.167E-07	5.27425E-06	0.5642981	3.919E-06	2.53068E-05	0.4947906	3.436E-06	2.21896E-05	0.6123973	4.253E-06	2.74639E-05
Road 2	2	0900-1000	0.152460935	8.682E-07	5.60662E-06	0.1356514	7.725E-07	4.98847E-06	0.6589165	3.752E-06	2.42311E-05	0.584854	3.33E-06	2.15075E-05	0.7205054	4.103E-06	2.6496E-05
Road 2	2	1000-1100	0.174745	7.443E-07	4.80652E-06	0.1487613	6.336E-07	4.09181E-06	0.7500515	3.195E-06	2.06308E-05	0.6369849	2.713E-06	1.75208E-05	0.7857462	3.347E-06	2.16126E-05
Road 2	2	1100-1200	0.211343702	8.855E-07	5.71841E-06	0.1809346	7.581E-07	4.89562E-06	0.8669222	3.632E-06	2.34567E-05	0.7410863	3.105E-06	2.00519E-05	0.9220209	3.863E-06	2.49475E-05
Road 2	2	1200-1300	0.162521436	7.073E-07	4.56748E-06	0.1366648	5.947E-07	3.84081E-06	0.7159502	3.116E-06	2.01209E-05	0.6001085	2.612E-06	1.68654E-05	0.7367734	3.206E-06	2.07062E-05
Road 2	2	1300-1400	0.181512955	9.244E-07	5.9695E-06	0.1510886	7.694E-07	4.96892E-06	0.7505114	3.822E-06	2.46824E-05	0.6226745	3.171E-06	2.04782E-05	0.7737631	3.94E-06	2.54471E-05
Road 2	2	1400-1500	0.15883092	5.993E-07	3.87017E-06	0.1321175	4.985E-07	3.21926E-06	0.6871599	2.593E-06	1.67438E-05	0.5702221	2.152E-06	1.38944E-05	0.7023396	2.65E-06	1.71136E-05
Road 2	2	1500-1600	0.195346425	8.094E-07	5.22717E-06	0.1632011	6.762E-07	4.36701E-06	0.7849104	3.252E-06	2.1003E-05	0.6544432	2.712E-06	1.75119E-05	0.8176443	3.388E-06	2.18789E-05
Road 2	2	1600-1700	0.163621233	8.295E-07	5.35663E-06	0.137443	6.968E-07	4.49961E-06	0.6918657	3.507E-06	2.26503E-05	0.5791568	2.936E-06	1.89604E-05	0.7165998	3.633E-06	2.346E-05
Road 2	2	1700-1800	0.122328387	6.145E-07	3.96821E-06	0.1046315	5.256E-07	3.39414E-06	0.4867455	2.445E-06	1.57895E-05	0.414547	2.082E-06	1.34475E-05	0.5191785	2.608E-06	1.68416E-05
Road 2	2	1800-1900	0.12996371	7.461E-07	4.81816E-06	0.1146398	6.581E-07	4.25006E-06	0.5985192	3.436E-06	2.2189E-05	0.5257236	3.018E-06	1.94902E-05	0.6403634	3.676E-06	2.37403E-05
Road 2	2	1900-2000	0.113286265	4.353E-07	2.81121E-06	0.0973196	3.74E-07	2.41499E-06	0.5194093	1.996E-06	1.28892E-05	0.4435839	1.705E-06	1.10076E-05	0.5409034	2.078E-06	1.34226E-05
Road 2	2	2000-2100	0.106692192	3.606E-07	2.32859E-06	0.0951368	3.215E-07	2.07639E-06	0.4471585	1.511E-06	9.75938E-06	0.3965228	1.34E-06	8.65424E-06	0.4916596	1.662E-06	1.07306E-05
Road 2	2	2100-2200	0.084372237	2.969E-07	1.91713E-06	0.0746768	2.628E-07	1.69683E-06	0.3803058	1.338E-06	8.6414E-06	0.3335534	1.174E-06	7.57908E-06	0.4082303	1.436E-06	9.27591E-06
Road 2	2	2200-2300	0.12434824	3.598E-07	2.32358E-06	0.106901	3.093E-07	1.99756E-06	0.529863	1.533E-06	9.90105E-06	0.4528074	1.31E-06	8.46119E-06	0.5597085	1.62E-06	1.04587E-05
Road 2	2	2300-0000	0.109934273	2.799E-07	1.80773E-06	0.096374	2.454E-07	1.58475E-06	0.493091	1.256E-06	8.10826E-06	0.4295098	1.094E-06	7.06274E-06	0.5258838	1.339E-06	8.64749E-06
Road 3	3	0000-0100	0.091924236	3.376E-07	1.31233E-05	0.0822283	3.02E-07	1.17391E-05	0.5016657	1.843E-06	7.16191E-05	0.4469386	1.642E-06	6.38061E-05	0.5291669	1.944E-06	7.55452E-05
Road 3	3	0100-0200	0.068803688	1.556E-07	6.04797E-06	0.0634736	1.436E-07	5.57945E-06	0.3970961	8.981E-07	3.49055E-05	0.3652142	8.26E-07	3.2103E-05	0.4286878	9.695E-07	3.76824E-05
Road 3	3	0200-0300	0.065784545	1.045E-07	4.06011E-06	0.0608639	9.665E-08	3.75642E-06	0.4042816	6.42E-07	2.49516E-05	0.3721616	5.91E-07	2.29692E-05	0.4330256	6.876E-07	2.67256E-05
Road 3	3	0300-0400	0.057045072	6.313E-08	2.45384E-06	0.0519165	5.746E-08	2.23323E-06	0.3064588	3.392E-07	1.31826E-05	0.2774664	3.071E-07	1.19354E-05	0.3293829	3.645E-07	1.41687E-05
Road 3	3	0400-0500	0.075746667	1.349E-07	5.24162E-06	0.0693221	1.234E-07	4.79704E-06	0.4139552	7.37E-07	2.86454E-05	0.3776383	6.723E-07	2.61323E-05	0.4469604	7.958E-07	3.09293E-05
Road 3	3	0500-0600	0.059763374	2.329E-07	9.05357E-06	0.0557744	2.174E-07	8.44929E-06	0.3261705	1.271E-06	4.94117E-05	0.3032041	1.182E-06	4.59325E-05	0.3589786	1.399E-06	5.43818E-05
Road 3	3	0600-0700	0.082542648	5.799E-07	2.25388E-05	0.0751355	5.279E-07	2.05163E-05	0.4084692	2.87E-06	0.000111535	0.3704206	2.602E-06	0.000101146	0.4455561	3.13E-06	0.000121662
Road 3	3	0700-0800	0.069007668	7.925E-07	3.08027E-05	0.063746	7.321E-07	2.84541E-05	0.3556231	4.084E-06	0.000158738	0.3269222	3.754E-06	0.000145927	0.3906682	4.487E-06	0.000174381
Road 3	3	0800-0900	0.079974833	1.269E-06	4.93092E-05	0.0706408	1.121E-06	4.35543E-05	0.3962444	6.286E-06	0.000244308	0.3483693	5.526E-06	0.00021479	0.4190101	6.647E-06	0.000258345
Road 3	3	0900-1000	0.086575126	1.325E-06	5.14897E-05	0.0768533	1.176E-06	4.57077E-05	0.4440601	6.795E-06	0.0002641	0.3929027	6.012E-06	0.000233675	0.469756	7.188E-06	0.000279383
Road 3	3	1000-1100	0.100907667	1.408E-06	5.47296E-05	0.0857671	1.197E-06	4.65177E-05	0.5122289	7.148E-06	0.000277819	0.4337651	6.053E-06	0.000235262	0.5195322	7.25E-06	0.00028178
Road 3	3	1100-1200	0.098580768	1.338E-06	5.19926E-05	0.0856292	1.162E-06	4.51618E-05	0.5136106	6.969E-06	0.000270884	0.4444498	6.031E-06	0.000234408	0.530079	7.193E-06	0.000279569
Road 3	3	1200-1300	0.094699196	1.285E-06	4.99454E-05	0.0802523	1.089E-06	4.23259E-05	0.5043592	6.844E-06	0.000266005	0.425657	5.776E-06	0.000224496	0.5059093	6.865E-06	0.000266822
Road 3	3	1300-1400	0.100044483	1.475E-06	5.73175E-05	0.0853278	1.258E-06	4.8886E-05	0.5128148	7.559E-06	0.000293802	0.4357116	6.423E-06	0.000249628	0.5210394	7.68E-06	0.000298514

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (August) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 3	3	1400-1500	0.093693496	1.389E-06	5.3971E-05	0.0793949	1.177E-06	4.57345E-05	0.4859321	7.202E-06	0.000279915	0.4101798	6.079E-06	0.000236279	0.4895747	7.256E-06	0.000282013
Road 3	3	1500-1600	0.104160011	1.487E-06	5.77923E-05	0.0876401	1.251E-06	4.86264E-05	0.5255492	7.502E-06	0.000291596	0.4404859	6.288E-06	0.0002444	0.528126	7.539E-06	0.000293026
Road 3	3	1600-1700	0.097607802	1.517E-06	5.8964E-05	0.0808338	1.256E-06	4.8831E-05	0.5020149	7.802E-06	0.000303263	0.4136617	6.429E-06	0.000249889	0.4944955	7.686E-06	0.00029872
Road 3	3	1700-1800	0.077158031	1.2E-06	4.66586E-05	0.0647345	1.007E-06	3.91459E-05	0.3967378	6.173E-06	0.000239913	0.3306641	5.145E-06	0.000199957	0.3953986	6.152E-06	0.000239103
Road 3	3	1800-1900	0.069177719	1.128E-06	4.38597E-05	0.0613098	1E-06	3.88713E-05	0.3798306	6.196E-06	0.000240818	0.3341878	5.451E-06	0.00021188	0.3954976	6.451E-06	0.000250751
Road 3	3	1900-2000	0.075689323	9.142E-07	3.55311E-05	0.064922	7.841E-07	3.04765E-05	0.4134936	4.994E-06	0.000194108	0.352179	4.254E-06	0.000165324	0.417101	5.038E-06	0.000195801
Road 3	3	2000-2100	0.067670637	6.99E-07	2.71684E-05	0.0600031	6.198E-07	2.40901E-05	0.3658934	3.779E-06	0.000146899	0.3225096	3.331E-06	0.000129481	0.3825127	3.951E-06	0.000153571
Road 3	3	2100-2200	0.069089525	6.76E-07	2.62737E-05	0.060093	5.88E-07	2.28524E-05	0.386384	3.78E-06	0.000146936	0.3338447	3.266E-06	0.000126956	0.3939377	3.854E-06	0.000149808
Road 3	3	2200-2300	0.075791133	6.759E-07	2.62707E-05	0.0644926	5.751E-07	2.23544E-05	0.4097344	3.654E-06	0.000142022	0.3459951	3.086E-06	0.000119929	0.4104877	3.661E-06	0.000142283
Road 3	3	2300-0000	0.064771928	5.174E-07	2.01092E-05	0.056462	4.51E-07	1.75293E-05	0.3630262	2.9E-06	0.000112706	0.3138064	2.507E-06	9.74249E-05	0.3702684	2.958E-06	0.000114954
Road 4	4	0000-0100	0.234774	1.902E-07	2.03669E-06	0.2097534	1.699E-07	1.81964E-06	1.1954977	9.686E-07	1.03711E-05	1.0679329	8.652E-07	9.26445E-06	1.2776863	1.035E-06	1.10841E-05
Road 4	4	0100-0200	0.221182	1.024E-07	1.09645E-06	0.203925	9.441E-08	1.0109E-06	1.1285205	5.225E-07	5.59432E-06	1.040539	4.817E-07	5.15817E-06	1.244464	5.761E-07	6.16907E-06
Road 4	4	0200-0300	0.236221538	7.109E-08	7.6115E-07	0.2186592	6.58E-08	7.04561E-07	1.1659008	3.508E-07	3.75675E-06	1.0788969	3.247E-07	3.47641E-06	1.2975562	3.905E-07	4.18097E-06
Road 4	4	0300-0400	0.216568571	3.509E-08	3.75752E-07	0.1971743	3.195E-08	3.42102E-07	1.1492714	1.862E-07	1.99401E-06	1.0465671	1.696E-07	1.81582E-06	1.2437414	2.015E-07	2.15792E-06
Road 4	4	0400-0500	0.220861429	7.158E-08	7.664E-07	0.2019521	6.545E-08	7.00784E-07	1.0903607	3.534E-07	3.7836E-06	0.9971693	3.232E-07	3.46023E-06	1.1991214	3.886E-07	4.16101E-06
Road 4	4	0500-0600	0.199623333	1.109E-07	1.18749E-06	0.1863279	1.035E-07	1.1084E-06	0.9451683	5.251E-07	5.62248E-06	0.8819271	4.9E-07	5.24628E-06	1.068255	5.935E-07	6.35468E-06
Road 4	4	0600-0700	0.223249615	2.687E-07	2.87741E-06	0.2031519	2.445E-07	2.61837E-06	1.0649819	1.282E-06	1.37263E-05	0.9687271	1.166E-06	1.24857E-05	1.171879	1.411E-06	1.51041E-05
Road 4	4	0700-0800	0.227942065	4.854E-07	5.1978E-06	0.2105595	4.484E-07	4.80142E-06	1.1332855	2.413E-06	2.58425E-05	1.0462479	2.228E-06	2.38578E-05	1.2568074	2.677E-06	2.86592E-05
Road 4	4	0800-0900	0.244204379	8.649E-07	9.26088E-06	0.2155023	7.632E-07	8.17242E-06	1.2177433	4.313E-06	4.61801E-05	1.074241	3.805E-06	4.07381E-05	1.2897433	4.568E-06	4.89105E-05
Road 4	4	0900-1000	0.250660608	8.587E-07	9.19508E-06	0.2220892	7.609E-07	8.14698E-06	1.1808973	4.046E-06	4.33193E-05	1.0457082	3.583E-06	3.83601E-05	1.2677974	4.343E-06	4.65071E-05
Road 4	4	1000-1100	0.289547483	9.585E-07	1.02627E-05	0.2457632	8.135E-07	8.71085E-06	1.3672229	4.526E-06	4.84599E-05	1.1600867	3.84E-06	4.11182E-05	1.4058499	4.654E-06	4.9829E-05
Road 4	4	1100-1200	0.26790529	9.612E-07	1.02925E-05	0.2324266	8.339E-07	8.92946E-06	1.2568127	4.509E-06	4.82847E-05	1.0900343	3.911E-06	4.18774E-05	1.3224609	4.745E-06	5.08068E-05
Road 4	4	1200-1300	0.278907347	9.491E-07	1.01621E-05	0.236035	8.032E-07	8.60005E-06	1.3687118	4.657E-06	4.98697E-05	1.1576307	3.939E-06	4.21789E-05	1.3936656	4.742E-06	5.07789E-05
Road 4	4	1300-1400	0.28460906	9.816E-07	1.0511E-05	0.2424783	8.363E-07	8.95502E-06	1.3638136	4.704E-06	5.03673E-05	1.161306	4.005E-06	4.28885E-05	1.4037842	4.842E-06	5.18435E-05
Road 4	4	1400-1500	0.262410942	8.383E-07	8.9757E-06	0.2220805	7.094E-07	7.59621E-06	1.3002988	4.154E-06	4.44764E-05	1.0995006	3.512E-06	3.76082E-05	1.3215811	4.222E-06	4.52044E-05
Road 4	4	1500-1600	0.292459516	8.395E-07	8.98866E-06	0.2456204	7.05E-07	7.54907E-06	1.4000238	4.019E-06	4.30293E-05	1.1753145	3.374E-06	3.6123E-05	1.4209349	4.079E-06	4.3672E-05
Road 4	4	1600-1700	0.273222177	7.842E-07	8.39741E-06	0.2258947	6.484E-07	6.94281E-06	1.3224862	3.796E-06	4.06462E-05	1.0927682	3.137E-06	3.35859E-05	1.3186629	3.785E-06	4.05287E-05
Road 4	4	1700-1800	0.258954365	7.553E-07	8.08726E-06	0.2172088	6.335E-07	6.78353E-06	1.2742887	3.717E-06	3.97966E-05	1.06784	3.115E-06	3.33491E-05	1.2850488	3.748E-06	4.01326E-05
Road 4	4	1800-1900	0.271200755	6.654E-07	7.12532E-06	0.2402694	5.896E-07	6.31265E-06	1.3530499	3.32E-06	3.5549E-05	1.1984365	2.941E-06	3.14868E-05	1.4387059	3.53E-06	3.77994E-05
Road 4	4	1900-2000	0.25098473	4.299E-07	4.60348E-06	0.2153753	3.689E-07	3.95035E-06	1.2461796	2.135E-06	2.2857E-05	1.0686746	1.831E-06	1.96013E-05	1.2840499	2.2E-06	2.35516E-05
Road 4	4	2000-2100	0.211213673	2.396E-07	2.56523E-06	0.187211	2.123E-07	2.27371E-06	1.0535592	1.195E-06	1.27957E-05	0.9330753	1.058E-06	1.13324E-05	1.1202863	1.271E-06	1.36061E-05
Road 4	4	2100-2200	0.18283027	1.566E-07	1.67671E-06	0.1592843	1.364E-07	1.46077E-06	0.9285462	7.953E-07	8.51555E-06	0.8077749	6.918E-07	7.40798E-06	0.9670592	8.283E-07	8.86875E-06
Road 4	4	2200-2300	0.250171429	3.648E-07	3.90648E-06	0.2128851	3.105E-07	3.32425E-06	1.2264692	1.789E-06	1.91516E-05	1.0431513	1.521E-06	1.6289E-05	1.2560363	1.832E-06	1.96133E-05
Road 4	4	2300-0000	0.224651667	2.496E-07	2.67275E-06	0.1957731	2.175E-07	2.32917E-06	1.1303204	1.256E-06	1.34478E-05	0.9844971	1.094E-06	1.17129E-05	1.1802702	1.311E-06	1.4042E-05
Road 5	5	0000-0100	0.078474767	2.843E-07	3.84417E-06	0.0702177	2.544E-07	3.43968E-06	0.4293322	1.555E-06	2.10313E-05	0.3820977	1.384E-06	1.87174E-05	0.4523154	1.638E-06	2.21571E-05
Road 5	5	0100-0200	0.052977355	1.203E-07	1.62701E-06	0.048886	1.11E-07	1.50136E-06	0.3166588	7.191E-07	9.72505E-06	0.2908896	6.606E-07	8.93364E-06	0.3397755	7.716E-07	1.0435E-05
Road 5	5	0200-0300	0.049070581	7.921E-08	1.07111E-06	0.0453973	7.328E-08	9.90931E-07	0.3271253	5.28E-07	7.14048E-06	0.30046	4.85E-07	6.55843E-06	0.3458573	5.583E-07	7.54936E-06
Road 5	5	0300-0400	0.045472581	5.291E-08	7.15577E-07	0.0413708	4.814E-08	6.51029E-07	0.2393905	2.786E-07	3.76715E-06	0.2162066	2.516E-07	3.40232E-06	0.2575774	2.997E-07	4.05335E-06
Road 5	5	0400-0500	0.062887835	1.145E-07	1.54829E-06	0.0575658	1.048E-07	1.41726E-06	0.3502282	6.376E-07	8.62259E-06	0.319229	5.812E-07	7.85939E-06	0.3767947	6.86E-07	9.27666E-06
Road 5	5	0500-0600	0.049317202	2.018E-07	2.72879E-06	0.0460209	1.883E-07	2.5464E-06	0.277493	1.135E-06	1.53541E-05	0.2576526	1.054E-06	1.42563E-05	0.3036735	1.243E-06	1.68027E-05
Road 5	5	0600-0700	0.072589766	5.245E-07	7.09334E-06	0.0660791	4.775E-07	6.45713E-06	0.3571143	2.58E-06	3.48966E-05	0.3235597	2.338E-06	3.16177E-05	0.3896388	2.816E-06	3.80748E-05
Road 5	5	0700-0800	0.056764215	6.648E-07	8.9903E-06	0.0524319	6.141E-07	8.30415E-06	0.2899131	3.395E-06	4.59163E-05	0.266086	3.116E-06	4.21426E-05	0.3185179	3.73E-06	5.04468E-05
Road 5	5	0800-0900	0.064350179	1.01E-06	1.36543E-05	0.0568497	8.92E-07	1.20628E-05	0.310755	4.876E-06	6.59385E-05	0.272805	4.28E-06	5.7886E-05	0.3296547	5.173E-06	6.99488E-05
Road 5	5	0900-1000	0.070591955	1.071E-06	1.44771E-05	0.0627339	9.514E-07	1.28656E-05	0.3700585	5.612E-06	7.58921E-05	0.3273169	4.964E-06	6.71266E-05	0.3900508	5.915E-06	7.99922E-05
Road 5	5	1000-1100	0.082891722	1.129E-06	1.52743E-05	0.0705229	9.61E-07	1.29952E-05	0.4272326	5.822E-06	7.87256E-05	0.3614627	4.925E-06	6.66062E-05	0.4319856	5.886E-06	7.96014E-05
Road 5	5	1100-1200	0.080837565	1.047E-06	1.41572E-05	0.0702733	9.101E-07	1.23071E-05	0.433386	5.613E-06	7.58995E-05	0.374637	4.852E-06	6.56107E-05	0.4449103	5.762E-06	7.79178E-05
Road 5	5	1200-1300	0.077025508	1.011E-06	1.36655E-05	0.0653091	8.568E-07	1.15869E-05	0.4157103	5.454E-06	7.37535E-05	0.3505003	4.598E-06	6.21843E-05	0.4158094	5.455E-06	7.37711E-05
Road 5	5	1300-1400	0.082554576	1.188E-06	1.60713E-05	0.0704769	1.015E-06	1.37201E-05	0.4290715	6.177E-06	8.35295E-05	0.3642195	5.243E-06	7.09044E-05	0.4346964	6.258E-06	8.46245E-05
Road 5	5	1400-1500	0.079456247	1.172E-06	1.58513E-05	0.0673841	9.941E-07	1.34429E-05	0.4127339	6.089E-06	8.23394E-05	0.3481551	5.136E-06	6.94561E-05	0.4155392	6.13E-06	8.2899E-05
Road 5	5	1500-1600	0.088870641	1.276E-06	1.72558E-05	0.0748184	1.074E-06	1.45273E-05	0.4508843	6.474E-06	8.7547E-05	0.377707	5.423E-06	7.33384E-05	0.4525255	6.497E-06	8.78657E-05
Road 5	5	1600-1700	0.083369145	1.318E-06	1.78169E-05	0.0690589	1.091E-06	1.47587E-05	0.4326329	6.837E-06	9.24584E-05	0.3561776	5.629E-06	7.61191E-05	0.4252365	6.72E-06	9.08777E-05
Road 5	5	1700-1800	0.061517002	9.745E-07	1.31781E-05	0.0516258	8.178E-07	1.10592E-05	0.3174495	5.029E-06	6.80036E-05	0.2639864	4.182E-06	5.65508E-05	0.3156122	5E-06	6.761E-05
Road 5	5	1800-1900	0.054791319	9.358E-07	1.26552E-05	0.0485639	8.295E-07	1.12168E-05	0.3069189	5.242E-06	7.08892E-05	0.269393	4.601E-06	6.22218E-05	0.3179569	5.431E-06	7.34386E-05
Road 5	5	1900-2000	0.064832393	8.238E-07	1.11403E-05	0.055621	7.067E-07	9.55745E-06	0.3598619	4.573E-06	6.18357E-05	0.3059495	3.888E-06	5.25719E-05	0.3615705	4.594E-06	6.21293E-05
Road 5	5	2000-2100	0.05996229	6.685E-07	9.04023E-06	0.0531734	5.928E-07	8.0167E-06	0.3263191	3.638E-06	4.91976E-05	0.2873429	3.203E-06	4.33213E-05	0.3405163	3.796E-06	5.1338E-05
Road 5	5	2100-2200	0.064799685	6.945E-07	9.39126E-06	0.0563468	6.039E-07	8.16621E-06	0.3645676	3.907E-06	5.28359E-05	0.3146915	3.373E-06	4.56075E-05	0.3710383	3.976E-06	5.37737E-05
Road 5	5	2200-2300	0.063899207	5.901E-07	7.9795E-06	0.054374	5.021E-07	6.79002E-06	0.3513789	3.245E-06	4.38789E-05	0.2960575	2.734E-06	3.69706E-05	0.3504315	3.236E-06	4.37606E-05
Road 5	5	2300-0000	0.054631049	4.594E-07	6.21201E-06	0.0476179	4.004E-07	5.41456E-06	0.311558	2.62E-06	3.54268E-05	0.268702	2.259E-06	3.05537E-05	0.31632	2.66E-06	3.59683E-05
Road 6	6	0000-0100	0.047579459	1.322E-07	4.72437E-06	0.0425172	1.181E-07	4.22172E-06	0.2961505	8.226E-07	2.94061E-05	0.2620834	7.28E-07	2.60234E-05	0.3046007	8.461E-07	3.02451E-05
Road 6	6	0100-0200	0.061650177	1.308E-07	4.67386E-06	0.0568739	1.206E-07	4.31175E-06	0.3407608	7.227E-07	2.58339E-05	0.3126808	6.632E-07	2.37051E-05	0.3695547	7.838E-07	2.80169E-05
Road 6	6	0200-0300	0.055960506	8.297E-08	2.966E-06	0.0518334	7.686E-08	2.74726E-06	0.3099619	4.596E-07	1.64285E-05	0.2853763	4.231E-07	1.51254E-05	0.3372097	5E-07	1.78727E-05
Road 6	6	0300-0400	0.057248548	6.662E-08	2.38133E-06	0.0522503	6.08E-08	2.17342E-06	0.3572166	4.157E-07	1.48589E-05	0.3242402	3.773E-07	1.34872E-05	0.3764905	4.381E-07	1.56606E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (August) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 6	6	0400-0500	0.061725333	1.043E-07	3.72708E-06	0.056512	9.546E-08	3.41229E-06	0.3531289	5.965E-07	2.13225E-05	0.3214868	5.431E-07	1.94119E-05	0.3779988	6.385E-07	2.28242E-05
Road 6	6	0500-0600	0.054486211	1.646E-07	5.88539E-06	0.0508871	1.538E-07	5.49662E-06	0.3195802	9.657E-07	3.45198E-05	0.2969255	8.972E-07	3.20727E-05	0.3478125	1.051E-06	3.75694E-05
Road 6	6	0600-0700	0.058659477	3.16E-07	1.12949E-05	0.0534315	2.878E-07	1.02883E-05	0.354186	1.908E-06	6.81987E-05	0.3204057	1.726E-06	6.16943E-05	0.3738372	2.014E-06	7.19825E-05
Road 6	6	0700-0800	0.056240175	4.813E-07	1.72058E-05	0.0519651	4.447E-07	1.58979E-05	0.3106692	2.659E-06	9.50442E-05	0.2851415	2.44E-06	8.72344E-05	0.3371067	2.885E-06	0.000103132
Road 6	6	0800-0900	0.050233914	6.166E-07	2.20413E-05	0.0443513	5.444E-07	1.94602E-05	0.2898083	3.557E-06	0.00012716	0.2531756	3.108E-06	0.000111087	0.2975269	3.652E-06	0.000130547
Road 6	6	0900-1000	0.052360939	6.172E-07	2.20612E-05	0.0464479	5.475E-07	1.95699E-05	0.2890575	3.407E-06	0.000121789	0.2539161	2.993E-06	0.000106982	0.300364	3.54E-06	0.000126552
Road 6	6	1000-1100	0.072828891	7.272E-07	2.59943E-05	0.0618675	6.177E-07	2.20819E-05	0.3942612	3.937E-06	0.000140721	0.3323865	3.319E-06	0.000118636	0.394254	3.937E-06	0.000140718
Road 6	6	1100-1200	0.082525152	8.178E-07	2.92336E-05	0.0717514	7.11E-07	2.54172E-05	0.4262787	4.224E-06	0.000151005	0.3684839	3.652E-06	0.000130531	0.4402353	4.363E-06	0.000155949
Road 6	6	1200-1300	0.081710988	7.913E-07	2.82874E-05	0.0693138	6.713E-07	2.39956E-05	0.4017529	3.891E-06	0.000139082	0.33918	3.285E-06	0.00011742	0.4084938	3.956E-06	0.000141416
Road 6	6	1300-1400	0.094682408	9.152E-07	3.27144E-05	0.0808014	7.81E-07	2.79183E-05	0.4742286	4.584E-06	0.000163854	0.4025604	3.891E-06	0.000139092	0.4833618	4.672E-06	0.00016701
Road 6	6	1400-1500	0.090935282	9.694E-07	3.46532E-05	0.0770862	8.218E-07	2.93757E-05	0.4523443	4.822E-06	0.000172377	0.381422	4.066E-06	0.000145351	0.4585082	4.888E-06	0.000174726
Road 6	6	1500-1600	0.079855135	8.318E-07	2.97343E-05	0.0671937	6.999E-07	2.50198E-05	0.4055497	4.224E-06	0.000151008	0.33907	3.532E-06	0.000126254	0.4062636	4.232E-06	0.000151274
Road 6	6	1600-1700	0.083512711	8.903E-07	3.18246E-05	0.0691848	7.376E-07	2.63646E-05	0.4058426	4.327E-06	0.000154657	0.3340964	3.562E-06	0.000127316	0.4032812	4.299E-06	0.000153681
Road 6	6	1700-1800	0.061659249	6.932E-07	2.47792E-05	0.0517616	5.819E-07	2.08016E-05	0.3080517	3.463E-06	0.000123798	0.2564077	2.883E-06	0.000103043	0.3081693	3.465E-06	0.000123845
Road 6	6	1800-1900	0.057558726	7.378E-07	2.63751E-05	0.0509709	6.534E-07	2.33564E-05	0.296068	3.795E-06	0.000135667	0.260211	3.336E-06	0.000119236	0.3111819	3.989E-06	0.000142593
Road 6	6	1900-2000	0.070013973	6.846E-07	2.44729E-05	0.0600276	5.87E-07	2.09822E-05	0.3600873	3.521E-06	0.000125866	0.3058315	2.991E-06	0.000106901	0.3658591	3.578E-06	0.000127883
Road 6	6	2000-2100	0.053655244	4.129E-07	1.47591E-05	0.0475308	3.658E-07	1.30744E-05	0.2984182	2.296E-06	8.20865E-05	0.2622057	2.018E-06	7.21254E-05	0.3097364	2.383E-06	8.51998E-05
Road 6	6	2100-2200	0.077584354	5.184E-07	1.85305E-05	0.0674769	4.509E-07	1.61164E-05	0.4005272	2.676E-06	9.56631E-05	0.3460922	2.312E-06	8.26617E-05	0.413569	2.763E-06	9.87781E-05
Road 6	6	2200-2300	0.059526207	4.212E-07	1.50561E-05	0.0506001	3.58E-07	1.27984E-05	0.3266086	2.311E-06	8.26098E-05	0.2735133	1.935E-06	6.91803E-05	0.3241135	2.293E-06	8.19787E-05
Road 6	6	2300-0000	0.038568503	2.563E-07	9.16007E-06	0.0336255	2.234E-07	7.98611E-06	0.2339337	1.554E-06	5.55595E-05	0.2013027	1.337E-06	4.78096E-05	0.2349282	1.561E-06	5.57957E-05
Road 7	7	0000-0100	0.068348429	1.826E-07	4.55798E-06	0.0610933	1.632E-07	4.07415E-06	0.4003056	1.069E-06	2.66953E-05	0.3557309	9.503E-07	2.37228E-05	0.4168242	1.114E-06	2.77969E-05
Road 7	7	0100-0200	0.082201228	1.707E-07	4.2603E-06	0.0750277	1.558E-07	3.88851E-06	0.4486576	9.315E-07	2.32529E-05	0.4080062	8.471E-07	2.1146E-05	0.4830339	1.003E-06	2.50345E-05
Road 7	7	0200-0300	0.070411809	9.609E-08	2.39883E-06	0.0647211	8.833E-08	2.20495E-06	0.3934598	5.37E-07	1.34046E-05	0.3601046	4.915E-07	1.22682E-05	0.4248257	5.798E-07	1.44732E-05
Road 7	7	0300-0400	0.071959329	7.94E-08	1.9821E-06	0.0655603	7.234E-08	1.80584E-06	0.4303173	4.748E-07	1.1853E-05	0.3905049	4.309E-07	1.07564E-05	0.4560651	5.032E-07	1.25622E-05
Road 7	7	0400-0500	0.07872283	1.269E-07	3.16701E-06	0.0724541	1.168E-07	2.91482E-06	0.4346709	7.005E-07	1.74868E-05	0.3986271	6.424E-07	1.60367E-05	0.4710812	7.592E-07	1.89515E-05
Road 7	7	0500-0600	0.070719099	2.012E-07	5.02364E-06	0.0660605	1.88E-07	4.69271E-06	0.3945461	1.123E-06	2.80272E-05	0.367223	1.045E-06	2.60862E-05	0.4332835	1.233E-06	3.0779E-05
Road 7	7	0600-0700	0.074744375	3.798E-07	9.48139E-06	0.0680983	3.46E-07	8.63833E-06	0.4254559	2.162E-06	5.39695E-05	0.3857458	1.96E-06	4.89322E-05	0.4538441	2.306E-06	5.75706E-05
Road 7	7	0700-0800	0.072865565	5.924E-07	1.47889E-05	0.0667426	5.426E-07	1.35462E-05	0.3914488	3.183E-06	7.9449E-05	0.3567865	2.901E-06	7.24139E-05	0.4235291	3.443E-06	8.59601E-05
Road 7	7	0800-0900	0.07578539	9.309E-07	2.32371E-05	0.0668409	8.21E-07	2.04945E-05	0.4107685	5.045E-06	0.000125949	0.3601677	4.424E-06	0.000110433	0.4270085	5.245E-06	0.000130928
Road 7	7	0900-1000	0.07738756	8.831E-07	2.20455E-05	0.0686799	7.837E-07	1.95649E-05	0.4035904	4.606E-06	0.000114971	0.3562328	4.065E-06	0.00010148	0.4249127	4.849E-06	0.000121045
Road 7	7	1000-1100	0.094775577	9.481E-07	2.36669E-05	0.0805566	8.058E-07	2.01162E-05	0.4984982	4.987E-06	0.000124483	0.4215587	4.217E-06	0.00010527	0.5021154	5.023E-06	0.000125386
Road 7	7	1100-1200	0.103456837	1.03E-06	2.57223E-05	0.0894294	8.907E-07	2.22346E-05	0.5340037	5.319E-06	0.000132768	0.4599605	4.581E-06	0.000114359	0.5493899	5.472E-06	0.000136594
Road 7	7	1200-1300	0.103669559	1.031E-06	2.57376E-05	0.0876134	8.713E-07	2.17514E-05	0.523036	5.202E-06	0.000129852	0.4408087	4.384E-06	0.000109438	0.5284221	5.255E-06	0.000131189
Road 7	7	1300-1400	0.111011945	1.088E-06	2.71581E-05	0.0939058	9.203E-07	2.29732E-05	0.5586344	5.475E-06	0.000136665	0.4708874	4.615E-06	0.000115198	0.5647932	5.535E-06	0.000138172
Road 7	7	1400-1500	0.104499751	1.074E-06	2.68148E-05	0.0879811	9.044E-07	2.25761E-05	0.5317556	5.466E-06	0.000136449	0.4460019	4.585E-06	0.000114445	0.533983	5.489E-06	0.000137021
Road 7	7	1500-1600	0.096371484	9.682E-07	2.41702E-05	0.0808595	8.124E-07	2.02798E-05	0.4940632	4.964E-06	0.000123912	0.4126898	4.146E-06	0.000103504	0.4935493	4.959E-06	0.000123783
Road 7	7	1600-1700	0.099682324	1.036E-06	2.58676E-05	0.0829666	8.625E-07	2.15299E-05	0.4928481	5.123E-06	0.000127894	0.4082982	4.244E-06	0.000105954	0.4912649	5.107E-06	0.000127484
Road 7	7	1700-1800	0.076332715	8.412E-07	2.0998E-05	0.0645161	7.109E-07	1.77474E-05	0.390915	4.308E-06	0.000107535	0.3282378	3.617E-06	9.02934E-05	0.3927539	4.328E-06	0.000108041
Road 7	7	1800-1900	0.067397679	7.711E-07	1.92485E-05	0.0595945	6.818E-07	1.70199E-05	0.3519894	4.027E-06	0.000100527	0.3094252	3.54E-06	8.83705E-05	0.3690197	4.222E-06	0.00010539
Road 7	7	1900-2000	0.080376541	6.967E-07	1.73912E-05	0.068973	5.978E-07	1.49238E-05	0.4214953	3.653E-06	9.11996E-05	0.3591427	3.113E-06	7.77082E-05	0.4281157	3.711E-06	9.2632E-05
Road 7	7	2000-2100	0.071143955	5.041E-07	1.2583E-05	0.063186	4.477E-07	1.11755E-05	0.3814766	2.703E-06	6.74704E-05	0.336848	2.387E-06	5.95771E-05	0.400034	2.834E-06	7.07526E-05
Road 7	7	2100-2200	0.084669259	5.04E-07	1.25816E-05	0.0741071	4.411E-07	1.10121E-05	0.4437007	2.641E-06	6.59325E-05	0.3863247	2.3E-06	5.74066E-05	0.4604318	2.741E-06	6.84187E-05
Road 7	7	2200-2300	0.072950525	4.681E-07	1.16863E-05	0.0622593	3.995E-07	9.9736E-06	0.395543	2.538E-06	6.33639E-05	0.3339947	2.143E-06	5.35042E-05	0.396254	2.543E-06	6.34778E-05
Road 7	7	2300-0000	0.048900393	2.89E-07	7.21327E-06	0.0427305	2.525E-07	6.30315E-06	0.287327	1.698E-06	4.23835E-05	0.248694	1.47E-06	3.66847E-05	0.2914245	1.722E-06	4.29879E-05
Road 8	8	0000-0100	0.206341667	1.501E-07	2.47379E-06	0.1843667	1.341E-07	2.21034E-06	1.0537136	7.663E-07	1.26328E-05	0.9409703	6.843E-07	1.12811E-05	1.1253369	8.184E-07	1.34915E-05
Road 8	8	0100-0200	0.213152667	1.292E-07	2.12954E-06	0.196547	1.191E-07	1.96364E-06	1.0843533	6.572E-07	1.08334E-05	0.99989	6.06E-07	9.98958E-06	1.196437	7.251E-07	1.19532E-05
Road 8	8	0200-0300	0.199296	6.039E-08	9.95551E-07	0.1845493	5.592E-08	9.21887E-07	1.0679493	3.236E-07	5.33477E-06	0.9885107	2.995E-07	4.93795E-06	1.17306	3.555E-07	5.85983E-06
Road 8	8	0300-0400	0.183607143	5.193E-08	8.56035E-07	0.1673529	4.733E-08	7.80252E-07	0.9594164	2.714E-07	4.4731E-06	0.8743814	2.473E-07	4.07664E-06	1.0417343	2.946E-07	4.8569E-06
Road 8	8	0400-0500	0.206262381	8.751E-08	1.44249E-06	0.18866	8.004E-08	1.31939E-06	1.0183162	4.32E-07	7.12157E-06	0.9315119	3.952E-07	6.51451E-06	1.1201719	4.752E-07	7.8339E-06
Road 8	8	0500-0600	0.192178529	1.32E-07	2.17599E-06	0.1794276	1.232E-07	2.03162E-06	0.9308224	6.394E-07	1.05395E-05	0.8688221	5.968E-07	9.83747E-06	1.0482497	7.2E-07	1.18691E-05
Road 8	8	0600-0700	0.216369032	2.71E-07	4.46746E-06	0.1970002	2.467E-07	4.06754E-06	1.0356389	1.297E-06	2.13833E-05	0.9423661	1.18E-06	1.94574E-05	1.1393663	1.427E-06	2.3525E-05
Road 8	8	0700-0800	0.220096238	4.491E-07	7.403E-06	0.203346	4.149E-07	6.8396E-06	1.0652922	2.174E-06	3.58314E-05	0.9838236	2.007E-06	3.30912E-05	1.1871696	2.422E-06	3.99308E-05
Road 8	8	0800-0900	0.254438684	9.766E-07	1.60994E-05	0.2246917	8.625E-07	1.42172E-05	1.2361836	4.745E-06	7.82187E-05	1.0910504	4.188E-06	6.90355E-05	1.3157422	5.05E-06	8.32527E-05
Road 8	8	0900-1000	0.27122707	8.603E-07	1.4181E-05	0.2403711	7.624E-07	1.25677E-05	1.2544548	3.979E-06	6.55886E-05	1.1116039	3.526E-06	5.81197E-05	1.351975	4.288E-06	7.06874E-05
Road 8	8	1000-1100	0.269859051	8.614E-07	1.41993E-05	0.2290925	7.312E-07	1.20543E-05	1.280442	4.087E-06	6.73738E-05	1.0860751	3.467E-06	5.71467E-05	1.3151676	4.198E-06	6.92009E-05
Road 8	8	1100-1200	0.275080692	8.836E-07	1.45657E-05	0.2386321	7.665E-07	1.26357E-05	1.3244371	4.254E-06	7.01298E-05	1.1487164	3.69E-06	6.08252E-05	1.3873484	4.456E-06	7.34609E-05
Road 8	8	1200-1300	0.283407219	9.676E-07	1.59504E-05	0.2397888	8.187E-07	1.34955E-05	1.3782748	4.706E-06	7.75705E-05	1.1658125	3.98E-06	6.56129E-05	1.4056014	4.799E-06	7.91084E-05
Road 8	8	1300-1400	0.257785375	8.332E-07	1.37357E-05	0.2196789	7.101E-07	1.17053E-05	1.2309634	3.979E-06	6.55902E-05	1.048424	3.389E-06	5.58638E-05	1.2681029	4.099E-06	6.75691E-05
Road 8	8	1400-1500	0.252699209	7.096E-07	1.16975E-05	0.2138919	6.006E-07	9.90109E-06	1.2638594	3.549E-06	5.85043E-05	1.0691306	3.002E-06	4.94902E-05	1.2830225	3.603E-06	5.93913E-05
Road 8	8	1500-1600	0.258785255	7.162E-07	1.18068E-05	0.2172937	6.014E-07	9.91383E-06	1.25921	3.485E-06	5.74503E-05	1.0564552	2.924E-06	4.81998E-05	1.2737489	3.525E-06	5.81137E-05
Road 8	8	1600-1700	0.259826781	7.664E-07	1.26331E-05	0.2148195	6.336E-07	1.04448E-05	1.2489473	3.684E-06	6.07255E-05	1.0318245	3.043E-06	5.01687E-05	1.246644	3.677E-06	6.06135E-05
Road 8	8	1700-1800	0.210028333	6.619E-07	1.09113E-05	0.1761058	5.55E-07	9.14897E-06	1.0538662	3.321E-06	5.475E-05	0.8821013	2.78E-06	4.58265E-05	1.0582071	3.335E-06	5.49755E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (August) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 8	8	1800-1900	0.200066822	4.325E-07	7.12907E-06	0.1773603	3.834E-07	6.31996E-06	1.0269048	2.22E-06	3.65921E-05	0.9095012	1.966E-06	3.24086E-05	1.0868615	2.349E-06	3.87286E-05
Road 8	8	1900-2000	0.204034935	3.174E-07	5.23202E-06	0.1750795	2.723E-07	4.48952E-06	1.07409	1.671E-06	2.75426E-05	0.921483	1.433E-06	2.36294E-05	1.0965625	1.706E-06	2.81189E-05
Road 8	8	2000-2100	0.215586974	3.31E-07	5.45645E-06	0.1910771	2.934E-07	4.83611E-06	1.0305275	1.582E-06	2.60824E-05	0.9127926	1.401E-06	2.31025E-05	1.1038697	1.695E-06	2.79386E-05
Road 8	8	2100-2200	0.183942264	1.969E-07	3.24662E-06	0.1601389	1.715E-07	2.82648E-06	0.9658643	1.034E-06	1.70477E-05	0.8394191	8.988E-07	1.48159E-05	0.9995579	1.07E-06	1.76424E-05
Road 8	8	2200-2300	0.2267425	2.932E-07	4.83267E-06	0.1929577	2.495E-07	4.11259E-06	1.1229908	1.452E-06	2.39348E-05	0.9546473	1.234E-06	2.03468E-05	1.147605	1.484E-06	2.44594E-05
Road 8	8	2300-0000	0.175789231	1.847E-07	3.04417E-06	0.1532983	1.61E-07	2.65469E-06	0.9046894	9.504E-07	1.56667E-05	0.7882406	8.281E-07	1.36501E-05	0.9415388	9.891E-07	1.63048E-05
Road 9	9	0000-0100	0.181963779	4.833E-08	1.44259E-06	0.1661775	4.413E-08	1.31744E-06	0.8271113	2.197E-07	6.55726E-06	0.7516998	1.996E-07	5.95941E-06	0.9178773	2.438E-07	7.27685E-06
Road 9	9	0100-0200	0.197759337	4.127E-08	1.23186E-06	0.1843136	3.846E-08	1.1481E-06	0.8490049	1.772E-07	5.28851E-06	0.7878821	1.644E-07	4.90778E-06	0.9721957	2.029E-07	6.05588E-06
Road 9	9	0200-0300	0.075641998	7.175E-09	2.14172E-07	0.0700353	6.643E-09	1.98298E-07	0.5417488	5.138E-08	1.53391E-06	0.5036505	4.777E-08	1.42603E-06	0.5736859	5.441E-08	1.62433E-06
Road 9	9	0300-0400	0.092527766	7.021E-09	2.09586E-07	0.0846721	6.425E-09	1.91792E-07	0.574613	4.36E-08	1.30157E-06	0.5269838	3.999E-08	1.19368E-06	0.611656	4.641E-08	1.38547E-06
Road 9	9	0400-0500	0.210294412	3.989E-08	1.19085E-06	0.1966825	3.731E-08	1.11377E-06	0.867728	1.646E-07	4.91376E-06	0.8085829	1.534E-07	4.57884E-06	1.0052653	1.907E-07	5.69261E-06
Road 9	9	0500-0600	0.149168875	4.81E-08	1.43601E-06	0.1413381	4.558E-08	1.36063E-06	0.7547066	2.434E-07	7.26537E-06	0.7166321	2.311E-07	6.89884E-06	0.8579702	2.767E-07	8.25946E-06
Road 9	9	0600-0700	0.177043865	1.075E-07	3.2082E-06	0.1650584	1.002E-07	2.99101E-06	0.9275043	5.63E-07	1.68072E-05	0.8667638	5.262E-07	1.57066E-05	1.0318222	6.263E-07	1.86976E-05
Road 9	9	0700-0800	0.15552097	1.416E-07	4.22728E-06	0.1465929	1.335E-07	3.9846E-06	0.8927581	8.129E-07	2.42664E-05	0.8440131	7.685E-07	2.29415E-05	0.9906061	9.02E-07	2.69261E-05
Road 9	9	0800-0900	0.24417756	5.327E-07	1.59014E-05	0.2212025	4.826E-07	1.44052E-05	1.1827183	2.58E-06	7.70211E-05	1.0673617	2.328E-06	6.95089E-05	1.2885642	2.811E-06	8.3914E-05
Road 9	9	0900-1000	0.251969861	4.111E-07	1.22709E-05	0.2308131	3.765E-07	1.12406E-05	1.1098305	1.811E-06	5.40488E-05	1.0134267	1.653E-06	4.93539E-05	1.2442398	2.03E-06	6.05945E-05
Road 9	9	1000-1100	0.269162101	3.625E-07	1.08219E-05	0.2347482	3.162E-07	9.43825E-06	1.162393	1.566E-06	4.6735E-05	1.0110186	1.362E-06	4.06488E-05	1.2457668	1.678E-06	5.00871E-05
Road 9	9	1100-1200	0.18608668	2.612E-07	7.7979E-06	0.1627011	2.284E-07	6.81794E-06	1.0008559	1.405E-06	4.19405E-05	0.8855037	1.243E-06	3.71067E-05	1.0482048	1.471E-06	4.39247E-05
Road 9	9	1200-1300	0.283582953	3.927E-07	1.17229E-05	0.250508	3.469E-07	1.03556E-05	1.3115155	1.816E-06	5.42159E-05	1.161112	1.608E-06	4.79985E-05	1.41162	1.955E-06	5.83541E-05
Road 9	9	1300-1400	0.318918025	3.63E-07	1.08358E-05	0.2818554	3.208E-07	9.57653E-06	1.2297383	1.4E-06	4.17825E-05	1.0796739	1.229E-06	3.66838E-05	1.3615293	1.55E-06	4.62604E-05
Road 9	9	1400-1500	0.207702066	2.679E-07	7.99798E-06	0.1844669	2.38E-07	7.10327E-06	1.0279981	1.326E-06	3.95851E-05	0.906961	1.17E-06	3.49243E-05	1.091428	1.408E-06	4.20276E-05
Road 9	9	1500-1600	0.172796866	1.868E-07	5.57752E-06	0.1509082	1.632E-07	4.871E-06	0.9140362	9.883E-07	2.95032E-05	0.8029846	8.682E-07	2.59187E-05	0.9538929	1.031E-06	3.07897E-05
Road 9	9	1600-1700	0.17955192	2.691E-07	8.03245E-06	0.1585631	2.376E-07	7.09349E-06	1.0219313	1.531E-06	4.57172E-05	0.9019388	1.352E-06	4.03492E-05	1.060502	1.589E-06	4.74427E-05
Road 9	9	1700-1800	0.156057335	2.013E-07	6.0093E-06	0.1406376	1.814E-07	5.41553E-06	0.9728736	1.255E-06	3.74624E-05	0.8851174	1.142E-06	3.40832E-05	1.025755	1.323E-06	3.94987E-05
Road 9	9	1800-1900	0.150335205	1.255E-07	3.7458E-06	0.1402538	1.171E-07	3.4946E-06	0.9264904	7.733E-07	2.30847E-05	0.8708205	7.268E-07	2.16976E-05	1.0110743	8.439E-07	2.51922E-05
Road 9	9	1900-2000	0.157989899	1.289E-07	3.84706E-06	0.1435623	1.171E-07	3.49574E-06	0.8518412	6.948E-07	2.07423E-05	0.7742695	6.316E-07	1.88535E-05	0.9178318	7.487E-07	2.23492E-05
Road 9	9	2000-2100	0.162065028	8.916E-08	2.66145E-06	0.1478408	8.133E-08	2.42786E-06	0.728668	4.009E-07	1.19663E-05	0.671524	3.694E-07	1.10278E-05	0.8193649	4.508E-07	1.34557E-05
Road 9	9	2100-2200	0.021835346	1.118E-08	3.33852E-07	0.0200023	1.024E-08	3.05826E-07	0.3001711	1.537E-07	4.58948E-06	0.2720701	1.393E-07	4.15983E-06	0.2920724	1.496E-07	4.46565E-06
Road 9	9	2200-2300	0.162902389	1.02E-07	3.04419E-06	0.143418	8.978E-08	2.68008E-06	0.7989474	5.001E-07	1.49301E-05	0.7034546	4.404E-07	1.31456E-05	0.8468726	5.301E-07	1.58257E-05
Road 9	9	2300-0000	0.129249079	7.355E-08	2.19573E-06	0.1170731	6.663E-08	1.98888E-06	0.667359	3.798E-07	1.13373E-05	0.6033604	3.434E-07	1.02501E-05	0.7204335	4.1E-07	1.2239E-05
Road 10	10	0000-0100	0.25115074	1.931E-07	4.29349E-06	0.2256679	1.735E-07	3.85786E-06	1.2844172	9.875E-07	2.19575E-05	1.154909	8.88E-07	1.97435E-05	1.3805768	1.061E-06	2.36013E-05
Road 10	10	0100-0200	0.246208751	1.43E-07	3.18014E-06	0.2282366	1.326E-07	2.948E-06	1.2480828	7.25E-07	1.61208E-05	1.1572765	6.723E-07	1.49479E-05	1.3855131	8.049E-07	1.78959E-05
Road 10	10	0200-0300	0.240466011	7.806E-08	1.73569E-06	0.2226589	7.228E-08	1.60715E-06	1.2052059	3.912E-07	8.69919E-06	1.1168974	3.626E-07	8.06177E-06	1.3395563	4.349E-07	9.66893E-06
Road 10	10	0300-0400	0.220340959	4.518E-08	1.00448E-06	0.2008271	4.118E-08	9.15519E-07	1.1916808	2.443E-07	5.43257E-06	1.0874538	2.23E-07	4.95742E-06	1.288281	2.641E-07	5.87294E-06
Road 10	10	0400-0500	0.258861318	1.017E-07	2.26182E-06	0.2383867	9.368E-08	2.08293E-06	1.2412493	4.878E-07	1.08455E-05	1.140702	4.483E-07	9.96698E-06	1.3790887	5.419E-07	1.20499E-05
Road 10	10	0500-0600	0.231943813	1.625E-07	3.61269E-06	0.2180658	1.528E-07	3.39653E-06	1.1172334	7.826E-07	1.74017E-05	1.0499374	7.355E-07	1.63535E-05	1.2680032	8.883E-07	1.975E-05
Road 10	10	0600-0700	0.285486112	4E-07	8.89329E-06	0.2637901	3.696E-07	8.21743E-06	1.4301419	2.004E-06	4.45509E-05	1.3251848	1.857E-06	4.12814E-05	1.5889749	2.226E-06	4.94988E-05
Road 10	10	0700-0800	0.285552339	6.294E-07	1.39939E-05	0.2666601	5.877E-07	1.30681E-05	1.4412382	3.177E-06	7.063E-05	1.3486868	2.973E-06	6.60944E-05	1.6153469	3.56E-06	7.91625E-05
Road 10	10	0800-0900	0.314177578	1.326E-06	2.94806E-05	0.278945	1.177E-06	2.61746E-05	1.5544325	6.56E-06	0.000145859	1.3812048	5.829E-06	0.000129604	1.6601498	7.006E-06	0.000155779
Road 10	10	0900-1000	0.352338233	1.18E-06	2.62349E-05	0.3172145	1.062E-06	2.36196E-05	1.70259	5.702E-06	0.000126774	1.5340277	5.137E-06	0.000114223	1.8512422	6.199E-06	0.000137842
Road 10	10	1000-1100	0.361278157	1.315E-06	2.92338E-05	0.311535	1.134E-06	2.52087E-05	1.6331374	5.943E-06	0.00013215	1.4043697	5.111E-06	0.000113638	1.7159047	6.245E-06	0.000138847
Road 10	10	1100-1200	0.348540797	1.268E-06	2.82031E-05	0.304892	1.11E-06	2.46712E-05	1.6365489	5.956E-06	0.000132426	1.4305653	5.206E-06	0.000115758	1.7354573	6.316E-06	0.000140429
Road 10	10	1200-1300	0.370917927	1.394E-06	3.10002E-05	0.3193366	1.2E-06	2.66892E-05	1.7678988	6.645E-06	0.000147756	1.5238733	5.728E-06	0.000127361	1.8432098	6.928E-06	0.00015405
Road 10	10	1300-1400	0.359651383	1.18E-06	2.62329E-05	0.3121001	1.024E-06	2.27645E-05	1.672685	5.487E-06	0.000122005	1.4496184	4.755E-06	0.000105735	1.7617184	5.779E-06	0.0001285
Road 10	10	1400-1500	0.33629317	1.034E-06	2.29961E-05	0.2915347	8.966E-07	1.99355E-05	1.6833351	5.177E-06	0.000115108	1.4609038	4.493E-06	9.98982E-05	1.7524385	5.389E-06	0.000119834
Road 10	10	1500-1600	0.332811238	1.046E-06	2.32637E-05	0.283768	8.921E-07	1.98356E-05	1.6045294	5.044E-06	0.000112158	1.3697935	4.306E-06	9.57495E-05	1.6535615	5.198E-06	0.000115585
Road 10	10	1600-1700	0.319175029	1.118E-06	2.48569E-05	0.2704527	9.473E-07	2.10625E-05	1.5602156	5.465E-06	0.000121507	1.3199978	4.623E-06	0.000102799	1.5904506	5.571E-06	0.000123862
Road 10	10	1700-1800	0.293991102	9.644E-07	2.14437E-05	0.2535171	8.317E-07	1.84915E-05	1.5304916	5.021E-06	0.000111634	1.3288104	4.359E-06	9.69233E-05	1.5823275	5.191E-06	0.000115415
Road 10	10	1800-1900	0.284845807	5.889E-07	1.30936E-05	0.2562183	5.297E-07	1.17777E-05	1.4415373	2.98E-06	6.62636E-05	1.2998175	2.687E-06	5.97491E-05	1.5560358	3.217E-06	7.15268E-05
Road 10	10	1900-2000	0.254055982	4.731E-07	1.05201E-05	0.2229813	4.153E-07	9.23334E-06	1.3475636	2.51E-06	5.58007E-05	1.1884115	2.213E-06	4.92104E-05	1.4113928	2.628E-06	5.84438E-05
Road 10	10	2000-2100	0.282077395	3.47E-07	7.71551E-06	0.2515287	3.094E-07	6.87993E-06	1.364549	1.679E-06	3.73238E-05	1.2169105	1.497E-06	3.32855E-05	1.4684392	1.806E-06	4.01654E-05
Road 10	10	2100-2200	0.246442288	3.032E-07	6.7408E-06	0.2220785	2.732E-07	6.07439E-06	1.3787591	1.696E-06	3.77124E-05	1.2487505	1.536E-06	3.41564E-05	1.4708291	1.809E-06	4.02308E-05
Road 10	10	2200-2300	0.262840139	3.368E-07	7.48888E-06	0.2283248	2.926E-07	6.50546E-06	1.3518556	1.732E-06	3.85173E-05	1.180512	1.513E-06	3.36353E-05	1.4088368	1.805E-06	4.01408E-05
Road 10	10	2300-0000	0.232496392	2.781E-07	6.1827E-06	0.2045206	2.446E-07	5.43875E-06	1.1749514	1.405E-06	3.12451E-05	1.0335472	1.236E-06	2.74848E-05	1.2380678	1.481E-06	3.29235E-05
Road 11	11	0000-0100	0.280977796	2.146E-07	1.78042E-06	0.2521655	1.926E-07	1.59785E-06	1.4071537	1.075E-06	8.91646E-06	1.2610497	9.633E-07	7.99067E-06	1.5132152	1.156E-06	9.58852E-06
Road 11	11	0100-0200	0.28021351	1.508E-07	1.25098E-06	0.2594934	1.397E-07	1.15847E-06	1.3784621	7.419E-07	6.15396E-06	1.274454	6.859E-07	5.68963E-06	1.5339474	8.256E-07	6.8481E-06
Road 11	11	0200-0300	0.240467333	6.262E-08	5.19452E-07	0.2226671	5.799E-08	4.81E-07	1.2840896	3.344E-07	2.77386E-06	1.1899844	3.099E-07	2.57058E-06	1.4126514	3.679E-07	3.05158E-06
Road 11	11	0300-0400	0.259535603	6.308E-08	5.23267E-07	0.2364706	5.748E-08	4.76764E-07	1.3592483	3.304E-07	2.74047E-06	1.2390025	3.011E-07	2.49803E-06	1.4754731	3.586E-07	2.9748E-06
Road 11	11	0400-0500	0.268004016	9.306E-08	7.71915E-07	0.2469362	8.574E-08	7.11235E-07	1.2685514	4.405E-07	3.65373E-06	1.1661964	4.049E-07	3.35892E-06	1.4131327	4.907E-07	4.07016E-06
Road 11	11	0500-0600	0.211743456	9.925E-08	8.23326E-07	0.1989543	9.326E-08	7.73598E-07	1.0792918	5.059E-07	4.19663E-06	1.0150908	4.758E-07	3.947E-06	1.214045	5.691E-07	4.72059E-06
Road 11	11	0600-0700	0.232452584	2.099E-07	1.74075E-06	0.2139143	1.931E-07	1.60192E-06	1.2039485	1.087E-06	9.01591E-06	1.1094073	1.002E-06	8.30792E-06	1.3233216	1.195E-06	9.90985E-06
Road 11	11	0700-0800	0.275216284	5.16E-07	4.28052E-06	0.2558006	4.796E-07	3.97854E-06	1.4344149	2.69E-06	2.23099E-05	1.335035	2.503E-06	2.07642E-05	1.5908356	2.983E-06	2.47427E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (August) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 11	11	0800-0900	0.31248889	1.112E-06	9.22543E-06	0.278962	9.928E-07	8.23564E-06	1.5390969	5.478E-06	4.54379E-05	1.3717584	4.882E-06	4.04976E-05	1.6507204	5.875E-06	4.87333E-05
Road 11	11	0900-1000	0.315628773	8E-07	6.63632E-06	0.2839607	7.198E-07	5.97048E-06	1.4902232	3.777E-06	3.1333E-05	1.3374755	3.39E-06	2.81214E-05	1.6214362	4.11E-06	3.40919E-05
Road 11	11	1000-1100	0.335989799	6.941E-07	5.75799E-06	0.2887431	5.965E-07	4.94831E-06	1.5661055	3.236E-06	2.6839E-05	1.3429732	2.775E-06	2.30151E-05	1.6317163	3.371E-06	2.79634E-05
Road 11	11	1100-1200	0.293705428	6.833E-07	5.66781E-06	0.255729	5.949E-07	4.93495E-06	1.5087897	3.51E-06	2.9116E-05	1.3195306	3.07E-06	2.54638E-05	1.5752596	3.665E-06	3.03987E-05
Road 11	11	1200-1300	0.36559397	1.035E-06	8.58193E-06	0.3141135	8.889E-07	7.37348E-06	1.774196	5.021E-06	4.16473E-05	1.5245661	4.314E-06	3.57876E-05	1.8386796	5.203E-06	4.3161E-05
Road 11	11	1300-1400	0.378496986	7.885E-07	6.54097E-06	0.3281047	6.836E-07	5.67012E-06	1.7044459	3.551E-06	2.94552E-05	1.4701085	3.063E-06	2.54056E-05	1.7982133	3.746E-06	3.10757E-05
Road 11	11	1400-1500	0.301196649	6.066E-07	5.0316E-06	0.2602416	5.241E-07	4.34743E-06	1.5028524	3.027E-06	2.51057E-05	1.2946249	2.607E-06	2.16272E-05	1.5548665	3.131E-06	2.59746E-05
Road 11	11	1500-1600	0.268602471	5.456E-07	4.52579E-06	0.2283838	4.639E-07	3.84813E-06	1.390949	2.825E-06	2.34366E-05	1.1852381	2.408E-06	1.99705E-05	1.4136219	2.871E-06	2.38187E-05
Road 11	11	1600-1700	0.256975204	6.201E-07	5.14404E-06	0.217866	5.258E-07	4.36116E-06	1.3753574	3.319E-06	2.75314E-05	1.1674461	2.817E-06	2.33695E-05	1.3853121	3.343E-06	2.77307E-05
Road 11	11	1700-1800	0.255254102	6.293E-07	5.21986E-06	0.2184383	5.385E-07	4.46699E-06	1.3926555	3.433E-06	2.84794E-05	1.1993739	2.957E-06	2.45268E-05	1.4178123	3.495E-06	2.89938E-05
Road 11	11	1800-1900	0.261582273	5.359E-07	4.44517E-06	0.234385	4.802E-07	3.983E-06	1.4004149	2.869E-06	2.37978E-05	1.2594657	2.58E-06	2.14026E-05	1.4938508	3.06E-06	2.53856E-05
Road 11	11	1900-2000	0.255873049	4.042E-07	3.35324E-06	0.2232076	3.526E-07	2.92515E-06	1.3317779	2.104E-06	1.74531E-05	1.1626659	1.837E-06	1.52368E-05	1.3858735	2.189E-06	1.8162E-05
Road 11	11	2000-2100	0.254092132	3.573E-07	2.96397E-06	0.2267153	3.188E-07	2.64462E-06	1.2692823	1.785E-06	1.48061E-05	1.1345576	1.595E-06	1.32346E-05	1.361273	1.914E-06	1.58792E-05
Road 11	11	2100-2200	0.190243606	1.883E-07	1.56165E-06	0.1659881	1.643E-07	1.36254E-06	1.0648699	1.054E-06	8.74117E-06	0.9314153	9.217E-07	7.64568E-06	1.0974034	1.086E-06	9.00823E-06
Road 11	11	2200-2300	0.252047421	2.757E-07	2.28676E-06	0.216738	2.371E-07	1.96641E-06	1.2732038	1.393E-06	1.15515E-05	1.0947191	1.197E-06	9.93211E-06	1.3114571	1.434E-06	1.18985E-05
Road 11	11	2300-0000	0.233409539	2.431E-07	2.01682E-06	0.2055161	2.141E-07	1.7758E-06	1.1990995	1.249E-06	1.03611E-05	1.0552395	1.099E-06	9.11802E-06	1.2607556	1.313E-06	1.08938E-05
Haul Road 1	HR1	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0700-0800	1.15676	2.174E-06	3.27035E-06	1.06839	2.008E-06	3.02051E-06	5.31586	9.992E-06	1.50288E-05	4.90952	9.228E-06	1.388E-05	5.97791	1.124E-05	1.69005E-05
Haul Road 1	HR1	0800-0900	1.21543	2.285E-06	3.43622E-06	1.07219	2.015E-06	3.03125E-06	5.58537	1.05E-05	1.57907E-05	4.92711	9.261E-06	1.39297E-05	5.9993	1.128E-05	1.6961E-05
Haul Road 1	HR1	0900-1000	1.21773	2.289E-06	3.44272E-06	1.07849	2.027E-06	3.04906E-06	5.59576	1.052E-05	1.58201E-05	4.9561	9.316E-06	1.40117E-05	6.03459	1.134E-05	1.70608E-05
Haul Road 1	HR1	1000-1100	1.26552	2.379E-06	3.57783E-06	1.07329	2.017E-06	3.03436E-06	5.81537	1.093E-05	1.6441E-05	4.93201	9.271E-06	1.39436E-05	6.0053	1.129E-05	1.69779E-05
Haul Road 1	HR1	1100-1200	1.26242	2.373E-06	3.56906E-06	1.09468	2.058E-06	3.09484E-06	5.80118	1.09E-05	1.64009E-05	5.03027	9.455E-06	1.42214E-05	6.12495	1.151E-05	1.73162E-05
Haul Road 1	HR1	1200-1300	1.28611	2.418E-06	3.63604E-06	1.08748	2.044E-06	3.07448E-06	5.91033	1.111E-05	1.67095E-05	4.99759	9.394E-06	1.4129E-05	6.08507	1.144E-05	1.72035E-05
Haul Road 1	HR1	1300-1400	1.27741	2.401E-06	3.61144E-06	1.08748	2.044E-06	3.07448E-06	5.87035	1.103E-05	1.65964E-05	4.99759	9.394E-06	1.4129E-05	6.08507	1.144E-05	1.72035E-05
Haul Road 1	HR1	1400-1500	1.28611	2.418E-06	3.63604E-06	1.08748	2.044E-06	3.07448E-06	5.91033	1.111E-05	1.67095E-05	4.99759	9.394E-06	1.4129E-05	6.08507	1.144E-05	1.72035E-05
Haul Road 1	HR1	1500-1600	1.27891	2.404E-06	3.61568E-06	1.07329	2.017E-06	3.03436E-06	5.87725	1.105E-05	1.66159E-05	4.93201	9.271E-06	1.39436E-05	6.0053	1.129E-05	1.69779E-05
Haul Road 1	HR1	1600-1700	1.27361	2.394E-06	3.6007E-06	1.0519	1.977E-06	2.97389E-06	5.85296	1.1E-05	1.65473E-05	4.83375	9.086E-06	1.36658E-05	5.88565	1.106E-05	1.66397E-05
Haul Road 1	HR1	1700-1800	1.26302	2.374E-06	3.57076E-06	1.05829	1.989E-06	2.99196E-06	5.80427	1.091E-05	1.64096E-05	4.86344	9.142E-06	1.37497E-05	5.92173	1.113E-05	1.67417E-05
Haul Road 1	HR1	1800-1900	1.19614	2.248E-06	3.38168E-06	1.05949	1.992E-06	2.99535E-06	5.4968	1.033E-05	1.55403E-05	4.86884	9.152E-06	1.3765E-05	5.92833	1.114E-05	1.67603E-05
Haul Road 1	HR1	1900-2000	1.22073	2.295E-06	3.4512E-06	1.0468	1.968E-06	2.95947E-06	5.60965	1.054E-05	1.58594E-05	4.81056	9.042E-06	1.36002E-05	5.85736	1.101E-05	1.65597E-05
Haul Road 1	HR1	2000-2100	1.17365	2.206E-06	3.3181E-06	1.0405	1.956E-06	2.94166E-06	5.39344	1.014E-05	1.52481E-05	4.78147	8.988E-06	1.3518E-05	5.82197	1.094E-05	1.64596E-05
Haul Road 1	HR1	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0700-0800	1.15676	1.498E-06	3.98858E-06	1.06839	1.384E-06	3.68387E-06	5.31586	6.886E-06	1.83294E-05	4.90952	6.359E-06	1.69283E-05	5.97791	7.743E-06	2.06122E-05
Haul Road 2	HR2	0800-0900	1.21543	1.574E-06	4.19088E-06	1.07219	1.389E-06	3.69698E-06	5.58537	7.235E-06	1.92587E-05	4.92711	6.382E-06	1.6989E-05	5.9993	7.771E-06	2.06859E-05
Haul Road 2	HR2	0900-1000	1.21773	1.577E-06	4.19881E-06	1.07849	1.397E-06	3.7187E-06	5.59576	7.248E-06	1.92945E-05	4.9561	6.42E-06	1.70889E-05	6.03459	7.817E-06	2.08076E-05
Haul Road 2	HR2	1000-1100	1.26552	1.639E-06	4.36359E-06	1.07329	1.39E-06	3.70077E-06	5.81537	7.533E-06	2.00517E-05	4.93201	6.389E-06	1.70059E-05	6.0053	7.779E-06	2.07066E-05
Haul Road 2	HR2	1100-1200	1.26242	1.635E-06	4.3529E-06	1.09468	1.418E-06	3.77452E-06	5.80118	7.514E-06	2.00028E-05	5.03027	6.516E-06	1.73447E-05	6.12495	7.934E-06	2.11192E-05
Haul Road 2	HR2	1200-1300	1.28611	1.666E-06	4.43458E-06	1.08748	1.409E-06	3.7497E-06	5.91033	7.656E-06	2.03792E-05	4.99759	6.474E-06	1.7232E-05	6.08507	7.882E-06	2.09817E-05
Haul Road 2	HR2	1300-1400	1.27741	1.655E-06	4.40459E-06	1.08748	1.409E-06	3.7497E-06	5.87035	7.604E-06	2.02413E-05	4.99759	6.474E-06	1.7232E-05	6.08507	7.882E-06	2.09817E-05
Haul Road 2	HR2	1400-1500	1.28611	1.666E-06	4.43458E-06	1.08748	1.409E-06	3.7497E-06	5.91033	7.656E-06	2.03792E-05	4.99759	6.474E-06	1.7232E-05	6.08507	7.882E-06	2.09817E-05
Haul Road 2	HR2	1500-1600	1.27891	1.657E-06	4.40976E-06	1.07329	1.39E-06	3.70077E-06	5.87725	7.613E-06	2.02651E-05	4.93201	6.389E-06	1.70059E-05	6.0053	7.779E-06	2.07066E-05
Haul Road 2	HR2	1600-1700	1.27361	1.65E-06	4.39148E-06	1.0519	1.363E-06	3.62701E-06	5.85296	7.582E-06	2.01814E-05	4.83375	6.261E-06	1.66671E-05	5.88565	7.624E-06	2.02941E-05
Haul Road 2	HR2	1700-1800	1.26302	1.636E-06	4.35497E-06	1.05829	1.371E-06	3.64905E-06	5.80427	7.518E-06	2.00135E-05	4.86344	6.3E-06	1.67694E-05	5.92173	7.671E-06	2.04185E-05
Haul Road 2	HR2	1800-1900	1.19614	1.549E-06	4.12436E-06	1.05949	1.372E-06	3.65319E-06	5.4968	7.12E-06	1.89533E-05	4.86884	6.307E-06	1.67881E-05	5.92833	7.679E-06	2.04412E-05
Haul Road 2	HR2	1900-2000	1.22073	1.581E-06	4.20915E-06	1.0468	1.356E-06	3.60943E-06	5.60965	7.266E-06	1.93424E-05	4.81056	6.231E-06	1.65871E-05	5.85736	7.587E-06	2.01965E-05
Haul Road 2	HR2	2000-2100	1.17365	1.52E-06	4.04682E-06	1.0405	1.348E-06	3.58771E-06	5.39344	6.986E-06	1.85969E-05	4.78147	6.194E-06	1.64868E-05	5.82197	7.541E-06	2.00745E-05
Haul Road 2	HR2	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (August) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Haul Road 2	HR2	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0700-0800	1.15676	1.498E-06	3.98302E-06	1.06839	1.384E-06	3.67874E-06	5.31586	6.886E-06	1.83039E-05	4.90952	6.359E-06	1.69047E-05	5.97791	7.743E-06	2.05835E-05
Haul Road 3	HR3	0800-0900	1.21543	1.574E-06	4.18503E-06	1.07219	1.389E-06	3.69182E-06	5.58537	7.235E-06	1.92318E-05	4.92711	6.382E-06	1.69653E-05	5.9993	7.771E-06	2.06571E-05
Haul Road 3	HR3	0900-1000	1.21773	1.577E-06	4.19295E-06	1.07849	1.397E-06	3.71351E-06	5.59576	7.248E-06	1.92676E-05	4.9561	6.42E-06	1.70651E-05	6.03459	7.817E-06	2.07786E-05
Haul Road 3	HR3	1000-1100	1.26552	1.639E-06	4.35751E-06	1.07329	1.39E-06	3.69561E-06	5.81537	7.533E-06	2.00238E-05	4.93201	6.389E-06	1.69822E-05	6.0053	7.779E-06	2.06778E-05
Haul Road 3	HR3	1100-1200	1.26242	1.635E-06	4.34683E-06	1.09468	1.418E-06	3.76926E-06	5.80118	7.514E-06	1.99749E-05	5.03027	6.516E-06	1.73205E-05	6.12495	7.934E-06	2.10898E-05
Haul Road 3	HR3	1200-1300	1.28611	1.666E-06	4.4284E-06	1.08748	1.409E-06	3.74447E-06	5.91033	7.656E-06	2.03508E-05	4.99759	6.474E-06	1.7208E-05	6.08507	7.882E-06	2.09524E-05
Haul Road 3	HR3	1300-1400	1.27741	1.655E-06	4.39845E-06	1.08748	1.409E-06	3.74447E-06	5.87035	7.604E-06	2.02131E-05	4.99759	6.474E-06	1.7208E-05	6.08507	7.882E-06	2.09524E-05
Haul Road 3	HR3	1400-1500	1.28611	1.666E-06	4.4284E-06	1.08748	1.409E-06	3.74447E-06	5.91033	7.656E-06	2.03508E-05	4.99759	6.474E-06	1.7208E-05	6.08507	7.882E-06	2.09524E-05
Haul Road 3	HR3	1500-1600	1.27891	1.657E-06	4.40361E-06	1.07329	1.39E-06	3.69561E-06	5.87725	7.613E-06	2.02369E-05	4.93201	6.389E-06	1.69822E-05	6.0053	7.779E-06	2.06778E-05
Haul Road 3	HR3	1600-1700	1.27361	1.65E-06	4.38536E-06	1.0519	1.363E-06	3.62196E-06	5.85296	7.582E-06	2.01532E-05	4.83375	6.261E-06	1.66438E-05	5.88565	7.624E-06	2.02658E-05
Haul Road 3	HR3	1700-1800	1.26302	1.636E-06	4.3489E-06	1.05829	1.371E-06	3.64396E-06	5.80427	7.518E-06	1.99856E-05	4.86344	6.3E-06	1.67461E-05	5.92173	7.671E-06	2.039E-05
Haul Road 3	HR3	1800-1900	1.19614	1.549E-06	4.11861E-06	1.05949	1.372E-06	3.64809E-06	5.4968	7.12E-06	1.89269E-05	4.86884	6.307E-06	1.67646E-05	5.92833	7.679E-06	2.04127E-05
Haul Road 3	HR3	1900-2000	1.22073	1.581E-06	4.20328E-06	1.0468	1.356E-06	3.6044E-06	5.60965	7.266E-06	1.93154E-05	4.81056	6.231E-06	1.6564E-05	5.85736	7.587E-06	2.01684E-05
Haul Road 3	HR3	2000-2100	1.17365	1.52E-06	4.04117E-06	1.0405	1.348E-06	3.5827E-06	5.39344	6.986E-06	1.8571E-05	4.78147	6.194E-06	1.64638E-05	5.82197	7.541E-06	2.00465E-05
Haul Road 3	HR3	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (September) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 1	1	0000-0100	0.10325322	3.43E-07	2.79047E-06	0.0860684	2.859E-07	2.32604E-06	0.60877	2.022E-06	1.64523E-05	0.5043067	1.675E-06	1.36292E-05	0.590375	1.961E-06	1.59552E-05
Road 1	1	0100-0200	0.079315556	1.608E-07	1.30793E-06	0.0678787	1.376E-07	1.11933E-06	0.4782373	9.694E-07	7.88621E-06	0.4071349	8.253E-07	6.71372E-06	0.4750136	9.629E-07	7.83305E-06
Road 1	1	0200-0300	0.074996494	1.084E-07	8.81725E-07	0.0641869	9.276E-08	7.54637E-07	0.4768203	6.891E-07	5.60592E-06	0.4043705	5.844E-07	4.75413E-06	0.4685574	6.772E-07	5.50877E-06
Road 1	1	0300-0400	0.065067636	6.717E-08	5.46423E-07	0.0544607	5.622E-08	4.57349E-07	0.3949836	4.077E-07	3.31698E-06	0.3275415	3.381E-07	2.75062E-06	0.3820022	3.943E-07	3.20797E-06
Road 1	1	0400-0500	0.085198706	1.359E-07	1.10574E-06	0.0711865	1.136E-07	9.23884E-07	0.4853174	7.742E-07	6.29863E-06	0.4030644	6.43E-07	5.23112E-06	0.4742508	7.566E-07	6.155E-06
Road 1	1	0500-0600	0.06848492	2.404E-07	1.95541E-06	0.0573351	2.012E-07	1.63706E-06	0.4027733	1.414E-06	1.15001E-05	0.3340926	1.173E-06	9.53915E-06	0.3914276	1.374E-06	1.11762E-05
Road 1	1	0600-0700	0.092202169	5.745E-07	4.67391E-06	0.0781333	4.869E-07	3.96073E-06	0.4933595	3.074E-06	2.50094E-05	0.4155533	2.589E-06	2.10652E-05	0.4936866	3.076E-06	2.5026E-05
Road 1	1	0700-0800	0.077617156	8.143E-07	6.62477E-06	0.0663399	6.96E-07	5.66223E-06	0.4273674	4.484E-06	3.64766E-05	0.3624003	3.802E-06	3.09315E-05	0.4287402	4.498E-06	3.65938E-05
Road 1	1	0800-0900	0.084180964	1.082E-06	8.80452E-06	0.0720837	9.268E-07	7.53926E-06	0.4478928	5.758E-06	4.68453E-05	0.3814737	4.904E-06	3.98985E-05	0.4535574	5.831E-06	4.74377E-05
Road 1	1	0900-1000	0.088421216	1.173E-06	9.54503E-06	0.0758732	1.007E-06	8.19047E-06	0.4955236	6.575E-06	5.34915E-05	0.4232915	5.617E-06	4.56941E-05	0.4991646	6.624E-06	5.38846E-05
Road 1	1	1000-1100	0.103498981	1.335E-06	1.08566E-05	0.0878356	1.133E-06	9.21358E-06	0.5565961	7.177E-06	5.83846E-05	0.4707987	6.071E-06	4.93848E-05	0.5586343	7.203E-06	5.85984E-05
Road 1	1	1100-1200	0.093545352	1.171E-06	9.52685E-06	0.0796191	9.967E-07	8.10857E-06	0.537967	6.735E-06	5.47877E-05	0.4563233	5.713E-06	4.64729E-05	0.5359423	6.709E-06	5.45815E-05
Road 1	1	1200-1300	0.094239818	1.167E-06	9.49685E-06	0.0821858	1.018E-06	8.28213E-06	0.5383624	6.669E-06	5.42525E-05	0.4678053	5.795E-06	4.71422E-05	0.5499911	6.813E-06	5.54244E-05
Road 1	1	1300-1400	0.098535185	1.298E-06	1.05616E-05	0.0859462	1.132E-06	9.21224E-06	0.5505912	7.254E-06	5.90157E-05	0.4786311	6.306E-06	5.13026E-05	0.5645773	7.439E-06	6.05148E-05
Road 1	1	1400-1500	0.094637804	1.359E-06	1.10542E-05	0.0818574	1.175E-06	9.56138E-06	0.5161189	7.41E-06	6.02854E-05	0.4449194	6.388E-06	5.1969E-05	0.5267768	7.564E-06	6.15303E-05
Road 1	1	1500-1600	0.103188025	1.373E-06	1.11706E-05	0.0860654	1.145E-06	9.317E-06	0.5612146	7.468E-06	6.07542E-05	0.4656873	6.197E-06	5.04129E-05	0.5517527	7.342E-06	5.97299E-05
Road 1	1	1600-1700	0.098539759	1.383E-06	1.12542E-05	0.0825266	1.159E-06	9.42534E-06	0.541697	7.605E-06	6.1867E-05	0.451032	6.332E-06	5.15122E-05	0.5335587	7.491E-06	6.09376E-05
Road 1	1	1700-1800	0.080083933	1.127E-06	9.17081E-06	0.0661809	9.316E-07	7.57871E-06	0.4491759	6.323E-06	5.14374E-05	0.3681173	5.182E-06	4.2155E-05	0.4342982	6.113E-06	4.97337E-05
Road 1	1	1800-1900	0.070725482	1.019E-06	8.29351E-06	0.0581129	8.377E-07	6.81452E-06	0.4220164	6.083E-06	4.94871E-05	0.3427479	4.941E-06	4.01918E-05	0.4008609	5.778E-06	4.70063E-05
Road 1	1	1900-2000	0.084421604	9.285E-07	7.55357E-06	0.0705135	7.755E-07	6.30916E-06	0.4842787	5.326E-06	4.33305E-05	0.4010178	4.411E-06	3.58808E-05	0.4715314	5.186E-06	4.219E-05
Road 1	1	2000-2100	0.07615746	7.09E-07	5.7676E-06	0.063517	5.913E-07	4.81031E-06	0.4487027	4.177E-06	3.39814E-05	0.3711758	3.455E-06	2.81101E-05	0.4346928	4.047E-06	3.29204E-05
Road 1	1	2100-2200	0.080997042	6.887E-07	5.60233E-06	0.0660401	5.615E-07	4.5678E-06	0.4796942	4.078E-06	3.3179E-05	0.3877085	3.296E-06	2.68167E-05	0.4537486	3.858E-06	3.13845E-05
Road 1	1	2200-2300	0.07788761	6.301E-07	5.12563E-06	0.0651103	5.267E-07	4.28477E-06	0.4592201	3.715E-06	3.02203E-05	0.3805847	3.079E-06	2.50455E-05	0.4456949	3.605E-06	2.93303E-05
Road 1	1	2300-0000	0.068199792	4.928E-07	4.00908E-06	0.0570399	4.122E-07	3.35306E-06	0.4175544	3.017E-06	2.45457E-05	0.3453941	2.496E-06	2.03038E-05	0.402434	2.908E-06	2.36568E-05
Road 2	2	0000-0100	0.173215882	2.045E-07	1.32058E-06	0.1443088	1.704E-07	1.1002E-06	0.7357465	8.686E-07	5.60927E-06	0.610332	7.205E-07	4.65312E-06	0.7546408	8.909E-07	5.75332E-06
Road 2	2	0100-0200	0.122074545	9.325E-08	6.02208E-07	0.104397	7.975E-08	5.15003E-07	0.6051006	4.622E-07	2.98503E-06	0.5153255	3.937E-07	2.54216E-06	0.6197224	4.734E-07	3.05716E-06
Road 2	2	0200-0300	0.120676522	6.425E-08	4.14914E-07	0.1033904	5.505E-08	3.55481E-07	0.6575674	3.501E-07	2.26087E-06	0.5599374	2.981E-07	1.9252E-06	0.6633278	3.532E-07	2.28068E-06
Road 2	2	0300-0400	0.107962667	3.749E-08	2.42088E-07	0.0903793	3.138E-08	2.0266E-07	0.3930607	1.365E-07	8.81371E-07	0.3263193	1.133E-07	7.31715E-07	0.4166987	1.447E-07	9.34375E-07
Road 2	2	0400-0500	0.146004074	9.125E-08	5.893E-07	0.122003	7.625E-08	4.92427E-07	0.7068507	4.418E-07	2.85298E-06	0.5883993	3.677E-07	2.37489E-06	0.7104022	4.44E-07	2.86732E-06
Road 2	2	0500-0600	0.115853509	1.529E-07	9.8717E-07	0.0970625	1.281E-07	8.27054E-07	0.5120621	6.756E-07	4.3632E-06	0.4258584	5.619E-07	3.62867E-06	0.5229209	6.9E-07	4.45573E-06
Road 2	2	0600-0700	0.163679903	3.903E-07	2.52023E-06	0.1386986	3.307E-07	2.13559E-06	0.6641989	1.584E-06	1.02269E-05	0.560385	1.336E-06	8.62842E-06	0.6990836	1.667E-06	1.0764E-05
Road 2	2	0700-0800	0.130375253	4.768E-07	3.07936E-06	0.1114172	4.075E-07	2.63158E-06	0.5502665	2.013E-06	1.29968E-05	0.4671915	1.709E-06	1.10347E-05	0.5786087	2.116E-06	1.36663E-05
Road 2	2	0800-0900	0.149010967	1.035E-06	6.68263E-06	0.1275376	8.857E-07	5.71962E-06	0.6318082	4.388E-06	2.83344E-05	0.5380835	3.737E-06	2.41312E-05	0.6656211	4.622E-06	2.98508E-05
Road 2	2	0900-1000	0.170774919	9.725E-07	6.28011E-06	0.146404	8.337E-07	5.38389E-06	0.7396412	4.212E-06	2.71997E-05	0.6323114	3.601E-06	2.32527E-05	0.7787154	4.434E-06	2.86366E-05
Road 2	2	1000-1100	0.191229076	8.145E-07	5.25992E-06	0.1622299	6.91E-07	4.46228E-06	0.8218821	3.501E-06	2.26066E-05	0.695838	2.964E-06	1.91396E-05	0.8580679	3.655E-06	2.36019E-05
Road 2	2	1100-1200	0.231328287	9.692E-07	6.25915E-06	0.1967369	8.243E-07	5.32319E-06	0.9496355	3.979E-06	2.56947E-05	0.8066845	3.38E-06	2.18268E-05	1.0034213	4.204E-06	2.715E-05
Road 2	2	1200-1300	0.172617394	7.512E-07	4.85121E-06	0.150522	6.55E-07	4.23024E-06	0.7622253	3.317E-06	2.14215E-05	0.6626855	2.884E-06	1.8624E-05	0.8132074	3.539E-06	2.28542E-05
Road 2	2	1300-1400	0.191100364	9.732E-07	6.28481E-06	0.1664862	8.478E-07	5.47531E-06	0.7914175	4.03E-06	2.60277E-05	0.6877978	3.503E-06	2.26199E-05	0.854284	4.351E-06	2.80952E-05
Road 2	2	1400-1500	0.167282331	6.312E-07	4.07611E-06	0.1446621	5.458E-07	3.52493E-06	0.724844	2.735E-06	1.7662E-05	0.6254696	2.36E-06	1.52406E-05	0.7701317	2.906E-06	1.87655E-05
Road 2	2	1500-1600	0.208926536	8.657E-07	5.59055E-06	0.1738959	7.205E-07	4.65318E-06	0.8407044	3.483E-06	2.24959E-05	0.698367	2.894E-06	1.86872E-05	0.8722629	3.614E-06	2.33404E-05
Road 2	2	1600-1700	0.178417123	9.045E-07	5.84102E-06	0.1493925	7.573E-07	4.89081E-06	0.7564192	3.835E-06	2.47636E-05	0.6309995	3.199E-06	2.06576E-05	0.780392	3.956E-06	2.55485E-05
Road 2	2	1700-1800	0.137152627	6.889E-07	4.44909E-06	0.1133561	5.694E-07	3.67716E-06	0.5476929	2.751E-06	1.77666E-05	0.4502883	2.262E-06	1.46069E-05	0.5636444	2.831E-06	1.82841E-05
Road 2	2	1800-1900	0.149374315	8.575E-07	5.53778E-06	0.1228474	7.052E-07	4.55434E-06	0.6914731	3.97E-06	2.56351E-05	0.5651229	3.244E-06	2.09509E-05	0.6879704	3.949E-06	2.55052E-05
Road 2	2	1900-2000	0.127445964	4.897E-07	3.16258E-06	0.106459	4.091E-07	2.64179E-06	0.5877852	2.259E-06	1.45859E-05	0.4872134	1.872E-06	1.20902E-05	0.5936723	2.281E-06	1.4732E-05
Road 2	2	2000-2100	0.124957329	4.223E-07	2.72723E-06	0.1042	3.522E-07	2.2742E-06	0.5280229	1.785E-06	1.15243E-05	0.4363023	1.475E-06	9.52244E-06	0.5405023	1.827E-06	1.17966E-05
Road 2	2	2100-2200	0.097386053	3.427E-07	2.21283E-06	0.0793303	2.791E-07	1.80256E-06	0.4433188	1.56E-06	1.00732E-05	0.3564137	1.254E-06	8.09852E-06	0.435744	1.533E-06	9.90108E-06
Road 2	2	2200-2300	0.13793208	3.991E-07	2.57741E-06	0.115339	3.337E-07	2.15523E-06	0.5905449	1.709E-06	1.1035E-05	0.4903079	1.419E-06	9.16192E-06	0.6056469	1.752E-06	1.13172E-05
Road 2	2	2300-0000	0.124974636	3.182E-07	2.05505E-06	0.1045425	2.662E-07	1.71907E-06	0.5644257	1.437E-06	9.28127E-06	0.4681469	1.192E-06	7.69808E-06	0.5726895	1.458E-06	9.41715E-06
Road 3	3	0000-0100	0.107286463	3.941E-07	1.53165E-05	0.0910943	3.346E-07	1.30048E-05	0.5884453	2.161E-06	8.40079E-05	0.4969531	1.825E-06	7.09463E-05	0.5880473	2.16E-06	8.39511E-05
Road 3	3	0100-0200	0.080121844	1.812E-07	7.04286E-06	0.0684939	1.549E-07	6.02074E-06	0.4648209	1.051E-06	4.08586E-05	0.3952389	8.939E-07	3.47422E-05	0.4637328	1.049E-06	4.0763E-05
Road 3	3	0200-0300	0.077818283	1.236E-07	4.80281E-06	0.0657845	1.045E-07	4.06011E-06	0.4827151	7.665E-07	2.97923E-05	0.4042816	6.42E-07	2.49516E-05	0.4700662	7.464E-07	2.90117E-05
Road 3	3	0300-0400	0.067202464	7.437E-08	2.89077E-06	0.0564255	6.245E-08	2.42719E-06	0.364463	4.034E-07	1.56777E-05	0.3031433	3.355E-07	1.30399E-05	0.3595688	3.979E-07	1.54671E-05
Road 3	3	0400-0500	0.089482703	1.593E-07	6.19214E-06	0.0752686	1.34E-07	5.20854E-06	0.491842	8.757E-07	3.40351E-05	0.4113456	7.324E-07	2.84648E-05	0.4866142	8.664E-07	3.36734E-05
Road 3	3	0500-0600	0.072136872	2.812E-07	1.0928E-05	0.0606031	2.362E-07	9.18078E-06	0.3975774	1.55E-06	6.02291E-05	0.331087	1.29E-06	5.01565E-05	0.39169	1.527E-06	5.93373E-05
Road 3	3	0600-0700	0.098426416	6.915E-07	2.6876E-05	0.0833102	5.853E-07	2.27484E-05	0.4901426	3.443E-06	0.000133837	0.4124124	2.897E-06	0.000112612	0.4957226	3.483E-06	0.00013536
Road 3	3	0700-0800	0.080854623	9.286E-07	3.60908E-05	0.0686841	7.888E-07	3.06583E-05	0.4197179	4.82E-06	0.000187348	0.353783	4.063E-06	0.000157917	0.4224671	4.852E-06	0.000188575
Road 3	3	0800-0900	0.089960576	1.427E-06	5.5466E-05	0.0766377	1.216E-06	4.72517E-05	0.4475221	7.099E-06	0.000275924	0.3792101	6.015E-06	0.000233806	0.4558478	7.231E-06	0.000281057
Road 3	3	0900-1000	0.097728386	1.495E-06	5.8123E-05	0.0834914	1.278E-06	4.96557E-05	0.5029939	7.697E-06	0.000299151	0.4279875	6.549E-06	0.000254541	0.5114789	7.827E-06	0.000304197
Road 3	3	1000-1100	0.110124897	1.537E-06	5.97288E-05	0.093608	1.306E-06	5.07704E-05	0.5601059	7.816E-06	0.000303786	0.4745241	6.622E-06	0.000257369	0.5681321	7.928E-06	0.000308139
Road 3	3	1100-1200	0.10759253	1.46E-06	5.67455E-05	0.0926949	1.258E-06	4.88883E-05	0.5615256	7.62E-06	0.000296155	0.4822213	6.543E-06	0.000254329	0.5749162	7.801E-06	0.000303217
Road 3	3	1200-1300	0.099924693	1.356E-06	5.27014E-05	0.0870219	1.181E-06	4.58963E-05	0.5336552	7.241E-06	0.000281456	0.4630662	6.284E-06	0.000244226	0.5500881	7.464E-06	0.000290122
Road 3	3	1300-1400	0.106248977	1.566E-06	6.08722E-05	0.0925201	1.364E-06	5.30066E-05	0.5460838	8.049E-06	0.000312862	0.4739514	6.986E-06	0.000271536	0.5664715	8.35E-06	0.000324543

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (September) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 3	3	1400-1500	0.099105227	1.469E-06	5.70883E-05	0.0850586	1.261E-06	4.89969E-05	0.5152874	7.637E-06	0.000296825	0.4407018	6.531E-06	0.000253861	0.5257604	7.792E-06	0.000302858
Road 3	3	1500-1600	0.112244764	1.602E-06	6.2278E-05	0.0951018	1.358E-06	5.27664E-05	0.5680943	8.11E-06	0.000315202	0.4792077	6.841E-06	0.000265884	0.5743094	8.198E-06	0.000318651
Road 3	3	1600-1700	0.10624258	1.651E-06	6.41802E-05	0.0879516	1.367E-06	5.31308E-05	0.5484429	8.524E-06	0.00033131	0.4515054	7.017E-06	0.00027275	0.539457	8.384E-06	0.000325881
Road 3	3	1700-1800	0.085086124	1.324E-06	5.14528E-05	0.0702061	1.092E-06	4.24547E-05	0.4396761	6.841E-06	0.000265879	0.3599514	5.6E-06	0.000217668	0.4301575	6.693E-06	0.000260123
Road 3	3	1800-1900	0.080084582	1.306E-06	5.07748E-05	0.0666469	1.087E-06	4.22551E-05	0.443415	7.233E-06	0.000281132	0.3651913	5.957E-06	0.000231537	0.4318382	7.044E-06	0.000273792
Road 3	3	1900-2000	0.085218991	1.029E-06	4.00046E-05	0.0710706	8.584E-07	3.33629E-05	0.4684581	5.658E-06	0.00021991	0.3873936	4.679E-06	0.000181855	0.4584643	5.537E-06	0.000215218
Road 3	3	2000-2100	0.079211211	8.182E-07	3.18018E-05	0.0657172	6.788E-07	2.63842E-05	0.4318334	4.461E-06	0.000173373	0.3551259	3.668E-06	0.000142576	0.420843	4.347E-06	0.00016896
Road 3	3	2100-2200	0.078481	7.679E-07	2.98451E-05	0.065502	6.409E-07	2.49094E-05	0.4419335	4.324E-06	0.00016806	0.3657211	3.578E-06	0.000139078	0.4312231	4.219E-06	0.000163987
Road 3	3	2200-2300	0.08323527	7.423E-07	2.8851E-05	0.069588	6.206E-07	2.41206E-05	0.452286	4.033E-06	0.000156771	0.3749421	3.344E-06	0.000129962	0.4445301	3.964E-06	0.000154083
Road 3	3	2300-0000	0.073884237	5.902E-07	2.29382E-05	0.0612936	4.896E-07	1.90293E-05	0.417579	3.335E-06	0.000129642	0.3427204	2.738E-06	0.000106402	0.404014	3.227E-06	0.000125431
Road 4	4	0000-0100	0.274281143	2.222E-07	2.37942E-06	0.2326143	1.885E-07	2.01796E-06	1.3974963	1.132E-06	1.21234E-05	1.1846689	9.598E-07	1.02771E-05	1.4172831	1.148E-06	1.22951E-05
Road 4	4	0100-0200	0.257736	1.193E-07	1.27765E-06	0.220147	1.019E-07	1.09132E-06	1.315607	6.091E-07	6.52174E-06	1.123403	5.201E-07	5.56895E-06	1.34355	6.22E-07	6.66026E-06
Road 4	4	0200-0300	0.279263846	8.404E-08	8.99841E-07	0.2362215	7.109E-08	7.6115E-07	1.3783423	4.148E-07	4.44128E-06	1.1659008	3.508E-07	3.75675E-06	1.4021223	4.219E-07	4.5179E-06
Road 4	4	0300-0400	0.25484	4.129E-08	4.42154E-07	0.2141971	3.471E-08	3.71637E-07	1.3529357	2.192E-07	2.34738E-06	1.1369486	1.842E-07	1.97263E-06	1.3511457	2.189E-07	2.34427E-06
Road 4	4	0400-0500	0.261025714	8.459E-08	9.05772E-07	0.21939	7.11E-08	7.61294E-07	1.2891143	4.178E-07	4.47329E-06	1.0833086	3.511E-07	3.75913E-06	1.3026986	4.222E-07	4.52043E-06
Road 4	4	0500-0600	0.240877917	1.338E-07	1.4329E-06	0.2024313	1.125E-07	1.20419E-06	1.1415417	6.342E-07	6.79064E-06	0.9585383	5.325E-07	5.70201E-06	1.1609696	6.45E-07	6.90621E-06
Road 4	4	0600-0700	0.266306154	3.206E-07	3.43235E-06	0.2253088	2.712E-07	2.90395E-06	1.2712052	1.53E-06	1.63842E-05	1.0748975	1.294E-06	1.38541E-05	1.3002063	1.565E-06	1.6758E-05
Road 4	4	0700-0800	0.26699587	5.686E-07	6.08835E-06	0.2268277	4.831E-07	5.17239E-06	1.328811	2.83E-06	3.03011E-05	1.1277251	2.402E-06	2.57157E-05	1.3545528	2.885E-06	3.08881E-05
Road 4	4	0800-0900	0.274812876	9.733E-07	1.04216E-05	0.2338903	8.284E-07	8.86975E-06	1.3707567	4.855E-06	5.19828E-05	1.1662403	4.13E-06	4.42269E-05	1.4001306	4.959E-06	5.30967E-05
Road 4	4	0900-1000	0.283541757	9.714E-07	1.04013E-05	0.241619	8.278E-07	8.8634E-06	1.3365632	4.579E-06	4.90296E-05	1.1381022	3.899E-06	4.17494E-05	1.3797211	4.727E-06	5.06128E-05
Road 4	4	1000-1100	0.31635	1.047E-06	1.12127E-05	0.268404	8.885E-07	9.51333E-06	1.4938395	4.945E-06	5.29477E-05	1.267208	4.195E-06	4.4915E-05	1.535612	5.083E-06	5.44283E-05
Road 4	4	1100-1200	0.292661548	1.05E-06	1.12436E-05	0.2517803	9.034E-07	9.673E-06	1.3731196	4.927E-06	5.2753E-05	1.1809332	4.237E-06	4.53696E-05	1.4327135	5.141E-06	5.50426E-05
Road 4	4	1200-1300	0.294310612	1.001E-06	1.07234E-05	0.2560184	8.712E-07	9.32816E-06	1.4446975	4.916E-06	5.26383E-05	1.2562344	4.275E-06	4.57715E-05	1.5122529	5.146E-06	5.50997E-05
Road 4	4	1300-1400	0.302328523	1.043E-06	1.11654E-05	0.2630022	9.071E-07	9.713E-06	1.4492752	4.999E-06	5.35235E-05	1.2602174	4.347E-06	4.65414E-05	1.5232197	5.254E-06	5.62544E-05
Road 4	4	1400-1500	0.277654203	8.87E-07	9.4971E-06	0.2379913	7.603E-07	8.14044E-06	1.3763093	4.397E-06	4.70763E-05	1.1789883	3.766E-06	4.0327E-05	1.4169796	4.526E-06	4.84675E-05
Road 4	4	1500-1600	0.315314113	9.051E-07	9.69109E-06	0.26674	7.656E-07	8.19818E-06	1.5095154	4.333E-06	4.63945E-05	1.2765944	3.664E-06	3.92358E-05	1.5433344	4.43E-06	4.74339E-05
Road 4	4	1600-1700	0.297476371	8.539E-07	9.14285E-06	0.2459292	7.059E-07	7.55856E-06	1.4403517	4.134E-06	4.42688E-05	1.1900223	3.416E-06	3.6575E-05	1.4359515	4.122E-06	4.41336E-05
Road 4	4	1700-1800	0.28546754	8.326E-07	8.91528E-06	0.2355612	6.871E-07	7.35668E-06	1.4053931	4.099E-06	4.3891E-05	1.1585746	3.379E-06	3.61828E-05	1.3941358	4.066E-06	4.35395E-05
Road 4	4	1800-1900	0.313951321	7.703E-07	8.24851E-06	0.2611807	6.409E-07	6.86206E-06	1.5664717	3.844E-06	4.11563E-05	1.3031046	3.197E-06	3.42368E-05	1.5642853	3.838E-06	4.10988E-05
Road 4	4	1900-2000	0.282435135	4.838E-07	5.18034E-06	0.2356949	4.037E-07	4.32304E-06	1.4029424	2.403E-06	2.57323E-05	1.1699749	2.004E-06	2.14593E-05	1.4056697	2.408E-06	2.57824E-05
Road 4	4	2000-2100	0.247289184	2.805E-07	3.00337E-06	0.2051704	2.327E-07	2.49183E-06	1.2352035	1.401E-06	1.50018E-05	1.0231627	1.161E-06	1.24265E-05	1.2283331	1.393E-06	1.49183E-05
Road 4	4	2100-2200	0.207431622	1.777E-07	1.90232E-06	0.1734735	1.486E-07	1.5909E-06	1.0548659	9.035E-07	9.67401E-06	0.8805651	7.542E-07	8.07552E-06	1.0540386	9.028E-07	9.66642E-06
Road 4	4	2200-2300	0.274546984	4.004E-07	4.28711E-06	0.2296659	3.349E-07	3.58628E-06	1.3466481	1.964E-06	2.10282E-05	1.1257951	1.642E-06	1.75795E-05	1.355461	1.977E-06	2.11658E-05
Road 4	4	2300-0000	0.256214792	2.847E-07	3.04827E-06	0.2125758	2.362E-07	2.52908E-06	1.2902417	1.434E-06	1.53504E-05	1.0693735	1.188E-06	1.27227E-05	1.2819494	1.424E-06	1.52517E-05
Road 5	5	0000-0100	0.09154544	3.316E-07	4.48445E-06	0.0777713	2.817E-07	3.80971E-06	0.5042615	1.827E-06	2.47018E-05	0.4252727	1.54E-06	2.08324E-05	0.503044	1.822E-06	2.46421E-05
Road 5	5	0100-0200	0.061670413	1.401E-07	1.89399E-06	0.0527453	1.198E-07	1.61988E-06	0.3713693	8.434E-07	1.14053E-05	0.3151509	7.157E-07	9.67874E-06	0.3678962	8.355E-07	1.12986E-05
Road 5	5	0200-0300	0.058071512	9.373E-08	1.26758E-06	0.0490706	7.921E-08	1.07111E-06	0.3922198	6.331E-07	8.56136E-06	0.3271253	5.28E-07	7.14048E-06	0.3761959	6.072E-07	8.21159E-06
Road 5	5	0300-0400	0.053585645	6.236E-08	8.43247E-07	0.044975	5.234E-08	7.07746E-07	0.2859327	3.327E-07	4.49956E-06	0.2368234	2.756E-07	3.72676E-06	0.2817984	3.279E-07	4.4345E-06
Road 5	5	0400-0500	0.074269485	1.352E-07	1.82851E-06	0.0624924	1.138E-07	1.53856E-06	0.4168602	7.589E-07	1.02631E-05	0.3480445	6.336E-07	8.56883E-06	0.4105369	7.474E-07	1.01074E-05
Road 5	5	0500-0600	0.059531835	2.436E-07	3.29398E-06	0.050008	2.046E-07	2.76701E-06	0.3392075	1.388E-06	1.87688E-05	0.2817548	1.153E-06	1.55899E-05	0.3317628	1.357E-06	1.83569E-05
Road 5	5	0600-0700	0.086552052	6.254E-07	8.45771E-06	0.0732655	5.294E-07	7.15938E-06	0.4291915	3.101E-06	4.19398E-05	0.3605985	2.606E-06	3.5237E-05	0.433864	3.135E-06	4.23964E-05
Road 5	5	0700-0800	0.066510208	7.789E-07	1.05339E-05	0.0564795	6.615E-07	8.94521E-06	0.3430523	4.018E-06	5.43325E-05	0.2884106	3.378E-06	4.56784E-05	0.3448902	4.039E-06	5.46236E-05
Road 5	5	0800-0900	0.072372572	1.136E-06	1.53566E-05	0.0616624	9.675E-07	1.3084E-05	0.3515219	5.516E-06	7.45888E-05	0.297319	4.665E-06	6.30876E-05	0.3589815	5.633E-06	7.61716E-05
Road 5	5	0900-1000	0.079657698	1.208E-06	1.63363E-05	0.0681223	1.033E-06	1.39706E-05	0.419245	6.358E-06	8.59793E-05	0.3566445	5.409E-06	7.31411E-05	0.4247668	6.442E-06	8.71118E-05
Road 5	5	1000-1100	0.090454449	1.233E-06	1.66679E-05	0.0769185	1.048E-06	1.41737E-05	0.4673058	6.368E-06	8.61098E-05	0.3957243	5.392E-06	7.29196E-05	0.4726428	6.44E-06	8.70933E-05
Road 5	5	1100-1200	0.088206406	1.142E-06	1.54477E-05	0.0760482	9.849E-07	1.33184E-05	0.4739119	6.137E-06	8.29968E-05	0.4067414	5.267E-06	7.12332E-05	0.4827896	6.252E-06	8.45516E-05
Road 5	5	1200-1300	0.081261273	1.066E-06	1.4417E-05	0.0707815	9.286E-07	1.25577E-05	0.4403971	5.778E-06	7.81334E-05	0.3817796	5.009E-06	6.77337E-05	0.4525611	5.937E-06	8.02914E-05
Road 5	5	1300-1400	0.087666323	1.262E-06	1.70664E-05	0.076384	1.1E-06	1.48701E-05	0.4572931	6.583E-06	8.90235E-05	0.396593	5.709E-06	7.72067E-05	0.472977	6.809E-06	9.20768E-05
Road 5	5	1400-1500	0.084048372	1.24E-06	1.67674E-05	0.0721555	1.064E-06	1.43948E-05	0.437929	6.46E-06	8.73657E-05	0.374345	5.522E-06	7.46809E-05	0.4465005	6.587E-06	8.90757E-05
Road 5	5	1500-1600	0.095742405	1.375E-06	1.85901E-05	0.0811627	1.165E-06	1.57591E-05	0.4877982	7.004E-06	9.47145E-05	0.4111149	5.903E-06	7.98251E-05	0.4922776	7.068E-06	9.55843E-05
Road 5	5	1600-1700	0.090723729	1.434E-06	1.93887E-05	0.0751196	1.187E-06	1.60539E-05	0.4731633	7.478E-06	0.00010112	0.3890623	6.148E-06	8.31469E-05	0.4641819	7.336E-06	9.92008E-05
Road 5	5	1700-1800	0.067827761	1.074E-06	1.453E-05	0.0559877	8.869E-07	1.19936E-05	0.352477	5.584E-06	7.55072E-05	0.2877387	4.558E-06	6.1639E-05	0.3437264	5.445E-06	7.36326E-05
Road 5	5	1800-1900	0.063447549	1.084E-06	1.46545E-05	0.0527971	9.018E-07	1.21946E-05	0.3593208	6.137E-06	8.29924E-05	0.2949068	5.037E-06	6.81147E-05	0.3477039	5.939E-06	8.03093E-05
Road 5	5	1900-2000	0.072997903	9.275E-07	1.25434E-05	0.0608802	7.736E-07	1.04612E-05	0.408382	5.189E-06	7.0173E-05	0.3369532	4.281E-06	5.78993E-05	0.3978335	5.055E-06	6.83604E-05
Road 5	5	2000-2100	0.070181229	7.824E-07	1.05809E-05	0.058229	6.492E-07	8.77891E-06	0.3856691	4.3E-06	5.81455E-05	0.3166742	3.53E-06	4.77435E-05	0.3749032	4.18E-06	5.65224E-05
Road 5	5	2100-2200	0.073620123	7.89E-07	1.06696E-05	0.0614308	6.584E-07	8.90301E-06	0.4173639	4.473E-06	6.04875E-05	0.3449633	3.697E-06	4.99947E-05	0.4063941	4.355E-06	5.88977E-05
Road 5	5	2200-2300	0.070187256	6.481E-07	8.76472E-06	0.0586698	5.418E-07	7.32647E-06	0.3885049	3.588E-06	4.8515E-05	0.321238	2.966E-06	4.0115E-05	0.3799078	3.508E-06	4.74415E-05
Road 5	5	2300-0000	0.062322478	5.24E-07	7.08659E-06	0.0517016	4.347E-07	5.87891E-06	0.3591261	3.02E-06	4.08357E-05	0.2939317	2.471E-06	3.34225E-05	0.3456333	2.906E-06	3.93014E-05
Road 6	6	0000-0100	0.055629189	1.545E-07	5.52366E-06	0.0471585	1.31E-07	4.68257E-06	0.3503022	9.731E-07	3.4783E-05	0.2931822	8.144E-07	2.91113E-05	0.3403407	9.454E-07	3.37939E-05
Road 6	6	0100-0200	0.071779912	1.522E-07	5.44182E-06	0.0613776	1.302E-07	4.65319E-06	0.4004086	8.492E-07	3.0356E-05	0.3391153	7.192E-07	2.57092E-05	0.4004929	8.494E-07	3.03624E-05
Road 6	6	0200-0300	0.066077215	9.797E-08	3.5022E-06	0.0559605	8.297E-08	2.966E-06	0.3699868	5.486E-07	1.96099E-05	0.3099619	4.596E-07	1.64285E-05	0.3659224	5.426E-07	1.93945E-05
Road 6	6	0300-0400	0.067135161	7.812E-08	2.79257E-06	0.0566429	6.591E-08	2.35613E-06	0.4230758	4.923E-07	1.75984E-05	0.3534524	4.113E-07	1.47023E-05	0.4100953	4.772E-07	1.70584E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (September) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 6	6	0400-0500	0.072881333	1.231E-07	4.4007E-06	0.0613398	1.036E-07	3.7038E-06	0.4212222	7.115E-07	2.54341E-05	0.3509318	5.928E-07	2.11898E-05	0.4122716	6.964E-07	2.48936E-05
Road 6	6	0500-0600	0.06565087	1.984E-07	7.09135E-06	0.0552425	1.669E-07	5.96708E-06	0.3902082	1.179E-06	4.21488E-05	0.3244665	9.805E-07	3.50476E-05	0.379709	1.147E-06	4.10147E-05
Road 6	6	0600-0700	0.069894634	3.765E-07	1.34582E-05	0.0592079	3.189E-07	1.14005E-05	0.4269506	2.3E-06	8.22095E-05	0.3577242	1.927E-06	6.88799E-05	0.4169321	2.246E-06	8.02805E-05
Road 6	6	0700-0800	0.065825395	5.634E-07	2.01382E-05	0.0559638	4.79E-07	1.71212E-05	0.3674652	3.145E-06	0.00011242	0.3090159	2.645E-06	9.45384E-05	0.3649797	3.124E-06	0.00011166
Road 6	6	0800-0900	0.056560872	6.943E-07	2.48174E-05	0.0481487	5.91E-07	2.11264E-05	0.3294119	4.043E-06	0.000144537	0.2769853	3.4E-06	0.000121534	0.3251339	3.991E-06	0.00014266
Road 6	6	0900-1000	0.059213646	6.979E-07	2.49485E-05	0.0505077	5.953E-07	2.12804E-05	0.3293963	3.883E-06	0.000138784	0.2781615	3.279E-06	0.000117198	0.3286693	3.874E-06	0.000138478
Road 6	6	1000-1100	0.07950468	7.939E-07	2.8377E-05	0.0675489	6.745E-07	2.41097E-05	0.4318901	4.312E-06	0.000154151	0.3647889	3.642E-06	0.000130201	0.4323378	4.317E-06	0.000154311
Road 6	6	1100-1200	0.090019659	8.921E-07	3.18885E-05	0.0776303	7.693E-07	2.74997E-05	0.4660829	4.619E-06	0.000165105	0.4000849	3.965E-06	0.000141726	0.4777152	4.734E-06	0.000169225
Road 6	6	1200-1300	0.086198566	8.348E-07	2.98409E-05	0.0751099	7.274E-07	2.60022E-05	0.425363	4.12E-06	0.000147256	0.3691505	3.575E-06	0.000127796	0.4442605	4.303E-06	0.000153798
Road 6	6	1300-1400	0.100568874	9.721E-07	3.47483E-05	0.0875884	8.466E-07	3.02633E-05	0.5053575	4.885E-06	0.00017461	0.4383067	4.237E-06	0.000151443	0.5258951	5.083E-06	0.000181706
Road 6	6	1400-1500	0.096190387	1.025E-06	3.66558E-05	0.0825847	8.804E-07	3.1471E-05	0.4800835	5.118E-06	0.000182948	0.4102137	4.373E-06	0.000156322	0.4927984	5.254E-06	0.000187793
Road 6	6	1500-1600	0.086073261	8.966E-07	3.20497E-05	0.0729223	7.596E-07	2.71529E-05	0.4394423	4.578E-06	0.000163628	0.3695411	3.849E-06	0.0001376	0.4424635	4.609E-06	0.000164753
Road 6	6	1600-1700	0.090874683	9.688E-07	3.46301E-05	0.0752783	8.025E-07	2.86867E-05	0.4437052	4.73E-06	0.000169085	0.3648871	3.89E-06	0.00013905	0.4401654	4.692E-06	0.000167736
Road 6	6	1700-1800	0.067952955	7.64E-07	2.73085E-05	0.05611	6.308E-07	2.25491E-05	0.3419777	3.845E-06	0.000137432	0.2793913	3.141E-06	0.00011228	0.3355013	3.772E-06	0.000134829
Road 6	6	1800-1900	0.066659971	8.545E-07	3.05456E-05	0.0554257	7.105E-07	2.53977E-05	0.3461338	4.437E-06	0.000158609	0.2845911	3.648E-06	0.000130408	0.3400168	4.359E-06	0.000155806
Road 6	6	1900-2000	0.078852534	7.711E-07	2.75623E-05	0.0657082	6.425E-07	2.29678E-05	0.4088549	3.998E-06	0.000142912	0.3370515	3.296E-06	0.000117814	0.4027597	3.938E-06	0.000140782
Road 6	6	2000-2100	0.062847098	4.836E-07	1.72875E-05	0.0520993	4.009E-07	1.43311E-05	0.3537116	2.722E-06	9.72962E-05	0.2894751	2.228E-06	7.96265E-05	0.3415744	2.628E-06	9.39576E-05
Road 6	6	2100-2200	0.088135534	5.889E-07	2.10506E-05	0.0735585	4.915E-07	1.75689E-05	0.4580969	3.061E-06	0.000109413	0.3790919	2.533E-06	9.05434E-05	0.4526504	3.024E-06	0.000108112
Road 6	6	2200-2300	0.065430292	4.63E-07	1.65494E-05	0.0546258	3.865E-07	1.38166E-05	0.362647	2.566E-06	9.17251E-05	0.2977702	2.107E-06	7.53156E-05	0.3523959	2.493E-06	8.91322E-05
Road 6	6	2300-0000	0.043988277	2.923E-07	1.04473E-05	0.0365016	2.425E-07	8.66918E-06	0.2702229	1.795E-06	6.41783E-05	0.2205522	1.465E-06	5.23814E-05	0.2570539	1.708E-06	6.10506E-05
Road 7	7	0000-0100	0.079857545	2.133E-07	5.32549E-06	0.0672553	1.797E-07	4.48508E-06	0.4711181	1.259E-06	3.14176E-05	0.3935907	1.051E-06	2.62475E-05	0.460846	1.231E-06	3.07326E-05
Road 7	7	0100-0200	0.09554583	1.984E-07	4.95192E-06	0.0816971	1.696E-07	4.23417E-06	0.5243883	1.089E-06	2.71778E-05	0.4457944	9.255E-07	2.31045E-05	0.5274916	1.095E-06	2.73387E-05
Road 7	7	0200-0300	0.082916503	1.132E-07	2.82484E-06	0.0705299	9.626E-08	2.40285E-06	0.4667042	6.369E-07	1.58999E-05	0.3941449	5.379E-07	1.34279E-05	0.4646748	6.342E-07	1.58308E-05
Road 7	7	0300-0400	0.084404467	9.313E-08	2.3249E-06	0.0710916	7.844E-08	1.9582E-06	0.5082326	5.608E-07	1.39992E-05	0.4250841	4.69E-07	1.17088E-05	0.4961757	5.475E-07	1.3667E-05
Road 7	7	0400-0500	0.093705039	1.51E-07	3.76974E-06	0.078657	1.268E-07	3.16436E-06	0.5209627	8.396E-07	2.09583E-05	0.4343851	7E-07	1.74753E-05	0.5130422	8.268E-07	2.06396E-05
Road 7	7	0500-0600	0.085192532	2.424E-07	6.05178E-06	0.0715874	2.037E-07	5.08532E-06	0.4795984	1.365E-06	3.4069E-05	0.3997156	1.137E-06	2.83944E-05	0.471303	1.341E-06	3.34797E-05
Road 7	7	0600-0700	0.088880862	4.516E-07	1.12746E-05	0.0753181	3.827E-07	9.55418E-06	0.5100864	2.592E-06	6.47049E-05	0.4288736	2.179E-06	5.4403E-05	0.5041917	2.562E-06	6.39572E-05
Road 7	7	0700-0800	0.085122726	6.921E-07	1.72766E-05	0.072515	5.896E-07	1.47178E-05	0.4605643	3.745E-06	9.34768E-05	0.3894317	3.166E-06	7.90396E-05	0.4619467	3.756E-06	9.37574E-05
Road 7	7	0800-0900	0.085000496	1.044E-06	2.60626E-05	0.0725154	8.907E-07	2.22344E-05	0.4634023	5.692E-06	0.000142087	0.3924836	4.821E-06	0.000120342	0.464999	5.711E-06	0.000142577
Road 7	7	0900-1000	0.087233735	9.955E-07	2.48504E-05	0.074502	8.502E-07	2.12235E-05	0.4571139	5.216E-06	0.000130218	0.3880361	4.428E-06	0.00011054	0.4625381	5.278E-06	0.000131764
Road 7	7	1000-1100	0.103573968	1.036E-06	2.5864E-05	0.0879206	8.795E-07	2.19551E-05	0.5460409	5.462E-06	0.000136355	0.4616779	4.618E-06	0.000115288	0.5495986	5.498E-06	0.000137243
Road 7	7	1100-1200	0.113022	1.126E-06	2.81004E-05	0.0969486	9.656E-07	2.41041E-05	0.584255	5.819E-06	0.000145262	0.4997658	4.978E-06	0.000124256	0.5967144	5.943E-06	0.00014836
Road 7	7	1200-1300	0.109620904	1.09E-06	2.72151E-05	0.0955124	9.499E-07	2.37124E-05	0.5543462	5.513E-06	0.000137625	0.4817641	4.791E-06	0.000119605	0.5772765	5.741E-06	0.000143318
Road 7	7	1300-1400	0.117517408	1.152E-06	2.87496E-05	0.1023822	1.003E-06	2.50469E-05	0.5927087	5.809E-06	0.000145001	0.5148571	5.046E-06	0.000125955	0.6172393	6.049E-06	0.000151002
Road 7	7	1400-1500	0.110364922	1.134E-06	2.83198E-05	0.0949657	9.762E-07	2.43683E-05	0.5629561	5.787E-06	0.000144455	0.4828932	4.964E-06	0.000123911	0.5778589	5.94E-06	0.000148279
Road 7	7	1500-1600	0.103570828	1.041E-06	2.59758E-05	0.087192	8.76E-07	2.1868E-05	0.5329756	5.355E-06	0.000133672	0.4463518	4.484E-06	0.000111946	0.5335438	5.36E-06	0.000133814
Road 7	7	1600-1700	0.108568455	1.129E-06	2.81736E-05	0.0902474	9.381E-07	2.34193E-05	0.5384889	5.598E-06	0.000139738	0.4453622	4.63E-06	0.000115572	0.5356095	5.568E-06	0.000138991
Road 7	7	1700-1800	0.084634015	9.326E-07	2.32816E-05	0.0699283	7.706E-07	1.92362E-05	0.4356699	4.801E-06	0.000119846	0.3570718	3.935E-06	9.82252E-05	0.4270001	4.705E-06	0.000117461
Road 7	7	1800-1900	0.077823718	8.904E-07	2.22261E-05	0.064488	7.378E-07	1.84175E-05	0.409503	4.685E-06	0.000116952	0.3362133	3.846E-06	9.60211E-05	0.4007013	4.584E-06	0.000114439
Road 7	7	1900-2000	0.090482269	7.843E-07	1.95778E-05	0.075476	6.542E-07	1.63309E-05	0.4774229	4.138E-06	0.000103301	0.3949717	3.423E-06	8.54606E-05	0.4704477	4.078E-06	0.000101791
Road 7	7	2000-2100	0.083326475	5.904E-07	1.47377E-05	0.0692086	4.903E-07	1.22407E-05	0.4504672	3.192E-06	7.96725E-05	0.370935	2.628E-06	6.5606E-05	0.4401436	3.118E-06	7.78466E-05
Road 7	7	2100-2200	0.096689423	5.756E-07	1.43677E-05	0.080045	4.765E-07	1.18944E-05	0.5096547	3.034E-06	7.57331E-05	0.4188218	2.493E-06	6.22356E-05	0.4988669	2.97E-06	7.413E-05
Road 7	7	2200-2300	0.080445113	5.162E-07	1.28869E-05	0.0672016	4.312E-07	1.07653E-05	0.4394336	2.82E-06	7.03949E-05	0.3626892	2.327E-06	5.81009E-05	0.4298908	2.759E-06	6.88662E-05
Road 7	7	2300-0000	0.055693109	3.291E-07	8.21526E-06	0.0463616	2.74E-07	6.83878E-06	0.3303676	1.952E-06	4.87324E-05	0.2716899	1.605E-06	4.00769E-05	0.3180516	1.879E-06	4.69156E-05
Road 8	8	0000-0100	0.241141111	1.754E-07	2.891E-06	0.2044756	1.487E-07	2.45142E-06	1.2319275	8.959E-07	1.47694E-05	1.0440511	7.593E-07	1.25169E-05	1.2485267	9.08E-07	1.49684E-05
Road 8	8	0100-0200	0.248348	1.505E-07	2.48117E-06	0.2121597	1.286E-07	2.11962E-06	1.263942	7.66E-07	1.26276E-05	1.079443	6.542E-07	1.07844E-05	1.2916027	7.828E-07	1.2904E-05
Road 8	8	0200-0300	0.235438	7.134E-08	1.17609E-06	0.199296	6.039E-08	9.95551E-07	1.26191	3.824E-07	6.30367E-06	1.0679493	3.236E-07	5.33477E-06	1.2672453	3.84E-07	6.33032E-06
Road 8	8	0300-0400	0.215705714	6.101E-08	1.00569E-06	0.18163	5.137E-08	8.46817E-07	1.1280221	3.19E-07	5.2592E-06	0.9492143	2.685E-07	4.42554E-06	1.1308443	3.198E-07	5.27236E-06
Road 8	8	0400-0500	0.243647619	1.034E-07	1.70394E-06	0.2048914	8.692E-08	1.4329E-06	1.2034567	5.106E-07	8.41635E-06	1.0117557	4.292E-07	7.07569E-06	1.2166471	5.162E-07	8.50859E-06
Road 8	8	0500-0600	0.231729118	1.592E-07	2.62382E-06	0.1948679	1.338E-07	2.20645E-06	1.1233121	7.716E-07	1.2719E-05	0.9439188	6.483E-07	1.06878E-05	1.1387868	7.822E-07	1.28942E-05
Road 8	8	0600-0700	0.257905645	3.23E-07	5.32508E-06	0.2183785	2.735E-07	4.50895E-06	1.2354024	1.547E-06	2.55079E-05	1.0452411	1.309E-06	2.15815E-05	1.2636197	1.583E-06	2.60905E-05
Road 8	8	0700-0800	0.257731287	5.259E-07	8.66887E-06	0.2190214	4.469E-07	7.36685E-06	1.2483354	2.547E-06	4.19881E-05	1.0600841	2.163E-06	3.56562E-05	1.2791054	2.61E-06	4.30231E-05
Road 8	8	0800-0900	0.286097053	1.098E-06	1.81026E-05	0.2437526	9.356E-07	1.54233E-05	1.3908277	5.339E-06	8.80037E-05	1.1840031	4.545E-06	7.4917E-05	1.4277557	5.48E-06	9.03403E-05
Road 8	8	0900-1000	0.30673121	9.729E-07	1.60373E-05	0.2614611	8.293E-07	1.36704E-05	1.4189651	4.501E-06	7.419E-05	1.2092071	3.835E-06	6.32229E-05	1.4706682	4.665E-06	7.68932E-05
Road 8	8	1000-1100	0.294813861	9.41E-07	1.55124E-05	0.2501738	7.985E-07	1.31635E-05	1.3992475	4.466E-06	7.3625E-05	1.1865808	3.787E-06	6.2435E-05	1.4367546	4.586E-06	7.55986E-05
Road 8	8	1100-1200	0.300505786	9.653E-07	1.5912E-05	0.2585103	8.304E-07	1.36883E-05	1.4470601	4.648E-06	7.66227E-05	1.2444863	3.997E-06	6.58963E-05	1.5029965	4.828E-06	7.95846E-05
Road 8	8	1200-1300	0.299052899	1.021E-06	1.68309E-05	0.2601343	8.881E-07	1.46406E-05	1.4548577	4.967E-06	8.18806E-05	1.2650846	4.319E-06	7.12E-05	1.5252189	5.207E-06	8.58406E-05
Road 8	8	1300-1400	0.273815625	8.851E-07	1.45899E-05	0.238244	7.701E-07	1.26945E-05	1.3080151	4.228E-06	6.96958E-05	1.1375926	3.677E-06	6.06151E-05	1.3758366	4.447E-06	7.33096E-05
Road 8	8	1400-1500	0.267360504	7.508E-07	1.23762E-05	0.2291977	6.436E-07	1.06096E-05	1.3374528	3.756E-06	6.19109E-05	1.146119	3.218E-06	5.3054E-05	1.3753167	3.862E-06	6.36636E-05
Road 8	8	1500-1600	0.278996715	7.722E-07	1.2729E-05	0.2359826	6.531E-07	1.07665E-05	1.3581175	3.759E-06	6.19629E-05	1.1478964	3.177E-06	5.23718E-05	1.383879	3.83E-06	6.31382E-05
Road 8	8	1600-1700	0.282932123	8.345E-07	1.37565E-05	0.2338579	6.898E-07	1.13705E-05	1.3603371	4.012E-06	6.61414E-05	1.1237797	3.315E-06	5.46396E-05	1.3576375	4.004E-06	6.60101E-05
Road 8	8	1700-1800	0.231583654	7.298E-07	1.20311E-05	0.1910084	6.02E-07	9.92318E-06	1.1630579	3.665E-06	6.04227E-05	0.957636	3.018E-06	4.97507E-05	1.1486444	3.62E-06	5.96738E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (September) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 8	8	1800-1900	0.231457009	5.003E-07	8.24761E-06	0.1927238	4.166E-07	6.86741E-06	1.1890413	2.57E-06	4.23696E-05	0.9889827	2.138E-06	3.52408E-05	1.1817065	2.554E-06	4.21083E-05
Road 8	8	1900-2000	0.229501818	3.57E-07	5.88506E-06	0.1915918	2.98E-07	4.91294E-06	1.2089699	1.881E-06	3.10013E-05	1.0085909	1.569E-06	2.5863E-05	1.2001827	1.867E-06	3.0776E-05
Road 8	8	2000-2100	0.252420132	3.876E-07	6.38868E-06	0.2094154	3.215E-07	5.30025E-06	1.208	1.855E-06	3.05741E-05	1.000818	1.537E-06	2.53304E-05	1.2102334	1.858E-06	3.06307E-05
Road 8	8	2100-2200	0.208799245	2.236E-07	3.68535E-06	0.1744858	1.868E-07	3.07971E-06	1.0981417	1.176E-06	1.93824E-05	0.9156298	9.804E-07	1.61611E-05	1.0901157	1.167E-06	1.92408E-05
Road 8	8	2200-2300	0.248834688	3.217E-07	5.30353E-06	0.2081642	2.691E-07	4.4367E-06	1.2333708	1.595E-06	2.62874E-05	1.0305436	1.332E-06	2.19644E-05	1.2387078	1.602E-06	2.64011E-05
Road 8	8	2300-0000	0.200358462	2.105E-07	3.46964E-06	0.1663831	1.748E-07	2.88129E-06	1.0324042	1.085E-06	1.78783E-05	0.8560108	8.992E-07	1.48237E-05	1.0223938	1.074E-06	1.7705E-05
Road 9	9	0000-0100	0.206947951	5.496E-08	1.64066E-06	0.1798043	4.775E-08	1.42547E-06	0.9472922	2.516E-07	7.51005E-06	0.8167694	2.169E-07	6.47527E-06	0.9965737	2.647E-07	7.90075E-06
Road 9	9	0100-0200	0.223514781	4.664E-08	1.39229E-06	0.1968414	4.107E-08	1.22614E-06	0.9666263	2.017E-07	6.02119E-06	0.8448473	1.763E-07	5.26261E-06	1.0416887	2.174E-07	6.48875E-06
Road 9	9	0200-0300	0.08831828	8.377E-09	2.50064E-07	0.075735	7.183E-09	2.14436E-07	0.6290069	5.966E-08	1.78097E-06	0.5423586	5.144E-08	1.53563E-06	0.6180936	5.863E-08	1.75007E-06
Road 9	9	0300-0400	0.107872056	8.185E-09	2.44343E-07	0.0914996	6.943E-09	2.07257E-07	0.6676626	5.066E-08	1.51233E-06	0.5680579	4.31E-08	1.28672E-06	0.6595575	5.005E-08	1.49398E-06
Road 9	9	0400-0500	0.241894759	4.589E-08	1.3698E-06	0.2099159	3.982E-08	1.18871E-06	1.0057572	1.908E-07	5.6954E-06	0.866014	1.643E-07	4.90406E-06	1.0759298	2.041E-07	6.09277E-06
Road 9	9	0500-0600	0.173451493	5.594E-08	1.66977E-06	0.1506714	4.859E-08	1.45048E-06	0.8744556	2.82E-07	8.41816E-06	0.7620688	2.458E-07	7.33624E-06	0.9127401	2.943E-07	8.78672E-06
Road 9	9	0600-0700	0.202590873	1.23E-07	3.67114E-06	0.1781054	1.081E-07	3.22744E-06	1.0599049	6.434E-07	1.92065E-05	0.9329751	5.663E-07	1.69064E-05	1.1110805	6.745E-07	2.01338E-05
Road 9	9	0700-0800	0.173829643	1.583E-07	4.72493E-06	0.155009	1.411E-07	4.21336E-06	0.9937851	9.049E-07	2.70125E-05	0.8898531	8.103E-07	2.41875E-05	1.044862	9.514E-07	2.84008E-05
Road 9	9	0800-0900	0.268039824	5.847E-07	1.74553E-05	0.2357893	5.144E-07	1.53551E-05	1.3033136	2.843E-06	8.48745E-05	1.1406973	2.488E-06	7.42846E-05	1.3764866	3.003E-06	8.96397E-05
Road 9	9	0900-1000	0.275947662	4.502E-07	1.34387E-05	0.2449955	3.997E-07	1.19313E-05	1.2199826	1.99E-06	5.94132E-05	1.0783084	1.759E-06	5.25136E-05	1.3233039	2.159E-06	6.44449E-05
Road 9	9	1000-1100	0.290469723	3.912E-07	1.16786E-05	0.2525327	3.401E-07	1.01533E-05	1.2566059	1.692E-06	5.05229E-05	1.0895486	1.467E-06	4.38062E-05	1.3420813	1.808E-06	5.39595E-05
Road 9	9	1100-1200	0.202132764	2.837E-07	8.47031E-06	0.1752615	2.46E-07	7.34428E-06	1.0801175	1.516E-06	4.5262E-05	0.9475874	1.33E-06	3.97083E-05	1.1228489	1.576E-06	4.70526E-05
Road 9	9	1200-1300	0.295781098	4.096E-07	1.22271E-05	0.2666081	3.692E-07	1.10211E-05	1.3686759	1.895E-06	5.65789E-05	1.2353413	1.711E-06	5.1067E-05	1.5019493	2.08E-06	6.20882E-05
Road 9	9	1300-1400	0.333338064	3.794E-07	1.13257E-05	0.3001565	3.416E-07	1.01983E-05	1.2883631	1.466E-06	4.37744E-05	1.1539132	1.313E-06	3.92062E-05	1.4540697	1.655E-06	4.94046E-05
Road 9	9	1400-1500	0.216066664	2.787E-07	8.32008E-06	0.1941746	2.505E-07	7.47708E-06	1.0730348	1.384E-06	4.13193E-05	0.9585133	1.236E-06	3.69095E-05	1.1526879	1.487E-06	4.43865E-05
Road 9	9	1500-1600	0.183086129	1.98E-07	5.90964E-06	0.1600484	1.731E-07	5.16603E-06	0.9677204	1.046E-06	3.1236E-05	0.8497911	9.189E-07	2.74295E-05	1.0098395	1.092E-06	3.25955E-05
Road 9	9	1600-1700	0.190635776	2.857E-07	8.52829E-06	0.1676181	2.512E-07	7.49857E-06	1.0861381	1.628E-06	4.85895E-05	0.9539992	1.43E-06	4.26782E-05	1.1216172	1.681E-06	5.01767E-05
Road 9	9	1700-1800	0.166651508	2.15E-07	6.41725E-06	0.1476209	1.904E-07	5.68444E-06	1.0340485	1.334E-06	3.98181E-05	0.9249428	1.193E-06	3.56168E-05	1.0725637	1.384E-06	4.13012E-05
Road 9	9	1800-1900	0.163945181	1.368E-07	4.08491E-06	0.1466719	1.224E-07	3.65452E-06	1.0028465	8.37E-07	2.49872E-05	0.9064712	7.566E-07	2.25859E-05	1.0531431	8.79E-07	2.62404E-05
Road 9	9	1900-2000	0.170774837	1.393E-07	4.15837E-06	0.1518142	1.238E-07	3.69668E-06	0.9220492	7.521E-07	2.24519E-05	0.8186732	6.678E-07	1.99347E-05	0.9704874	7.916E-07	2.36314E-05
Road 9	9	2000-2100	0.183789009	1.011E-07	3.0182E-06	0.1586136	8.726E-08	2.60477E-06	0.8178772	4.499E-07	1.34313E-05	0.7150043	3.933E-07	1.17419E-05	0.8736179	4.806E-07	1.43466E-05
Road 9	9	2100-2200	0.023824383	1.22E-08	3.64264E-07	0.021057	1.079E-08	3.21952E-07	0.3319832	1.7E-07	5.07587E-06	0.2879876	1.475E-07	4.4032E-06	0.3090447	1.583E-07	4.72515E-06
Road 9	9	2200-2300	0.176272461	1.103E-07	3.29404E-06	0.1523452	9.537E-08	2.84691E-06	0.8643663	5.411E-07	1.61526E-05	0.7470377	4.676E-07	1.39601E-05	0.899383	5.63E-07	1.6807E-05
Road 9	9	2300-0000	0.142638334	8.117E-08	2.42319E-06	0.12424	7.07E-08	2.11064E-06	0.7379894	4.2E-07	1.25372E-05	0.6407277	3.646E-07	1.08849E-05	0.7649678	4.353E-07	1.29956E-05
Road 10	10	0000-0100	0.291504193	2.241E-07	4.98335E-06	0.2489614	1.914E-07	4.25607E-06	1.4897462	1.145E-06	2.54676E-05	1.2733866	9.791E-07	2.17689E-05	1.522348	1.17E-06	2.6025E-05
Road 10	10	0100-0200	0.284455	1.652E-07	3.67414E-06	0.2451449	1.424E-07	3.1664E-06	1.44121	8.372E-07	1.86153E-05	1.2427852	7.22E-07	1.60524E-05	1.4879301	8.644E-07	1.92188E-05
Road 10	10	0200-0300	0.283992771	9.219E-08	2.04986E-06	0.240466	7.806E-08	1.73569E-06	1.4215641	4.615E-07	1.02609E-05	1.2052059	3.912E-07	8.69919E-06	1.4456719	4.693E-07	1.04349E-05
Road 10	10	0300-0400	0.258969878	5.31E-08	1.18058E-06	0.2179967	4.47E-08	9.93791E-07	1.3983636	2.867E-07	6.37478E-06	1.1789637	2.417E-07	5.37459E-06	1.3969603	2.864E-07	6.36838E-06
Road 10	10	0400-0500	0.302426837	1.188E-07	2.64248E-06	0.2572908	1.011E-07	2.2481E-06	1.4557075	5.721E-07	1.27194E-05	1.233512	4.847E-07	1.07779E-05	1.4908028	5.858E-07	1.3026E-05
Road 10	10	0500-0600	0.275037554	1.927E-07	4.2839E-06	0.234888	1.645E-07	3.65854E-06	1.3268958	9.295E-07	2.06673E-05	1.131469	7.926E-07	1.76234E-05	1.366357	9.572E-07	2.1282E-05
Road 10	10	0600-0700	0.331965821	4.651E-07	1.03412E-05	0.2877195	4.031E-07	8.96287E-06	1.6567713	2.321E-06	5.16107E-05	1.4409578	2.019E-06	4.48879E-05	1.7286773	2.422E-06	5.38507E-05
Road 10	10	0700-0800	0.327902259	7.227E-07	1.60693E-05	0.2843355	6.267E-07	1.39343E-05	1.649841	3.636E-06	8.08529E-05	1.4353485	3.164E-06	7.03414E-05	1.719684	3.79E-06	8.42757E-05
Road 10	10	0800-0900	0.351763089	1.484E-06	3.30074E-05	0.3015206	1.272E-06	2.82929E-05	1.7395055	7.341E-06	0.000163225	1.4922197	6.297E-06	0.000140021	1.7937403	7.57E-06	0.000168314
Road 10	10	0900-1000	0.392839402	1.316E-06	2.92506E-05	0.3412311	1.143E-06	2.54079E-05	1.89705	6.353E-06	0.000141253	1.6493088	5.523E-06	0.000122807	1.9905399	6.666E-06	0.000148215
Road 10	10	1000-1100	0.391680674	1.425E-06	3.16939E-05	0.3372377	1.227E-06	2.72885E-05	1.7733302	6.454E-06	0.000143494	1.5227655	5.542E-06	0.000123219	1.8600032	6.769E-06	0.000150507
Road 10	10	1100-1200	0.3790104	1.379E-06	3.06686E-05	0.3286625	1.196E-06	2.65946E-05	1.7802978	6.479E-06	0.000144058	1.5428606	5.615E-06	0.000124845	1.8715231	6.811E-06	0.000151439
Road 10	10	1200-1300	0.389525202	1.464E-06	3.25553E-05	0.3434235	1.291E-06	2.87023E-05	1.8563028	6.978E-06	0.000155144	1.6382669	6.158E-06	0.000136921	1.9816904	7.449E-06	0.000165624
Road 10	10	1300-1400	0.379690223	1.246E-06	2.76946E-05	0.3352894	1.1E-06	2.4456E-05	1.7670604	5.797E-06	0.000128889	1.558712	5.113E-06	0.000113692	1.8940014	6.213E-06	0.000138148
Road 10	10	1400-1500	0.353187613	1.086E-06	2.41514E-05	0.3092002	9.509E-07	2.11435E-05	1.7679485	5.437E-06	0.000120894	1.5493213	4.765E-06	0.000105944	1.8585214	5.716E-06	0.000127088
Road 10	10	1500-1600	0.35672189	1.121E-06	2.49351E-05	0.305848	9.615E-07	2.1379E-05	1.719434	5.405E-06	0.00012019	1.4757071	4.639E-06	0.000103153	1.7815551	5.601E-06	0.000124532
Road 10	10	1600-1700	0.344187573	1.206E-06	2.68048E-05	0.2910778	1.02E-06	2.26687E-05	1.6838219	5.898E-06	0.000131134	1.4217691	4.98E-06	0.000110725	1.7128469	5.999E-06	0.000133394
Road 10	10	1700-1800	0.319652308	1.049E-06	2.33154E-05	0.271315	8.9E-07	1.97897E-05	1.6590682	5.442E-06	0.000121012	1.4174479	4.65E-06	0.000103388	1.688763	5.54E-06	0.000123178
Road 10	10	1800-1900	0.324398722	6.707E-07	1.49117E-05	0.2756357	5.698E-07	1.26702E-05	1.637516	3.385E-06	7.52722E-05	1.3957194	2.885E-06	6.41575E-05	1.6713551	3.455E-06	7.68277E-05
Road 10	10	1900-2000	0.281493597	5.242E-07	1.16562E-05	0.2407286	4.483E-07	9.96823E-06	1.4888684	2.773E-06	6.16519E-05	1.279248	2.382E-06	5.29718E-05	1.5199766	2.831E-06	6.29401E-05
Road 10	10	2000-2100	0.32806652	4.036E-07	8.97342E-06	0.2743555	3.375E-07	7.5043E-06	1.5874862	1.953E-06	4.34216E-05	1.3273685	1.633E-06	3.63068E-05	1.6017241	1.97E-06	4.38111E-05
Road 10	10	2100-2200	0.271838955	3.344E-07	7.43546E-06	0.2367368	2.912E-07	6.47533E-06	1.5145792	1.863E-06	4.14275E-05	1.3268635	1.632E-06	3.6293E-05	1.5636003	1.923E-06	4.27683E-05
Road 10	10	2200-2300	0.28535926	3.657E-07	8.13049E-06	0.2438606	3.125E-07	6.94811E-06	1.4637687	1.876E-06	4.17059E-05	1.2574972	1.611E-06	3.58288E-05	1.5013578	1.924E-06	4.27769E-05
Road 10	10	2300-0000	0.263151453	3.147E-07	6.9979E-06	0.2207665	2.64E-07	5.87077E-06	1.3299965	1.591E-06	3.53681E-05	1.1157143	1.334E-06	2.96698E-05	1.3364808	1.598E-06	3.55406E-05
Road 11	11	0000-0100	0.326624445	2.495E-07	2.06966E-06	0.2785067	2.127E-07	1.76476E-06	1.6385129	1.252E-06	1.03825E-05	1.3947302	1.065E-06	8.83774E-06	1.6732369	1.278E-06	1.06025E-05
Road 11	11	0100-0200	0.324311984	1.745E-07	1.44785E-06	0.2789887	1.502E-07	1.24551E-06	1.5995303	8.609E-07	7.14089E-06	1.3724076	7.386E-07	6.12693E-06	1.6513963	8.888E-07	7.37244E-06
Road 11	11	0200-0300	0.283933236	7.394E-08	6.13346E-07	0.2404673	6.262E-08	5.19452E-07	1.5147189	3.945E-07	3.27206E-06	1.2840896	3.344E-07	2.77386E-06	1.5245569	3.97E-07	3.29331E-06
Road 11	11	0300-0400	0.30518773	7.418E-08	6.15309E-07	0.2567713	6.241E-08	5.17693E-07	1.5973547	3.882E-07	3.22053E-06	1.3446308	3.268E-07	2.711E-06	1.6014021	3.892E-07	3.22869E-06
Road 11	11	0400-0500	0.312847362	1.086E-07	9.01074E-07	0.2663979	9.25E-08	7.67289E-07	1.4868343	5.163E-07	4.28243E-06	1.260637	4.377E-07	3.63093E-06	1.5270349	5.302E-07	4.39822E-06
Road 11	11	0500-0600	0.251409514	1.178E-07	9.7756E-07	0.2144523	1.005E-07	8.33859E-07	1.2796193	5.998E-07	4.97557E-06	1.0928803	5.123E-07	4.24947E-06	1.3073327	6.128E-07	5.08333E-06
Road 11	11	0600-0700	0.272160025	2.457E-07	2.0381E-06	0.2343264	2.115E-07	1.75478E-06	1.4088229	1.272E-06	1.05501E-05	1.213777	1.096E-06	9.08951E-06	1.4481034	1.307E-06	1.08443E-05
Road 11	11	0700-0800	0.318848604	5.978E-07	4.95914E-06	0.2739642	5.137E-07	4.26104E-06	1.6581972	3.109E-06	2.57904E-05	1.4280833	2.678E-06	2.22114E-05	1.7020475	3.191E-06	2.64724E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (September) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 11	11	0800-0900	0.348187303	1.239E-06	1.02793E-05	0.3004433	1.069E-06	8.86981E-06	1.7180519	6.115E-06	5.07211E-05	1.47902	5.264E-06	4.36643E-05	1.7794633	6.333E-06	5.25341E-05
Road 11	11	0900-1000	0.35209677	8.925E-07	7.40309E-06	0.3056286	7.747E-07	6.42606E-06	1.6666471	4.224E-06	3.50425E-05	1.4419556	3.655E-06	3.03182E-05	1.7475842	4.43E-06	3.67442E-05
Road 11	11	1000-1100	0.364913547	7.539E-07	6.25367E-06	0.3132217	6.471E-07	5.36781E-06	1.7029518	3.518E-06	2.91842E-05	1.4584143	3.013E-06	2.49934E-05	1.7716361	3.66E-06	3.03612E-05
Road 11	11	1100-1200	0.32021114	7.449E-07	6.1793E-06	0.2764717	6.432E-07	5.33524E-06	1.6408356	3.817E-06	3.16642E-05	1.4226643	3.31E-06	2.7454E-05	1.699136	3.953E-06	3.27892E-05
Road 11	11	1200-1300	0.384087287	1.087E-06	9.01604E-06	0.3381235	9.568E-07	7.93709E-06	1.8648334	5.277E-06	4.3775E-05	1.6416719	4.646E-06	3.85365E-05	1.9797954	5.603E-06	4.64736E-05
Road 11	11	1300-1400	0.39976207	8.328E-07	6.90846E-06	0.3527012	7.348E-07	6.09518E-06	1.803345	3.757E-06	3.11644E-05	1.5845749	3.301E-06	2.73837E-05	1.9372761	4.036E-06	3.34789E-05
Road 11	11	1400-1500	0.316659627	6.377E-07	5.28992E-06	0.2764467	5.567E-07	4.61814E-06	1.5823452	3.187E-06	2.64337E-05	1.3775384	2.774E-06	2.30123E-05	1.6539851	3.331E-06	2.76304E-05
Road 11	11	1500-1600	0.288212642	5.854E-07	4.85621E-06	0.2465145	5.007E-07	4.15362E-06	1.491907	3.03E-06	2.51377E-05	1.2780865	2.596E-06	2.1535E-05	1.5246011	3.097E-06	2.56886E-05
Road 11	11	1600-1700	0.277099933	6.687E-07	5.54689E-06	0.2344093	5.657E-07	4.69232E-06	1.4825351	3.578E-06	2.96769E-05	1.255587	3.03E-06	2.51339E-05	1.4899963	3.596E-06	2.98262E-05
Road 11	11	1700-1800	0.278656889	6.87E-07	5.69844E-06	0.23461	5.784E-07	4.7977E-06	1.5158239	3.737E-06	3.09981E-05	1.2843156	3.166E-06	2.62638E-05	1.5189256	3.745E-06	3.10615E-05
Road 11	11	1800-1900	0.299112961	6.128E-07	5.08294E-06	0.2528204	5.179E-07	4.29628E-06	1.5954334	3.268E-06	2.71118E-05	1.3548799	2.776E-06	2.3024E-05	1.6077003	3.294E-06	2.73203E-05
Road 11	11	1900-2000	0.284690851	4.498E-07	3.7309E-06	0.2418766	3.821E-07	3.16981E-06	1.4817997	2.341E-06	1.94191E-05	1.2591707	1.989E-06	1.65015E-05	1.5010472	2.371E-06	1.96713E-05
Road 11	11	2000-2100	0.295288619	4.152E-07	3.44453E-06	0.2471669	3.476E-07	2.88319E-06	1.4729993	2.071E-06	1.71825E-05	1.2353846	1.737E-06	1.44107E-05	1.4825515	2.085E-06	1.72939E-05
Road 11	11	2100-2200	0.215459922	2.132E-07	1.76864E-06	0.1805765	1.787E-07	1.48229E-06	1.2042092	1.192E-06	9.88496E-06	1.0115755	1.001E-06	8.30369E-06	1.192152	1.18E-06	9.78599E-06
Road 11	11	2200-2300	0.275071289	3.009E-07	2.49565E-06	0.2326475	2.545E-07	2.11075E-06	1.3898347	1.52E-06	1.26096E-05	1.1749102	1.285E-06	1.06597E-05	1.4075577	1.54E-06	1.27704E-05
Road 11	11	2300-0000	0.263953451	2.75E-07	2.28075E-06	0.2217502	2.31E-07	1.91608E-06	1.356792	1.413E-06	1.17236E-05	1.1387653	1.186E-06	9.83974E-06	1.3605154	1.417E-06	1.17558E-05
Haul Road 1	HR1	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0700-0800	1.35548	2.548E-06	3.83216E-06	1.15116	2.164E-06	3.25451E-06	6.22902	1.171E-05	1.76104E-05	5.29007	9.944E-06	1.49559E-05	6.44123	1.211E-05	1.82104E-05
Haul Road 1	HR1	0800-0900	1.36808	2.572E-06	3.86778E-06	1.16395	2.188E-06	3.29067E-06	6.28669	1.182E-05	1.77735E-05	5.34876	1.005E-05	1.51218E-05	6.51271	1.224E-05	1.84125E-05
Haul Road 1	HR1	0900-1000	1.37807	2.59E-06	3.89603E-06	1.17365	2.206E-06	3.3181E-06	6.33268	1.19E-05	1.79035E-05	5.39334	1.014E-05	1.52478E-05	6.56699	1.234E-05	1.85659E-05
Haul Road 1	HR1	1000-1100	1.38307	2.6E-06	3.91016E-06	1.17265	2.204E-06	3.31527E-06	6.35557	1.195E-05	1.79682E-05	5.38874	1.013E-05	1.52348E-05	6.56139	1.233E-05	1.85501E-05
Haul Road 1	HR1	1100-1200	1.37947	2.593E-06	3.89998E-06	1.18615	2.23E-06	3.35344E-06	6.33927	1.192E-05	1.79221E-05	5.45051	1.025E-05	1.54095E-05	6.63666	1.247E-05	1.87629E-05
Haul Road 1	HR1	1200-1300	1.35748	2.552E-06	3.83781E-06	1.18015	2.218E-06	3.33647E-06	6.23831	1.173E-05	1.76367E-05	5.42352	1.019E-05	1.53332E-05	6.60367	1.241E-05	1.86696E-05
Haul Road 1	HR1	1300-1400	1.35748	2.552E-06	3.83781E-06	1.18015	2.218E-06	3.33647E-06	6.23831	1.173E-05	1.76367E-05	5.42352	1.019E-05	1.53332E-05	6.60367	1.241E-05	1.86696E-05
Haul Road 1	HR1	1400-1500	1.36108	2.558E-06	3.84799E-06	1.16595	2.192E-06	3.29633E-06	6.2546	1.176E-05	1.76828E-05	5.35785	1.007E-05	1.51475E-05	6.5238	1.226E-05	1.84438E-05
Haul Road 1	HR1	1500-1600	1.37897	2.592E-06	3.89857E-06	1.16595	2.192E-06	3.29633E-06	6.33708	1.191E-05	1.79159E-05	5.35785	1.007E-05	1.51475E-05	6.5238	1.226E-05	1.84438E-05
Haul Road 1	HR1	1600-1700	1.38737	2.608E-06	3.92232E-06	1.14576	2.154E-06	3.23925E-06	6.37556	1.198E-05	1.80247E-05	5.26509	9.897E-06	1.48853E-05	6.41085	1.205E-05	1.81245E-05
Haul Road 1	HR1	1700-1800	1.39297	2.618E-06	3.93815E-06	1.14826	2.158E-06	3.24632E-06	6.40145	1.203E-05	1.80979E-05	5.27678	9.919E-06	1.49183E-05	6.42504	1.208E-05	1.81646E-05
Haul Road 1	HR1	1800-1900	1.38477	2.603E-06	3.91497E-06	1.15196	2.165E-06	3.25678E-06	6.36356	1.196E-05	1.79908E-05	5.29387	9.951E-06	1.49666E-05	6.44583	1.212E-05	1.82234E-05
Haul Road 1	HR1	1900-2000	1.37417	2.583E-06	3.885E-06	1.14606	2.154E-06	3.2401E-06	6.31499	1.187E-05	1.78535E-05	5.26638	9.899E-06	1.48889E-05	6.41244	1.205E-05	1.8129E-05
Haul Road 1	HR1	2000-2100	1.37417	2.583E-06	3.885E-06	1.14006	2.143E-06	3.22313E-06	6.31499	1.187E-05	1.78535E-05	5.239	9.848E-06	1.48115E-05	6.37906	1.199E-05	1.80346E-05
Haul Road 1	HR1	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0700-0800	1.35548	1.756E-06	4.67378E-06	1.15116	1.491E-06	3.96927E-06	6.22902	8.069E-06	2.1478E-05	5.29007	6.852E-06	1.82405E-05	6.44123	8.344E-06	2.22097E-05
Haul Road 2	HR2	0800-0900	1.36808	1.772E-06	4.71722E-06	1.16395	1.508E-06	4.01337E-06	6.28669	8.143E-06	2.16769E-05	5.34876	6.928E-06	1.84428E-05	6.51271	8.436E-06	2.24562E-05
Haul Road 2	HR2	0900-1000	1.37807	1.785E-06	4.75167E-06	1.17365	1.52E-06	4.04682E-06	6.33268	8.203E-06	2.18355E-05	5.39334	6.986E-06	1.85966E-05	6.56699	8.506E-06	2.26434E-05
Haul Road 2	HR2	1000-1100	1.38307	1.792E-06	4.76891E-06	1.17265	1.519E-06	4.04337E-06	6.35557	8.233E-06	2.19144E-05	5.38874	6.98E-06	1.85807E-05	6.56139	8.499E-06	2.26241E-05
Haul Road 2	HR2	1100-1200	1.37947	1.787E-06	4.7565E-06	1.18615	1.536E-06	4.08992E-06	6.33927	8.211E-06	2.18582E-05	5.45051	7.06E-06	1.87937E-05	6.63666	8.597E-06	2.28836E-05
Haul Road 2	HR2	1200-1300	1.35748	1.758E-06	4.68067E-06	1.18015	1.529E-06	4.06923E-06	6.23831	8.081E-06	2.15101E-05	5.42352	7.025E-06	1.87006E-05	6.60367	8.554E-06	2.27699E-05
Haul Road 2	HR2	1300-1400	1.35748	1.758E-06	4.68067E-06	1.18015	1.529E-06	4.06923E-06	6.23831	8.081E-06	2.15101E-05	5.42352	7.025E-06	1.87006E-05	6.60367	8.554E-06	2.27699E-05
Haul Road 2	HR2	1400-1500	1.36108	1.763E-06	4.69309E-06	1.16595	1.51E-06	4.02027E-06	6.2546	8.102E-06	2.15662E-05	5.35785	6.94E-06	1.84742E-05	6.5238	8.451E-06	2.24945E-05
Haul Road 2	HR2	1500-1600	1.37897	1.786E-06	4.75477E-06	1.16595	1.51E-06	4.02027E-06	6.33708	8.209E-06	2.18506E-05	5.35785	6.94E-06	1.84742E-05	6.5238	8.451E-06	2.24945E-05
Haul Road 2	HR2	1600-1700	1.38737	1.797E-06	4.78374E-06	1.14576	1.484E-06	3.95065E-06	6.37556	8.258E-06	2.19833E-05	5.26509	6.82E-06	1.81543E-05	6.41085	8.304E-06	2.2105E-05
Haul Road 2	HR2	1700-1800	1.39297	1.804E-06	4.80304E-06	1.14826	1.487E-06	3.95927E-06	6.40145	8.292E-06	2.20726E-05	5.27678	6.835E-06	1.81947E-05	6.42504	8.323E-06	2.21539E-05
Haul Road 2	HR2	1800-1900	1.38477	1.794E-06	4.77477E-06	1.15196	1.492E-06	3.97203E-06	6.36356	8.243E-06	2.19419E-05	5.29387	6.857E-06	1.82536E-05	6.44583	8.35E-06	2.22256E-05
Haul Road 2	HR2	1900-2000	1.37417	1.78E-06	4.73822E-06	1.14606	1.485E-06	3.95168E-06	6.31499	8.18E-06	2.17745E-05	5.26638	6.822E-06	1.81588E-05	6.41244	8.306E-06	2.21105E-05
Haul Road 2	HR2	2000-2100	1.37417	1.78E-06	4.73822E-06	1.14006	1.477E-06	3.931E-06	6.31499	8.18E-06	2.17745E-05	5.239	6.786E-06	1.80644E-05	6.37906	8.263E-06	2.19954E-05
Haul Road 2	HR2	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (September) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Haul Road 2	HR2	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0700-0800	1.35548	1.756E-06	4.66726E-06	1.15116	1.491E-06	3.96373E-06	6.22902	8.069E-06	2.14481E-05	5.29007	6.852E-06	1.8215E-05	6.44123	8.344E-06	2.21788E-05
Haul Road 3	HR3	0800-0900	1.36808	1.772E-06	4.71065E-06	1.16395	1.508E-06	4.00777E-06	6.28669	8.143E-06	2.16467E-05	5.34876	6.928E-06	1.84171E-05	6.51271	8.436E-06	2.24249E-05
Haul Road 3	HR3	0900-1000	1.37807	1.785E-06	4.74504E-06	1.17365	1.52E-06	4.04117E-06	6.33268	8.203E-06	2.1805E-05	5.39334	6.986E-06	1.85706E-05	6.56699	8.506E-06	2.26118E-05
Haul Road 3	HR3	1000-1100	1.38307	1.792E-06	4.76226E-06	1.17265	1.519E-06	4.03773E-06	6.35557	8.233E-06	2.18838E-05	5.38874	6.98E-06	1.85548E-05	6.56139	8.499E-06	2.25925E-05
Haul Road 3	HR3	1100-1200	1.37947	1.787E-06	4.74986E-06	1.18615	1.536E-06	4.08421E-06	6.33927	8.211E-06	2.18277E-05	5.45051	7.06E-06	1.87675E-05	6.63666	8.597E-06	2.28517E-05
Haul Road 3	HR3	1200-1300	1.35748	1.758E-06	4.67415E-06	1.18015	1.529E-06	4.06355E-06	6.23831	8.081E-06	2.14801E-05	5.42352	7.025E-06	1.86746E-05	6.60367	8.554E-06	2.27381E-05
Haul Road 3	HR3	1300-1400	1.35748	1.758E-06	4.67415E-06	1.18015	1.529E-06	4.06355E-06	6.23831	8.081E-06	2.14801E-05	5.42352	7.025E-06	1.86746E-05	6.60367	8.554E-06	2.27381E-05
Haul Road 3	HR3	1400-1500	1.36108	1.763E-06	4.68654E-06	1.16595	1.51E-06	4.01466E-06	6.2546	8.102E-06	2.15362E-05	5.35785	6.94E-06	1.84484E-05	6.5238	8.451E-06	2.24631E-05
Haul Road 3	HR3	1500-1600	1.37897	1.786E-06	4.74814E-06	1.16595	1.51E-06	4.01466E-06	6.33708	8.209E-06	2.18202E-05	5.35785	6.94E-06	1.84484E-05	6.5238	8.451E-06	2.24631E-05
Haul Road 3	HR3	1600-1700	1.38737	1.797E-06	4.77707E-06	1.14576	1.484E-06	3.94514E-06	6.37556	8.258E-06	2.19527E-05	5.26509	6.82E-06	1.8129E-05	6.41085	8.304E-06	2.20742E-05
Haul Road 3	HR3	1700-1800	1.39297	1.804E-06	4.79635E-06	1.14826	1.487E-06	3.95375E-06	6.40145	8.292E-06	2.20418E-05	5.27678	6.835E-06	1.81693E-05	6.42504	8.323E-06	2.2123E-05
Haul Road 3	HR3	1800-1900	1.38477	1.794E-06	4.76811E-06	1.15196	1.492E-06	3.96649E-06	6.36356	8.243E-06	2.19113E-05	5.29387	6.857E-06	1.82281E-05	6.44583	8.35E-06	2.21946E-05
Haul Road 3	HR3	1900-2000	1.37417	1.78E-06	4.73161E-06	1.14606	1.485E-06	3.94617E-06	6.31499	8.18E-06	2.17441E-05	5.26638	6.822E-06	1.81335E-05	6.41244	8.306E-06	2.20797E-05
Haul Road 3	HR3	2000-2100	1.37417	1.78E-06	4.73161E-06	1.14006	1.477E-06	3.92551E-06	6.31499	8.18E-06	2.17441E-05	5.239	6.786E-06	1.80392E-05	6.37906	8.263E-06	2.19647E-05
Haul Road 3	HR3	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (October) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 1	1	0000-0100	0.102813955	3.416E-07	2.7786E-06	0.0894011	2.97E-07	2.41611E-06	0.6058682	2.013E-06	1.63739E-05	0.5244025	1.742E-06	1.41723E-05	0.6138036	2.039E-06	1.65884E-05
Road 1	1	0100-0200	0.077135463	1.564E-07	1.27198E-06	0.0700903	1.421E-07	1.1558E-06	0.4643768	9.413E-07	7.65765E-06	0.420579	8.525E-07	6.93542E-06	0.4906693	9.946E-07	8.09122E-06
Road 1	1	0200-0300	0.073894675	1.068E-07	8.68771E-07	0.0665991	9.625E-08	7.82997E-07	0.4691166	6.78E-07	5.51535E-06	0.4201618	6.072E-07	4.93979E-06	0.4867609	7.035E-07	5.72279E-06
Road 1	1	0300-0400	0.062998364	6.503E-08	5.29046E-07	0.0567904	5.862E-08	4.76912E-07	0.3815295	3.938E-07	3.204E-06	0.3419193	3.53E-07	2.87136E-06	0.3987096	4.116E-07	3.34827E-06
Road 1	1	0400-0500	0.082225882	1.312E-07	1.06716E-06	0.0744722	1.188E-07	9.66528E-07	0.467754	7.462E-07	6.07068E-06	0.4221414	6.735E-07	5.47871E-06	0.4966136	7.923E-07	6.44524E-06
Road 1	1	0500-0600	0.067660214	2.375E-07	1.93186E-06	0.0600064	2.106E-07	1.71333E-06	0.3974056	1.395E-06	1.13469E-05	0.3502429	1.229E-06	1.00003E-05	0.4102493	1.44E-06	1.17136E-05
Road 1	1	0600-0700	0.09289512	5.789E-07	4.70904E-06	0.0816913	5.09E-07	4.1411E-06	0.4971629	3.098E-06	2.52022E-05	0.4350022	2.711E-06	2.20511E-05	0.5166935	3.22E-06	2.61922E-05
Road 1	1	0700-0800	0.078404544	8.226E-07	6.69197E-06	0.0687566	7.214E-07	5.8685E-06	0.4317308	4.53E-06	3.6849E-05	0.375932	3.944E-06	3.20865E-05	0.4446886	4.666E-06	3.7955E-05
Road 1	1	0800-0900	0.083413796	1.072E-06	8.72428E-06	0.0745265	9.582E-07	7.79475E-06	0.4432877	5.699E-06	4.63636E-05	0.3946413	5.074E-06	4.12757E-05	0.4691678	6.032E-06	4.90704E-05
Road 1	1	0900-1000	0.086825446	1.152E-06	9.37276E-06	0.0782939	1.039E-06	8.45179E-06	0.4858463	6.447E-06	5.24469E-05	0.4369132	5.798E-06	4.71646E-05	0.5152071	6.837E-06	5.56164E-05
Road 1	1	1000-1100	0.100992853	1.302E-06	1.05937E-05	0.0919355	1.185E-06	9.64364E-06	0.5424911	6.995E-06	5.6905E-05	0.4928793	6.355E-06	5.1701E-05	0.5848148	7.541E-06	6.13446E-05
Road 1	1	1100-1200	0.090765502	1.136E-06	9.24374E-06	0.0828752	1.037E-06	8.44018E-06	0.5210979	6.524E-06	5.30697E-05	0.4747791	5.944E-06	4.83525E-05	0.5576543	6.981E-06	5.67927E-05
Road 1	1	1200-1300	0.092764242	1.149E-06	9.34815E-06	0.0854599	1.059E-06	8.61207E-06	0.5288772	6.551E-06	5.32967E-05	0.4862708	6.024E-06	4.90031E-05	0.5717308	7.082E-06	5.76152E-05
Road 1	1	1300-1400	0.096989858	1.278E-06	1.0396E-05	0.0885716	1.167E-06	9.49364E-06	0.5408929	7.127E-06	5.79762E-05	0.4930975	6.497E-06	5.28532E-05	0.5816691	7.664E-06	6.23468E-05
Road 1	1	1400-1500	0.09293485	1.334E-06	1.08553E-05	0.0844186	1.212E-06	9.86054E-06	0.5060743	7.266E-06	5.91122E-05	0.4588043	6.588E-06	5.35908E-05	0.5432228	7.8E-06	6.34513E-05
Road 1	1	1500-1600	0.098877659	1.316E-06	1.0704E-05	0.0913332	1.215E-06	9.88726E-06	0.536535	7.14E-06	5.80825E-05	0.4944759	6.58E-06	5.35294E-05	0.585809	7.795E-06	6.34167E-05
Road 1	1	1600-1700	0.094923382	1.333E-06	1.08412E-05	0.0866856	1.217E-06	9.90033E-06	0.5203202	7.305E-06	5.94256E-05	0.4741547	6.657E-06	5.4153E-05	0.5608403	7.874E-06	6.40534E-05
Road 1	1	1700-1800	0.075635293	1.065E-06	8.66138E-06	0.0688383	9.69E-07	7.88302E-06	0.42262	5.949E-06	4.83963E-05	0.3833295	5.396E-06	4.3897E-05	0.4521678	6.365E-06	5.178E-05
Road 1	1	1800-1900	0.066403424	9.572E-07	7.78669E-06	0.0613723	8.846E-07	7.19673E-06	0.3937761	5.676E-06	4.61755E-05	0.3624555	5.225E-06	4.25028E-05	0.4238278	6.109E-06	4.96995E-05
Road 1	1	1900-2000	0.07944256	8.737E-07	7.10808E-06	0.0724453	7.968E-07	6.482E-06	0.4535418	4.988E-06	4.05804E-05	0.4120512	4.532E-06	3.6868E-05	0.4844965	5.329E-06	4.335E-05
Road 1	1	2000-2100	0.071944234	6.698E-07	5.44852E-06	0.066165	6.16E-07	5.01085E-06	0.4219239	3.928E-06	3.19534E-05	0.386664	3.6E-06	2.92831E-05	0.452829	4.216E-06	3.42939E-05
Road 1	1	2100-2200	0.075748565	6.44E-07	5.23931E-06	0.0693215	5.894E-07	4.79477E-06	0.446758	3.798E-06	3.09009E-05	0.4071475	3.462E-06	2.81612E-05	0.476469	4.051E-06	3.2956E-05
Road 1	1	2200-2300	0.075635916	6.118E-07	4.97745E-06	0.0673228	5.446E-07	4.43038E-06	0.4449501	3.599E-06	2.92813E-05	0.3938626	3.186E-06	2.59193E-05	0.4611853	3.731E-06	3.03497E-05
Road 1	1	2300-0000	0.067877818	4.905E-07	3.99016E-06	0.0589673	4.261E-07	3.46636E-06	0.4150881	2.999E-06	2.44007E-05	0.3574618	2.583E-06	2.10132E-05	0.4164291	3.009E-06	2.44795E-05
Road 2	2	0000-0100	0.172464118	2.036E-07	1.31485E-06	0.1499384	1.77E-07	1.14312E-06	0.732302	8.645E-07	5.58301E-06	0.6345261	7.491E-07	4.83757E-06	0.7844645	9.261E-07	5.98069E-06
Road 2	2	0100-0200	0.118673636	9.065E-08	5.85431E-07	0.1077782	8.233E-08	5.31683E-07	0.5876427	4.489E-07	2.89891E-06	0.5323639	4.067E-07	2.62622E-06	0.6401421	4.89E-07	3.1579E-06
Road 2	2	0200-0300	0.118926957	6.332E-08	4.08899E-07	0.1072609	5.711E-08	3.68788E-07	0.6473878	3.447E-07	2.22587E-06	0.5814496	3.096E-07	1.99916E-06	0.6887104	3.667E-07	2.36795E-06
Road 2	2	0300-0400	0.104522667	3.629E-08	2.34374E-07	0.0941867	3.27E-08	2.11197E-07	0.3797113	1.318E-07	8.51437E-07	0.3406347	1.183E-07	7.63814E-07	0.4348213	1.51E-07	9.75012E-07
Road 2	2	0400-0500	0.140926667	8.808E-08	5.68807E-07	0.1276204	7.976E-08	5.151E-07	0.6816141	4.26E-07	2.75112E-06	0.6159785	3.85E-07	2.48621E-06	0.7435989	4.647E-07	3.00131E-06
Road 2	2	0500-0600	0.114450702	1.51E-07	9.75217E-07	0.1015609	1.34E-07	8.65384E-07	0.505384	6.668E-07	4.3063E-06	0.4462274	5.888E-07	3.80223E-06	0.5477882	7.228E-07	4.66762E-06
Road 2	2	0600-0700	0.164901359	3.932E-07	2.53904E-06	0.145004	3.457E-07	2.23267E-06	0.6693153	1.596E-06	1.03057E-05	0.5864139	1.398E-06	9.0292E-06	0.7314179	1.744E-06	1.12619E-05
Road 2	2	0700-0800	0.131683861	4.816E-07	3.11026E-06	0.1154368	4.222E-07	2.72652E-06	0.5558766	2.033E-06	1.31294E-05	0.4846144	1.772E-06	1.14462E-05	0.6000512	2.195E-06	1.41727E-05
Road 2	2	0800-0900	0.147616	1.025E-06	6.62007E-06	0.1318843	9.159E-07	5.91456E-06	0.6255044	4.344E-06	2.80517E-05	0.5567748	3.866E-06	2.49694E-05	0.6886591	4.782E-06	3.0884E-05
Road 2	2	0900-1000	0.167629593	9.546E-07	6.16444E-06	0.1511138	8.605E-07	5.55708E-06	0.725461	4.131E-06	2.66782E-05	0.6526791	3.717E-06	2.40017E-05	0.8037929	4.577E-06	2.95588E-05
Road 2	2	1000-1100	0.186584457	7.947E-07	5.13217E-06	0.1698383	7.234E-07	4.67155E-06	0.8012017	3.413E-06	2.20378E-05	0.7283027	3.102E-06	2.00326E-05	0.8981409	3.825E-06	2.47042E-05
Road 2	2	1100-1200	0.224434033	9.403E-07	6.0726E-06	0.204876	8.584E-07	5.54342E-06	0.9206894	3.858E-06	2.49115E-05	0.8398226	3.519E-06	2.27234E-05	1.0446986	4.377E-06	2.82668E-05
Road 2	2	1200-1300	0.169906755	7.394E-07	4.77503E-06	0.1565104	6.811E-07	4.39854E-06	0.7489363	3.259E-06	2.1048E-05	0.6887989	2.998E-06	1.93579E-05	0.8453094	3.679E-06	2.37564E-05
Road 2	2	1300-1400	0.18807	9.578E-07	6.18515E-06	0.1716179	8.74E-07	5.64408E-06	0.7778096	3.961E-06	2.55802E-05	0.7088678	3.61E-06	2.33129E-05	0.8804857	4.484E-06	2.89569E-05
Road 2	2	1400-1500	0.164299018	6.199E-07	4.00341E-06	0.1492213	5.63E-07	3.63602E-06	0.711158	2.683E-06	1.73285E-05	0.6451106	2.434E-06	1.57192E-05	0.794332	2.997E-06	1.93552E-05
Road 2	2	1500-1600	0.200115866	8.292E-07	5.35479E-06	0.1846978	7.653E-07	4.94222E-06	0.8044055	3.333E-06	2.15246E-05	0.7416658	3.073E-06	1.98458E-05	0.9263635	3.838E-06	2.4788E-05
Road 2	2	1600-1700	0.171888995	8.714E-07	5.6273E-06	0.1569898	7.959E-07	5.13953E-06	0.7273792	3.687E-06	2.38129E-05	0.6632646	3.362E-06	2.17139E-05	0.8202544	4.158E-06	2.68535E-05
Road 2	2	1700-1800	0.129569355	6.508E-07	4.2031E-06	0.1179569	5.925E-07	3.8264E-06	0.5161099	2.592E-06	1.67421E-05	0.4687181	2.354E-06	1.52047E-05	0.586675	2.947E-06	1.90311E-05
Road 2	2	1800-1900	0.140278468	8.053E-07	5.20056E-06	0.1297083	7.446E-07	4.8087E-06	0.6472087	3.715E-06	2.39941E-05	0.5970598	3.428E-06	2.21349E-05	0.7267682	4.172E-06	2.69436E-05
Road 2	2	1900-2000	0.119920663	4.608E-07	2.97584E-06	0.1093655	4.202E-07	2.71391E-06	0.550788	2.116E-06	1.36679E-05	0.5005842	1.924E-06	1.2422E-05	0.6099497	2.344E-06	1.5136E-05
Road 2	2	2000-2100	0.118025548	3.989E-07	2.57595E-06	0.1085077	3.667E-07	2.36822E-06	0.4963914	1.678E-06	1.08339E-05	0.4547116	1.537E-06	9.92422E-06	0.5632193	1.903E-06	1.22924E-05
Road 2	2	2100-2200	0.091068816	3.204E-07	2.06929E-06	0.0832598	2.93E-07	1.89185E-06	0.4119389	1.449E-06	9.36018E-06	0.3745712	1.318E-06	8.5111E-06	0.457831	1.611E-06	1.04029E-05
Road 2	2	2200-2300	0.13400056	3.877E-07	2.50394E-06	0.1192964	3.452E-07	2.22918E-06	0.5724946	1.657E-06	1.06977E-05	0.5073532	1.468E-06	9.48043E-06	0.6266496	1.813E-06	1.17096E-05
Road 2	2	2300-0000	0.124414636	3.168E-07	2.04584E-06	0.1081205	2.753E-07	1.77791E-06	0.5613055	1.429E-06	9.22996E-06	0.4844173	1.233E-06	7.96563E-06	0.5925378	1.509E-06	9.74353E-06
Road 3	3	0000-0100	0.107183057	3.937E-07	1.53017E-05	0.0948255	3.483E-07	1.35375E-05	0.5877405	2.159E-06	8.39073E-05	0.5178745	1.902E-06	7.39331E-05	0.6127	2.25E-06	8.74706E-05
Road 3	3	0100-0200	0.078706879	1.78E-07	6.91848E-06	0.071047	1.607E-07	6.24516E-06	0.4561195	1.032E-06	4.00937E-05	0.4102131	9.277E-07	3.60585E-05	0.4812601	1.088E-06	4.23036E-05
Road 3	3	0200-0300	0.075867576	1.205E-07	4.68242E-06	0.0683101	1.085E-07	4.21598E-06	0.4696096	7.457E-07	2.89835E-05	0.4203461	6.675E-07	2.5943E-05	0.4886562	7.759E-07	3.0159E-05
Road 3	3	0300-0400	0.065274928	7.224E-08	2.80785E-06	0.0585867	6.484E-08	2.52015E-06	0.3531923	3.909E-07	1.51928E-05	0.315193	3.488E-07	1.35583E-05	0.3737797	4.137E-07	1.60784E-05
Road 3	3	0400-0500	0.087188288	1.552E-07	6.03337E-06	0.0797359	1.42E-07	5.51767E-06	0.4786147	8.521E-07	3.31198E-05	0.436329	7.768E-07	3.01937E-05	0.5160649	9.188E-07	3.57113E-05
Road 3	3	0500-0600	0.071311317	2.779E-07	1.0803E-05	0.0644616	2.512E-07	9.76532E-06	0.3925374	1.53E-06	5.94656E-05	0.3529358	1.376E-06	5.34664E-05	0.4173974	1.627E-06	6.32317E-05
Road 3	3	0600-0700	0.098783402	6.94E-07	2.69735E-05	0.0881751	6.195E-07	2.40768E-05	0.4919779	3.456E-06	0.000134338	0.4371478	3.071E-06	0.000119366	0.5253229	3.691E-06	0.000143443
Road 3	3	0700-0800	0.081339232	9.341E-07	3.63071E-05	0.0724035	8.315E-07	3.23185E-05	0.4224181	4.851E-06	0.000188553	0.3736114	4.291E-06	0.000166768	0.4460149	5.122E-06	0.000199086
Road 3	3	0800-0900	0.089536097	1.42E-06	5.52043E-05	0.0805161	1.277E-06	4.96429E-05	0.4451626	7.062E-06	0.000274469	0.3989207	6.328E-06	0.000245958	0.4794367	7.605E-06	0.000295601
Road 3	3	0900-1000	0.096452191	1.476E-06	5.7364E-05	0.0871324	1.333E-06	5.18211E-05	0.4959874	7.589E-06	0.000294984	0.4467357	6.836E-06	0.000265692	0.5338681	8.169E-06	0.000317513
Road 3	3	1000-1100	0.107847943	1.505E-06	5.84938E-05	0.0976372	1.362E-06	5.29557E-05	0.5479949	7.647E-06	0.000297218	0.4950492	6.908E-06	0.000268501	0.5926864	8.271E-06	0.000321457
Road 3	3	1100-1200	0.105617766	1.433E-06	5.5704E-05	0.0951082	1.291E-06	5.01611E-05	0.5505336	7.47E-06	0.000290357	0.4947207	6.713E-06	0.000260921	0.5898289	8.004E-06	0.000311082
Road 3	3	1200-1300	0.098809433	1.341E-06	5.21132E-05	0.0905914	1.229E-06	4.77789E-05	0.5267736	7.148E-06	0.000277826	0.4819315	6.54E-06	0.000254176	0.5725229	7.769E-06	0.000301955
Road 3	3	1300-1400	0.104654548	1.543E-06	5.99587E-05	0.0963299	1.42E-06	5.51894E-05	0.5368387	7.913E-06	0.000307566	0.493208	7.27E-06	0.000282569	0.5895379	8.69E-06	0.000337758

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (October) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 3	3	1400-1500	0.09738303	1.443E-06	5.60963E-05	0.0896374	1.328E-06	5.16345E-05	0.5054716	7.491E-06	0.000291171	0.4643525	6.882E-06	0.000267484	0.5539899	8.21E-06	0.000319119
Road 3	3	1500-1600	0.108944056	1.555E-06	6.04467E-05	0.0992405	1.417E-06	5.50627E-05	0.5502913	7.856E-06	0.000305324	0.5003442	7.143E-06	0.000277612	0.5995847	8.559E-06	0.000332674
Road 3	3	1600-1700	0.101376698	1.576E-06	6.12408E-05	0.0938831	1.459E-06	5.6714E-05	0.5219178	8.112E-06	0.000315286	0.4822951	7.496E-06	0.00029135	0.5761783	8.955E-06	0.000348064
Road 3	3	1700-1800	0.080692134	1.255E-06	4.87957E-05	0.0734256	1.142E-06	4.44015E-05	0.4155081	6.465E-06	0.000251264	0.3769574	5.865E-06	0.000227952	0.450383	7.007E-06	0.000272353
Road 3	3	1800-1900	0.075818427	1.237E-06	4.807E-05	0.0693596	1.131E-06	4.3975E-05	0.4178244	6.816E-06	0.000264907	0.3806843	6.21E-06	0.00024136	0.4500439	7.341E-06	0.000285335
Road 3	3	1900-2000	0.080218274	9.689E-07	3.76571E-05	0.0734118	8.867E-07	3.44619E-05	0.438971	5.302E-06	0.000206067	0.4002306	4.834E-06	0.000187881	0.4736425	5.721E-06	0.000222343
Road 3	3	2000-2100	0.074569643	7.703E-07	2.99383E-05	0.0685273	7.079E-07	2.75124E-05	0.4045881	4.179E-06	0.000162434	0.370401	3.826E-06	0.000148709	0.4389283	4.534E-06	0.000176221
Road 3	3	2100-2200	0.073657984	7.207E-07	2.8011E-05	0.0673871	6.593E-07	2.56263E-05	0.4130006	4.041E-06	0.000157058	0.3762602	3.681E-06	0.000143086	0.4436474	4.341E-06	0.000168712
Road 3	3	2200-2300	0.080855665	7.211E-07	2.80262E-05	0.0719769	6.419E-07	2.49486E-05	0.4382332	3.908E-06	0.0001519	0.3879992	3.46E-06	0.000134488	0.4599761	4.102E-06	0.000159437
Road 3	3	2300-0000	0.072833554	5.818E-07	2.2612E-05	0.0645479	5.156E-07	2.00397E-05	0.4111689	3.284E-06	0.000127652	0.3615348	2.888E-06	0.000112243	0.4260827	3.403E-06	0.000132282
Road 4	4	0000-0100	0.274022	2.22E-07	2.37717E-06	0.2422654	1.963E-07	2.10168E-06	1.3962123	1.131E-06	1.21123E-05	1.2337449	9.996E-07	1.07029E-05	1.4760103	1.196E-06	1.28046E-05
Road 4	4	0100-0200	0.2531365	1.172E-07	1.25485E-06	0.228351	1.057E-07	1.13198E-06	1.292036	5.982E-07	6.4049E-06	1.165351	5.395E-07	5.77689E-06	1.393702	6.452E-07	6.90888E-06
Road 4	4	0200-0300	0.272243846	8.193E-08	8.77221E-07	0.2452746	7.381E-08	7.90321E-07	1.3435531	4.043E-07	4.32918E-06	1.2103262	3.642E-07	3.8999E-06	1.4556008	4.38E-07	4.69022E-06
Road 4	4	0300-0400	0.247561429	4.011E-08	4.29525E-07	0.2224114	3.604E-08	3.85889E-07	1.3141043	2.129E-07	2.28E-06	1.1802843	1.912E-07	2.04782E-06	1.4026957	2.273E-07	2.43371E-06
Road 4	4	0400-0500	0.254330714	8.242E-08	8.8254E-07	0.2324793	7.534E-08	8.06714E-07	1.2557414	4.07E-07	4.35748E-06	1.1478964	3.72E-07	3.98326E-06	1.3803757	4.473E-07	4.78997E-06
Road 4	4	0500-0600	0.238091667	1.323E-07	1.41633E-06	0.2152979	1.196E-07	1.28073E-06	1.1280679	6.267E-07	6.71049E-06	1.0195688	5.664E-07	6.06506E-06	1.2348667	6.86E-07	7.3458E-06
Road 4	4	0600-0700	0.267231731	3.217E-07	3.44428E-06	0.2384875	2.871E-07	3.07381E-06	1.2758131	1.536E-06	1.64436E-05	1.1380113	1.37E-06	1.46675E-05	1.3764988	1.657E-06	1.77414E-05
Road 4	4	0700-0800	0.268619457	5.721E-07	6.12538E-06	0.2391142	5.092E-07	5.45256E-06	1.3371164	2.848E-06	3.04905E-05	1.1892693	2.533E-06	2.71191E-05	1.4283836	3.042E-06	3.25717E-05
Road 4	4	0800-0900	0.273493007	9.686E-07	1.03716E-05	0.2459025	8.709E-07	9.32528E-06	1.3642342	4.832E-06	5.17354E-05	1.2260919	4.342E-06	4.64967E-05	1.4719944	5.213E-06	5.5822E-05
Road 4	4	0900-1000	0.279833784	9.587E-07	1.02652E-05	0.2523683	8.646E-07	9.25772E-06	1.3188055	4.518E-06	4.83782E-05	1.1887968	4.073E-06	4.36091E-05	1.4411651	4.937E-06	5.28668E-05
Road 4	4	1000-1100	0.309716993	1.025E-06	1.09776E-05	0.2801669	9.274E-07	9.93026E-06	1.4625941	4.841E-06	5.18403E-05	1.3227612	4.379E-06	4.6884E-05	1.6029281	5.306E-06	5.68143E-05
Road 4	4	1100-1200	0.287291226	1.031E-06	1.10373E-05	0.2584731	9.274E-07	9.93012E-06	1.3476948	4.835E-06	5.17763E-05	1.2122837	4.35E-06	4.6574E-05	1.4707568	5.277E-06	5.65041E-05
Road 4	4	1200-1300	0.291072585	9.905E-07	1.06054E-05	0.2666993	9.075E-07	9.71732E-06	1.4285662	4.861E-06	5.20505E-05	1.3086995	4.453E-06	4.76831E-05	1.5753987	5.361E-06	5.74005E-05
Road 4	4	1300-1400	0.297828523	1.027E-06	1.09992E-05	0.2739713	9.449E-07	1.01181E-05	1.4274472	4.923E-06	5.27174E-05	1.3128517	4.528E-06	4.84852E-05	1.586823	5.473E-06	5.86033E-05
Road 4	4	1400-1500	0.272783478	8.714E-07	9.33049E-06	0.2509295	8.016E-07	8.58298E-06	1.3518992	4.319E-06	4.62414E-05	1.2431967	3.971E-06	4.25233E-05	1.4941262	4.773E-06	5.11062E-05
Road 4	4	1500-1600	0.306001371	8.783E-07	9.40486E-06	0.2785094	7.994E-07	8.55991E-06	1.4648405	4.205E-06	4.50215E-05	1.3331454	3.827E-06	4.09738E-05	1.6116548	4.626E-06	4.95338E-05
Road 4	4	1600-1700	0.283816532	8.147E-07	8.72302E-06	0.2626753	7.54E-07	8.07325E-06	1.3739278	3.944E-06	4.22273E-05	1.2713258	3.649E-06	3.90738E-05	1.5340011	4.403E-06	4.71471E-05
Road 4	4	1700-1800	0.270864286	7.9E-07	8.45921E-06	0.2464648	7.189E-07	7.6972E-06	1.332969	3.888E-06	4.16292E-05	1.2125128	3.536E-06	3.78673E-05	1.4589775	4.255E-06	4.55645E-05
Road 4	4	1800-1900	0.297338113	7.296E-07	7.81203E-06	0.2719675	6.673E-07	7.14546E-06	1.4835706	3.64E-06	3.89782E-05	1.3568475	3.329E-06	3.56488E-05	1.6288149	3.997E-06	4.27942E-05
Road 4	4	1900-2000	0.26597973	4.556E-07	4.87852E-06	0.2433804	4.169E-07	4.46401E-06	1.3209189	2.263E-06	2.42279E-05	1.2083331	2.07E-06	2.21629E-05	1.4517135	2.487E-06	2.66269E-05
Road 4	4	2000-2100	0.232844694	2.641E-07	2.82794E-06	0.2139802	2.427E-07	2.59883E-06	1.1623551	1.318E-06	1.4117E-05	1.0673131	1.211E-06	1.29627E-05	1.2812933	1.453E-06	1.55615E-05
Road 4	4	2100-2200	0.194817838	1.669E-07	1.78664E-06	0.1783943	1.528E-07	1.63603E-06	0.9900014	8.479E-07	9.07915E-06	0.9055576	7.756E-07	8.30473E-06	1.0839519	9.284E-07	9.94075E-06
Road 4	4	2200-2300	0.266824762	3.891E-07	4.16653E-06	0.2375424	3.464E-07	3.70928E-06	1.3082365	1.908E-06	2.04284E-05	1.1643565	1.698E-06	1.81817E-05	1.4018989	2.044E-06	2.1891E-05
Road 4	4	2300-0000	0.252729792	2.808E-07	3.0068E-06	0.2238852	2.488E-07	2.66363E-06	1.2723294	1.414E-06	1.51373E-05	1.1266642	1.252E-06	1.34043E-05	1.3505494	1.501E-06	1.60679E-05
Road 5	5	0000-0100	0.091455803	3.313E-07	4.48006E-06	0.0809465	2.932E-07	3.96525E-06	0.5035963	1.824E-06	2.46692E-05	0.4432227	1.606E-06	2.17117E-05	0.5241692	1.899E-06	2.5677E-05
Road 5	5	0100-0200	0.060583967	1.376E-07	1.86062E-06	0.0547016	1.242E-07	1.67996E-06	0.3642771	8.273E-07	1.11875E-05	0.3271823	7.43E-07	1.00482E-05	0.3818839	8.673E-07	1.17282E-05
Road 5	5	0200-0300	0.056615	9.138E-08	1.23579E-06	0.0509598	8.225E-08	1.11235E-06	0.3812593	6.154E-07	8.32212E-06	0.3403452	5.494E-07	7.42904E-06	0.391305	6.316E-07	8.54139E-06
Road 5	5	0300-0400	0.05204871	6.057E-08	8.19062E-07	0.0466815	5.432E-08	7.346E-07	0.2768421	3.222E-07	4.35651E-06	0.2463819	2.867E-07	3.87718E-06	0.2930634	3.41E-07	4.61178E-06
Road 5	5	0400-0500	0.072372371	1.318E-07	1.7818E-06	0.066197	1.205E-07	1.62976E-06	0.4054963	7.382E-07	9.98329E-06	0.3693241	6.724E-07	9.09273E-06	0.4355211	7.929E-07	1.07225E-05
Road 5	5	0500-0600	0.058852248	2.408E-07	3.25637E-06	0.0531952	2.177E-07	2.94336E-06	0.334818	1.37E-06	1.85259E-05	0.3005502	1.23E-06	1.66299E-05	0.3537454	1.447E-06	1.95732E-05
Road 5	5	0600-0700	0.086864494	6.277E-07	8.48824E-06	0.0775397	5.603E-07	7.57705E-06	0.4308141	3.113E-06	4.20984E-05	0.3823686	2.763E-06	3.73644E-05	0.4599083	3.323E-06	4.49414E-05
Road 5	5	0700-0800	0.066912821	7.837E-07	1.05976E-05	0.0595577	6.975E-07	9.43272E-06	0.3452787	4.044E-06	5.46851E-05	0.3047087	3.569E-06	4.82597E-05	0.3642664	4.266E-06	5.76924E-05
Road 5	5	0800-0900	0.072035634	1.13E-06	1.52851E-05	0.0647794	1.016E-06	1.37454E-05	0.3496077	5.486E-06	7.41826E-05	0.3128509	4.909E-06	6.63833E-05	0.3776303	5.925E-06	8.01287E-05
Road 5	5	0900-1000	0.078631881	1.192E-06	1.61259E-05	0.0710576	1.078E-06	1.45726E-05	0.4132763	6.267E-06	8.47553E-05	0.3721725	5.644E-06	7.63256E-05	0.4432301	6.722E-06	9.08982E-05
Road 5	5	1000-1100	0.088585468	1.207E-06	1.63235E-05	0.0802221	1.093E-06	1.47824E-05	0.4570818	6.228E-06	8.42258E-05	0.4127029	5.624E-06	7.60482E-05	0.492925	6.717E-06	9.08306E-05
Road 5	5	1100-1200	0.086588391	1.121E-06	1.51643E-05	0.0780005	1.01E-06	1.36603E-05	0.4644398	6.015E-06	8.1338E-05	0.4171688	5.403E-06	7.30593E-05	0.4951693	6.413E-06	8.67197E-05
Road 5	5	1200-1300	0.080347253	1.054E-06	1.42549E-05	0.0736725	9.665E-07	1.30707E-05	0.434367	5.699E-06	7.70635E-05	0.3971305	5.21E-06	7.04572E-05	0.470803	6.177E-06	8.35278E-05
Road 5	5	1300-1400	0.086356063	1.243E-06	1.68114E-05	0.0794978	1.144E-06	1.54762E-05	0.4492287	6.467E-06	8.74536E-05	0.4125042	5.938E-06	8.03043E-05	0.4920019	7.083E-06	9.57805E-05
Road 5	5	1400-1500	0.082580776	1.218E-06	1.64747E-05	0.0760145	1.121E-06	1.51647E-05	0.4294221	6.335E-06	8.56686E-05	0.3943144	5.817E-06	7.86647E-05	0.4703289	6.938E-06	9.38294E-05
Road 5	5	1500-1600	0.092940196	1.334E-06	1.8046E-05	0.0846856	1.216E-06	1.64432E-05	0.4722218	6.78E-06	9.16901E-05	0.4292423	6.163E-06	8.33449E-05	0.5139279	7.379E-06	9.9788E-05
Road 5	5	1600-1700	0.086554038	1.368E-06	1.84976E-05	0.0801725	1.267E-06	1.71337E-05	0.4499284	7.11E-06	9.61547E-05	0.4155994	6.568E-06	8.88182E-05	0.4957718	7.835E-06	0.000105952
Road 5	5	1700-1800	0.064313566	1.019E-06	1.37772E-05	0.0585487	9.275E-07	1.25422E-05	0.3326255	5.269E-06	7.12546E-05	0.3014271	4.775E-06	6.45713E-05	0.3599758	5.702E-06	7.71135E-05
Road 5	5	1800-1900	0.060058637	1.026E-06	1.38718E-05	0.0549394	9.383E-07	1.26894E-05	0.3379826	5.773E-06	7.8064E-05	0.3075363	5.253E-06	7.10318E-05	0.3624757	6.191E-06	8.37212E-05
Road 5	5	1900-2000	0.068716632	8.731E-07	1.18077E-05	0.062871	7.989E-07	1.08032E-05	0.3821801	4.856E-06	6.56707E-05	0.3481686	4.424E-06	5.98264E-05	0.4110396	5.223E-06	7.06297E-05
Road 5	5	2000-2100	0.066070623	7.366E-07	9.96116E-06	0.0607208	6.77E-07	9.15459E-06	0.3609942	4.025E-06	5.44254E-05	0.3302906	3.682E-06	4.97964E-05	0.3910114	4.359E-06	5.89509E-05
Road 5	5	2100-2200	0.069093625	7.405E-07	1.00136E-05	0.0632006	6.773E-07	9.15952E-06	0.3897987	4.177E-06	5.64926E-05	0.3549328	3.804E-06	5.14395E-05	0.4181334	4.481E-06	6.05991E-05
Road 5	5	2200-2300	0.068176016	6.296E-07	8.51357E-06	0.0606861	5.604E-07	7.57825E-06	0.3761265	3.473E-06	4.69693E-05	0.33248	3.07E-06	4.15189E-05	0.3931661	3.631E-06	4.90971E-05
Road 5	5	2300-0000	0.061434308	5.166E-07	6.9856E-06	0.0544393	4.577E-07	6.19021E-06	0.3534832	2.972E-06	4.0194E-05	0.3102014	2.608E-06	3.52725E-05	0.3646407	3.066E-06	4.14627E-05
Road 6	6	0000-0100	0.055561216	1.543E-07	5.51691E-06	0.0491045	1.364E-07	4.8758E-06	0.3496797	9.713E-07	3.47212E-05	0.3059762	8.499E-07	3.03817E-05	0.3550807	9.863E-07	3.52575E-05
Road 6	6	0100-0200	0.070507434	1.495E-07	5.34535E-06	0.0636516	1.35E-07	4.82559E-06	0.39256	8.326E-07	2.9761E-05	0.3521549	7.469E-07	2.66978E-05	0.4158065	8.819E-07	3.15233E-05
Road 6	6	0200-0300	0.064431519	9.553E-08	3.41498E-06	0.05808	8.612E-08	3.07834E-06	0.3598537	5.336E-07	1.90729E-05	0.3221996	4.777E-07	1.70771E-05	0.3802796	5.639E-07	2.01555E-05
Road 6	6	0300-0400	0.06525371	7.593E-08	2.71431E-06	0.0587298	6.834E-08	2.44294E-06	0.4103308	4.775E-07	1.70682E-05	0.3671537	4.272E-07	1.52722E-05	0.4258835	4.956E-07	1.77152E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (October) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 6	6	0400-0500	0.071022333	1.2E-07	4.28845E-06	0.064967	1.097E-07	3.92282E-06	0.4096512	6.92E-07	2.47354E-05	0.3726174	6.294E-07	2.24993E-05	0.4375844	7.392E-07	2.64221E-05
Road 6	6	0500-0600	0.064908137	1.961E-07	7.01112E-06	0.058725	1.775E-07	6.34324E-06	0.3851793	1.164E-06	4.16056E-05	0.3459981	1.046E-06	3.73734E-05	0.404723	1.223E-06	4.37166E-05
Road 6	6	0600-0700	0.070139268	3.778E-07	1.35053E-05	0.0626257	3.373E-07	1.20586E-05	0.4284402	2.308E-06	8.24963E-05	0.3795411	2.044E-06	7.30808E-05	0.4421668	2.382E-06	8.51394E-05
Road 6	6	0700-0800	0.066225329	5.668E-07	2.02606E-05	0.0589684	5.047E-07	1.80404E-05	0.3696868	3.164E-06	0.0001131	0.3263736	2.793E-06	9.98487E-05	0.3853421	3.298E-06	0.000117889
Road 6	6	0800-0900	0.056279847	6.908E-07	2.46941E-05	0.0505872	6.209E-07	2.21963E-05	0.3273561	4.018E-06	0.000143635	0.2916762	3.58E-06	0.00012798	0.3422634	4.201E-06	0.000150176
Road 6	6	0900-1000	0.058420732	6.886E-07	2.46144E-05	0.0527094	6.213E-07	2.22081E-05	0.324152	3.821E-06	0.000136575	0.2903016	3.422E-06	0.000122313	0.343011	4.043E-06	0.000144521
Road 6	6	1000-1100	0.077830658	7.771E-07	2.77795E-05	0.0704408	7.034E-07	2.51419E-05	0.4220252	4.214E-06	0.00015063	0.3802705	3.797E-06	0.000135727	0.4507113	4.5E-06	0.000160869
Road 6	6	1100-1200	0.088357822	8.756E-07	3.12998E-05	0.0796226	7.891E-07	2.82054E-05	0.4566831	4.526E-06	0.000161775	0.4102359	4.065E-06	0.000145322	0.4898584	4.854E-06	0.000173527
Road 6	6	1200-1300	0.085210446	8.252E-07	2.94989E-05	0.0781759	7.571E-07	2.70636E-05	0.4196322	4.064E-06	0.000145272	0.3839147	3.718E-06	0.000132907	0.4620906	4.475E-06	0.00015997
Road 6	6	1300-1400	0.099050757	9.574E-07	3.42238E-05	0.0911813	8.814E-07	3.15047E-05	0.4964656	4.799E-06	0.000171537	0.455909	4.407E-06	0.000157524	0.5470902	5.288E-06	0.000189029
Road 6	6	1400-1500	0.094500229	1.007E-06	3.60117E-05	0.0869913	9.274E-07	3.31502E-05	0.4706729	5.018E-06	0.000179362	0.4321171	4.607E-06	0.000164669	0.5191084	5.534E-06	0.000197819
Road 6	6	1500-1600	0.083510811	8.699E-07	3.10956E-05	0.0760806	7.925E-07	2.83289E-05	0.4250076	4.427E-06	0.000158253	0.3859128	4.02E-06	0.000143696	0.4619934	4.812E-06	0.000172025
Road 6	6	1600-1700	0.086713521	9.244E-07	3.30444E-05	0.0803141	8.562E-07	3.06057E-05	0.4220197	4.499E-06	0.000160821	0.3898322	4.156E-06	0.000148555	0.4701463	5.012E-06	0.000179161
Road 6	6	1700-1800	0.064455643	7.246E-07	2.5903E-05	0.0586993	6.599E-07	2.35897E-05	0.3227242	3.628E-06	0.000129694	0.2925754	3.289E-06	0.000117578	0.3512747	3.949E-06	0.000141168
Road 6	6	1800-1900	0.063105256	8.09E-07	2.89167E-05	0.0577209	7.399E-07	2.64494E-05	0.3259282	4.178E-06	0.00014935	0.2967471	3.804E-06	0.000135978	0.354468	4.544E-06	0.000162428
Road 6	6	1900-2000	0.074220211	7.258E-07	2.59431E-05	0.0678872	6.638E-07	2.37295E-05	0.3825962	3.741E-06	0.000133734	0.3483507	3.406E-06	0.000121763	0.4162379	4.07E-06	0.000145493
Road 6	6	2000-2100	0.059136683	4.551E-07	1.62668E-05	0.0543365	4.181E-07	1.49465E-05	0.330627	2.544E-06	9.09462E-05	0.3020561	2.324E-06	8.30872E-05	0.3563926	2.743E-06	9.80336E-05
Road 6	6	2100-2200	0.082714185	5.527E-07	1.97557E-05	0.0756739	5.056E-07	1.80742E-05	0.4281346	2.861E-06	0.000102257	0.390025	2.606E-06	9.31548E-05	0.465699	3.112E-06	0.000111229
Road 6	6	2200-2300	0.063514324	4.494E-07	1.60648E-05	0.0564876	3.997E-07	1.42875E-05	0.350473	2.48E-06	8.86459E-05	0.3084178	2.182E-06	7.80088E-05	0.3649054	2.582E-06	9.22963E-05
Road 6	6	2300-0000	0.043350339	2.88E-07	1.02958E-05	0.0384309	2.553E-07	9.12739E-06	0.2658974	1.767E-06	6.3151E-05	0.2328631	1.547E-06	5.53053E-05	0.2712941	1.803E-06	6.44327E-05
Road 7	7	0000-0100	0.079678696	2.129E-07	5.31356E-06	0.0699813	1.869E-07	4.66687E-06	0.4698432	1.255E-06	3.13326E-05	0.410114	1.096E-06	2.73494E-05	0.4800953	1.283E-06	3.20163E-05
Road 7	7	0100-0200	0.093516444	1.942E-07	4.84674E-06	0.0846013	1.756E-07	4.38469E-06	0.5125458	1.064E-06	2.65641E-05	0.4619452	9.591E-07	2.39415E-05	0.5465465	1.135E-06	2.83262E-05
Road 7	7	0200-0300	0.081156292	1.108E-07	2.76488E-06	0.0731878	9.988E-08	2.4934E-06	0.4560717	6.224E-07	1.55377E-05	0.4093908	5.587E-07	1.39473E-05	0.4825786	6.586E-07	1.64407E-05
Road 7	7	0300-0400	0.081944868	9.042E-08	2.25715E-06	0.0738598	8.15E-08	2.03445E-06	0.4926021	5.435E-07	1.35686E-05	0.4420569	4.878E-07	1.21764E-05	0.5159167	5.693E-07	1.42108E-05
Road 7	7	0400-0500	0.09099973	1.467E-07	3.66091E-06	0.0829464	1.337E-07	3.33692E-06	0.5052351	8.142E-07	2.03255E-05	0.458777	7.393E-07	1.84565E-05	0.5417234	8.73E-07	2.17935E-05
Road 7	7	0500-0600	0.084207699	2.396E-07	5.98182E-06	0.0756733	2.153E-07	5.37557E-06	0.4735307	1.347E-06	3.3638E-05	0.4233498	1.205E-06	3.00733E-05	0.4990232	1.42E-06	3.54489E-05
Road 7	7	0600-0700	0.089321784	4.539E-07	1.13306E-05	0.0793427	4.032E-07	1.00647E-05	0.5125845	2.605E-06	6.50218E-05	0.4526557	2.3E-06	5.74198E-05	0.5319983	2.703E-06	6.74845E-05
Road 7	7	0700-0800	0.085776211	6.974E-07	1.74093E-05	0.0759614	6.176E-07	1.54172E-05	0.4640079	3.773E-06	9.41757E-05	0.4085082	3.321E-06	8.29114E-05	0.4844696	3.939E-06	9.83287E-05
Road 7	7	0800-0900	0.084469515	1.038E-06	2.58998E-05	0.0757601	9.305E-07	2.32293E-05	0.4599579	5.65E-06	0.000141031	0.4105382	5.043E-06	0.000125878	0.4862984	5.973E-06	0.000149107
Road 7	7	0900-1000	0.08591279	9.804E-07	2.44741E-05	0.0774443	8.838E-07	2.20616E-05	0.4493988	5.128E-06	0.000128021	0.4035231	4.605E-06	0.000114952	0.4809673	5.489E-06	0.000137014
Road 7	7	1000-1100	0.101286506	1.013E-06	2.52928E-05	0.0918257	9.186E-07	2.29303E-05	0.5332446	5.334E-06	0.000133159	0.4821562	4.823E-06	0.000120402	0.5739819	5.742E-06	0.000143332
Road 7	7	1100-1200	0.110488483	1.1E-06	2.74705E-05	0.0999809	9.958E-07	2.4858E-05	0.5704377	5.681E-06	0.000141827	0.5152685	5.132E-06	0.00012811	0.6152493	6.128E-06	0.000152968
Road 7	7	1200-1300	0.10822692	1.076E-06	2.6869E-05	0.0993991	9.885E-07	2.46774E-05	0.5464566	5.435E-06	0.000135666	0.5011414	4.984E-06	0.000124416	0.6005405	5.973E-06	0.000149093
Road 7	7	1300-1400	0.115729648	1.134E-06	2.83122E-05	0.1062051	1.041E-06	2.59821E-05	0.5826426	5.71E-06	0.000142538	0.5338944	5.232E-06	0.000130613	0.6400995	6.273E-06	0.000156595
Road 7	7	1400-1500	0.108415646	1.114E-06	2.78196E-05	0.0993111	1.021E-06	2.54833E-05	0.5521888	5.676E-06	0.000141692	0.5049206	5.19E-06	0.000129563	0.6042317	6.211E-06	0.000155047
Road 7	7	1500-1600	0.100030684	1.005E-06	2.50879E-05	0.0915425	9.197E-07	2.29591E-05	0.5136417	5.16E-06	0.000128823	0.468958	4.712E-06	0.000117616	0.5605005	5.631E-06	0.000140575
Road 7	7	1600-1700	0.103931506	1.08E-06	2.69703E-05	0.0957869	9.957E-07	2.48568E-05	0.5144614	5.348E-06	0.000133503	0.4731148	4.918E-06	0.000122774	0.5689016	5.914E-06	0.00014763
Road 7	7	1700-1800	0.080162451	8.834E-07	2.20515E-05	0.0729785	8.042E-07	2.00753E-05	0.4112324	4.532E-06	0.000113124	0.3731692	4.112E-06	0.000102653	0.4461477	4.916E-06	0.000122729
Road 7	7	1800-1900	0.073477343	8.406E-07	2.09848E-05	0.0674737	7.719E-07	1.92702E-05	0.3849342	4.404E-06	0.000109936	0.3522128	4.03E-06	0.000100591	0.4196864	4.801E-06	0.000119861
Road 7	7	1900-2000	0.085165762	7.382E-07	1.84274E-05	0.0778213	6.745E-07	1.68383E-05	0.4474001	3.878E-06	9.68046E-05	0.4073408	3.531E-06	8.81369E-05	0.485162	4.205E-06	0.000104975
Road 7	7	2000-2100	0.078526154	5.564E-07	1.38886E-05	0.0721609	5.113E-07	1.27628E-05	0.4225561	2.994E-06	7.4736E-05	0.3868401	2.741E-06	6.8419E-05	0.4590009	3.252E-06	8.11819E-05
Road 7	7	2100-2200	0.090636634	5.395E-07	1.34683E-05	0.0829326	4.937E-07	1.23235E-05	0.4760674	2.834E-06	7.07421E-05	0.4340187	2.584E-06	6.44938E-05	0.5169513	3.077E-06	7.68173E-05
Road 7	7	2200-2300	0.078111063	5.013E-07	1.2513E-05	0.0694931	4.46E-07	1.11324E-05	0.4253371	2.729E-06	6.81367E-05	0.3755112	2.41E-06	6.01549E-05	0.4450043	2.856E-06	7.12873E-05
Road 7	7	2300-0000	0.055083609	3.255E-07	8.12536E-06	0.0484945	2.866E-07	7.1534E-06	0.3264068	1.929E-06	4.81481E-05	0.2847177	1.682E-06	4.19986E-05	0.3332122	1.969E-06	4.9152E-05
Road 8	8	0000-0100	0.240899722	1.752E-07	2.8881E-06	0.2129367	1.549E-07	2.55286E-06	1.2308842	8.952E-07	1.47568E-05	1.0874458	7.909E-07	1.30372E-05	1.3003825	9.457E-07	1.559E-05
Road 8	8	0100-0200	0.243913	1.478E-07	2.43686E-06	0.2200533	1.334E-07	2.19848E-06	1.2413113	7.523E-07	1.24015E-05	1.1197163	6.786E-07	1.11867E-05	1.3397697	8.12E-07	1.33852E-05
Road 8	8	0200-0300	0.229542	6.956E-08	1.14664E-06	0.2069027	6.27E-08	1.03355E-06	1.2301393	3.728E-07	6.14497E-06	1.1084967	3.359E-07	5.53732E-06	1.3153993	3.986E-07	6.57087E-06
Road 8	8	0300-0400	0.209600714	5.928E-08	9.77225E-07	0.1885107	5.332E-08	8.78897E-07	1.0958707	3.099E-07	5.1093E-06	0.9850857	2.786E-07	4.59278E-06	1.1735964	3.319E-07	5.47168E-06
Road 8	8	0400-0500	0.237406667	1.007E-07	1.6603E-06	0.2170729	9.209E-08	1.51809E-06	1.1723724	4.974E-07	8.19896E-06	1.0719148	4.548E-07	7.49641E-06	1.2889876	5.468E-07	9.01451E-06
Road 8	8	0500-0600	0.229068529	1.573E-07	2.59369E-06	0.2072035	1.423E-07	2.34612E-06	1.1102762	7.626E-07	1.25714E-05	1.0038259	6.895E-07	1.13661E-05	1.2110294	8.318E-07	1.37122E-05
Road 8	8	0600-0700	0.258828387	3.242E-07	5.34414E-06	0.2310752	2.894E-07	4.7711E-06	1.2398013	1.553E-06	2.55987E-05	1.1063444	1.386E-06	2.28431E-05	1.3374195	1.675E-06	2.76142E-05
Road 8	8	0700-0800	0.259294752	5.291E-07	8.72146E-06	0.2308616	4.711E-07	7.7651E-06	1.2560994	2.563E-06	4.22493E-05	1.1177305	2.281E-06	3.75952E-05	1.3485921	2.752E-06	4.53603E-05
Road 8	8	0800-0900	0.284761316	1.093E-06	1.80181E-05	0.2561561	9.832E-07	1.62081E-05	1.3843279	5.314E-06	8.75924E-05	1.2446628	4.777E-06	7.87552E-05	1.5008188	5.761E-06	9.49633E-05
Road 8	8	0900-1000	0.302725159	9.602E-07	1.58279E-05	0.2730672	8.661E-07	1.42772E-05	1.4002818	4.441E-06	7.32131E-05	1.2629058	4.006E-06	6.60305E-05	1.535973	4.872E-06	8.03077E-05
Road 8	8	1000-1100	0.288643354	9.213E-07	1.51877E-05	0.2611291	8.335E-07	1.374E-05	1.3699307	4.373E-06	7.20824E-05	1.2387293	3.954E-06	6.51789E-05	1.4998584	4.787E-06	7.89189E-05
Road 8	8	1100-1200	0.294987044	9.475E-07	1.56197E-05	0.2653791	8.524E-07	1.4052E-05	1.4203384	4.562E-06	7.52078E-05	1.277604	4.104E-06	6.76499E-05	1.5429831	4.956E-06	8.17019E-05
Road 8	8	1200-1300	0.295767811	1.01E-06	1.66461E-05	0.2709962	9.252E-07	1.52519E-05	1.4385538	4.911E-06	8.0963E-05	1.3178638	4.499E-06	7.41705E-05	1.5888601	5.425E-06	8.94224E-05
Road 8	8	1300-1400	0.269740313	8.719E-07	1.43727E-05	0.2481648	8.021E-07	1.32231E-05	1.2883224	4.164E-06	6.86465E-05	1.1850191	3.83E-06	6.31421E-05	1.4331838	4.633E-06	7.63652E-05
Road 8	8	1400-1500	0.262673957	7.376E-07	1.21592E-05	0.2416507	6.786E-07	1.1186E-05	1.3138901	3.69E-06	6.08202E-05	1.2084913	3.394E-06	5.59413E-05	1.450142	4.072E-06	6.71273E-05
Road 8	8	1500-1600	0.27076073	7.494E-07	1.23532E-05	0.246442	6.821E-07	1.12437E-05	1.3177522	3.647E-06	6.01213E-05	1.1989109	3.318E-06	5.46992E-05	1.4453529	4E-06	6.59429E-05
Road 8	8	1600-1700	0.269923699	7.961E-07	1.3124E-05	0.2498201	7.368E-07	1.21466E-05	1.2975493	3.827E-06	6.30886E-05	1.2005954	3.541E-06	5.83745E-05	1.4504155	4.278E-06	7.05211E-05
Road 8	8	1700-1800	0.219705128	6.924E-07	1.1414E-05	0.1998759	6.299E-07	1.03839E-05	1.1027216	3.475E-06	5.72881E-05	1.0024481	3.159E-06	5.20787E-05	1.202324	3.789E-06	6.24626E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (October) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 8	8	1800-1900	0.219253645	4.739E-07	7.81276E-06	0.2006285	4.337E-07	7.14908E-06	1.1259609	2.434E-06	4.01219E-05	1.0297628	2.226E-06	3.6694E-05	1.2303913	2.66E-06	4.38431E-05
Road 8	8	1900-2000	0.216185844	3.363E-07	5.5436E-06	0.1978513	3.078E-07	5.07345E-06	1.1384242	1.771E-06	2.91923E-05	1.0415862	1.62E-06	2.67091E-05	1.2394375	1.928E-06	3.17826E-05
Road 8	8	2000-2100	0.237680921	3.649E-07	6.01564E-06	0.2184092	3.353E-07	5.52788E-06	1.1368792	1.746E-06	2.87741E-05	1.044005	1.603E-06	2.64235E-05	1.2624142	1.938E-06	3.19514E-05
Road 8	8	2100-2200	0.196071509	2.099E-07	3.4607E-06	0.1794506	1.921E-07	3.16734E-06	1.0301677	1.103E-06	1.81827E-05	0.9418013	1.008E-06	1.6623E-05	1.1212519	1.201E-06	1.97903E-05
Road 8	8	2200-2300	0.241838906	3.127E-07	5.15442E-06	0.215303	2.784E-07	4.58885E-06	1.1981106	1.549E-06	2.55359E-05	1.0659448	1.378E-06	2.2719E-05	1.2812478	1.657E-06	2.73078E-05
Road 8	8	2300-0000	0.197652692	2.076E-07	3.42279E-06	0.1751871	1.84E-07	3.03375E-06	1.0181281	1.07E-06	1.76311E-05	0.9017777	9.473E-07	1.56162E-05	1.0769648	1.131E-06	1.865E-05
Road 9	9	0000-0100	0.206672137	5.489E-08	1.63848E-06	0.1857922	4.934E-08	1.47294E-06	0.9464757	2.514E-07	7.50357E-06	0.8458148	2.246E-07	6.70554E-06	1.031607	2.74E-07	8.17849E-06
Road 9	9	0100-0200	0.219772301	4.586E-08	1.36898E-06	0.2024847	4.225E-08	1.26129E-06	0.9506843	1.984E-07	5.92188E-06	0.8709401	1.817E-07	5.42515E-06	1.0734247	2.24E-07	6.68644E-06
Road 9	9	0200-0300	0.086531448	8.207E-09	2.45005E-07	0.0784361	7.44E-09	2.22084E-07	0.6185072	5.866E-08	1.75124E-06	0.5613523	5.324E-08	1.58941E-06	0.6397884	6.068E-08	1.81149E-06
Road 9	9	0300-0400	0.104901156	7.96E-09	2.37613E-07	0.094884	7.2E-09	2.14923E-07	0.6505066	4.936E-08	1.47347E-06	0.5889291	4.469E-08	1.33399E-06	0.6838131	5.189E-08	1.54892E-06
Road 9	9	0400-0500	0.236285928	4.482E-08	1.33804E-06	0.2192513	4.159E-08	1.24157E-06	0.9825167	1.864E-07	5.56379E-06	0.9072786	1.721E-07	5.13773E-06	1.1265299	2.137E-07	6.37931E-06
Road 9	9	0500-0600	0.172066505	5.549E-08	1.65644E-06	0.1576757	5.085E-08	1.5179E-06	0.8717217	2.811E-07	8.39185E-06	0.7972202	2.571E-07	7.67464E-06	0.954896	3.079E-07	9.19254E-06
Road 9	9	0600-0700	0.203471812	1.235E-07	3.6871E-06	0.1855153	1.126E-07	3.36171E-06	1.0698946	6.495E-07	1.93875E-05	0.9711741	5.895E-07	1.75986E-05	1.1566894	7.021E-07	2.09603E-05
Road 9	9	0700-0800	0.174938756	1.593E-07	4.75508E-06	0.1603391	1.46E-07	4.35824E-06	1.0053458	9.154E-07	2.73267E-05	0.9189439	8.367E-07	2.49782E-05	1.0792831	9.827E-07	2.93364E-05
Road 9	9	0800-0900	0.266764209	5.82E-07	1.73723E-05	0.2444456	5.333E-07	1.59188E-05	1.2978736	2.831E-06	8.45203E-05	1.1841041	2.583E-06	7.71114E-05	1.4285497	3.116E-06	9.30302E-05
Road 9	9	0900-1000	0.272889466	4.452E-07	1.32897E-05	0.2523942	4.118E-07	1.22916E-05	1.206059	1.968E-06	5.87351E-05	1.1115128	1.813E-06	5.41307E-05	1.363907	2.225E-06	6.64223E-05
Road 9	9	1000-1100	0.285004572	3.839E-07	1.14588E-05	0.2620153	3.529E-07	1.05345E-05	1.232464	1.66E-06	4.95522E-05	1.1304603	1.523E-06	4.54511E-05	1.3924756	1.875E-06	5.59856E-05
Road 9	9	1100-1200	0.198054729	2.78E-07	8.29942E-06	0.1802126	2.53E-07	7.55175E-06	1.0599915	1.488E-06	4.44186E-05	0.9712775	1.363E-06	4.07011E-05	1.1514901	1.616E-06	4.82528E-05
Road 9	9	1200-1300	0.292975752	4.057E-07	1.21111E-05	0.2746696	3.804E-07	1.13544E-05	1.3547267	1.876E-06	5.60022E-05	1.2706033	1.76E-06	5.25247E-05	1.545273	2.14E-06	6.38791E-05
Road 9	9	1300-1400	0.329463891	3.75E-07	1.11941E-05	0.3087674	3.514E-07	1.04909E-05	1.2723651	1.448E-06	4.32308E-05	1.1884945	1.353E-06	4.03812E-05	1.4972619	1.704E-06	5.08721E-05
Road 9	9	1400-1500	0.213309469	2.752E-07	8.21391E-06	0.2005589	2.587E-07	7.72292E-06	1.057745	1.364E-06	4.07306E-05	0.9905154	1.278E-06	3.81418E-05	1.1910743	1.536E-06	4.58647E-05
Road 9	9	1500-1600	0.178239014	1.927E-07	5.75318E-06	0.1660506	1.795E-07	5.35977E-06	0.9424197	1.019E-06	3.04193E-05	0.8796418	9.511E-07	2.8393E-05	1.0456924	1.131E-06	3.37528E-05
Road 9	9	1600-1700	0.184753413	2.769E-07	8.26514E-06	0.1746953	2.618E-07	7.81518E-06	1.0522392	1.577E-06	4.7073E-05	0.9939948	1.49E-06	4.44674E-05	1.1686902	1.751E-06	5.22826E-05
Road 9	9	1700-1800	0.160942705	2.076E-07	6.19742E-06	0.1516478	1.956E-07	5.8395E-06	1.0012737	1.292E-06	3.8556E-05	0.9475046	1.222E-06	3.64856E-05	1.0991524	1.418E-06	4.23251E-05
Road 9	9	1800-1900	0.158364911	1.322E-07	3.94587E-06	0.1504846	1.256E-07	3.74952E-06	0.9722327	8.115E-07	2.42244E-05	0.9270096	7.737E-07	2.30976E-05	1.0774941	8.994E-07	2.68472E-05
Road 9	9	1900-2000	0.163974383	1.338E-07	3.99278E-06	0.1547699	1.262E-07	3.76865E-06	0.886122	7.228E-07	2.15771E-05	0.8342681	6.805E-07	2.03144E-05	0.989038	8.068E-07	2.40831E-05
Road 9	9	2000-2100	0.175195589	9.638E-08	2.87708E-06	0.1638548	9.014E-08	2.69084E-06	0.7836824	4.311E-07	1.28697E-05	0.7360636	4.049E-07	1.20877E-05	0.8999183	4.951E-07	1.47785E-05
Road 9	9	2100-2200	0.022869738	1.171E-08	3.49668E-07	0.0214876	1.101E-08	3.28536E-07	0.3170189	1.624E-07	4.84707E-06	0.295462	1.513E-07	4.51748E-06	0.3169496	1.623E-07	4.84601E-06
Road 9	9	2200-2300	0.172183644	1.078E-07	3.21763E-06	0.1565316	9.799E-08	2.92514E-06	0.8459507	5.296E-07	1.58085E-05	0.7676181	4.805E-07	1.43446E-05	0.9241496	5.785E-07	1.72698E-05
Road 9	9	2300-0000	0.141483411	8.052E-08	2.40357E-06	0.1285986	7.318E-08	2.18468E-06	0.7334324	4.174E-07	1.24598E-05	0.6640946	3.779E-07	1.12819E-05	0.7926932	4.511E-07	1.34666E-05
Road 10	10	0000-0100	0.291254909	2.239E-07	4.97908E-06	0.2588064	1.99E-07	4.42437E-06	1.4892344	1.145E-06	2.54589E-05	1.323516	1.018E-06	2.26259E-05	1.5823224	1.217E-06	2.70502E-05
Road 10	10	0100-0200	0.27968956	1.625E-07	3.61259E-06	0.2537568	1.474E-07	3.27763E-06	1.4185951	8.241E-07	1.83232E-05	1.2862391	7.472E-07	1.66136E-05	1.5399959	8.946E-07	1.98913E-05
Road 10	10	0200-0300	0.276857486	8.988E-08	1.99836E-06	0.2495914	8.102E-08	1.80155E-06	1.3868744	4.502E-07	1.00105E-05	1.2506824	4.06E-07	9.02744E-06	1.5002738	4.87E-07	1.0829E-05
Road 10	10	0300-0400	0.251594578	5.158E-08	1.14695E-06	0.2262319	4.638E-08	1.03133E-06	1.3598915	2.788E-07	6.19939E-06	1.2232839	2.508E-07	5.57664E-06	1.4495158	2.972E-07	6.60797E-06
Road 10	10	0400-0500	0.295092036	1.16E-07	2.57839E-06	0.2714512	1.067E-07	2.37183E-06	1.420373	5.582E-07	1.24106E-05	1.3035853	5.123E-07	1.13902E-05	1.5750365	6.189E-07	1.3762E-05
Road 10	10	0500-0600	0.272223385	1.907E-07	4.24007E-06	0.2482897	1.739E-07	3.86729E-06	1.315075	9.212E-07	2.04832E-05	1.1971453	8.386E-07	1.86464E-05	1.445435	1.013E-06	2.25137E-05
Road 10	10	0600-0700	0.333078066	4.667E-07	1.03758E-05	0.3019085	4.23E-07	9.40487E-06	1.6644995	2.332E-06	5.18515E-05	1.5101974	2.116E-06	4.70448E-05	1.8121059	2.539E-06	5.64496E-05
Road 10	10	0700-0800	0.329765716	7.268E-07	1.61607E-05	0.2977035	6.562E-07	1.45894E-05	1.6613959	3.662E-06	8.14192E-05	1.5009928	3.308E-06	7.35584E-05	1.7986964	3.964E-06	8.81478E-05
Road 10	10	0800-0900	0.35017234	1.478E-06	3.28581E-05	0.3162172	1.334E-06	2.9672E-05	1.7325551	7.312E-06	0.000162573	1.5646587	6.603E-06	0.000146818	1.8808759	7.938E-06	0.00017649
Road 10	10	0900-1000	0.388239785	1.3E-06	2.89081E-05	0.3544237	1.187E-06	2.63902E-05	1.875108	6.279E-06	0.00013962	1.7124638	5.735E-06	0.000127509	2.0668875	6.922E-06	0.000153899
Road 10	10	1000-1100	0.384181347	1.398E-06	3.10871E-05	0.3506038	1.276E-06	2.837E-05	1.7387526	6.328E-06	0.000140696	1.5838425	5.764E-06	0.000128161	1.9344462	7.04E-06	0.000156531
Road 10	10	1100-1200	0.372388583	1.355E-06	3.01328E-05	0.3369192	1.226E-06	2.72627E-05	1.7490865	6.365E-06	0.000141532	1.5813896	5.755E-06	0.000127962	1.9183088	6.981E-06	0.000155225
Road 10	10	1200-1300	0.385553743	1.449E-06	3.22234E-05	0.3562795	1.339E-06	2.97767E-05	1.8373039	6.906E-06	0.000153556	1.6983123	6.384E-06	0.00014194	2.0545918	7.723E-06	0.000171716
Road 10	10	1300-1400	0.374588519	1.229E-06	2.73224E-05	0.3476978	1.141E-06	2.5361E-05	1.7428518	5.717E-06	0.000127123	1.6164191	5.303E-06	0.000117901	1.9641169	6.443E-06	0.000143262
Road 10	10	1400-1500	0.347773335	1.07E-06	2.37811E-05	0.3235657	9.951E-07	2.21258E-05	1.7407019	5.353E-06	0.000119031	1.6198986	4.982E-06	0.00011077	1.9434643	5.977E-06	0.000132896
Road 10	10	1500-1600	0.347000192	1.091E-06	2.42556E-05	0.3182058	1E-06	2.22428E-05	1.6725699	5.258E-06	0.000116914	1.5345293	4.824E-06	0.000107265	1.8527352	5.825E-06	0.000129507
Road 10	10	1600-1700	0.33007197	1.156E-06	2.57055E-05	0.3083402	1.08E-06	2.40131E-05	1.6142527	5.654E-06	0.000125716	1.5066126	5.277E-06	0.000117333	1.8149528	6.357E-06	0.000141346
Road 10	10	1700-1800	0.305524806	1.002E-06	2.22849E-05	0.281861	9.246E-07	2.05589E-05	1.5882735	5.21E-06	0.000115848	1.4700007	4.822E-06	0.000107222	1.7518617	5.747E-06	0.000127781
Road 10	10	1800-1900	0.309035035	6.389E-07	1.42055E-05	0.285593	5.904E-07	1.31279E-05	1.5617741	3.229E-06	7.17906E-05	1.4449604	2.987E-06	6.64209E-05	1.7305534	3.578E-06	7.95489E-05
Road 10	10	1900-2000	0.267133223	4.975E-07	1.10616E-05	0.2474405	4.608E-07	1.02462E-05	1.4155282	2.636E-06	5.8615E-05	1.3134527	2.446E-06	5.43882E-05	1.5608932	2.907E-06	6.46344E-05
Road 10	10	2000-2100	0.309680699	3.81E-07	8.47053E-06	0.285576	3.513E-07	7.8112E-06	1.4986658	1.844E-06	4.09922E-05	1.3816329	1.7E-06	3.7791E-05	1.6672089	2.051E-06	4.56022E-05
Road 10	10	2100-2200	0.258846498	3.184E-07	7.08009E-06	0.2418148	2.975E-07	6.61423E-06	1.4455447	1.778E-06	3.95392E-05	1.3540556	1.666E-06	3.70367E-05	1.5958704	1.963E-06	4.3651E-05
Road 10	10	2200-2300	0.278225413	3.565E-07	7.92724E-06	0.2511301	3.218E-07	7.15523E-06	1.4290301	1.831E-06	4.07161E-05	1.2936802	1.658E-06	3.68597E-05	1.5448102	1.98E-06	4.40149E-05
Road 10	10	2300-0000	0.259761985	3.107E-07	6.90776E-06	0.2317987	2.772E-07	6.16415E-06	1.3136216	1.571E-06	3.49327E-05	1.171554	1.401E-06	3.11547E-05	1.4033527	1.678E-06	3.73189E-05
Road 11	11	0000-0100	0.326316134	2.493E-07	2.06771E-06	0.2896481	2.213E-07	1.83536E-06	1.6373446	1.251E-06	1.03751E-05	1.4511242	1.108E-06	9.19508E-06	1.7407723	1.33E-06	1.10304E-05
Road 11	11	0100-0200	0.318786349	1.716E-07	1.42318E-06	0.2889268	1.555E-07	1.28988E-06	1.5721735	8.461E-07	7.01876E-06	1.4221013	7.654E-07	6.34878E-06	1.7110281	9.209E-07	7.63866E-06
Road 11	11	0200-0300	0.276794995	7.208E-08	5.97926E-07	0.2495662	6.499E-08	5.39107E-07	1.4777332	3.848E-07	3.19217E-06	1.3325624	3.47E-07	2.87857E-06	1.5821286	4.12E-07	3.41768E-06
Road 11	11	0300-0400	0.296443188	7.205E-08	5.97679E-07	0.2664892	6.477E-08	5.37286E-07	1.5523305	3.773E-07	3.12976E-06	1.395556	3.392E-07	2.81367E-06	1.6620452	4.04E-07	3.35096E-06
Road 11	11	0400-0500	0.305298842	1.06E-07	8.79333E-07	0.2809694	9.756E-08	8.09258E-07	1.4509301	5.038E-07	4.17902E-06	1.3319948	4.625E-07	3.83646E-06	1.6129642	5.601E-07	4.64572E-06
Road 11	11	0500-0600	0.248885177	1.167E-07	9.67745E-07	0.2267647	1.063E-07	8.81734E-07	1.2694522	5.951E-07	4.93604E-06	1.1557575	5.418E-07	4.49395E-06	1.3825222	6.481E-07	5.37569E-06
Road 11	11	0600-0700	0.273121605	2.466E-07	2.0453E-06	0.246483	2.225E-07	1.84582E-06	1.4167411	1.279E-06	1.06094E-05	1.276263	1.152E-06	9.55744E-06	1.522746	1.375E-06	1.14033E-05
Road 11	11	0700-0800	0.320738236	6.014E-07	4.98853E-06	0.2877471	5.395E-07	4.47541E-06	1.6704503	3.132E-06	2.5981E-05	1.4984862	2.81E-06	2.33064E-05	1.7862333	3.349E-06	2.77818E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (October) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 11	11	0800-0900	0.346685099	1.234E-06	1.0235E-05	0.3144313	1.119E-06	9.28277E-06	1.7113861	6.091E-06	5.05243E-05	1.5489929	5.513E-06	4.573E-05	1.8634242	6.632E-06	5.50128E-05
Road 11	11	0900-1000	0.347938828	8.819E-07	7.31567E-06	0.3175131	8.048E-07	6.67594E-06	1.6468291	4.174E-06	3.46258E-05	1.4990728	3.8E-06	3.15191E-05	1.8165859	4.605E-06	3.8195E-05
Road 11	11	1000-1100	0.357797281	7.392E-07	6.13172E-06	0.3258418	6.732E-07	5.58408E-06	1.6691728	3.448E-06	2.86053E-05	1.5179179	3.136E-06	2.60132E-05	1.8437598	3.809E-06	3.15973E-05
Road 11	11	1100-1200	0.314472959	7.316E-07	6.06857E-06	0.2835899	6.597E-07	5.4726E-06	1.6121041	3.75E-06	3.11097E-05	1.4579689	3.392E-06	2.81353E-05	1.7415588	4.052E-06	3.36079E-05
Road 11	11	1200-1300	0.380165318	1.076E-06	8.92397E-06	0.3509553	9.932E-07	8.2383E-06	1.8452057	5.222E-06	4.33142E-05	1.7030223	4.819E-06	3.99766E-05	2.0539776	5.812E-06	4.82149E-05
Road 11	11	1300-1400	0.394402486	8.217E-07	6.81583E-06	0.3658405	7.622E-07	6.32224E-06	1.7780488	3.704E-06	3.07272E-05	1.6453682	3.428E-06	2.84343E-05	2.0112087	4.19E-06	3.47565E-05
Road 11	11	1400-1500	0.311738247	6.278E-07	5.2077E-06	0.2895377	5.831E-07	4.83684E-06	1.5566349	3.135E-06	2.60042E-05	1.443423	2.907E-06	2.41129E-05	1.7329607	3.49E-06	2.89498E-05
Road 11	11	1500-1600	0.280207809	5.692E-07	4.72133E-06	0.2566417	5.213E-07	4.32425E-06	1.4507624	2.947E-06	2.44445E-05	1.3296063	2.701E-06	2.2403E-05	1.586248	3.222E-06	2.67273E-05
Road 11	11	1600-1700	0.265743007	6.413E-07	5.31955E-06	0.2482548	5.991E-07	4.96948E-06	1.4222149	3.432E-06	2.84694E-05	1.3289111	3.207E-06	2.66017E-05	1.5771659	3.806E-06	3.15711E-05
Road 11	11	1700-1800	0.265740227	6.551E-07	5.4343E-06	0.2442558	6.022E-07	4.99495E-06	1.4479572	3.57E-06	2.96103E-05	1.3346844	3.29E-06	2.72939E-05	1.5789401	3.893E-06	3.22888E-05
Road 11	11	1800-1900	0.284544105	5.829E-07	4.83537E-06	0.2622914	5.373E-07	4.45722E-06	1.5200798	3.114E-06	2.58313E-05	1.4037769	2.876E-06	2.38549E-05	1.6660683	3.413E-06	2.83122E-05
Road 11	11	1900-2000	0.269623296	4.26E-07	3.53343E-06	0.2489238	3.933E-07	3.26217E-06	1.4038261	2.218E-06	1.83972E-05	1.2955333	2.047E-06	1.69781E-05	1.5444571	2.44E-06	2.02402E-05
Road 11	11	2000-2100	0.27883781	3.921E-07	3.25263E-06	0.2572261	3.617E-07	3.00053E-06	1.3920019	1.958E-06	1.62376E-05	1.2849048	1.807E-06	1.49884E-05	1.5421309	2.169E-06	1.79889E-05
Road 11	11	2100-2200	0.202601455	2.005E-07	1.66309E-06	0.1856362	1.837E-07	1.52383E-06	1.1333721	1.122E-06	9.30348E-06	1.0395609	1.029E-06	8.53342E-06	1.2251972	1.212E-06	1.00572E-05
Road 11	11	2200-2300	0.267791433	2.929E-07	2.4296E-06	0.2400737	2.626E-07	2.17813E-06	1.3536265	1.481E-06	1.22811E-05	1.2125857	1.326E-06	1.10015E-05	1.4526593	1.589E-06	1.31796E-05
Road 11	11	2300-0000	0.260574858	2.714E-07	2.25155E-06	0.2327153	2.424E-07	2.01083E-06	1.3401667	1.396E-06	1.158E-05	1.195645	1.245E-06	1.03312E-05	1.4283603	1.488E-06	1.2342E-05
Haul Road 1	HR1	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0700-0800	1.36388	2.564E-06	3.85591E-06	1.21374	2.281E-06	3.43144E-06	6.2673	1.178E-05	1.77187E-05	5.57766	1.048E-05	1.57689E-05	6.7914	1.277E-05	1.92004E-05
Haul Road 1	HR1	0800-0900	1.36158	2.559E-06	3.84941E-06	1.22383	2.3E-06	3.45996E-06	6.2572	1.176E-05	1.76901E-05	5.62385	1.057E-05	1.58995E-05	6.84768	1.287E-05	1.93595E-05
Haul Road 1	HR1	0900-1000	1.35988	2.556E-06	3.8446E-06	1.22603	2.305E-06	3.46618E-06	6.24921	1.175E-05	1.76675E-05	5.63404	1.059E-05	1.59283E-05	6.86007	1.289E-05	1.93945E-05
Haul Road 1	HR1	1000-1100	1.35398	2.545E-06	3.82792E-06	1.22423	2.301E-06	3.46109E-06	6.22232	1.17E-05	1.75915E-05	5.62605	1.058E-05	1.59057E-05	6.85028	1.288E-05	1.93668E-05
Haul Road 1	HR1	1100-1200	1.35398	2.545E-06	3.82792E-06	1.21773	2.289E-06	3.44272E-06	6.22232	1.17E-05	1.75915E-05	5.59576	1.052E-05	1.58201E-05	6.81349	1.281E-05	1.92628E-05
Haul Road 1	HR1	1200-1300	1.34249	2.523E-06	3.79543E-06	1.22963	2.311E-06	3.47636E-06	6.16893	1.16E-05	1.74406E-05	5.65074	1.062E-05	1.59755E-05	6.88037	1.293E-05	1.94519E-05
Haul Road 1	HR1	1300-1400	1.33719	2.514E-06	3.78045E-06	1.22963	2.311E-06	3.47636E-06	6.14465	1.155E-05	1.73719E-05	5.65074	1.062E-05	1.59755E-05	6.88037	1.293E-05	1.94519E-05
Haul Road 1	HR1	1400-1500	1.33719	2.514E-06	3.78045E-06	1.22963	2.311E-06	3.47636E-06	6.14465	1.155E-05	1.73719E-05	5.65074	1.062E-05	1.59755E-05	6.88037	1.293E-05	1.94519E-05
Haul Road 1	HR1	1500-1600	1.33829	2.516E-06	3.78356E-06	1.21773	2.289E-06	3.44272E-06	6.14974	1.156E-05	1.73863E-05	5.59576	1.052E-05	1.58201E-05	6.81349	1.281E-05	1.92628E-05
Haul Road 1	HR1	1600-1700	1.32329	2.487E-06	3.74115E-06	1.22423	2.301E-06	3.46109E-06	6.08127	1.143E-05	1.71927E-05	5.62605	1.058E-05	1.59057E-05	6.85028	1.288E-05	1.93668E-05
Haul Road 1	HR1	1700-1800	1.32129	2.484E-06	3.7355E-06	1.20174	2.259E-06	3.39751E-06	6.07188	1.141E-05	1.71662E-05	5.52269	1.038E-05	1.56135E-05	6.72443	1.264E-05	1.9011E-05
Haul Road 1	HR1	1800-1900	1.3116	2.465E-06	3.7081E-06	1.19954	2.255E-06	3.39129E-06	6.02719	1.133E-05	1.70398E-05	5.51249	1.036E-05	1.55847E-05	6.71203	1.262E-05	1.8976E-05
Haul Road 1	HR1	1900-2000	1.294	2.432E-06	3.65835E-06	1.18365	2.225E-06	3.34637E-06	5.94653	1.118E-05	1.68118E-05	5.43951	1.022E-05	1.53784E-05	6.62316	1.245E-05	1.87247E-05
Haul Road 1	HR1	2000-2100	1.294	2.432E-06	3.65835E-06	1.18894	2.235E-06	3.36132E-06	5.94653	1.118E-05	1.68118E-05	5.46381	1.027E-05	1.54471E-05	6.65275	1.251E-05	1.88084E-05
Haul Road 1	HR1	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0700-0800	1.36388	1.767E-06	4.70274E-06	1.21374	1.572E-06	4.18505E-06	6.2673	8.118E-06	2.161E-05	5.57766	7.225E-06	1.92321E-05	6.7914	8.797E-06	2.34172E-05
Haul Road 2	HR2	0800-0900	1.36158	1.764E-06	4.69481E-06	1.22383	1.585E-06	4.21984E-06	6.2572	8.105E-06	2.15752E-05	5.62385	7.285E-06	1.93914E-05	6.84768	8.87E-06	2.36112E-05
Haul Road 2	HR2	0900-1000	1.35988	1.762E-06	4.68895E-06	1.22603	1.588E-06	4.22743E-06	6.24921	8.095E-06	2.15477E-05	5.63404	7.298E-06	1.94265E-05	6.86007	8.886E-06	2.36539E-05
Haul Road 2	HR2	1000-1100	1.35398	1.754E-06	4.6686E-06	1.22423	1.586E-06	4.22122E-06	6.22232	8.06E-06	2.14549E-05	5.62605	7.288E-06	1.9399E-05	6.85028	8.873E-06	2.36202E-05
Haul Road 2	HR2	1100-1200	1.35398	1.754E-06	4.6686E-06	1.21773	1.577E-06	4.19881E-06	6.22232	8.06E-06	2.14549E-05	5.59576	7.248E-06	1.92945E-05	6.81349	8.826E-06	2.34933E-05
Haul Road 2	HR2	1200-1300	1.34249	1.739E-06	4.62899E-06	1.22963	1.593E-06	4.23984E-06	6.16893	7.991E-06	2.12708E-05	5.65074	7.32E-06	1.94841E-05	6.88037	8.912E-06	2.37239E-05
Haul Road 2	HR2	1300-1400	1.33719	1.732E-06	4.61071E-06	1.22963	1.593E-06	4.23984E-06	6.14465	7.959E-06	2.11871E-05	5.65074	7.32E-06	1.94841E-05	6.88037	8.912E-06	2.37239E-05
Haul Road 2	HR2	1400-1500	1.33719	1.732E-06	4.61071E-06	1.22963	1.593E-06	4.23984E-06	6.14465	7.959E-06	2.11871E-05	5.65074	7.32E-06	1.94841E-05	6.88037	8.912E-06	2.37239E-05
Haul Road 2	HR2	1500-1600	1.33829	1.734E-06	4.6145E-06	1.21773	1.577E-06	4.19881E-06	6.14974	7.966E-06	2.12047E-05	5.59576	7.248E-06	1.92945E-05	6.81349	8.826E-06	2.34933E-05
Haul Road 2	HR2	1600-1700	1.32329	1.714E-06	4.56278E-06	1.22423	1.586E-06	4.22122E-06	6.08127	7.877E-06	2.09686E-05	5.62605	7.288E-06	1.9399E-05	6.85028	8.873E-06	2.36202E-05
Haul Road 2	HR2	1700-1800	1.32129	1.712E-06	4.55589E-06	1.20174	1.557E-06	4.14367E-06	6.07188	7.865E-06	2.09362E-05	5.52269	7.154E-06	1.90426E-05	6.72443	8.71E-06	2.31862E-05
Haul Road 2	HR2	1800-1900	1.3116	1.699E-06	4.52248E-06	1.19954	1.554E-06	4.13609E-06	6.02719	7.807E-06	2.07821E-05	5.51249	7.141E-06	1.90074E-05	6.71203	8.694E-06	2.31435E-05
Haul Road 2	HR2	1900-2000	1.294	1.676E-06	4.46179E-06	1.18365	1.533E-06	4.0813E-06	5.94653	7.703E-06	2.0504E-05	5.43951	7.046E-06	1.87558E-05	6.62316	8.579E-06	2.28371E-05
Haul Road 2	HR2	2000-2100	1.294	1.676E-06	4.46179E-06	1.18894	1.54E-06	4.09954E-06	5.94653	7.703E-06	2.0504E-05	5.46381	7.077E-06	1.88395E-05	6.65275	8.618E-06	2.29391E-05
Haul Road 2	HR2	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (October) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Haul Road 2	HR2	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0700-0800	1.36388	1.767E-06	4.69618E-06	1.21374	1.572E-06	4.17921E-06	6.2673	8.118E-06	2.15799E-05	5.57766	7.225E-06	1.92053E-05	6.7914	8.797E-06	2.33845E-05
Haul Road 3	HR3	0800-0900	1.36158	1.764E-06	4.68826E-06	1.22383	1.585E-06	4.21396E-06	6.2572	8.105E-06	2.15451E-05	5.62385	7.285E-06	1.93643E-05	6.84768	8.87E-06	2.35783E-05
Haul Road 3	HR3	0900-1000	1.35988	1.762E-06	4.68241E-06	1.22603	1.588E-06	4.22153E-06	6.24921	8.095E-06	2.15176E-05	5.63404	7.298E-06	1.93994E-05	6.86007	8.886E-06	2.3621E-05
Haul Road 3	HR3	1000-1100	1.35398	1.754E-06	4.6621E-06	1.22423	1.586E-06	4.21533E-06	6.22232	8.06E-06	2.1425E-05	5.62605	7.288E-06	1.93719E-05	6.85028	8.873E-06	2.35872E-05
Haul Road 3	HR3	1100-1200	1.35398	1.754E-06	4.6621E-06	1.21773	1.577E-06	4.19295E-06	6.22232	8.06E-06	2.1425E-05	5.59576	7.248E-06	1.92676E-05	6.81349	8.826E-06	2.34606E-05
Haul Road 3	HR3	1200-1300	1.34249	1.739E-06	4.62253E-06	1.22963	1.593E-06	4.23393E-06	6.16893	7.991E-06	2.12412E-05	5.65074	7.32E-06	1.94569E-05	6.88037	8.912E-06	2.36909E-05
Haul Road 3	HR3	1300-1400	1.33719	1.732E-06	4.60428E-06	1.22963	1.593E-06	4.23393E-06	6.14465	7.959E-06	2.11576E-05	5.65074	7.32E-06	1.94569E-05	6.88037	8.912E-06	2.36909E-05
Haul Road 3	HR3	1400-1500	1.33719	1.732E-06	4.60428E-06	1.22963	1.593E-06	4.23393E-06	6.14465	7.959E-06	2.11576E-05	5.65074	7.32E-06	1.94569E-05	6.88037	8.912E-06	2.36909E-05
Haul Road 3	HR3	1500-1600	1.33829	1.734E-06	4.60807E-06	1.21773	1.577E-06	4.19295E-06	6.14974	7.966E-06	2.11751E-05	5.59576	7.248E-06	1.92676E-05	6.81349	8.826E-06	2.34606E-05
Haul Road 3	HR3	1600-1700	1.32329	1.714E-06	4.55642E-06	1.22423	1.586E-06	4.21533E-06	6.08127	7.877E-06	2.09394E-05	5.62605	7.288E-06	1.93719E-05	6.85028	8.873E-06	2.35872E-05
Haul Road 3	HR3	1700-1800	1.32129	1.712E-06	4.54954E-06	1.20174	1.557E-06	4.13789E-06	6.07188	7.865E-06	2.0907E-05	5.52269	7.154E-06	1.9016E-05	6.72443	8.71E-06	2.31539E-05
Haul Road 3	HR3	1800-1900	1.3116	1.699E-06	4.51617E-06	1.19954	1.554E-06	4.13032E-06	6.02719	7.807E-06	2.07531E-05	5.51249	7.141E-06	1.89809E-05	6.71203	8.694E-06	2.31112E-05
Haul Road 3	HR3	1900-2000	1.294	1.676E-06	4.45557E-06	1.18365	1.533E-06	4.07561E-06	5.94653	7.703E-06	2.04754E-05	5.43951	7.046E-06	1.87296E-05	6.62316	8.579E-06	2.28052E-05
Haul Road 3	HR3	2000-2100	1.294	1.676E-06	4.45557E-06	1.18894	1.54E-06	4.09382E-06	5.94653	7.703E-06	2.04754E-05	5.46381	7.077E-06	1.88133E-05	6.65275	8.618E-06	2.29071E-05
Haul Road 3	HR3	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (November) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 1	1	0000-0100	0.106072373	3.524E-07	2.86666E-06	0.0969012	3.219E-07	2.61881E-06	0.6267571	2.082E-06	1.69385E-05	0.5697361	1.893E-06	1.53974E-05	0.6666373	2.215E-06	1.80162E-05
Road 1	1	0100-0200	0.081522593	1.652E-07	1.34432E-06	0.075835	1.537E-07	1.25053E-06	0.4926359	9.986E-07	8.12365E-06	0.456315	9.25E-07	7.52471E-06	0.53215	1.079E-06	8.77524E-06
Road 1	1	0200-0300	0.078023636	1.128E-07	9.17314E-07	0.0721448	1.043E-07	8.48198E-07	0.4992464	7.215E-07	5.86958E-06	0.4572713	6.608E-07	5.37608E-06	0.5294161	7.651E-07	6.22428E-06
Road 1	1	0300-0400	0.066759455	6.891E-08	5.6063E-07	0.0615131	6.35E-08	5.16573E-07	0.4074398	4.206E-07	3.42159E-06	0.3719124	3.839E-07	3.12323E-06	0.4334255	4.474E-07	3.63981E-06
Road 1	1	0400-0500	0.086879882	1.386E-07	1.12756E-06	0.0805242	1.285E-07	1.04507E-06	0.4967336	7.925E-07	6.44679E-06	0.4576138	7.301E-07	5.93908E-06	0.538138	8.585E-07	6.98415E-06
Road 1	1	0500-0600	0.070554332	2.476E-07	2.0145E-06	0.0656383	2.304E-07	1.87413E-06	0.4171997	1.464E-06	1.19121E-05	0.3850006	1.351E-06	1.09927E-05	0.4506389	1.582E-06	1.28668E-05
Road 1	1	0600-0700	0.095879729	5.974E-07	4.86033E-06	0.0891992	5.558E-07	4.52169E-06	0.5155426	3.212E-06	2.61339E-05	0.4766605	2.97E-06	2.41629E-05	0.5658597	3.526E-06	2.86846E-05
Road 1	1	0700-0800	0.081287782	8.529E-07	6.93806E-06	0.0752335	7.893E-07	6.42132E-06	0.4503131	4.725E-06	3.84351E-05	0.4132584	4.336E-06	3.52724E-05	0.4884919	5.125E-06	4.16937E-05
Road 1	1	0800-0900	0.08709362	1.12E-06	9.10916E-06	0.0808382	1.039E-06	8.4549E-06	0.4645693	5.973E-06	4.85895E-05	0.4290456	5.516E-06	4.48741E-05	0.5098838	6.555E-06	5.33289E-05
Road 1	1	0900-1000	0.090410636	1.2E-06	9.75978E-06	0.0844276	1.12E-06	9.11392E-06	0.5071156	6.729E-06	5.47429E-05	0.4718711	6.262E-06	5.09382E-05	0.5562987	7.382E-06	6.00522E-05
Road 1	1	1000-1100	0.105074818	1.355E-06	1.10219E-05	0.0978264	1.261E-06	1.02616E-05	0.5655217	7.292E-06	5.93208E-05	0.5250063	6.77E-06	5.50709E-05	0.6228328	8.031E-06	6.53325E-05
Road 1	1	1100-1200	0.094376252	1.181E-06	9.61147E-06	0.088643	1.11E-06	9.02759E-06	0.5422324	6.788E-06	5.52221E-05	0.5083799	6.364E-06	5.17744E-05	0.597023	7.474E-06	6.0802E-05
Road 1	1	1200-1300	0.096868227	1.2E-06	9.76172E-06	0.0907576	1.124E-06	9.14594E-06	0.5526022	6.845E-06	5.56875E-05	0.5169331	6.403E-06	5.2093E-05	0.6076907	7.528E-06	6.1239E-05
Road 1	1	1300-1400	0.101247293	1.334E-06	1.08523E-05	0.0952426	1.255E-06	1.02087E-05	0.564739	7.441E-06	6.05322E-05	0.5307421	6.993E-06	5.68882E-05	0.6259847	8.248E-06	6.70968E-05
Road 1	1	1400-1500	0.096210275	1.381E-06	1.12379E-05	0.0909354	1.306E-06	1.06217E-05	0.5239487	7.523E-06	6.12E-05	0.4945801	7.101E-06	5.77696E-05	0.5855155	8.407E-06	6.83913E-05
Road 1	1	1500-1600	0.104160268	1.386E-06	1.12759E-05	0.097173	1.293E-06	1.05195E-05	0.565599	7.526E-06	6.12288E-05	0.5267234	7.009E-06	5.70204E-05	0.6238965	8.302E-06	6.75398E-05
Road 1	1	1600-1700	0.099588396	1.398E-06	1.1374E-05	0.09277	1.302E-06	1.05952E-05	0.5464388	7.671E-06	6.24086E-05	0.5078491	7.13E-06	5.80013E-05	0.600619	8.432E-06	6.85965E-05
Road 1	1	1700-1800	0.080520973	1.133E-06	9.22086E-06	0.0735876	1.036E-06	8.42688E-06	0.4514419	6.355E-06	5.16969E-05	0.4104008	5.777E-06	4.69971E-05	0.4839884	6.813E-06	5.54239E-05
Road 1	1	1800-1900	0.071822943	1.035E-06	8.4222E-06	0.06508	9.381E-07	7.6315E-06	0.428358	6.175E-06	5.02307E-05	0.3852445	5.553E-06	4.51751E-05	0.4503245	6.491E-06	5.28066E-05
Road 1	1	1900-2000	0.086363532	9.499E-07	7.72733E-06	0.0782484	8.606E-07	7.00123E-06	0.4960422	5.456E-06	4.43831E-05	0.4464623	4.91E-06	3.9947E-05	0.5247107	5.771E-06	4.69482E-05
Road 1	1	2000-2100	0.07799998	7.261E-07	5.90714E-06	0.0704018	6.554E-07	5.33171E-06	0.4602846	4.285E-06	3.48586E-05	0.4125209	3.84E-06	3.12413E-05	0.4829226	4.496E-06	3.6573E-05
Road 1	1	2100-2200	0.082103068	6.981E-07	5.67883E-06	0.075082	6.384E-07	5.1932E-06	0.4867653	4.139E-06	3.36681E-05	0.4425428	3.763E-06	3.06094E-05	0.5176249	4.401E-06	3.58026E-05
Road 1	1	2200-2300	0.079902019	6.464E-07	5.25819E-06	0.0730199	5.907E-07	4.80529E-06	0.4720781	3.819E-06	3.10665E-05	0.4286828	3.468E-06	2.82107E-05	0.5017028	4.058E-06	3.3016E-05
Road 1	1	2300-0000	0.069964675	5.056E-07	4.11283E-06	0.0639389	4.62E-07	3.75861E-06	0.4294405	3.103E-06	2.52444E-05	0.3893323	2.813E-06	2.28867E-05	0.4532712	3.275E-06	2.66453E-05
Road 2	2	0000-0100	0.17790451	2.1E-07	1.35633E-06	0.1625369	1.919E-07	1.23917E-06	0.757032	8.937E-07	5.77155E-06	0.6889745	8.134E-07	5.25268E-06	0.8515114	1.005E-06	6.49185E-06
Road 2	2	0100-0200	0.125445152	9.583E-08	6.18836E-07	0.1166721	8.912E-08	5.75558E-07	0.6231458	4.76E-07	3.07405E-06	0.57747	4.411E-07	2.84873E-06	0.6941421	5.302E-07	3.42429E-06
Road 2	2	0200-0300	0.125446957	6.679E-08	4.31316E-07	0.1161352	6.183E-08	3.993E-07	0.6864765	3.655E-07	2.36027E-06	0.631493	3.362E-07	2.17122E-06	0.7476283	3.98E-07	2.57052E-06
Road 2	2	0300-0400	0.110696667	3.844E-08	2.48218E-07	0.102014	3.542E-08	2.28749E-07	0.4050353	1.406E-07	9.08222E-07	0.3702593	1.286E-07	8.30243E-07	0.4722733	1.64E-07	1.05899E-06
Road 2	2	0400-0500	0.148885556	9.305E-08	6.0093E-07	0.1380159	8.626E-08	5.57058E-07	0.72228	4.514E-07	2.91526E-06	0.6670615	4.169E-07	2.69239E-06	0.8050774	5.032E-07	3.24944E-06
Road 2	2	0500-0600	0.11926614	1.574E-07	1.01625E-06	0.1110365	1.465E-07	9.46125E-07	0.5295461	6.987E-07	4.51218E-06	0.48978	6.462E-07	4.17334E-06	0.6008165	7.927E-07	5.11946E-06
Road 2	2	0600-0700	0.170133495	4.056E-07	2.6196E-06	0.158317	3.775E-07	2.43766E-06	0.6929781	1.652E-06	1.067E-05	0.641915	1.53E-06	9.88377E-06	0.800232	1.908E-06	1.23214E-05
Road 2	2	0700-0800	0.136445316	4.99E-07	3.22273E-06	0.1263287	4.62E-07	2.98378E-06	0.5792202	2.118E-06	1.36807E-05	0.5323225	1.947E-06	1.2573E-05	0.6586513	2.409E-06	1.55568E-05
Road 2	2	0800-0900	0.154162233	1.071E-06	6.91364E-06	0.1430905	9.937E-07	6.41711E-06	0.6554743	4.552E-06	2.93958E-05	0.6054979	4.205E-06	2.71545E-05	0.7485884	5.199E-06	3.35716E-05
Road 2	2	0900-1000	0.174628415	9.944E-07	6.42181E-06	0.1630081	9.282E-07	5.99449E-06	0.7568113	4.31E-06	2.78311E-05	0.7047893	4.013E-06	2.5918E-05	0.8677974	4.942E-06	3.19125E-05
Road 2	2	1000-1100	0.194125435	8.268E-07	5.33959E-06	0.1807397	7.698E-07	4.9714E-06	0.8347948	3.556E-06	2.29618E-05	0.7755844	3.303E-06	2.13331E-05	0.9563241	4.073E-06	2.63045E-05
Road 2	2	1100-1200	0.233422652	9.78E-07	6.31581E-06	0.2192248	9.185E-07	5.93166E-06	0.9577797	4.013E-06	2.5915E-05	0.898871	3.766E-06	2.43211E-05	1.1180958	4.685E-06	3.02528E-05
Road 2	2	1200-1300	0.177431223	7.722E-07	4.9865E-06	0.1662516	7.235E-07	4.67231E-06	0.7824122	3.405E-06	2.19888E-05	0.7320968	3.186E-06	2.05747E-05	0.8983485	3.909E-06	2.5247E-05
Road 2	2	1300-1400	0.196416136	1E-06	6.45963E-06	0.1846891	9.405E-07	6.07396E-06	0.812447	4.137E-06	2.67193E-05	0.7633152	3.887E-06	2.51035E-05	0.9480044	4.828E-06	3.11775E-05
Road 2	2	1400-1500	0.170093988	6.418E-07	4.14462E-06	0.160753	6.065E-07	3.91701E-06	0.7363491	2.778E-06	1.79423E-05	0.6953812	2.624E-06	1.69441E-05	0.8561342	3.23E-06	2.08611E-05
Road 2	2	1500-1600	0.210928268	8.74E-07	5.64411E-06	0.19665	8.148E-07	5.26205E-06	0.8479683	3.514E-06	2.26903E-05	0.7899947	3.273E-06	2.1139E-05	0.9866447	4.088E-06	2.64011E-05
Road 2	2	1600-1700	0.180362055	9.143E-07	5.90469E-06	0.1679839	8.516E-07	5.49945E-06	0.7637989	3.872E-06	2.50052E-05	0.7102828	3.601E-06	2.32532E-05	0.8782667	4.452E-06	2.87527E-05
Road 2	2	1700-1800	0.137933917	6.929E-07	4.47444E-06	0.1260612	6.332E-07	4.0893E-06	0.5505983	2.766E-06	1.78609E-05	0.5014973	2.519E-06	1.62681E-05	0.6275586	3.152E-06	2.03574E-05
Road 2	2	1800-1900	0.151682823	8.708E-07	5.62336E-06	0.1375117	7.894E-07	5.09799E-06	0.7017801	4.029E-06	2.60172E-05	0.6337082	3.638E-06	2.34936E-05	0.7712199	4.427E-06	2.85915E-05
Road 2	2	1900-2000	0.130370663	5.01E-07	3.23516E-06	0.1181511	4.54E-07	2.93193E-06	0.6019345	2.313E-06	1.49371E-05	0.5422054	2.083E-06	1.34549E-05	0.6603564	2.537E-06	1.63868E-05
Road 2	2	2000-2100	0.12805411	4.328E-07	2.79482E-06	0.1155236	3.904E-07	2.52134E-06	0.5417405	1.831E-06	1.18237E-05	0.4852912	1.64E-06	1.05916E-05	0.6008148	2.031E-06	1.3113E-05
Road 2	2	2100-2200	0.098700592	3.473E-07	2.2427E-06	0.0902454	3.175E-07	2.05058E-06	0.4503615	1.585E-06	1.02332E-05	0.4079765	1.435E-06	9.27014E-06	0.4982219	1.753E-06	1.13207E-05
Road 2	2	2200-2300	0.14149712	4.094E-07	2.64402E-06	0.1293561	3.743E-07	2.41716E-06	0.606836	1.756E-06	1.13394E-05	0.5518338	1.597E-06	1.03116E-05	0.6811899	1.971E-06	1.27288E-05
Road 2	2	2300-0000	0.128199636	3.264E-07	2.10808E-06	0.117209	2.984E-07	1.92735E-06	0.5801388	1.477E-06	9.53965E-06	0.52706	1.342E-06	8.66683E-06	0.644269	1.64E-06	1.05942E-05
Road 3	3	0000-0100	0.110339258	4.053E-07	1.57523E-05	0.1007113	3.699E-07	1.43778E-05	0.6065947	2.228E-06	8.6599E-05	0.5510341	2.024E-06	7.8667E-05	0.6517454	2.394E-06	9.30448E-05
Road 3	3	0100-0200	0.082467589	1.865E-07	7.24905E-06	0.0768757	1.739E-07	6.75752E-06	0.4794425	1.084E-06	4.21439E-05	0.4450832	1.007E-06	3.91236E-05	0.5219589	1.18E-06	4.58811E-05
Road 3	3	0200-0300	0.080151515	1.273E-07	4.94681E-06	0.0742848	1.18E-07	4.58473E-06	0.4999638	7.939E-07	3.08569E-05	0.4592526	7.293E-07	2.83443E-05	0.5335375	8.472E-07	3.2929E-05
Road 3	3	0300-0400	0.069029855	7.64E-08	2.96937E-06	0.0637368	7.054E-08	2.74169E-06	0.3765033	4.167E-07	1.61956E-05	0.344298	3.81E-07	1.48102E-05	0.4080348	4.516E-07	1.75519E-05
Road 3	3	0400-0500	0.091684234	1.632E-07	6.34448E-06	0.0858549	1.529E-07	5.9411E-06	0.5054497	8.999E-07	3.49768E-05	0.4709524	8.385E-07	3.25896E-05	0.5568073	9.913E-07	3.85307E-05
Road 3	3	0500-0600	0.074543292	2.905E-07	1.12926E-05	0.0693658	2.704E-07	1.05082E-05	0.4130985	1.61E-06	6.25804E-05	0.38138	1.486E-06	5.77754E-05	0.4507457	1.757E-06	6.82836E-05
Road 3	3	0600-0700	0.101850548	7.155E-07	2.7811E-05	0.0948547	6.664E-07	2.59007E-05	0.5094801	3.579E-06	0.000139117	0.4717161	3.314E-06	0.000128805	0.5665708	3.98E-06	0.000154706
Road 3	3	0700-0800	0.08455014	9.71E-07	3.77404E-05	0.0780477	8.963E-07	3.48379E-05	0.4419265	5.075E-06	0.000197261	0.4043757	4.644E-06	0.0001805	0.4824234	5.54E-06	0.000215338
Road 3	3	0800-0900	0.092891274	1.474E-06	5.7273E-05	0.0861361	1.366E-06	5.3108E-05	0.4634706	7.352E-06	0.000285757	0.4276026	6.783E-06	0.000263642	0.5137386	8.149E-06	0.00031675
Road 3	3	0900-1000	0.10034934	1.536E-06	5.96818E-05	0.093106	1.425E-06	5.53739E-05	0.5174032	7.917E-06	0.00030772	0.4782159	7.318E-06	0.000284414	0.5713219	8.742E-06	0.000339788
Road 3	3	1000-1100	0.11236569	1.568E-06	6.09441E-05	0.1044917	1.458E-06	5.66735E-05	0.5719121	7.981E-06	0.00031019	0.5304147	7.402E-06	0.000287683	0.6349064	8.86E-06	0.000344356
Road 3	3	1100-1200	0.109688924	1.488E-06	5.78511E-05	0.1023655	1.389E-06	5.39887E-05	0.5725934	7.77E-06	0.000301992	0.5330536	7.233E-06	0.000281138	0.6354192	8.622E-06	0.000335127
Road 3	3	1200-1300	0.103166939	1.4E-06	5.44114E-05	0.0963163	1.307E-06	5.07983E-05	0.5504133	7.469E-06	0.000290294	0.5128709	6.959E-06	0.000270494	0.6091872	8.266E-06	0.000321292
Road 3	3	1300-1400	0.109376355	1.612E-06	6.26639E-05	0.1023906	1.509E-06	5.86616E-05	0.5613291	8.274E-06	0.000321597	0.5248497	7.736E-06	0.000300697	0.6272403	9.246E-06	0.000359359

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (November) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 3	3	1400-1500	0.101776807	1.508E-06	5.86272E-05	0.0952737	1.412E-06	5.48812E-05	0.5285335	7.833E-06	0.000304455	0.4941618	7.324E-06	0.000284656	0.5894355	8.736E-06	0.000339537
Road 3	3	1500-1600	0.113478236	1.62E-06	6.29624E-05	0.1057251	1.509E-06	5.86607E-05	0.5735258	8.187E-06	0.000318216	0.5335845	7.617E-06	0.000296055	0.6393096	9.126E-06	0.000354715
Road 3	3	1600-1700	0.106775511	1.66E-06	6.45021E-05	0.0990782	1.54E-06	5.98523E-05	0.5502244	8.552E-06	0.000332386	0.5095576	7.92E-06	0.000307819	0.6086358	9.46E-06	0.000367672
Road 3	3	1700-1800	0.085706443	1.333E-06	5.18279E-05	0.0784825	1.221E-06	4.74595E-05	0.4426282	6.887E-06	0.000267664	0.4035452	6.279E-06	0.00024403	0.4820277	7.5E-06	0.000291489
Road 3	3	1800-1900	0.080994523	1.321E-06	5.13518E-05	0.0735484	1.2E-06	4.66308E-05	0.4481358	7.31E-06	0.000284125	0.404483	6.598E-06	0.000256448	0.4780314	7.798E-06	0.000303079
Road 3	3	1900-2000	0.087297676	1.054E-06	4.09804E-05	0.0790557	9.548E-07	3.71114E-05	0.4806476	5.805E-06	0.000225632	0.4321506	5.219E-06	0.000202866	0.5112063	6.174E-06	0.000239977
Road 3	3	2000-2100	0.081144037	8.382E-07	3.25778E-05	0.0732426	7.566E-07	2.94055E-05	0.4430077	4.576E-06	0.000177859	0.3969538	4.1E-06	0.000159369	0.4701964	4.857E-06	0.000188775
Road 3	3	2100-2200	0.079644328	7.793E-07	3.02875E-05	0.0728084	7.124E-07	2.76879E-05	0.4491822	4.395E-06	0.000170817	0.407759	3.99E-06	0.000155064	0.4805674	4.702E-06	0.000182752
Road 3	3	2200-2300	0.085199263	7.598E-07	2.95318E-05	0.0780645	6.962E-07	2.70587E-05	0.463784	4.136E-06	0.000160757	0.4222438	3.766E-06	0.000146358	0.5003082	4.462E-06	0.000173417
Road 3	3	2300-0000	0.075365261	6.02E-07	2.3398E-05	0.0690578	5.516E-07	2.14398E-05	0.4270328	3.411E-06	0.000132577	0.3882499	3.101E-06	0.000120537	0.4573077	3.653E-06	0.000141977
Road 4	4	0000-0100	0.281996571	2.285E-07	2.44635E-06	0.2573954	2.085E-07	2.23294E-06	1.4373946	1.165E-06	1.24696E-05	1.3111291	1.062E-06	1.13742E-05	1.5685246	1.271E-06	1.36071E-05
Road 4	4	0100-0200	0.2651445	1.228E-07	1.31438E-06	0.247173	1.144E-07	1.22529E-06	1.3534785	6.266E-07	6.70948E-06	1.2616985	5.841E-07	6.25451E-06	1.5088715	6.986E-07	7.4798E-06
Road 4	4	0200-0300	0.287215385	8.643E-08	9.25462E-07	0.2665623	8.022E-08	8.58914E-07	1.4176354	4.266E-07	4.56789E-06	1.31581	3.96E-07	4.23979E-06	1.5823723	4.762E-07	5.0987E-06
Road 4	4	0300-0400	0.261461429	4.237E-08	4.53642E-07	0.2417114	3.917E-08	4.19375E-07	1.3880829	2.249E-07	2.40836E-06	1.2831757	2.079E-07	2.22634E-06	1.5248871	2.471E-07	2.64572E-06
Road 4	4	0400-0500	0.267282143	8.662E-08	9.27482E-07	0.2503621	8.114E-08	8.68769E-07	1.31998	4.278E-07	4.58039E-06	1.2361557	4.006E-07	4.28952E-06	1.4865179	4.817E-07	5.15829E-06
Road 4	4	0500-0600	0.248675	1.382E-07	1.47928E-06	0.2316158	1.287E-07	1.3778E-06	1.1788654	6.549E-07	7.01266E-06	1.0972438	6.096E-07	6.52712E-06	1.3288596	7.383E-07	7.90493E-06
Road 4	4	0600-0700	0.275278462	3.314E-07	3.548E-06	0.2565365	3.088E-07	3.30644E-06	1.3148677	1.583E-06	1.6947E-05	1.2245883	1.474E-06	1.57834E-05	1.4811248	1.783E-06	1.90898E-05
Road 4	4	0700-0800	0.27896837	5.941E-07	6.36136E-06	0.257716	5.488E-07	5.87674E-06	1.3896083	2.959E-06	3.16875E-05	1.2826697	2.732E-06	2.92489E-05	1.5403857	3.28E-06	3.51257E-05
Road 4	4	0800-0900	0.283616471	1.004E-06	1.07555E-05	0.2631013	9.318E-07	9.9775E-06	1.4152316	5.012E-06	5.36694E-05	1.3121784	4.647E-06	4.97613E-05	1.5752797	5.579E-06	5.97388E-05
Road 4	4	0900-1000	0.291172297	9.975E-07	1.06812E-05	0.2700243	9.251E-07	9.9054E-06	1.3729084	4.703E-06	5.03629E-05	1.2724021	4.359E-06	4.6676E-05	1.5424264	5.284E-06	5.65814E-05
Road 4	4	1000-1100	0.32269035	1.068E-06	1.14375E-05	0.300041	9.932E-07	1.06347E-05	1.5240634	5.045E-06	5.4019E-05	1.4168121	4.69E-06	5.02176E-05	1.7168531	5.683E-06	6.08523E-05
Road 4	4	1100-1200	0.298457935	1.071E-06	1.14663E-05	0.278371	9.988E-07	1.06946E-05	1.4002178	5.024E-06	5.37941E-05	1.3058383	4.685E-06	5.01682E-05	1.5842092	5.684E-06	6.08628E-05
Road 4	4	1200-1300	0.304111837	1.035E-06	1.10805E-05	0.2837205	9.654E-07	1.03375E-05	1.4925931	5.079E-06	5.43834E-05	1.3923141	4.738E-06	5.07297E-05	1.6760346	5.703E-06	6.10672E-05
Road 4	4	1300-1400	0.311452752	1.074E-06	1.15023E-05	0.291453	1.005E-06	1.07637E-05	1.4929811	5.149E-06	5.51376E-05	1.3967311	4.817E-06	5.1583E-05	1.6881841	5.823E-06	6.23467E-05
Road 4	4	1400-1500	0.285263623	9.113E-07	9.75737E-06	0.2669451	8.527E-07	9.1308E-06	1.4139645	4.517E-06	4.83643E-05	1.3226878	4.225E-06	4.52422E-05	1.5896329	5.078E-06	5.4373E-05
Road 4	4	1500-1600	0.318898145	9.154E-07	9.80124E-06	0.2969142	8.523E-07	9.12557E-06	1.5265375	4.382E-06	4.69177E-05	1.4213326	4.08E-06	4.36843E-05	1.7182468	4.932E-06	5.28098E-05
Road 4	4	1600-1700	0.299081694	8.585E-07	9.19219E-06	0.2773973	7.962E-07	8.52573E-06	1.4479251	4.156E-06	4.45016E-05	1.3427535	3.854E-06	4.12691E-05	1.6201508	4.65E-06	4.97949E-05
Road 4	4	1700-1800	0.287621746	8.389E-07	8.98255E-06	0.2635014	7.685E-07	8.22926E-06	1.416057	4.13E-06	4.42241E-05	1.2965962	3.782E-06	4.04933E-05	1.5600976	4.55E-06	4.87225E-05
Road 4	4	1800-1900	0.317383868	7.788E-07	8.3387E-06	0.2883987	7.076E-07	7.57716E-06	1.5837304	3.886E-06	4.16097E-05	1.4388277	3.53E-06	3.78026E-05	1.7272264	4.238E-06	4.53798E-05
Road 4	4	1900-2000	0.28935973	4.957E-07	5.30734E-06	0.2621188	4.49E-07	4.8077E-06	1.4372582	2.462E-06	2.63617E-05	1.3015416	2.229E-06	2.38725E-05	1.5636604	2.678E-06	2.86802E-05
Road 4	4	2000-2100	0.253350204	2.874E-07	3.07698E-06	0.2286735	2.594E-07	2.77728E-06	1.2659669	1.436E-06	1.53754E-05	1.1414882	1.295E-06	1.38636E-05	1.3701616	1.554E-06	1.66408E-05
Road 4	4	2100-2200	0.210439189	1.802E-07	1.9299E-06	0.1925559	1.649E-07	1.7659E-06	1.0705751	9.169E-07	9.81808E-06	0.9782341	8.378E-07	8.97123E-06	1.17079	1.003E-06	1.07371E-05
Road 4	4	2200-2300	0.280994444	4.098E-07	4.38779E-06	0.2575622	3.756E-07	4.02189E-06	1.3782978	2.01E-06	2.15224E-05	1.2630124	1.842E-06	1.97222E-05	1.5205746	2.218E-06	2.37441E-05
Road 4	4	2300-0000	0.261252708	2.903E-07	3.1082E-06	0.239526	2.661E-07	2.84972E-06	1.3159648	1.462E-06	1.56564E-05	1.2057183	1.34E-06	1.43448E-05	1.4452444	1.606E-06	1.71945E-05
Road 5	5	0000-0100	0.094163834	3.411E-07	4.61271E-06	0.0859488	3.113E-07	4.21029E-06	0.5202624	1.885E-06	2.54856E-05	0.471864	1.709E-06	2.31147E-05	0.5578127	2.021E-06	2.7325E-05
Road 5	5	0100-0200	0.063484959	1.442E-07	1.94971E-06	0.0591849	1.344E-07	1.81765E-06	0.3835059	8.709E-07	1.1778E-05	0.3553511	8.07E-07	1.09133E-05	0.414536	9.414E-07	1.2731E-05
Road 5	5	0200-0300	0.059856512	9.662E-08	1.30655E-06	0.0554349	8.948E-08	1.21003E-06	0.4074206	6.576E-07	8.89316E-06	0.3726337	6.015E-07	8.13384E-06	0.4280686	6.91E-07	9.34387E-06
Road 5	5	0300-0400	0.055069516	6.408E-08	8.66598E-07	0.0508239	5.914E-08	7.99787E-07	0.2961908	3.447E-07	4.66099E-06	0.2696519	3.138E-07	4.24336E-06	0.3204758	3.729E-07	5.04315E-06
Road 5	5	0400-0500	0.076114124	1.386E-07	1.87392E-06	0.0712692	1.298E-07	1.75464E-06	0.428938	7.809E-07	1.05604E-05	0.3989506	7.263E-07	9.82213E-06	0.4702198	8.561E-07	1.15768E-05
Road 5	5	0500-0600	0.061539954	2.518E-07	3.40509E-06	0.0572474	2.342E-07	3.16758E-06	0.3531083	1.445E-06	1.9538E-05	0.3251822	1.331E-06	1.79928E-05	0.3824296	1.565E-06	2.11604E-05
Road 5	5	0600-0700	0.089583325	6.473E-07	8.75392E-06	0.0834159	6.028E-07	8.15125E-06	0.4467741	3.228E-06	4.3658E-05	0.4129431	2.984E-06	4.03521E-05	0.496359	3.587E-06	4.85033E-05
Road 5	5	0700-0800	0.069576827	8.149E-07	1.10196E-05	0.06419	7.518E-07	1.01664E-05	0.362153	4.241E-06	5.73577E-05	0.3302734	3.868E-06	5.23086E-05	0.3944634	4.62E-06	6.2475E-05
Road 5	5	0800-0900	0.0747436	1.173E-06	1.58597E-05	0.0692998	1.087E-06	1.47046E-05	0.3646064	5.721E-06	7.73652E-05	0.3356172	5.266E-06	7.1214E-05	0.4049171	6.353E-06	8.59186E-05
Road 5	5	0900-1000	0.081792042	1.24E-06	1.6774E-05	0.0759024	1.151E-06	1.55662E-05	0.4314552	6.543E-06	8.84834E-05	0.3983623	6.041E-06	8.16967E-05	0.4742647	7.192E-06	9.72629E-05
Road 5	5	1000-1100	0.092260041	1.257E-06	1.70006E-05	0.0858223	1.169E-06	1.58144E-05	0.4773363	6.504E-06	8.79581E-05	0.4422249	6.026E-06	8.14882E-05	0.5280472	7.195E-06	9.73026E-05
Road 5	5	1100-1200	0.089931667	1.165E-06	1.57499E-05	0.0839286	1.087E-06	1.46985E-05	0.4832552	6.258E-06	8.46331E-05	0.4495342	5.822E-06	7.87275E-05	0.5334628	6.909E-06	9.34261E-05
Road 5	5	1200-1300	0.083886309	1.101E-06	1.48827E-05	0.0783073	1.027E-06	1.38929E-05	0.4538168	5.954E-06	8.05142E-05	0.4226937	5.545E-06	7.49925E-05	0.501001	6.573E-06	8.88854E-05
Road 5	5	1300-1400	0.090250913	1.299E-06	1.75696E-05	0.0845018	1.216E-06	1.64504E-05	0.4696151	6.76E-06	9.14223E-05	0.4389973	6.32E-06	8.54618E-05	0.5234991	7.536E-06	0.000101912
Road 5	5	1400-1500	0.0863043	1.273E-06	1.72175E-05	0.0808033	1.192E-06	1.61201E-05	0.4489159	6.623E-06	8.95576E-05	0.419648	6.191E-06	8.37187E-05	0.5004513	7.383E-06	9.98388E-05
Road 5	5	1500-1600	0.096766993	1.389E-06	1.8789E-05	0.0902012	1.295E-06	1.75141E-05	0.4922008	7.067E-06	9.55693E-05	0.4577684	6.573E-06	8.88837E-05	0.5479696	7.868E-06	0.000106398
Road 5	5	1600-1700	0.091161496	1.441E-06	1.94822E-05	0.0846074	1.337E-06	1.80815E-05	0.4743854	7.497E-06	0.000101381	0.4391135	6.939E-06	9.38434E-05	0.523721	8.277E-06	0.000111925
Road 5	5	1700-1800	0.068319028	1.082E-06	1.46352E-05	0.062583	9.914E-07	1.34064E-05	0.3547035	5.619E-06	7.59841E-05	0.3228244	5.114E-06	6.9155E-05	0.3854074	6.105E-06	8.25615E-05
Road 5	5	1800-1900	0.064133989	1.095E-06	1.48131E-05	0.0582506	9.949E-07	1.34542E-05	0.3631571	6.203E-06	8.38785E-05	0.3269816	5.585E-06	7.5523E-05	0.3852322	6.58E-06	8.89772E-05
Road 5	5	1900-2000	0.074787504	9.503E-07	1.28509E-05	0.0677083	8.603E-07	1.16344E-05	0.4191472	5.326E-06	7.20228E-05	0.3761871	4.78E-06	6.46409E-05	0.4438954	5.64E-06	7.62753E-05
Road 5	5	2000-2100	0.071881717	8.014E-07	1.08373E-05	0.0648689	7.232E-07	9.77997E-06	0.3957282	4.412E-06	5.96621E-05	0.3541387	3.948E-06	5.33918E-05	0.4190075	4.671E-06	6.31718E-05
Road 5	5	2100-2200	0.074719895	8.008E-07	1.0829E-05	0.0682773	7.317E-07	9.89526E-06	0.4242724	4.547E-06	6.14888E-05	0.3848477	4.124E-06	5.5775E-05	0.4531249	4.856E-06	6.56703E-05
Road 5	5	2200-2300	0.07185063	6.635E-07	8.97244E-06	0.0658185	6.078E-07	8.21917E-06	0.3986049	3.681E-06	4.97763E-05	0.3621922	3.345E-06	4.52292E-05	0.4280107	3.952E-06	5.34484E-05
Road 5	5	2300-0000	0.063546094	5.343E-07	7.22573E-06	0.0582183	4.895E-07	6.61992E-06	0.3675748	3.091E-06	4.17964E-05	0.3334662	2.804E-06	3.79179E-05	0.3916845	3.293E-06	4.45379E-05
Road 6	6	0000-0100	0.057268784	1.591E-07	5.68646E-06	0.0521752	1.449E-07	5.1807E-06	0.3626173	1.007E-06	3.60058E-05	0.3265934	9.072E-07	3.24289E-05	0.3787686	1.052E-06	3.76096E-05
Road 6	6	0100-0200	0.073893097	1.567E-07	5.60202E-06	0.0688679	1.461E-07	5.22105E-06	0.4138877	8.778E-07	3.13779E-05	0.3827789	8.118E-07	2.90194E-05	0.4516468	9.579E-07	3.42405E-05
Road 6	6	0200-0300	0.068034557	1.009E-07	3.60595E-06	0.0631104	9.358E-08	3.34496E-06	0.3834238	5.685E-07	2.03221E-05	0.3518767	5.217E-07	1.86501E-05	0.4149871	6.153E-07	2.1995E-05
Road 6	6	0300-0400	0.068909194	8.019E-08	2.86636E-06	0.063754	7.419E-08	2.65193E-06	0.4365258	5.08E-07	1.81578E-05	0.4002089	4.657E-07	1.66472E-05	0.4639629	5.399E-07	1.92991E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (November) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 6	6	0400-0500	0.074710444	1.262E-07	4.51114E-06	0.069943	1.181E-07	4.22327E-06	0.4340839	7.332E-07	2.62107E-05	0.403031	6.808E-07	2.43357E-05	0.472974	7.989E-07	2.8559E-05
Road 6	6	0500-0600	0.06785472	2.05E-07	7.3294E-06	0.0631506	1.908E-07	6.82128E-06	0.406107	1.227E-06	4.38661E-05	0.3741803	1.131E-06	4.04175E-05	0.4373309	1.322E-06	4.72388E-05
Road 6	6	0600-0700	0.072370453	3.898E-07	1.3935E-05	0.0673459	3.628E-07	1.29675E-05	0.4461153	2.403E-06	8.58997E-05	0.4103985	2.211E-06	7.90224E-05	0.4777443	2.573E-06	9.19899E-05
Road 6	6	0700-0800	0.068882895	5.895E-07	2.10736E-05	0.0635556	5.439E-07	1.94438E-05	0.3879221	3.32E-06	0.000118678	0.3535593	3.026E-06	0.000108166	0.4171149	3.57E-06	0.00012761
Road 6	6	0800-0900	0.058432309	7.172E-07	2.56385E-05	0.0541337	6.645E-07	2.37524E-05	0.342909	4.209E-06	0.000150459	0.3135888	3.849E-06	0.000137594	0.3677224	4.514E-06	0.000161347
Road 6	6	0900-1000	0.06084285	7.171E-07	2.56349E-05	0.0563637	6.643E-07	2.37477E-05	0.3403064	4.011E-06	0.000143381	0.3116332	3.673E-06	0.0001313	0.3679969	4.338E-06	0.000155048
Road 6	6	1000-1100	0.081126053	8.1E-07	2.89557E-05	0.0754102	7.53E-07	2.69156E-05	0.4414448	4.408E-06	0.000157562	0.4077943	4.072E-06	0.000145551	0.4832045	4.825E-06	0.000172467
Road 6	6	1100-1200	0.091780114	9.095E-07	3.25121E-05	0.0856587	8.489E-07	3.03437E-05	0.4751379	4.709E-06	0.000168312	0.4419877	4.38E-06	0.000156569	0.5276464	5.229E-06	0.000186913
Road 6	6	1200-1300	0.088965853	8.616E-07	3.07989E-05	0.0830897	8.047E-07	2.87647E-05	0.4382436	4.244E-06	0.000151715	0.4084339	3.956E-06	0.000141395	0.4915236	4.76E-06	0.00017016
Road 6	6	1300-1400	0.103513107	1.001E-06	3.57656E-05	0.096932	9.369E-07	3.34917E-05	0.5190012	5.017E-06	0.000179324	0.4851618	4.69E-06	0.000167632	0.5820938	5.626E-06	0.000201123
Road 6	6	1400-1500	0.098759278	1.053E-06	3.76347E-05	0.0924782	9.859E-07	3.52412E-05	0.4920564	5.246E-06	0.000187511	0.4598955	4.903E-06	0.000175255	0.5523737	5.889E-06	0.000210496
Road 6	6	1500-1600	0.087004595	9.063E-07	3.23965E-05	0.0810561	8.443E-07	3.01815E-05	0.4430654	4.615E-06	0.000164977	0.4117774	4.289E-06	0.000153327	0.4928335	5.134E-06	0.000183508
Road 6	6	1600-1700	0.091331761	9.737E-07	3.48043E-05	0.084764	9.036E-07	3.23015E-05	0.4450336	4.744E-06	0.000169591	0.4119282	4.391E-06	0.000156976	0.4966922	5.295E-06	0.000189277
Road 6	6	1700-1800	0.068431319	7.693E-07	2.75007E-05	0.062713	7.051E-07	2.52027E-05	0.3440844	3.868E-06	0.000138278	0.3132338	3.522E-06	0.00012588	0.3759468	4.227E-06	0.000151083
Road 6	6	1800-1900	0.067384671	8.638E-07	3.08777E-05	0.0612054	7.846E-07	2.80461E-05	0.3499743	4.486E-06	0.000160369	0.3154482	4.044E-06	0.000144548	0.3766536	4.828E-06	0.000172594
Road 6	6	1900-2000	0.080791171	7.9E-07	2.824E-05	0.0731252	7.151E-07	2.55604E-05	0.4199069	4.106E-06	0.000146775	0.3766196	3.683E-06	0.000131645	0.4497448	4.398E-06	0.000157205
Road 6	6	2000-2100	0.064389195	4.955E-07	1.77117E-05	0.058065	4.468E-07	1.59721E-05	0.3632093	2.795E-06	9.99087E-05	0.3242389	2.495E-06	8.9189E-05	0.3823039	2.942E-06	0.000105161
Road 6	6	2100-2200	0.089452753	5.977E-07	2.13652E-05	0.0817256	5.461E-07	1.95196E-05	0.4655914	3.111E-06	0.000111203	0.4227592	2.825E-06	0.000100973	0.5044848	3.371E-06	0.000120493
Road 6	6	2200-2300	0.06697687	4.739E-07	1.69406E-05	0.0612987	4.337E-07	1.55044E-05	0.3727206	2.637E-06	9.4273E-05	0.3369998	2.385E-06	8.52381E-05	0.3982985	2.818E-06	0.000100742
Road 6	6	2300-0000	0.044851045	2.98E-07	1.06522E-05	0.0410795	2.729E-07	9.75642E-06	0.2768534	1.839E-06	6.5753E-05	0.250614	1.665E-06	5.95211E-05	0.2916935	1.938E-06	6.92776E-05
Road 7	7	0000-0100	0.082135685	2.194E-07	5.47741E-06	0.0749046	2.001E-07	4.99519E-06	0.4862189	1.299E-06	3.24247E-05	0.4402724	1.176E-06	2.93606E-05	0.515177	1.376E-06	3.43558E-05
Road 7	7	0100-0200	0.098289378	2.041E-07	5.09411E-06	0.091542	1.901E-07	4.74441E-06	0.5407722	1.123E-06	2.8027E-05	0.5013056	1.041E-06	2.59815E-05	0.5928476	1.231E-06	3.07259E-05
Road 7	7	0200-0300	0.085639702	1.169E-07	2.91762E-06	0.0794059	1.084E-07	2.70524E-06	0.4841627	6.608E-07	1.64947E-05	0.4457115	6.083E-07	1.51847E-05	0.5251173	7.167E-07	1.789E-05
Road 7	7	0300-0400	0.086589818	9.554E-08	2.3851E-06	0.0800546	8.833E-08	2.20509E-06	0.5231825	5.773E-07	1.44109E-05	0.4806671	5.304E-07	1.32399E-05	0.5607217	6.187E-07	1.5445E-05
Road 7	7	0400-0500	0.095854356	1.545E-07	3.85621E-06	0.0894367	1.441E-07	3.59803E-06	0.5348411	8.619E-07	2.15166E-05	0.4961493	7.996E-07	1.996E-05	0.585586	9.437E-07	2.3558E-05
Road 7	7	0500-0600	0.087910051	2.502E-07	6.24482E-06	0.0818465	2.329E-07	5.81409E-06	0.4972396	1.415E-06	3.53222E-05	0.459774	1.308E-06	3.26607E-05	0.5416206	1.541E-06	3.84748E-05
Road 7	7	0600-0700	0.092149309	4.683E-07	1.16892E-05	0.0857797	4.359E-07	1.08812E-05	0.5322097	2.704E-06	6.75113E-05	0.4913149	2.497E-06	6.23238E-05	0.5770946	2.933E-06	7.3205E-05
Road 7	7	0700-0800	0.089057929	7.241E-07	1.80753E-05	0.0823004	6.691E-07	1.67038E-05	0.4847421	3.941E-06	9.8384E-05	0.4442384	3.612E-06	9.01633E-05	0.5265389	4.281E-06	0.000106867
Road 7	7	0800-0900	0.087856903	1.079E-06	2.69384E-05	0.0814544	1E-06	2.49753E-05	0.4808402	5.906E-06	0.000147434	0.4426719	5.437E-06	0.000135731	0.5241263	6.438E-06	0.000160706
Road 7	7	0900-1000	0.089467244	1.021E-06	2.54866E-05	0.0831119	9.484E-07	2.36762E-05	0.469994	5.363E-06	0.000133888	0.433878	4.951E-06	0.000123599	0.5169899	5.9E-06	0.000147275
Road 7	7	1000-1100	0.10549107	1.055E-06	2.63427E-05	0.0981145	9.815E-07	2.45007E-05	0.5567904	5.57E-06	0.000139039	0.5157469	5.159E-06	0.00012879	0.6138613	6.141E-06	0.00015329
Road 7	7	1100-1200	0.114806746	1.143E-06	2.85442E-05	0.1073784	1.069E-06	2.66973E-05	0.5932736	5.909E-06	0.000147504	0.5538522	5.516E-06	0.000137703	0.6612306	6.586E-06	0.0001644
Road 7	7	1200-1300	0.113010584	1.124E-06	2.80566E-05	0.1056381	1.051E-06	2.62263E-05	0.5708031	5.677E-06	0.000141711	0.5329247	5.3E-06	0.000132307	0.6385628	6.351E-06	0.000158533
Road 7	7	1300-1400	0.120907411	1.185E-06	2.95789E-05	0.1133971	1.111E-06	2.77416E-05	0.6089098	5.967E-06	0.000148964	0.5703907	5.59E-06	0.000139541	0.6837878	6.701E-06	0.000167283
Road 7	7	1400-1500	0.112923777	1.161E-06	2.89764E-05	0.1060755	1.09E-06	2.72191E-05	0.5753464	5.914E-06	0.000147635	0.5397693	5.548E-06	0.000138506	0.6458448	6.639E-06	0.000165725
Road 7	7	1500-1600	0.10464465	1.051E-06	2.62451E-05	0.0975212	9.798E-07	2.44586E-05	0.5376222	5.401E-06	0.000134837	0.5000921	5.024E-06	0.000125424	0.5976133	6.004E-06	0.000149883
Road 7	7	1600-1700	0.109340656	1.137E-06	2.8374E-05	0.1015917	1.056E-06	2.63631E-05	0.5416497	5.631E-06	0.000140559	0.5023142	5.222E-06	0.000130351	0.6039059	6.278E-06	0.000156714
Road 7	7	1700-1800	0.085201504	9.389E-07	2.34377E-05	0.0779999	8.595E-07	2.14566E-05	0.4383847	4.831E-06	0.000120593	0.3994288	4.402E-06	0.000109877	0.4774287	5.261E-06	0.000131334
Road 7	7	1800-1900	0.078813605	9.017E-07	2.25088E-05	0.0715445	8.185E-07	2.04328E-05	0.4146363	4.744E-06	0.000118418	0.3741579	4.281E-06	0.000106858	0.4457024	5.099E-06	0.000127291
Road 7	7	1900-2000	0.092653185	8.031E-07	2.00475E-05	0.0839089	7.273E-07	1.81555E-05	0.4897268	4.245E-06	0.000105963	0.4404996	3.818E-06	9.53115E-05	0.5244085	4.545E-06	0.000113467
Road 7	7	2000-2100	0.085361865	6.048E-07	1.50977E-05	0.0770069	5.456E-07	1.36199E-05	0.4622886	3.275E-06	8.17633E-05	0.4140789	2.934E-06	7.32367E-05	0.4910858	3.479E-06	8.68566E-05
Road 7	7	2100-2200	0.098085657	5.839E-07	1.45752E-05	0.0896604	5.337E-07	1.33233E-05	0.5175992	3.081E-06	7.69136E-05	0.4706768	2.802E-06	6.99411E-05	0.5603372	3.335E-06	8.32643E-05
Road 7	7	2200-2300	0.08241279	5.289E-07	1.32021E-05	0.0753993	4.839E-07	1.20786E-05	0.4515234	2.898E-06	7.23316E-05	0.409455	2.628E-06	6.55925E-05	0.4848543	3.111E-06	7.7671E-05
Road 7	7	2300-0000	0.056906446	3.363E-07	8.39424E-06	0.0520987	3.079E-07	7.68506E-06	0.3387012	2.001E-06	4.99616E-05	0.3074151	1.817E-06	4.53466E-05	0.3595138	2.124E-06	5.30317E-05
Road 8	8	0000-0100	0.247993611	1.804E-07	2.97315E-06	0.2262839	1.646E-07	2.71288E-06	1.2672264	9.216E-07	1.51925E-05	1.1558614	8.406E-07	1.38574E-05	1.3821453	1.005E-06	1.65703E-05
Road 8	8	0100-0200	0.255472667	1.548E-07	2.55235E-06	0.2381723	1.443E-07	2.3795E-06	1.300306	7.881E-07	1.29909E-05	1.2121953	7.347E-07	1.21107E-05	1.4503677	8.79E-07	1.44902E-05
Road 8	8	0200-0300	0.242113333	7.337E-08	1.20944E-06	0.224768	6.811E-08	1.12279E-06	1.2978267	3.933E-07	6.48309E-06	1.20481	3.651E-07	6.01844E-06	1.429578	4.332E-07	7.14123E-06
Road 8	8	0300-0400	0.221265714	6.258E-08	1.03161E-06	0.2046921	5.789E-08	9.5434E-07	1.1571357	3.273E-07	5.39493E-06	1.0702707	3.027E-07	4.98994E-06	1.2749629	3.606E-07	5.94428E-06
Road 8	8	0400-0500	0.249475714	1.058E-07	1.7447E-06	0.233721	9.915E-08	1.63452E-06	1.2322143	5.228E-07	8.61746E-06	1.1541276	4.896E-07	8.07136E-06	1.3878486	5.888E-07	9.70589E-06
Road 8	8	0500-0600	0.239210294	1.643E-07	2.70852E-06	0.2228579	1.531E-07	2.52337E-06	1.1597388	7.966E-07	1.31315E-05	1.0800962	7.419E-07	1.22297E-05	1.3029541	8.95E-07	1.47531E-05
Road 8	8	0600-0700	0.266600645	3.339E-07	5.50461E-06	0.2485087	3.113E-07	5.13106E-06	1.27757	1.6E-06	2.63785E-05	1.1901758	1.491E-06	2.4574E-05	1.4386845	1.802E-06	2.97051E-05
Road 8	8	0700-0800	0.269272277	5.494E-07	9.05705E-06	0.2487921	5.076E-07	8.36819E-06	1.3050087	2.663E-06	4.38944E-05	1.2051271	2.459E-06	4.05348E-05	1.4539192	2.967E-06	4.8903E-05
Road 8	8	0800-0900	0.295255474	1.133E-06	1.86821E-05	0.2739798	1.052E-06	1.73359E-05	1.4357743	5.511E-06	9.08476E-05	1.3317226	5.112E-06	8.42638E-05	1.6057024	6.163E-06	0.0001016
Road 8	8	0900-1000	0.314953312	9.989E-07	1.64672E-05	0.2921408	9.266E-07	1.52745E-05	1.4570062	4.621E-06	7.61789E-05	1.3512738	4.286E-06	7.06508E-05	1.6434146	5.212E-06	8.59252E-05
Road 8	8	1000-1100	0.300722658	9.599E-07	1.58233E-05	0.2796295	8.926E-07	1.47134E-05	1.42783	4.558E-06	7.5129E-05	1.3269963	4.236E-06	6.98233E-05	1.6066258	5.128E-06	8.45368E-05
Road 8	8	1100-1200	0.306460818	9.844E-07	1.62273E-05	0.2858335	9.181E-07	1.51351E-05	1.4756935	4.74E-06	7.81389E-05	1.3762424	4.421E-06	7.28729E-05	1.6620759	5.339E-06	8.80079E-05
Road 8	8	1200-1300	0.308973018	1.055E-06	1.73893E-05	0.2882953	9.843E-07	1.62255E-05	1.5030541	5.132E-06	8.45931E-05	1.402048	4.787E-06	7.89084E-05	1.6903433	5.771E-06	9.51339E-05
Road 8	8	1300-1400	0.282068813	9.117E-07	1.50297E-05	0.2639773	8.533E-07	1.40657E-05	1.3473926	4.355E-06	7.1794E-05	1.2606241	4.075E-06	6.71706E-05	1.5246014	4.928E-06	8.12363E-05
Road 8	8	1400-1500	0.274684317	7.713E-07	1.27152E-05	0.2570578	7.218E-07	1.18992E-05	1.3741285	3.859E-06	6.36086E-05	1.2856206	3.61E-06	5.95116E-05	1.5426785	4.332E-06	7.14108E-05
Road 8	8	1500-1600	0.282166058	7.809E-07	1.28736E-05	0.2627326	7.272E-07	1.19869E-05	1.3735058	3.801E-06	6.2665E-05	1.2784398	3.538E-06	5.83277E-05	1.5411724	4.265E-06	7.03146E-05
Road 8	8	1600-1700	0.284429384	8.389E-07	1.38293E-05	0.2638113	7.781E-07	1.28269E-05	1.3675918	4.034E-06	6.64941E-05	1.2680942	3.74E-06	6.16564E-05	1.5319055	4.518E-06	7.44833E-05
Road 8	8	1700-1800	0.233317628	7.353E-07	1.21212E-05	0.2137103	6.735E-07	1.11026E-05	1.1721611	3.694E-06	6.08956E-05	1.0724142	3.38E-06	5.57136E-05	1.2861244	4.053E-06	6.68161E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (November) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 8	8	1800-1900	0.233975794	5.058E-07	8.33736E-06	0.2126984	4.598E-07	7.57917E-06	1.2022724	2.599E-06	4.28411E-05	1.0919607	2.36E-06	3.89103E-05	1.3046592	2.82E-06	4.64895E-05
Road 8	8	1900-2000	0.235093117	3.657E-07	6.02843E-06	0.2130614	3.314E-07	5.46348E-06	1.2385104	1.927E-06	3.17588E-05	1.1217829	1.745E-06	2.87656E-05	1.3348443	2.076E-06	3.42291E-05
Road 8	8	2000-2100	0.258608289	3.971E-07	6.5453E-06	0.2334179	3.584E-07	5.90774E-06	1.2380451	1.901E-06	3.13346E-05	1.1165061	1.714E-06	2.82585E-05	1.3499239	2.073E-06	3.41662E-05
Road 8	8	2100-2200	0.211860943	2.268E-07	3.73939E-06	0.1937575	2.075E-07	3.41986E-06	1.1147128	1.194E-06	1.96749E-05	1.0179198	1.09E-06	1.79665E-05	1.2116774	1.297E-06	2.13864E-05
Road 8	8	2200-2300	0.254688906	3.293E-07	5.4283E-06	0.2334466	3.018E-07	4.97555E-06	1.2626753	1.633E-06	2.6912E-05	1.1566141	1.495E-06	2.46514E-05	1.3900606	1.797E-06	2.9627E-05
Road 8	8	2300-0000	0.204297308	2.146E-07	3.53785E-06	0.1873673	1.968E-07	3.24467E-06	1.0530525	1.106E-06	1.82359E-05	0.9649644	1.014E-06	1.67105E-05	1.1523317	1.211E-06	1.99551E-05
Road 9	9	0000-0100	0.212011557	5.631E-08	1.68081E-06	0.1962823	5.213E-08	1.55611E-06	0.9759133	2.592E-07	7.73695E-06	0.8972856	2.383E-07	7.1136E-06	1.0935679	2.904E-07	8.66971E-06
Road 9	9	0100-0200	0.228933426	4.777E-08	1.42604E-06	0.2159331	4.506E-08	1.34506E-06	0.9962131	2.079E-07	6.20548E-06	0.9339443	1.949E-07	5.81761E-06	1.1498773	2.399E-07	7.16267E-06
Road 9	9	0200-0300	0.091426844	8.672E-09	2.58866E-07	0.0848544	8.048E-09	2.40256E-07	0.6601511	6.261E-08	1.86915E-06	0.6080111	5.767E-08	1.72152E-06	0.6928655	6.572E-08	1.96178E-06
Road 9	9	0300-0400	0.110796326	8.407E-09	2.50967E-07	0.1026186	7.787E-09	2.32443E-07	0.6888117	5.227E-08	1.56024E-06	0.6371298	4.834E-08	1.44317E-06	0.7397484	5.613E-08	1.67562E-06
Road 9	9	0400-0500	0.24667282	4.679E-08	1.39686E-06	0.2330977	4.422E-08	1.31998E-06	1.0330306	1.96E-07	5.84984E-06	0.9697812	1.84E-07	5.49167E-06	1.2028789	2.282E-07	6.81165E-06
Road 9	9	0500-0600	0.178709808	5.763E-08	1.72039E-06	0.1682533	5.426E-08	1.61973E-06	0.9131027	2.945E-07	8.79021E-06	0.8549195	2.757E-07	8.2301E-06	1.0231729	3.3E-07	9.84983E-06
Road 9	9	0600-0700	0.20882179	1.268E-07	3.78405E-06	0.1971599	1.197E-07	3.57272E-06	1.1126974	6.754E-07	2.01631E-05	1.0402431	6.315E-07	1.88502E-05	1.237403	7.511E-07	2.24229E-05
Road 9	9	0700-0800	0.180407526	1.643E-07	4.90373E-06	0.1698675	1.547E-07	4.61724E-06	1.0529629	9.588E-07	2.8621E-05	0.980494	8.928E-07	2.66512E-05	1.1503615	1.047E-06	3.12684E-05
Road 9	9	0800-0900	0.275475739	6.01E-07	1.79396E-05	0.2589759	5.65E-07	1.68651E-05	1.3504391	2.946E-06	8.79435E-05	1.2601629	2.749E-06	8.20645E-05	1.5191388	3.314E-06	9.89295E-05
Road 9	9	0900-1000	0.281653634	4.595E-07	1.37165E-05	0.2660646	4.341E-07	1.29574E-05	1.2573282	2.051E-06	6.12319E-05	1.1760838	1.919E-06	5.72753E-05	1.4421485	2.353E-06	7.02327E-05
Road 9	9	1000-1100	0.295307105	3.977E-07	1.18731E-05	0.2773647	3.736E-07	1.11517E-05	1.2841622	1.73E-06	5.16308E-05	1.1987921	1.615E-06	4.81984E-05	1.4761568	1.988E-06	5.93501E-05
Road 9	9	1100-1200	0.205540357	2.885E-07	8.6131E-06	0.1927453	2.706E-07	8.07693E-06	1.1040528	1.55E-06	4.6265E-05	1.0335193	1.451E-06	4.33093E-05	1.2262646	1.721E-06	5.13862E-05
Road 9	9	1200-1300	0.303015445	4.196E-07	1.25262E-05	0.287581	3.982E-07	1.18881E-05	1.4045054	1.945E-06	5.806E-05	1.3298804	1.842E-06	5.49751E-05	1.6174614	2.24E-06	6.68633E-05
Road 9	9	1300-1400	0.340934016	3.88E-07	1.15838E-05	0.3243143	3.691E-07	1.10192E-05	1.3207334	1.503E-06	4.48742E-05	1.2514833	1.424E-06	4.25213E-05	1.5757976	1.794E-06	5.35405E-05
Road 9	9	1400-1500	0.219960081	2.837E-07	8.47E-06	0.2100175	2.709E-07	8.08714E-06	1.0960187	1.414E-06	4.22044E-05	1.0403646	1.342E-06	4.00613E-05	1.250382	1.613E-06	4.81485E-05
Road 9	9	1500-1600	0.184753724	1.998E-07	5.96347E-06	0.1745211	1.887E-07	5.63318E-06	0.9803759	1.06E-06	3.16445E-05	0.9232422	9.983E-07	2.98003E-05	1.0977633	1.187E-06	3.54335E-05
Road 9	9	1600-1700	0.191620128	2.872E-07	8.57233E-06	0.181846	2.725E-07	8.13508E-06	1.0946283	1.64E-06	4.89694E-05	1.0354676	1.552E-06	4.63227E-05	1.2173136	1.824E-06	5.44578E-05
Road 9	9	1700-1800	0.1677877	2.164E-07	6.461E-06	0.1581089	2.04E-07	6.0883E-06	1.0512072	1.356E-06	4.04788E-05	0.9853737	1.271E-06	3.79438E-05	1.1434826	1.475E-06	4.40321E-05
Road 9	9	1800-1900	0.165558268	1.382E-07	4.1251E-06	0.1557517	1.3E-07	3.88076E-06	1.0209024	8.521E-07	2.54371E-05	0.9577195	7.994E-07	2.38628E-05	1.1134712	9.294E-07	2.77436E-05
Road 9	9	1900-2000	0.17432044	1.422E-07	4.2447E-06	0.1625651	1.326E-07	3.95846E-06	0.9554622	7.794E-07	2.32655E-05	0.8799464	7.178E-07	2.14267E-05	1.0425116	8.504E-07	2.53852E-05
Road 9	9	2000-2100	0.188077137	1.035E-07	3.08862E-06	0.17269	9.5E-08	2.83593E-06	0.8480803	4.665E-07	1.39273E-05	0.7747731	4.262E-07	1.27234E-05	0.947463	5.212E-07	1.55593E-05
Road 9	9	2100-2200	0.024435601	1.252E-08	3.73609E-07	0.0227809	1.167E-08	3.48309E-07	0.3443167	1.764E-07	5.26444E-06	0.3163769	1.62E-07	4.83726E-06	0.3391578	1.737E-07	5.18557E-06
Road 9	9	2200-2300	0.180193906	1.128E-07	3.36732E-06	0.1673468	1.048E-07	3.12725E-06	0.8914041	5.58E-07	1.66579E-05	0.8234414	5.155E-07	1.53878E-05	0.9907882	6.202E-07	1.85151E-05
Road 9	9	2300-0000	0.145376274	8.273E-08	2.46971E-06	0.1357381	7.725E-08	2.30597E-06	0.7602037	4.326E-07	1.29146E-05	0.7044659	4.009E-07	1.19677E-05	0.8402039	4.782E-07	1.42737E-05
Road 10	10	0000-0100	0.299642177	2.304E-07	5.12247E-06	0.2743201	2.109E-07	4.68958E-06	1.5354836	1.181E-06	2.62495E-05	1.4036289	1.079E-06	2.39954E-05	1.677949	1.29E-06	2.8685E-05
Road 10	10	0100-0200	0.292493136	1.699E-07	3.77797E-06	0.2735619	1.589E-07	3.53344E-06	1.4860753	8.633E-07	1.91948E-05	1.388111	8.064E-07	1.79294E-05	1.6616729	9.653E-07	2.14629E-05
Road 10	10	0200-0300	0.292168214	9.485E-08	2.10887E-06	0.2712142	8.804E-08	1.95763E-06	1.4654794	4.757E-07	1.05778E-05	1.3590196	4.412E-07	9.80941E-06	1.6302337	5.292E-07	1.1767E-05
Road 10	10	0300-0400	0.265802723	5.45E-08	1.21173E-06	0.245791	5.039E-08	1.1205E-06	1.4395049	2.951E-07	6.56233E-06	1.3290805	2.725E-07	6.05893E-06	1.5748715	3.229E-07	7.17943E-06
Road 10	10	0400-0500	0.309280433	1.215E-07	2.70237E-06	0.2908639	1.143E-07	2.54145E-06	1.4923154	5.864E-07	1.30392E-05	1.4000466	5.502E-07	1.2233E-05	1.6909106	6.645E-07	1.47745E-05
Road 10	10	0500-0600	0.283457985	1.986E-07	4.41506E-06	0.2655169	1.86E-07	4.13561E-06	1.3736791	9.623E-07	2.1396E-05	1.2833366	8.99E-07	1.99889E-05	1.5488535	1.085E-06	2.41245E-05
Road 10	10	0600-0700	0.342003943	4.792E-07	1.06539E-05	0.3215838	4.505E-07	1.00178E-05	1.7152323	2.403E-06	5.34319E-05	1.6099866	2.256E-06	5.01533E-05	1.9315704	2.706E-06	6.01711E-05
Road 10	10	0700-0800	0.341315087	7.523E-07	1.67266E-05	0.3180213	7.009E-07	1.55851E-05	1.7259629	3.804E-06	8.45834E-05	1.6048659	3.537E-06	7.86488E-05	1.9228872	4.238E-06	9.42339E-05
Road 10	10	0800-0900	0.362755162	1.531E-06	3.40388E-05	0.3374259	1.424E-06	3.16621E-05	1.7991351	7.593E-06	0.00016882	1.6704625	7.05E-06	0.000156746	2.0078884	8.474E-06	0.000188408
Road 10	10	0900-1000	0.402344748	1.347E-06	2.99584E-05	0.3762103	1.26E-06	2.80124E-05	1.9482758	6.524E-06	0.000145068	1.8178828	6.088E-06	0.000135359	2.1940931	7.348E-06	0.000163371
Road 10	10	1000-1100	0.399039637	1.452E-06	3.22894E-05	0.3731768	1.358E-06	3.01966E-05	1.8109837	6.591E-06	0.000146541	1.6881542	6.144E-06	0.000136601	2.061331	7.502E-06	0.000166798
Road 10	10	1100-1200	0.386244769	1.406E-06	3.1254E-05	0.3614739	1.315E-06	2.92496E-05	1.8168755	6.612E-06	0.000147017	1.6972538	6.177E-06	0.000137338	2.0587277	7.492E-06	0.000166587
Road 10	10	1200-1300	0.401293418	1.508E-06	3.35389E-05	0.3767184	1.416E-06	3.1485E-05	1.9134562	7.192E-06	0.000159921	1.7953058	6.748E-06	0.000150046	2.1720242	8.164E-06	0.000181531
Road 10	10	1300-1400	0.390016854	1.279E-06	2.84478E-05	0.3673758	1.205E-06	2.67963E-05	1.816466	5.959E-06	0.000132493	1.7090782	5.607E-06	0.00012466	2.076454	6.812E-06	0.000151456
Road 10	10	1400-1500	0.361678536	1.112E-06	2.4732E-05	0.3412791	1.05E-06	2.3337E-05	1.8116768	5.572E-06	0.000123885	1.7083852	5.254E-06	0.000116821	2.0496643	6.304E-06	0.000140158
Road 10	10	1500-1600	0.360523775	1.133E-06	2.52009E-05	0.3374793	1.061E-06	2.359E-05	1.7386759	5.466E-06	0.000121535	1.6269471	5.115E-06	0.000113725	1.9644264	6.176E-06	0.000137315
Road 10	10	1600-1700	0.345844172	1.211E-06	2.69338E-05	0.3234805	1.133E-06	2.51922E-05	1.6934571	5.931E-06	0.000131884	1.5816173	5.54E-06	0.000123174	1.9050978	6.673E-06	0.000148366
Road 10	10	1700-1800	0.321902159	1.056E-06	2.34795E-05	0.298349	9.787E-07	2.17615E-05	1.6746954	5.494E-06	0.000122152	1.552832	5.094E-06	0.000113263	1.851181	6.073E-06	0.000135025
Road 10	10	1800-1900	0.327769703	6.776E-07	1.50667E-05	0.3007459	6.218E-07	1.38245E-05	1.658138	3.428E-06	7.62201E-05	1.5207413	3.144E-06	6.99044E-05	1.8214872	3.766E-06	8.37289E-05
Road 10	10	1900-2000	0.287868708	5.361E-07	1.19202E-05	0.2638196	4.913E-07	1.09244E-05	1.5288125	2.847E-06	6.33059E-05	1.399277	2.606E-06	5.79421E-05	1.6630966	3.097E-06	6.88665E-05
Road 10	10	2000-2100	0.33595292	4.133E-07	9.18914E-06	0.3044257	3.745E-07	8.32679E-06	1.6286478	2.004E-06	4.45475E-05	1.4734203	1.813E-06	4.03017E-05	1.777846	2.187E-06	4.86284E-05
Road 10	10	2100-2200	0.275220627	3.386E-07	7.52796E-06	0.2565548	3.156E-07	7.0174E-06	1.5373334	1.891E-06	4.20498E-05	1.4345232	1.765E-06	3.92377E-05	1.691078	2.08E-06	4.62551E-05
Road 10	10	2200-2300	0.291495401	3.735E-07	8.30533E-06	0.2697397	3.457E-07	7.68546E-06	1.4980529	1.92E-06	4.26827E-05	1.387535	1.778E-06	3.95338E-05	1.6572747	2.124E-06	4.72193E-05
Road 10	10	2300-0000	0.268222378	3.208E-07	7.13275E-06	0.2470072	2.954E-07	6.56858E-06	1.3594424	1.626E-06	3.61512E-05	1.2498283	1.495E-06	3.32363E-05	1.4968355	1.79E-06	3.98048E-05
Road 11	11	0000-0100	0.335617418	2.564E-07	2.12665E-06	0.3071562	2.346E-07	1.9463E-06	1.685674	1.288E-06	1.06813E-05	1.5401764	1.177E-06	9.75936E-06	1.8473326	1.411E-06	1.17057E-05
Road 11	11	0100-0200	0.333358481	1.794E-07	1.48823E-06	0.3116924	1.678E-07	1.39151E-06	1.646298	8.86E-07	7.34968E-06	1.5365544	8.27E-07	6.85974E-06	1.8482468	9.947E-07	8.25125E-06
Road 11	11	0200-0300	0.292094179	7.607E-08	6.30975E-07	0.2711915	7.062E-08	5.85822E-07	1.5616259	4.067E-07	3.37339E-06	1.447997	3.771E-07	3.12793E-06	1.7191885	4.477E-07	3.71375E-06
Road 11	11	0300-0400	0.313102577	7.61E-08	6.31267E-07	0.2895767	7.038E-08	5.83835E-07	1.6399419	3.986E-07	3.30639E-06	1.5163157	3.685E-07	3.05714E-06	1.8058924	4.389E-07	3.64098E-06
Road 11	11	0400-0500	0.319903533	1.111E-07	9.21398E-07	0.300951	1.045E-07	8.6681E-07	1.5245353	5.294E-07	4.39102E-06	1.4303593	4.967E-07	4.11977E-06	1.7313103	6.011E-07	4.98658E-06
Road 11	11	0500-0600	0.259354323	1.216E-07	1.00845E-06	0.2427373	1.138E-07	9.4384E-07	1.3277387	6.224E-07	5.16267E-06	1.2396049	5.811E-07	4.81998E-06	1.4823422	6.948E-07	5.76382E-06
Road 11	11	0600-0700	0.280803958	2.535E-07	2.10283E-06	0.2633239	2.377E-07	1.97193E-06	1.4657508	1.323E-06	1.09764E-05	1.3680999	1.235E-06	1.02452E-05	1.6314238	1.473E-06	1.22171E-05
Road 11	11	0700-0800	0.332589734	6.236E-07	5.17286E-06	0.3086491	5.787E-07	4.8005E-06	1.7390896	3.261E-06	2.70485E-05	1.6097223	3.018E-06	2.50365E-05	1.9183713	3.597E-06	2.9837E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (November) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 11	11	0800-0900	0.358677078	1.277E-06	1.0589E-05	0.3345393	1.191E-06	9.87641E-06	1.7760686	6.321E-06	5.24339E-05	1.6514304	5.877E-06	4.87542E-05	1.9859697	7.068E-06	5.86306E-05
Road 11	11	0900-1000	0.360696473	9.143E-07	7.58391E-06	0.3371294	8.545E-07	7.08839E-06	1.7152146	4.348E-06	3.60636E-05	1.5951403	4.043E-06	3.3539E-05	1.9322697	4.898E-06	4.06274E-05
Road 11	11	1000-1100	0.371860122	7.683E-07	6.37272E-06	0.3473459	7.176E-07	5.95261E-06	1.7395831	3.594E-06	2.98119E-05	1.6198006	3.346E-06	2.77592E-05	1.9671465	4.064E-06	3.37118E-05
Road 11	11	1100-1200	0.326569888	7.597E-07	6.30201E-06	0.3049198	7.094E-07	5.88422E-06	1.6766498	3.901E-06	3.23553E-05	1.5645266	3.64E-06	3.01916E-05	1.8694464	4.349E-06	3.60758E-05
Road 11	11	1200-1300	0.395848137	1.12E-06	9.29211E-06	0.3713346	1.051E-06	8.71668E-06	1.9231942	5.442E-06	4.51449E-05	1.8022812	5.1E-06	4.23066E-05	2.1736158	6.151E-06	5.10233E-05
Road 11	11	1300-1400	0.410717444	8.557E-07	7.09778E-06	0.386767	8.058E-07	6.68388E-06	1.8549475	3.864E-06	3.20561E-05	1.7425574	3.63E-06	3.01139E-05	2.1293244	4.436E-06	3.67977E-05
Road 11	11	1400-1500	0.324459939	6.534E-07	5.42022E-06	0.3057969	6.158E-07	5.10845E-06	1.6237949	3.27E-06	2.71261E-05	1.5263061	3.074E-06	2.54975E-05	1.832103	3.69E-06	3.0606E-05
Road 11	11	1500-1600	0.291313305	5.917E-07	4.90845E-06	0.2724193	5.534E-07	4.5901E-06	1.5099154	3.067E-06	2.54411E-05	1.4106897	2.865E-06	2.37693E-05	1.683109	3.419E-06	2.83593E-05
Road 11	11	1600-1700	0.278395612	6.718E-07	5.57282E-06	0.260424	6.285E-07	5.21308E-06	1.4912765	3.599E-06	2.98518E-05	1.3939906	3.364E-06	2.79044E-05	1.6544147	3.992E-06	3.31175E-05
Road 11	11	1700-1800	0.28074906	6.921E-07	5.74123E-06	0.2592621	6.392E-07	5.30183E-06	1.5318723	3.776E-06	3.13263E-05	1.4139389	3.486E-06	2.89146E-05	1.6732009	4.125E-06	3.42164E-05
Road 11	11	1800-1900	0.302296732	6.193E-07	5.13705E-06	0.276699	5.668E-07	4.70206E-06	1.6155143	3.31E-06	2.74531E-05	1.4792019	3.03E-06	2.51367E-05	1.7559009	3.597E-06	2.98387E-05
Road 11	11	1900-2000	0.291401519	4.604E-07	3.81884E-06	0.2661096	4.204E-07	3.48739E-06	1.5232837	2.407E-06	1.99627E-05	1.3864753	2.19E-06	1.81699E-05	1.652585	2.611E-06	2.16573E-05
Road 11	11	2000-2100	0.302477508	4.254E-07	3.52839E-06	0.2741412	3.855E-07	3.19785E-06	1.5129954	2.128E-06	1.7649E-05	1.3692366	1.925E-06	1.59721E-05	1.6433778	2.311E-06	1.91699E-05
Road 11	11	2100-2200	0.218755082	2.165E-07	1.79569E-06	0.2002884	1.982E-07	1.6441E-06	1.2254038	1.213E-06	1.00589E-05	1.1214031	1.11E-06	9.20523E-06	1.3216915	1.308E-06	1.08493E-05
Road 11	11	2200-2300	0.281361071	3.077E-07	2.55272E-06	0.259115	2.834E-07	2.35088E-06	1.4257452	1.559E-06	1.29354E-05	1.3104217	1.433E-06	1.18891E-05	1.5695367	1.717E-06	1.424E-05
Road 11	11	2300-0000	0.269027691	2.802E-07	2.32459E-06	0.247899	2.582E-07	2.14202E-06	1.3869311	1.445E-06	1.19841E-05	1.2752829	1.328E-06	1.10193E-05	1.523182	1.587E-06	1.31614E-05
Haul Road 1	HR1	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0700-0800	1.41636	2.662E-06	4.00428E-06	1.3085	2.46E-06	3.69934E-06	6.50881	1.223E-05	1.84015E-05	6.0129	1.13E-05	1.69994E-05	7.3214	1.376E-05	2.06988E-05
Haul Road 1	HR1	0800-0900	1.41206	2.654E-06	3.99212E-06	1.3097	2.462E-06	3.70273E-06	6.48921	1.22E-05	1.8346E-05	6.01859	1.131E-05	1.70155E-05	7.32829	1.377E-05	2.07183E-05
Haul Road 1	HR1	0900-1000	1.41506	2.66E-06	4.0006E-06	1.3122	2.467E-06	3.7098E-06	6.50291	1.222E-05	1.83848E-05	6.02979	1.133E-05	1.70472E-05	7.34199	1.38E-05	2.0757E-05
Haul Road 1	HR1	1000-1100	1.41096	2.652E-06	3.98901E-06	1.3116	2.465E-06	3.7081E-06	6.48402	1.219E-05	1.83314E-05	6.02719	1.133E-05	1.70398E-05	7.33879	1.379E-05	2.07479E-05
Haul Road 1	HR1	1100-1200	1.40686	2.644E-06	3.97742E-06	1.3119	2.466E-06	3.70895E-06	6.46503	1.215E-05	1.82777E-05	6.02899	1.133E-05	1.70449E-05	7.34089	1.38E-05	2.07539E-05
Haul Road 1	HR1	1200-1300	1.40276	2.637E-06	3.96583E-06	1.3084	2.459E-06	3.69906E-06	6.44603	1.212E-05	1.8224E-05	6.0126	1.13E-05	1.69986E-05	7.321	1.376E-05	2.06976E-05
Haul Road 1	HR1	1300-1400	1.39866	2.629E-06	3.95424E-06	1.3084	2.459E-06	3.69906E-06	6.42724	1.208E-05	1.81708E-05	6.0126	1.13E-05	1.69986E-05	7.321	1.376E-05	2.06976E-05
Haul Road 1	HR1	1400-1500	1.39866	2.629E-06	3.95424E-06	1.3084	2.459E-06	3.69906E-06	6.42724	1.208E-05	1.81708E-05	6.0126	1.13E-05	1.69986E-05	7.321	1.376E-05	2.06976E-05
Haul Road 1	HR1	1500-1600	1.39477	2.622E-06	3.94324E-06	1.2984	2.441E-06	3.67079E-06	6.40944	1.205E-05	1.81205E-05	5.96692	1.122E-05	1.68694E-05	7.26532	1.366E-05	2.05402E-05
Haul Road 1	HR1	1600-1700	1.39477	2.622E-06	3.94324E-06	1.2932	2.431E-06	3.65608E-06	6.40944	1.205E-05	1.81205E-05	5.94303	1.117E-05	1.68019E-05	7.23623	1.36E-05	2.0458E-05
Haul Road 1	HR1	1700-1800	1.40346	2.638E-06	3.96781E-06	1.28521	2.416E-06	3.6335E-06	6.44943	1.212E-05	1.82336E-05	5.90614	1.11E-05	1.66976E-05	7.19135	1.352E-05	2.03311E-05
Haul Road 1	HR1	1800-1900	1.40006	2.632E-06	3.95819E-06	1.27201	2.391E-06	3.59618E-06	6.43374	1.209E-05	1.81892E-05	5.84566	1.099E-05	1.65266E-05	7.11767	1.338E-05	2.01228E-05
Haul Road 1	HR1	1900-2000	1.40776	2.646E-06	3.97996E-06	1.27501	2.397E-06	3.60466E-06	6.46942	1.216E-05	1.82901E-05	5.85946	1.101E-05	1.65656E-05	7.13447	1.341E-05	2.01703E-05
Haul Road 1	HR1	2000-2100	1.40776	2.646E-06	3.97996E-06	1.27091	2.389E-06	3.59307E-06	6.46942	1.216E-05	1.82901E-05	5.84047	1.098E-05	1.65119E-05	7.11138	1.337E-05	2.0105E-05
Haul Road 1	HR1	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0700-0800	1.41636	1.835E-06	4.88369E-06	1.3085	1.695E-06	4.51179E-06	6.50881	8.431E-06	2.24428E-05	6.0129	7.789E-06	2.07328E-05	7.3214	9.484E-06	2.52446E-05
Haul Road 2	HR2	0800-0900	1.41206	1.829E-06	4.86887E-06	1.3097	1.697E-06	4.51592E-06	6.48921	8.406E-06	2.23752E-05	6.01859	7.796E-06	2.07525E-05	7.32829	9.493E-06	2.52684E-05
Haul Road 2	HR2	0900-1000	1.41506	1.833E-06	4.87921E-06	1.3122	1.7E-06	4.52454E-06	6.50291	8.423E-06	2.24224E-05	6.02979	7.811E-06	2.07911E-05	7.34199	9.51E-06	2.53156E-05
Haul Road 2	HR2	1000-1100	1.41096	1.828E-06	4.86508E-06	1.3116	1.699E-06	4.52248E-06	6.48402	8.399E-06	2.23573E-05	6.02719	7.807E-06	2.07821E-05	7.33879	9.506E-06	2.53046E-05
Haul Road 2	HR2	1100-1200	1.40686	1.822E-06	4.85094E-06	1.3119	1.699E-06	4.52351E-06	6.46503	8.374E-06	2.22918E-05	6.02899	7.81E-06	2.07883E-05	7.34089	9.509E-06	2.53118E-05
Haul Road 2	HR2	1200-1300	1.40276	1.817E-06	4.8368E-06	1.3084	1.695E-06	4.51144E-06	6.44603	8.35E-06	2.22263E-05	6.0126	7.788E-06	2.07318E-05	7.321	9.483E-06	2.52432E-05
Haul Road 2	HR2	1300-1400	1.39866	1.812E-06	4.82266E-06	1.3084	1.695E-06	4.51144E-06	6.42724	8.325E-06	2.21615E-05	6.0126	7.788E-06	2.07318E-05	7.321	9.483E-06	2.52432E-05
Haul Road 2	HR2	1400-1500	1.39866	1.812E-06	4.82266E-06	1.3084	1.695E-06	4.51144E-06	6.42724	8.325E-06	2.21615E-05	6.0126	7.788E-06	2.07318E-05	7.321	9.483E-06	2.52432E-05
Haul Road 2	HR2	1500-1600	1.39477	1.807E-06	4.80925E-06	1.2984	1.682E-06	4.47696E-06	6.40944	8.302E-06	2.21001E-05	5.96692	7.729E-06	2.05743E-05	7.26532	9.411E-06	2.50513E-05
Haul Road 2	HR2	1600-1700	1.39477	1.807E-06	4.80925E-06	1.2932	1.675E-06	4.45903E-06	6.40944	8.302E-06	2.21001E-05	5.94303	7.698E-06	2.04919E-05	7.23623	9.373E-06	2.4951E-05
Haul Road 2	HR2	1700-1800	1.40346	1.818E-06	4.83921E-06	1.28521	1.665E-06	4.43148E-06	6.44943	8.354E-06	2.2238E-05	5.90614	7.65E-06	2.03647E-05	7.19135	9.315E-06	2.47962E-05
Haul Road 2	HR2	1800-1900	1.40006	1.814E-06	4.82749E-06	1.27201	1.648E-06	4.38597E-06	6.43374	8.334E-06	2.21839E-05	5.84566	7.572E-06	2.01562E-05	7.11767	9.22E-06	2.45422E-05
Haul Road 2	HR2	1900-2000	1.40776	1.824E-06	4.85404E-06	1.27501	1.652E-06	4.39631E-06	6.46942	8.38E-06	2.23069E-05	5.85946	7.59E-06	2.02038E-05	7.13447	9.242E-06	2.46001E-05
Haul Road 2	HR2	2000-2100	1.40776	1.824E-06	4.85404E-06	1.27091	1.646E-06	4.38217E-06	6.46942	8.38E-06	2.23069E-05	5.84047	7.565E-06	2.01383E-05	7.11138	9.212E-06	2.45205E-05
Haul Road 2	HR2	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (November) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Haul Road 2	HR2	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0700-0800	1.41636	1.835E-06	4.87689E-06	1.3085	1.695E-06	4.5055E-06	6.50881	8.431E-06	2.24115E-05	6.0129	7.789E-06	2.07039E-05	7.3214	9.484E-06	2.52094E-05
Haul Road 3	HR3	0800-0900	1.41206	1.829E-06	4.86208E-06	1.3097	1.697E-06	4.50963E-06	6.48921	8.406E-06	2.2344E-05	6.01859	7.796E-06	2.07235E-05	7.32829	9.493E-06	2.52332E-05
Haul Road 3	HR3	0900-1000	1.41506	1.833E-06	4.87241E-06	1.3122	1.7E-06	4.51824E-06	6.50291	8.423E-06	2.23912E-05	6.02979	7.811E-06	2.07621E-05	7.34199	9.51E-06	2.52803E-05
Haul Road 3	HR3	1000-1100	1.41096	1.828E-06	4.85829E-06	1.3116	1.699E-06	4.51617E-06	6.48402	8.399E-06	2.23261E-05	6.02719	7.807E-06	2.07531E-05	7.33879	9.506E-06	2.52693E-05
Haul Road 3	HR3	1100-1200	1.40686	1.822E-06	4.84417E-06	1.3119	1.699E-06	4.5172E-06	6.46503	8.374E-06	2.22607E-05	6.02899	7.81E-06	2.07593E-05	7.34089	9.509E-06	2.52765E-05
Haul Road 3	HR3	1200-1300	1.40276	1.817E-06	4.83006E-06	1.3084	1.695E-06	4.50515E-06	6.44603	8.35E-06	2.21953E-05	6.0126	7.788E-06	2.07029E-05	7.321	9.483E-06	2.52081E-05
Haul Road 3	HR3	1300-1400	1.39866	1.812E-06	4.81594E-06	1.3084	1.695E-06	4.50515E-06	6.42724	8.325E-06	2.21306E-05	6.0126	7.788E-06	2.07029E-05	7.321	9.483E-06	2.52081E-05
Haul Road 3	HR3	1400-1500	1.39866	1.812E-06	4.81594E-06	1.3084	1.695E-06	4.50515E-06	6.42724	8.325E-06	2.21306E-05	6.0126	7.788E-06	2.07029E-05	7.321	9.483E-06	2.52081E-05
Haul Road 3	HR3	1500-1600	1.39477	1.807E-06	4.80255E-06	1.2984	1.682E-06	4.47072E-06	6.40944	8.302E-06	2.20693E-05	5.96692	7.729E-06	2.05456E-05	7.26532	9.411E-06	2.50163E-05
Haul Road 3	HR3	1600-1700	1.39477	1.807E-06	4.80255E-06	1.2932	1.675E-06	4.45281E-06	6.40944	8.302E-06	2.20693E-05	5.94303	7.698E-06	2.04634E-05	7.23623	9.373E-06	2.49162E-05
Haul Road 3	HR3	1700-1800	1.40346	1.818E-06	4.83247E-06	1.28521	1.665E-06	4.4253E-06	6.44943	8.354E-06	2.2207E-05	5.90614	7.65E-06	2.03363E-05	7.19135	9.315E-06	2.47616E-05
Haul Road 3	HR3	1800-1900	1.40006	1.814E-06	4.82076E-06	1.27201	1.648E-06	4.37985E-06	6.43374	8.334E-06	2.2153E-05	5.84566	7.572E-06	2.01281E-05	7.11767	9.22E-06	2.45079E-05
Haul Road 3	HR3	1900-2000	1.40776	1.824E-06	4.84727E-06	1.27501	1.652E-06	4.39018E-06	6.46942	8.38E-06	2.22758E-05	5.85946	7.59E-06	2.01756E-05	7.13447	9.242E-06	2.45658E-05
Haul Road 3	HR3	2000-2100	1.40776	1.824E-06	4.84727E-06	1.27091	1.646E-06	4.37606E-06	6.46942	8.38E-06	2.22758E-05	5.84047	7.565E-06	2.01102E-05	7.11138	9.212E-06	2.44863E-05
Haul Road 3	HR3	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (December) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 1	1	0000-0100	0.111237571	3.695E-07	3.00626E-06	0.101114	3.359E-07	2.73266E-06	0.6604901	2.194E-06	1.78501E-05	0.5964872	1.982E-06	1.61204E-05	0.6976012	2.317E-06	1.88531E-05
Road 1	1	0100-0200	0.086261574	1.749E-07	1.42247E-06	0.0782011	1.585E-07	1.28955E-06	0.524337	1.063E-06	8.6464E-06	0.4719638	9.567E-07	7.78276E-06	0.5501649	1.115E-06	9.07231E-06
Road 1	1	0200-0300	0.082569351	1.193E-07	9.70758E-07	0.0746458	1.079E-07	8.77602E-07	0.5337818	7.714E-07	6.27561E-06	0.475587	6.873E-07	5.59142E-06	0.5502329	7.952E-07	6.46902E-06
Road 1	1	0300-0400	0.070637818	7.292E-08	5.932E-07	0.0636284	6.568E-08	5.34336E-07	0.4358251	4.499E-07	3.65996E-06	0.3866222	3.991E-07	3.24676E-06	0.4502505	4.648E-07	3.7811E-06
Road 1	1	0400-0500	0.091992	1.468E-07	1.19391E-06	0.0839596	1.339E-07	1.08966E-06	0.5297741	8.452E-07	6.8756E-06	0.4791776	7.645E-07	6.21895E-06	0.5631373	8.984E-07	7.3086E-06
Road 1	1	0500-0600	0.074330695	2.609E-07	2.12232E-06	0.0677496	2.378E-07	1.93441E-06	0.4442181	1.559E-06	1.26835E-05	0.3994863	1.402E-06	1.14063E-05	0.4672359	1.64E-06	1.33407E-05
Road 1	1	0600-0700	0.10076003	6.279E-07	5.10773E-06	0.0917572	5.718E-07	4.65136E-06	0.5454343	3.399E-06	2.76491E-05	0.4920073	3.066E-06	2.49408E-05	0.5837645	3.638E-06	2.95922E-05
Road 1	1	0700-0800	0.084855206	8.903E-07	7.24255E-06	0.0772661	8.107E-07	6.5948E-06	0.4745216	4.979E-06	4.05013E-05	0.4261096	4.471E-06	3.63693E-05	0.5033757	5.281E-06	4.29641E-05
Road 1	1	0800-0900	0.090743445	1.167E-06	9.49089E-06	0.082732	1.064E-06	8.65297E-06	0.4873041	6.265E-06	5.09673E-05	0.4399511	5.656E-06	4.60147E-05	0.5226831	6.72E-06	5.46676E-05
Road 1	1	0900-1000	0.09421587	1.25E-06	1.01706E-05	0.0862672	1.145E-06	9.3125E-06	0.5311451	7.048E-06	5.73369E-05	0.4827732	6.406E-06	5.21151E-05	0.5690404	7.551E-06	6.14276E-05
Road 1	1	1000-1100	0.109512591	1.412E-06	1.14874E-05	0.0999416	1.289E-06	1.04835E-05	0.5915779	7.628E-06	6.2054E-05	0.5367109	6.92E-06	5.62987E-05	0.6366526	8.209E-06	6.67822E-05
Road 1	1	1100-1200	0.09912934	1.241E-06	1.00955E-05	0.090489	1.133E-06	9.21559E-06	0.5727828	7.171E-06	5.83334E-05	0.5192564	6.5E-06	5.28821E-05	0.6097455	7.633E-06	6.20977E-05
Road 1	1	1200-1300	0.102095485	1.265E-06	1.02885E-05	0.0923573	1.144E-06	9.30715E-06	0.5854084	7.252E-06	5.89935E-05	0.5261482	6.518E-06	5.30216E-05	0.6185055	7.662E-06	6.23288E-05
Road 1	1	1300-1400	0.106907749	1.409E-06	1.1459E-05	0.0968482	1.276E-06	1.03808E-05	0.5996297	7.901E-06	6.4272E-05	0.5397549	7.112E-06	5.78542E-05	0.6366031	8.388E-06	6.8235E-05
Road 1	1	1400-1500	0.102272889	1.468E-06	1.1946E-05	0.0925349	1.329E-06	1.08086E-05	0.5596563	8.036E-06	6.53708E-05	0.5033583	7.227E-06	5.87949E-05	0.5958932	8.556E-06	6.96035E-05
Road 1	1	1500-1600	0.109643597	1.459E-06	1.18695E-05	0.0993216	1.322E-06	1.0752E-05	0.5981603	7.96E-06	6.47538E-05	0.5385931	7.167E-06	5.83053E-05	0.6379147	8.489E-06	6.90574E-05
Road 1	1	1600-1700	0.105236578	1.477E-06	1.2019E-05	0.0954943	1.341E-06	1.09064E-05	0.5810324	8.157E-06	6.63595E-05	0.523307	7.347E-06	5.97667E-05	0.6188012	8.687E-06	7.06731E-05
Road 1	1	1700-1800	0.08453824	1.19E-06	9.6809E-06	0.0763579	1.075E-06	8.74412E-06	0.4768839	6.713E-06	5.46104E-05	0.4266587	6.006E-06	4.88588E-05	0.5030166	7.081E-06	5.7603E-05
Road 1	1	1800-1900	0.075446094	1.088E-06	8.84707E-06	0.0683216	9.848E-07	8.01163E-06	0.4532148	6.533E-06	5.31455E-05	0.4060997	5.854E-06	4.76206E-05	0.4744213	6.839E-06	5.56323E-05
Road 1	1	1900-2000	0.090214505	9.922E-07	8.07189E-06	0.0810864	8.918E-07	7.25516E-06	0.5213721	5.734E-06	4.66495E-05	0.4635924	5.099E-06	4.14797E-05	0.5446788	5.991E-06	4.87348E-05
Road 1	1	2000-2100	0.081691149	7.605E-07	6.18668E-06	0.073773	6.868E-07	5.58702E-06	0.4848937	4.514E-06	3.67223E-05	0.4338566	4.039E-06	3.28571E-05	0.5076295	4.726E-06	3.84441E-05
Road 1	1	2100-2200	0.08629936	7.337E-07	5.96907E-06	0.077592	6.597E-07	5.36681E-06	0.5154466	4.382E-06	3.56519E-05	0.4586678	3.9E-06	3.17247E-05	0.5362598	4.559E-06	3.70915E-05
Road 1	1	2200-2300	0.084032807	6.798E-07	5.53003E-06	0.0755167	6.109E-07	4.9696E-06	0.5005805	4.049E-06	3.29422E-05	0.4446658	3.597E-06	2.92626E-05	0.5201824	4.208E-06	3.42322E-05
Road 1	1	2300-0000	0.073684468	5.324E-07	4.3315E-06	0.0666455	4.816E-07	3.91772E-06	0.457873	3.309E-06	2.69158E-05	0.4081313	2.949E-06	2.39917E-05	0.4747769	3.431E-06	2.79095E-05
Road 2	2	0000-0100	0.186496471	2.202E-07	1.42183E-06	0.1696104	2.002E-07	1.29309E-06	0.7967794	9.406E-07	6.07458E-06	0.7207471	8.509E-07	5.49491E-06	0.8903575	1.051E-06	6.78801E-06
Road 2	2	0100-0200	0.132735152	1.014E-07	6.54798E-07	0.1203609	9.194E-08	5.93755E-07	0.6627006	5.062E-07	3.26918E-06	0.5970342	4.561E-07	2.94524E-06	0.7173952	5.48E-07	3.539E-06
Road 2	2	0200-0300	0.132632609	7.061E-08	4.56022E-07	0.1200978	6.394E-08	4.12925E-07	0.7305678	3.89E-07	2.51186E-06	0.6552617	3.489E-07	2.25294E-06	0.7753596	4.128E-07	2.66587E-06
Road 2	2	0300-0400	0.117058	4.065E-08	2.62482E-07	0.1055327	3.664E-08	2.36639E-07	0.432482	1.502E-07	9.69766E-07	0.3845693	1.335E-07	8.6233E-07	0.490102	1.702E-07	1.09897E-06
Road 2	2	0400-0500	0.157561481	9.848E-08	6.35948E-07	0.1438474	8.99E-08	5.80595E-07	0.7679811	4.8E-07	3.09972E-06	0.6972096	4.358E-07	2.81407E-06	0.841057	5.257E-07	3.39467E-06
Road 2	2	0500-0600	0.125562105	1.657E-07	1.0699E-06	0.1145168	1.511E-07	9.7578E-07	0.5622037	7.418E-07	4.79045E-06	0.5074856	6.696E-07	4.32421E-06	0.6220025	8.207E-07	5.29999E-06
Road 2	2	0600-0700	0.178694466	4.261E-07	2.75141E-06	0.1628251	3.882E-07	2.50707E-06	0.731625	1.744E-06	1.12651E-05	0.6618997	1.578E-06	1.01915E-05	0.8247249	1.966E-06	1.26985E-05
Road 2	2	0700-0800	0.142382848	5.208E-07	3.36297E-06	0.1297051	4.744E-07	3.06353E-06	0.6093354	2.229E-06	1.4392E-05	0.5484822	2.006E-06	1.29547E-05	0.6781873	2.48E-06	1.60182E-05
Road 2	2	0800-0900	0.160599333	1.115E-06	7.20233E-06	0.1464329	1.017E-06	6.56701E-06	0.6869011	4.77E-06	3.08051E-05	0.6208656	4.312E-06	2.78437E-05	0.7672986	5.328E-06	3.44107E-05
Road 2	2	0900-1000	0.18191565	1.036E-06	6.6898E-06	0.1666283	9.489E-07	6.12762E-06	0.7916101	4.508E-06	2.91108E-05	0.720868	4.105E-06	2.65093E-05	0.8874963	5.054E-06	3.26369E-05
Road 2	2	1000-1100	0.202295163	8.616E-07	5.56431E-06	0.1846577	7.865E-07	5.07917E-06	0.8725405	3.716E-06	2.4E-05	0.7926469	3.376E-06	2.18025E-05	0.9773046	4.163E-06	2.68816E-05
Road 2	2	1100-1200	0.245050276	1.027E-06	6.63043E-06	0.2238144	9.377E-07	6.05584E-06	1.0077527	4.222E-06	2.72672E-05	0.917891	3.846E-06	2.48358E-05	1.1417054	4.784E-06	3.08916E-05
Road 2	2	1200-1300	0.186985532	8.137E-07	5.25501E-06	0.1691764	7.362E-07	4.75451E-06	0.8284986	3.606E-06	2.3284E-05	0.7450904	3.243E-06	2.09399E-05	0.9142668	3.979E-06	2.56944E-05
Road 2	2	1300-1400	0.207430864	1.056E-06	6.82188E-06	0.1878775	9.568E-07	6.17882E-06	0.8617694	4.389E-06	2.83414E-05	0.7763503	3.954E-06	2.55322E-05	0.9642279	4.91E-06	3.1711E-05
Road 2	2	1400-1500	0.180745215	6.82E-07	4.40415E-06	0.1635853	6.172E-07	3.98602E-06	0.785008	2.962E-06	1.9128E-05	0.7077339	2.67E-06	1.72451E-05	0.8713192	3.288E-06	2.12311E-05
Road 2	2	1500-1600	0.222025419	9.2E-07	5.94105E-06	0.2010386	8.33E-07	5.37948E-06	0.8949129	3.708E-06	2.39465E-05	0.8077639	3.347E-06	2.16145E-05	1.0088025	4.18E-06	2.6994E-05
Road 2	2	1600-1700	0.190473973	9.656E-07	6.23573E-06	0.1729754	8.769E-07	5.66287E-06	0.8102122	4.107E-06	2.65247E-05	0.7317299	3.709E-06	2.39554E-05	0.9047053	4.586E-06	2.96182E-05
Road 2	2	1700-1800	0.144703641	7.269E-07	4.69404E-06	0.1307921	6.57E-07	4.24276E-06	0.580189	2.914E-06	1.88208E-05	0.5210459	2.617E-06	1.69022E-05	0.6518379	3.274E-06	2.1145E-05
Road 2	2	1800-1900	0.159171734	9.138E-07	5.901E-06	0.1443531	8.287E-07	5.35162E-06	0.7396406	4.246E-06	2.74208E-05	0.6665036	3.826E-06	2.47094E-05	0.8108567	4.655E-06	3.0061E-05
Road 2	2	1900-2000	0.136138554	5.231E-07	3.37829E-06	0.1224167	4.704E-07	3.03778E-06	0.6322315	2.429E-06	1.56889E-05	0.5628406	2.163E-06	1.39669E-05	0.6852573	2.633E-06	1.70047E-05
Road 2	2	2000-2100	0.134048219	4.53E-07	2.92565E-06	0.1210482	4.091E-07	2.64192E-06	0.5709146	1.929E-06	1.24604E-05	0.5105514	1.725E-06	1.11429E-05	0.6315996	2.135E-06	1.37849E-05
Road 2	2	2100-2200	0.103788224	3.652E-07	2.3583E-06	0.0932868	3.282E-07	2.11969E-06	0.4788232	1.685E-06	1.08799E-05	0.4235805	1.49E-06	9.6247E-06	0.5168673	1.819E-06	1.17444E-05
Road 2	2	2200-2300	0.14872688	4.303E-07	2.77912E-06	0.1337511	3.87E-07	2.49928E-06	0.6422751	1.858E-06	1.20016E-05	0.5720031	1.655E-06	1.06885E-05	0.7057542	2.042E-06	1.31878E-05
Road 2	2	2300-0000	0.134906727	3.435E-07	2.21837E-06	0.1220974	3.109E-07	2.00774E-06	0.6164949	1.57E-06	1.01375E-05	0.5516685	1.405E-06	9.07149E-06	0.6737659	1.716E-06	1.10792E-05
Road 3	3	0000-0100	0.11623607	4.269E-07	1.65942E-05	0.1051924	3.864E-07	1.50175E-05	0.642787	2.361E-06	9.17659E-05	0.5772533	2.12E-06	8.24101E-05	0.6824457	2.507E-06	9.74277E-05
Road 3	3	0100-0200	0.087447021	1.978E-07	7.68675E-06	0.0791241	1.789E-07	6.95515E-06	0.5114396	1.157E-06	4.49565E-05	0.4592571	1.039E-06	4.03695E-05	0.5383812	1.218E-06	4.73247E-05
Road 3	3	0200-0300	0.084979394	1.349E-07	5.24478E-06	0.0766608	1.217E-07	4.73137E-06	0.53527	8.5E-07	3.3036E-05	0.4763409	7.564E-07	2.93989E-05	0.5530017	8.781E-07	3.41303E-05
Road 3	3	0300-0400	0.073176957	8.099E-08	3.14776E-06	0.0659257	7.296E-08	2.83584E-06	0.4037472	4.468E-07	1.73675E-05	0.3579633	3.962E-07	1.53981E-05	0.423889	4.691E-07	1.82339E-05
Road 3	3	0400-0500	0.097248108	1.731E-07	6.7295E-06	0.0887667	1.58E-07	6.14259E-06	0.5398771	9.612E-07	3.73591E-05	0.4886784	8.7E-07	3.38162E-05	0.577445	1.028E-06	3.99588E-05
Road 3	3	0500-0600	0.078520288	3.06E-07	1.18951E-05	0.0714405	2.784E-07	1.08225E-05	0.4396021	1.713E-06	6.65955E-05	0.3947519	1.539E-06	5.98011E-05	0.4661924	1.817E-06	7.06237E-05
Road 3	3	0600-0700	0.10740847	7.546E-07	2.93286E-05	0.0976284	6.859E-07	2.66581E-05	0.5409781	3.801E-06	0.000147718	0.4871129	3.422E-06	0.000133009	0.5847413	4.108E-06	0.000159668
Road 3	3	0700-0800	0.088268338	1.014E-06	3.94E-05	0.0803594	9.229E-07	3.58698E-05	0.4655956	5.347E-06	0.000207826	0.4181688	4.802E-06	0.000186657	0.4985283	5.725E-06	0.000222526
Road 3	3	0800-0900	0.097086431	1.54E-06	5.98596E-05	0.0882115	1.399E-06	5.43877E-05	0.4881816	7.744E-06	0.000300993	0.4387756	6.96E-06	0.000270531	0.5269871	8.36E-06	0.000324919
Road 3	3	0900-1000	0.104059958	1.592E-06	6.18886E-05	0.0952361	1.457E-06	5.66407E-05	0.5389478	8.247E-06	0.000320534	0.48951	7.49E-06	0.000291131	0.5847461	8.948E-06	0.000347772
Road 3	3	1000-1100	0.117163494	1.635E-06	6.35463E-05	0.106845	1.491E-06	5.79498E-05	0.5985587	8.353E-06	0.000324642	0.5425324	7.571E-06	0.000294255	0.6493773	9.062E-06	0.000352205
Road 3	3	1100-1200	0.115123924	1.562E-06	6.07176E-05	0.1045702	1.419E-06	5.51515E-05	0.6039629	8.195E-06	0.000318537	0.5448	7.393E-06	0.000287333	0.6493702	8.812E-06	0.000342485
Road 3	3	1200-1300	0.108761395	1.476E-06	5.73619E-05	0.0989493	1.343E-06	5.2187E-05	0.5830932	7.912E-06	0.00030753	0.5270816	7.152E-06	0.000277989	0.626031	8.495E-06	0.000330176
Road 3	3	1300-1400	0.115828651	1.707E-06	6.63606E-05	0.1042973	1.537E-06	5.9754E-05	0.5975868	8.809E-06	0.00034237	0.5345075	7.879E-06	0.00030623	0.6388048	9.416E-06	0.000365984

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (December) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 3	3	1400-1500	0.107371623	1.591E-06	6.18501E-05	0.097051	1.438E-06	5.5905E-05	0.5600871	8.301E-06	0.000322631	0.5032558	7.459E-06	0.000289894	0.6003068	8.897E-06	0.000345799
Road 3	3	1500-1600	0.119560461	1.707E-06	6.63371E-05	0.109144	1.558E-06	6.05576E-05	0.6068403	8.663E-06	0.0003367	0.5509902	7.865E-06	0.000305712	0.6601342	9.424E-06	0.00036627
Road 3	3	1600-1700	0.112579133	1.75E-06	6.80081E-05	0.1020884	1.587E-06	6.16707E-05	0.5837213	9.072E-06	0.000352621	0.5254098	8.166E-06	0.000317395	0.6274982	9.753E-06	0.000379066
Road 3	3	1700-1800	0.090149134	1.403E-06	5.45145E-05	0.0812387	1.264E-06	4.91262E-05	0.4686258	7.291E-06	0.000283385	0.4182922	6.508E-06	0.000252947	0.4995309	7.772E-06	0.000302074
Road 3	3	1800-1900	0.085428918	1.394E-06	5.41632E-05	0.0770356	1.257E-06	4.88417E-05	0.4768886	7.779E-06	0.000302355	0.4249683	6.932E-06	0.000269436	0.5020039	8.189E-06	0.000318278
Road 3	3	1900-2000	0.091421368	1.104E-06	4.29162E-05	0.0821465	9.921E-07	3.85623E-05	0.5063463	6.116E-06	0.000237696	0.4502691	5.438E-06	0.000211371	0.5324157	6.43E-06	0.000249934
Road 3	3	2000-2100	0.084836755	8.763E-07	3.40603E-05	0.0767277	7.926E-07	3.08047E-05	0.4658829	4.812E-06	0.000187043	0.4175482	4.313E-06	0.000167637	0.4942759	5.106E-06	0.000198442
Road 3	3	2100-2200	0.083927902	8.212E-07	3.19165E-05	0.0754576	7.383E-07	2.86953E-05	0.477114	4.668E-06	0.000181439	0.4241365	4.15E-06	0.000161293	0.4995941	4.888E-06	0.000189988
Road 3	3	2200-2300	0.090037716	8.03E-07	3.12089E-05	0.081495	7.268E-07	2.82478E-05	0.4949027	4.414E-06	0.000171543	0.4430847	3.951E-06	0.000153582	0.5245797	4.678E-06	0.00018183
Road 3	3	2300-0000	0.079406165	6.343E-07	2.46526E-05	0.0719528	5.747E-07	2.23386E-05	0.455332	3.637E-06	0.000141363	0.4068784	3.25E-06	0.00012632	0.4788312	3.825E-06	0.000148659
Road 4	4	0000-0100	0.296948286	2.406E-07	2.57606E-06	0.2688386	2.178E-07	2.33221E-06	1.5142251	1.227E-06	1.31361E-05	1.3697894	1.11E-06	1.18831E-05	1.638628	1.328E-06	1.42153E-05
Road 4	4	0100-0200	0.2809685	1.301E-07	1.39282E-06	0.2543715	1.178E-07	1.26097E-06	1.4342635	6.64E-07	7.10995E-06	1.2983765	6.011E-07	6.43633E-06	1.552748	7.189E-07	7.6973E-06
Road 4	4	0200-0300	0.303998462	9.148E-08	9.7954E-07	0.2749869	8.275E-08	8.8606E-07	1.50041	4.515E-07	4.8346E-06	1.3571438	4.084E-07	4.37297E-06	1.6321308	4.912E-07	5.25903E-06
Road 4	4	0300-0400	0.276621429	4.482E-08	4.79945E-07	0.2499329	4.05E-08	4.3364E-07	1.4684329	2.379E-07	2.54777E-06	1.32643	2.149E-07	2.30139E-06	1.5763629	2.554E-07	2.73503E-06
Road 4	4	0400-0500	0.283328571	9.182E-08	9.83164E-07	0.2587807	8.386E-08	8.97982E-07	1.3991986	4.534E-07	4.85529E-06	1.2777457	4.141E-07	4.43384E-06	1.5365264	4.979E-07	5.33182E-06
Road 4	4	0500-0600	0.261511667	1.453E-07	1.55564E-06	0.2383138	1.324E-07	1.41765E-06	1.2409821	6.894E-07	7.38217E-06	1.1294933	6.275E-07	6.71897E-06	1.3678071	7.599E-07	8.13661E-06
Road 4	4	0600-0700	0.290123077	3.492E-07	3.73932E-06	0.2639325	3.177E-07	3.40176E-06	1.3865873	1.669E-06	1.78714E-05	1.2602719	1.517E-06	1.62433E-05	1.5242044	1.835E-06	1.96451E-05
Road 4	4	0700-0800	0.290810543	6.193E-07	6.6314E-06	0.2652504	5.649E-07	6.04855E-06	1.4499241	3.088E-06	3.30629E-05	1.3205493	2.812E-06	3.01127E-05	1.5857998	3.377E-06	3.61613E-05
Road 4	4	0800-0900	0.296133529	1.049E-06	1.12302E-05	0.2693334	9.539E-07	1.02138E-05	1.478698	5.237E-06	5.60762E-05	1.3437395	4.759E-06	5.09582E-05	1.6130729	5.713E-06	6.1172E-05
Road 4	4	0900-1000	0.301990676	1.035E-06	1.1078E-05	0.2762422	9.464E-07	1.01335E-05	1.4245737	4.88E-06	5.22582E-05	1.3018445	4.46E-06	4.7756E-05	1.5780866	5.406E-06	5.78895E-05
Road 4	4	1000-1100	0.336408112	1.114E-06	1.19237E-05	0.3067934	1.016E-06	1.0874E-05	1.5891266	5.26E-06	5.63251E-05	1.4486525	4.795E-06	5.13461E-05	1.7554459	5.811E-06	6.22201E-05
Road 4	4	1100-1200	0.313088	1.123E-06	1.20283E-05	0.2844608	1.021E-06	1.09285E-05	1.469451	5.272E-06	5.64539E-05	1.3343239	4.788E-06	5.12626E-05	1.6187847	5.808E-06	6.21911E-05
Road 4	4	1200-1300	0.320370204	1.09E-06	1.16729E-05	0.2915312	9.92E-07	1.06221E-05	1.5730463	5.353E-06	5.73147E-05	1.4307135	4.868E-06	5.21288E-05	1.7222446	5.86E-06	6.27509E-05
Road 4	4	1300-1400	0.329678926	1.137E-06	1.21754E-05	0.296845	1.024E-06	1.09629E-05	1.5807821	5.452E-06	5.83802E-05	1.4227227	4.907E-06	5.25429E-05	1.7195677	5.931E-06	6.35058E-05
Road 4	4	1400-1500	0.300836087	9.61E-07	1.029E-05	0.2718793	8.685E-07	9.29957E-06	1.4919291	4.766E-06	5.10311E-05	1.3473096	4.304E-06	4.60844E-05	1.6191889	5.172E-06	5.5384E-05
Road 4	4	1500-1600	0.335905806	9.642E-07	1.0324E-05	0.3065407	8.799E-07	9.42144E-06	1.6084124	4.617E-06	4.94341E-05	1.4674046	4.212E-06	4.51003E-05	1.7739453	5.092E-06	5.45217E-05
Road 4	4	1600-1700	0.315177016	9.047E-07	9.68688E-06	0.2858598	8.205E-07	8.78582E-06	1.526346	4.381E-06	4.69118E-05	1.3838407	3.972E-06	4.2532E-05	1.6697006	4.793E-06	5.13178E-05
Road 4	4	1700-1800	0.302311667	8.817E-07	9.44133E-06	0.27269	7.953E-07	8.51623E-06	1.4889749	4.343E-06	4.65013E-05	1.3420877	3.914E-06	4.1914E-05	1.6147777	4.71E-06	5.04302E-05
Road 4	4	1800-1900	0.334455472	8.207E-07	8.78722E-06	0.3019883	7.41E-07	7.93421E-06	1.6692306	4.096E-06	4.38561E-05	1.506803	3.697E-06	3.95886E-05	1.8087913	4.438E-06	4.75228E-05
Road 4	4	1900-2000	0.302651892	5.184E-07	5.55115E-06	0.2724222	4.666E-07	4.99668E-06	1.504087	2.576E-06	2.75875E-05	1.3528501	2.317E-06	2.48136E-05	1.6252723	2.784E-06	2.98102E-05
Road 4	4	2000-2100	0.264648776	3.002E-07	3.2142E-06	0.2396227	2.718E-07	2.91026E-06	1.3232059	1.501E-06	1.60706E-05	1.1966539	1.357E-06	1.45336E-05	1.4362765	1.629E-06	1.74438E-05
Road 4	4	2100-2200	0.221405405	1.896E-07	2.03047E-06	0.1994957	1.709E-07	1.82954E-06	1.1280592	9.662E-07	1.03453E-05	1.0141095	8.686E-07	9.30024E-06	1.2136051	1.039E-06	1.11298E-05
Road 4	4	2200-2300	0.296537143	4.325E-07	4.63049E-06	0.2688578	3.921E-07	4.19827E-06	1.4554121	2.122E-06	2.27266E-05	1.31852	1.923E-06	2.0589E-05	1.5873778	2.315E-06	2.47873E-05
Road 4	4	2300-0000	0.274833958	3.054E-07	3.26978E-06	0.2494133	2.771E-07	2.96735E-06	1.38559	1.54E-06	1.64848E-05	1.2560752	1.396E-06	1.49439E-05	1.5054885	1.673E-06	1.79113E-05
Road 5	5	0000-0100	0.099220829	3.594E-07	4.86043E-06	0.0897855	3.252E-07	4.39824E-06	0.552526	2.001E-06	2.7066E-05	0.4948256	1.792E-06	2.42395E-05	0.5846111	2.118E-06	2.86378E-05
Road 5	5	0100-0200	0.067351901	1.53E-07	2.06847E-06	0.0609124	1.383E-07	1.87071E-06	0.410338	9.319E-07	1.26021E-05	0.3671197	8.337E-07	1.12748E-05	0.4280321	9.721E-07	1.31455E-05
Road 5	5	0200-0300	0.063525698	1.025E-07	1.38664E-06	0.0572235	9.237E-08	1.24907E-06	0.4382392	7.074E-07	9.56587E-06	0.3873941	6.253E-07	8.45603E-06	0.4446176	7.177E-07	9.7051E-06
Road 5	5	0300-0400	0.058429839	6.799E-08	9.19478E-07	0.0525811	6.119E-08	8.2744E-07	0.3193745	3.716E-07	5.02582E-06	0.2810221	3.27E-07	4.42229E-06	0.3336032	3.882E-07	5.24973E-06
Road 5	5	0400-0500	0.080761237	1.47E-07	1.98833E-06	0.0736994	1.342E-07	1.81447E-06	0.4593499	8.363E-07	1.13092E-05	0.4145184	7.547E-07	1.02054E-05	0.4882177	8.888E-07	1.20199E-05
Road 5	5	0500-0600	0.064862615	2.654E-07	3.58894E-06	0.0589825	2.413E-07	3.26358E-06	0.3769922	1.542E-06	2.08595E-05	0.3371491	1.379E-06	1.86549E-05	0.3961316	1.621E-06	2.19185E-05
Road 5	5	0600-0700	0.094492156	6.828E-07	9.23361E-06	0.0858686	6.205E-07	8.39092E-06	0.4753508	3.435E-06	4.64504E-05	0.4268437	3.084E-06	4.17104E-05	0.5127123	3.705E-06	5.01013E-05
Road 5	5	0700-0800	0.072667788	8.511E-07	1.15091E-05	0.0661251	7.744E-07	1.04729E-05	0.3829758	4.485E-06	6.06556E-05	0.3421269	4.007E-06	5.4186E-05	0.408252	4.781E-06	6.46588E-05
Road 5	5	0800-0900	0.078152464	1.226E-06	1.6583E-05	0.0709619	1.113E-06	1.50573E-05	0.3854774	6.048E-06	8.17937E-05	0.3447087	5.409E-06	7.31431E-05	0.4156707	6.522E-06	8.82004E-05
Road 5	5	0900-1000	0.084824121	1.286E-06	1.73958E-05	0.0776386	1.177E-06	1.59222E-05	0.4500759	6.825E-06	9.23022E-05	0.4078597	6.185E-06	8.36444E-05	0.4854983	7.363E-06	9.95667E-05
Road 5	5	1000-1100	0.096218003	1.311E-06	1.773E-05	0.0877134	1.195E-06	1.61628E-05	0.5003525	6.818E-06	9.21993E-05	0.4524853	6.166E-06	8.33789E-05	0.5401987	7.361E-06	9.95417E-05
Road 5	5	1100-1200	0.09439129	1.222E-06	1.65309E-05	0.0857205	1.11E-06	1.50123E-05	0.5108672	6.616E-06	8.94689E-05	0.4594844	5.951E-06	8.04701E-05	0.5452049	7.061E-06	9.54825E-05
Road 5	5	1200-1300	0.088433333	1.16E-06	1.56895E-05	0.0804226	1.055E-06	1.42682E-05	0.4819361	6.323E-06	8.5503E-05	0.4344495	5.7E-06	7.70782E-05	0.5148721	6.755E-06	9.13464E-05
Road 5	5	1300-1400	0.095576362	1.376E-06	1.86063E-05	0.0860491	1.239E-06	1.67516E-05	0.5010535	7.213E-06	9.75426E-05	0.4470916	6.436E-06	8.70376E-05	0.5331407	7.675E-06	0.000103789
Road 5	5	1400-1500	0.09103285	1.343E-06	1.81608E-05	0.0822824	1.214E-06	1.64151E-05	0.4764671	7.029E-06	9.5054E-05	0.4273853	6.305E-06	8.52623E-05	0.5096677	7.519E-06	0.000101677
Road 5	5	1500-1600	0.10198834	1.464E-06	1.98028E-05	0.0930681	1.336E-06	1.80708E-05	0.5214984	7.488E-06	0.000101258	0.4727812	6.788E-06	9.17987E-05	0.5658493	8.125E-06	0.000109869
Road 5	5	1600-1700	0.096152138	1.52E-06	2.05488E-05	0.0871713	1.378E-06	1.86295E-05	0.504231	7.969E-06	0.00010776	0.4528704	7.157E-06	9.67834E-05	0.5400418	8.534E-06	0.000115413
Road 5	5	1700-1800	0.071908329	1.139E-06	1.54041E-05	0.0647591	1.026E-06	1.38726E-05	0.3765794	5.965E-06	8.06703E-05	0.3348082	5.304E-06	7.17222E-05	0.3995673	6.329E-06	8.55948E-05
Road 5	5	1800-1900	0.067716396	1.157E-06	1.56405E-05	0.0610291	1.042E-06	1.40959E-05	0.3877358	6.622E-06	8.95555E-05	0.343942	5.874E-06	7.94404E-05	0.404971	6.917E-06	9.35363E-05
Road 5	5	1900-2000	0.078345643	9.955E-07	1.34623E-05	0.0703768	8.942E-07	1.2093E-05	0.4423244	5.62E-06	7.60054E-05	0.3921798	4.983E-06	6.7389E-05	0.4625565	5.877E-06	7.94819E-05
Road 5	5	2000-2100	0.075157121	8.379E-07	1.13311E-05	0.067983	7.579E-07	1.02495E-05	0.4166714	4.645E-06	6.28196E-05	0.3727554	4.156E-06	5.61986E-05	0.4407384	4.914E-06	6.6448E-05
Road 5	5	2100-2200	0.078741786	8.439E-07	1.14119E-05	0.0707651	7.584E-07	1.02558E-05	0.4511279	4.835E-06	6.53809E-05	0.400474	4.292E-06	5.80397E-05	0.4712391	5.05E-06	6.82955E-05
Road 5	5	2200-2300	0.075968435	7.015E-07	9.48666E-06	0.0687232	6.346E-07	8.5819E-06	0.4266908	3.94E-06	5.32836E-05	0.3806584	3.515E-06	4.75352E-05	0.4493816	4.15E-06	5.61171E-05
Road 5	5	2300-0000	0.067018996	5.635E-07	7.62063E-06	0.0606904	5.103E-07	6.90101E-06	0.3933088	3.307E-06	4.47225E-05	0.3500436	2.943E-06	3.98029E-05	0.410734	3.454E-06	4.67039E-05
Road 6	6	0000-0100	0.060473041	1.68E-07	6.00463E-06	0.054558	1.515E-07	5.4173E-06	0.388518	1.079E-06	3.85776E-05	0.3439866	9.555E-07	3.41559E-05	0.3985445	1.107E-06	3.95732E-05
Road 6	6	0100-0200	0.078416903	1.663E-07	5.94498E-06	0.0708953	1.504E-07	5.37475E-06	0.44421	9.421E-07	3.36767E-05	0.3959233	8.397E-07	3.00159E-05	0.4668186	9.901E-07	3.53907E-05
Road 6	6	0200-0300	0.072103038	1.069E-07	3.82158E-06	0.0650949	9.652E-08	3.45014E-06	0.4110767	6.095E-07	2.17878E-05	0.3651749	5.415E-07	1.93549E-05	0.4302699	6.38E-07	2.2805E-05
Road 6	6	0300-0400	0.07295	8.489E-08	3.03445E-06	0.0658884	7.667E-08	2.74071E-06	0.4669321	5.434E-07	1.94226E-05	0.4155805	4.836E-07	1.72866E-05	0.4814689	5.603E-07	2.00273E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (December) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 6	6	0400-0500	0.079292222	1.339E-07	4.7878E-06	0.0723412	1.222E-07	4.36808E-06	0.4659714	7.871E-07	2.81361E-05	0.4192988	7.083E-07	2.5318E-05	0.49164	8.305E-07	2.9686E-05
Road 6	6	0500-0600	0.071483043	2.16E-07	7.72132E-06	0.065028	1.965E-07	7.02407E-06	0.4334214	1.31E-06	4.68165E-05	0.387886	1.172E-06	4.18979E-05	0.452914	1.369E-06	4.8922E-05
Road 6	6	0600-0700	0.076414983	4.116E-07	1.47137E-05	0.0693662	3.737E-07	1.33565E-05	0.477308	2.571E-06	9.19059E-05	0.4253887	2.291E-06	8.19088E-05	0.4947549	2.665E-06	9.52653E-05
Road 6	6	0700-0800	0.071934605	6.157E-07	2.20072E-05	0.065462	5.603E-07	2.0027E-05	0.4107731	3.516E-06	0.000125669	0.3663826	3.136E-06	0.000112089	0.4318446	3.696E-06	0.000132116
Road 6	6	0800-0900	0.061223287	7.515E-07	2.68632E-05	0.055445	6.806E-07	2.43278E-05	0.3662617	4.496E-06	0.000160706	0.3228868	3.963E-06	0.000141674	0.3783318	4.644E-06	0.000166002
Road 6	6	0900-1000	0.063206704	7.45E-07	2.66309E-05	0.0576555	6.796E-07	2.4292E-05	0.3581107	4.221E-06	0.000150883	0.3196608	3.768E-06	0.000134683	0.3773164	4.447E-06	0.000158975
Road 6	6	1000-1100	0.084667162	8.454E-07	3.02196E-05	0.0771001	7.698E-07	2.75188E-05	0.4647728	4.641E-06	0.000165888	0.4174043	4.168E-06	0.000148981	0.4945045	4.938E-06	0.0001765
Road 6	6	1100-1200	0.096332273	9.546E-07	3.41247E-05	0.0875069	8.672E-07	3.09984E-05	0.5026845	4.982E-06	0.000178071	0.4517098	4.476E-06	0.000160013	0.5392168	5.344E-06	0.000191012
Road 6	6	1200-1300	0.093775233	9.082E-07	3.24639E-05	0.0853261	8.264E-07	2.95389E-05	0.4649357	4.503E-06	0.000160955	0.4196678	4.064E-06	0.000145284	0.5049938	4.891E-06	0.000174823
Road 6	6	1300-1400	0.109631573	1.06E-06	3.78796E-05	0.0986943	9.54E-07	3.41006E-05	0.5536369	5.351E-06	0.000191291	0.4940918	4.776E-06	0.000170717	0.5927861	5.73E-06	0.000204818
Road 6	6	1400-1500	0.104172236	1.111E-06	3.96975E-05	0.0941602	1.004E-06	3.58821E-05	0.5225229	5.57E-06	0.000199121	0.4683675	4.993E-06	0.000178483	0.5625277	5.997E-06	0.000214365
Road 6	6	1500-1600	0.091687928	9.551E-07	3.41403E-05	0.0836641	8.715E-07	3.11526E-05	0.4704713	4.901E-06	0.000175182	0.4253771	4.431E-06	0.000158391	0.5090412	5.303E-06	0.000189543
Road 6	6	1600-1700	0.096309701	1.027E-06	3.67013E-05	0.087324	9.309E-07	3.3277E-05	0.4727871	5.04E-06	0.000180168	0.4248612	4.529E-06	0.000161904	0.5121853	5.46E-06	0.000195181
Road 6	6	1700-1800	0.072032337	8.098E-07	2.89479E-05	0.0648793	7.294E-07	2.60733E-05	0.3652753	4.107E-06	0.000146794	0.3248503	3.652E-06	0.000130549	0.3897296	4.382E-06	0.000156622
Road 6	6	1800-1900	0.071139122	9.119E-07	3.25981E-05	0.0640934	8.216E-07	2.93695E-05	0.3728419	4.779E-06	0.000170847	0.3316839	4.252E-06	0.000151987	0.3957772	5.073E-06	0.000181357
Road 6	6	1900-2000	0.084628464	8.275E-07	2.95813E-05	0.076029	7.435E-07	2.65754E-05	0.4430951	4.333E-06	0.000154881	0.3928223	3.841E-06	0.000137308	0.4688513	4.585E-06	0.000163884
Road 6	6	2000-2100	0.067346122	5.182E-07	1.8525E-05	0.0608769	4.685E-07	1.67455E-05	0.3831728	2.949E-06	0.0001054	0.3417634	2.63E-06	9.40096E-05	0.4026403	3.098E-06	0.000110755
Road 6	6	2100-2200	0.094239185	6.297E-07	2.25084E-05	0.0847233	5.661E-07	2.02356E-05	0.4944404	3.304E-06	0.000118094	0.4396756	2.938E-06	0.000105013	0.5243989	3.504E-06	0.000125249
Road 6	6	2200-2300	0.070909576	5.017E-07	1.79353E-05	0.0640768	4.534E-07	1.62071E-05	0.4019115	2.844E-06	0.000101656	0.3555023	2.515E-06	8.99179E-05	0.4195792	2.969E-06	0.000106125
Road 6	6	2300-0000	0.047339294	3.145E-07	1.12431E-05	0.0428393	2.846E-07	1.01744E-05	0.2972102	1.975E-06	7.05878E-05	0.2635308	1.751E-06	6.25889E-05	0.3063702	2.036E-06	7.27633E-05
Road 7	7	0000-0100	0.086476874	2.31E-07	5.76691E-06	0.0782655	2.091E-07	5.21932E-06	0.5162542	1.379E-06	3.44276E-05	0.4621041	1.234E-06	3.08165E-05	0.5403696	1.444E-06	3.60358E-05
Road 7	7	0100-0200	0.104151469	2.162E-07	5.39793E-06	0.0942965	1.958E-07	4.88717E-06	0.5770187	1.198E-06	2.99055E-05	0.5179048	1.075E-06	2.68418E-05	0.6122013	1.271E-06	3.1729E-05
Road 7	7	0200-0300	0.090644255	1.237E-07	3.08812E-06	0.081969	1.119E-07	2.79257E-06	0.5164643	7.048E-07	1.75952E-05	0.4619702	6.305E-07	1.57387E-05	0.5439393	7.423E-07	1.85312E-05
Road 7	7	0300-0400	0.091555132	1.01E-07	2.52187E-06	0.0827324	9.129E-08	2.27884E-06	0.5572207	6.148E-07	1.53485E-05	0.4983817	5.499E-07	1.37278E-05	0.5811141	6.412E-07	1.60067E-05
Road 7	7	0400-0500	0.101603243	1.637E-07	4.08749E-06	0.0927441	1.495E-07	3.73108E-06	0.5712374	9.206E-07	2.29808E-05	0.5166376	8.326E-07	2.07843E-05	0.6093817	9.821E-07	2.45153E-05
Road 7	7	0500-0600	0.092539235	2.633E-07	6.57367E-06	0.0843141	2.399E-07	5.98938E-06	0.5281821	1.503E-06	3.75202E-05	0.4758206	1.354E-06	3.38006E-05	0.5601347	1.594E-06	3.979E-05
Road 7	7	0600-0700	0.097088943	4.934E-07	1.23158E-05	0.0882773	4.486E-07	1.11981E-05	0.5661	2.877E-06	7.18103E-05	0.5080312	2.582E-06	6.44442E-05	0.5963085	3.03E-06	7.56423E-05
Road 7	7	0700-0800	0.092947571	7.557E-07	1.88648E-05	0.0846639	6.884E-07	1.71835E-05	0.5106753	4.152E-06	0.000103647	0.4588105	3.73E-06	9.31209E-05	0.5434744	4.419E-06	0.000110304
Road 7	7	0800-0900	0.091773103	1.127E-06	2.81392E-05	0.0834033	1.024E-06	2.55729E-05	0.5077136	6.236E-06	0.000155674	0.454548	5.583E-06	0.000139372	0.5379513	6.608E-06	0.000164945
Road 7	7	0900-1000	0.093017795	1.061E-06	2.64981E-05	0.0850015	9.7E-07	2.42145E-05	0.4926325	5.622E-06	0.000140337	0.4444316	5.072E-06	0.000126606	0.5294331	6.042E-06	0.00015082
Road 7	7	1000-1100	0.110032483	1.101E-06	2.74768E-05	0.1002872	1.003E-06	2.50432E-05	0.5839382	5.841E-06	0.000145818	0.5275754	5.277E-06	0.000131744	0.6278626	6.281E-06	0.000156787
Road 7	7	1100-1200	0.12050145	1.2E-06	2.996E-05	0.1096597	1.092E-06	2.72644E-05	0.6258238	6.233E-06	0.000155597	0.5658669	5.636E-06	0.00014069	0.6755266	6.728E-06	0.000167955
Road 7	7	1200-1300	0.11907654	1.184E-06	2.95626E-05	0.1081444	1.076E-06	2.68485E-05	0.603926	6.006E-06	0.000149934	0.5457476	5.428E-06	0.00013549	0.653892	6.503E-06	0.000162339
Road 7	7	1300-1400	0.127901319	1.253E-06	3.12899E-05	0.1154136	1.131E-06	2.82349E-05	0.6472405	6.343E-06	0.000158342	0.5806465	5.69E-06	0.00014205	0.6960601	6.821E-06	0.000170285
Road 7	7	1400-1500	0.119433665	1.228E-06	3.06468E-05	0.1080009	1.11E-06	2.77132E-05	0.6113337	6.284E-06	0.000156869	0.5496053	5.649E-06	0.000141029	0.6576062	6.76E-06	0.000168743
Road 7	7	1500-1600	0.110232807	1.107E-06	2.76467E-05	0.1003018	1.008E-06	2.51559E-05	0.5693314	5.72E-06	0.00014279	0.5147183	5.171E-06	0.000129093	0.6150201	6.179E-06	0.000154249
Road 7	7	1600-1700	0.115364518	1.199E-06	2.99372E-05	0.104649	1.088E-06	2.71565E-05	0.5743386	5.97E-06	0.000149041	0.5178311	5.383E-06	0.000134378	0.6224801	6.471E-06	0.000161534
Road 7	7	1700-1800	0.089556877	9.869E-07	2.46358E-05	0.0807788	8.902E-07	2.22211E-05	0.4634929	5.108E-06	0.0001275	0.4144328	4.567E-06	0.000114004	0.4952116	5.457E-06	0.000136225
Road 7	7	1800-1900	0.08300627	9.496E-07	2.37062E-05	0.0749794	8.578E-07	2.14138E-05	0.439607	5.029E-06	0.00012555	0.3933991	4.501E-06	0.000112353	0.4683785	5.359E-06	0.000133767
Road 7	7	1900-2000	0.096937571	8.402E-07	2.09745E-05	0.0871309	7.552E-07	1.88526E-05	0.5152441	4.466E-06	0.000111484	0.4584853	3.974E-06	9.92031E-05	0.5456162	4.729E-06	0.000118056
Road 7	7	2000-2100	0.089303773	6.327E-07	1.57948E-05	0.0807148	5.719E-07	1.42757E-05	0.4864495	3.447E-06	8.60366E-05	0.4356578	3.087E-06	7.70533E-05	0.5163726	3.659E-06	9.1329E-05
Road 7	7	2100-2200	0.103225341	6.145E-07	1.5339E-05	0.0928368	5.526E-07	1.37952E-05	0.5483544	3.264E-06	8.14837E-05	0.488663	2.909E-06	7.26138E-05	0.5814998	3.461E-06	8.6409E-05
Road 7	7	2200-2300	0.08700524	5.583E-07	1.39378E-05	0.0784973	5.037E-07	1.25748E-05	0.4827117	3.098E-06	7.73278E-05	0.4287692	2.752E-06	6.86865E-05	0.5072665	3.255E-06	8.12614E-05
Road 7	7	2300-0000	0.059974967	3.544E-07	8.84688E-06	0.0543027	3.209E-07	8.01017E-06	0.3615138	2.136E-06	5.33267E-05	0.3223904	1.905E-06	4.75557E-05	0.3766931	2.226E-06	5.55658E-05
Road 8	8	0000-0100	0.261120833	1.899E-07	3.13053E-06	0.2363481	1.719E-07	2.83353E-06	1.3348425	9.708E-07	1.60032E-05	1.2076378	8.783E-07	1.44781E-05	1.4439858	1.05E-06	1.73117E-05
Road 8	8	0100-0200	0.270706333	1.641E-07	2.70454E-06	0.2451127	1.486E-07	2.44884E-06	1.3778497	8.351E-07	1.37657E-05	1.247399	7.56E-07	1.24624E-05	1.4925117	9.046E-07	1.49112E-05
Road 8	8	0200-0300	0.256211333	7.764E-08	1.27986E-06	0.231852	7.026E-08	1.15818E-06	1.37347	4.162E-07	6.86095E-06	1.2425613	3.765E-07	6.20702E-06	1.4744133	4.468E-07	7.3652E-06
Road 8	8	0300-0400	0.233966429	6.617E-08	1.09083E-06	0.2115929	5.984E-08	9.86513E-07	1.2237079	3.461E-07	5.70532E-06	1.106095	3.128E-07	5.15697E-06	1.3176879	3.727E-07	6.14348E-06
Road 8	8	0400-0500	0.26440619	1.122E-07	1.84912E-06	0.241559	1.025E-07	1.68934E-06	1.3060205	5.541E-07	9.13362E-06	1.192869	5.061E-07	8.3423E-06	1.4344281	6.085E-07	1.00316E-05
Road 8	8	0500-0600	0.251502353	1.727E-07	2.8477E-06	0.2292729	1.575E-07	2.59601E-06	1.2199162	8.379E-07	1.38128E-05	1.1114226	7.634E-07	1.25844E-05	1.3406956	9.209E-07	1.51804E-05
Road 8	8	0600-0700	0.280886774	3.518E-07	5.79958E-06	0.2556279	3.202E-07	5.27805E-06	1.3469445	1.687E-06	2.78109E-05	1.2247029	1.534E-06	2.52869E-05	1.4803308	1.854E-06	3.0565E-05
Road 8	8	0700-0800	0.280680198	5.727E-07	9.44076E-06	0.2560529	5.225E-07	8.61241E-06	1.3611256	2.777E-06	4.57819E-05	1.2404563	2.531E-06	4.17231E-05	1.4965092	3.053E-06	5.03355E-05
Road 8	8	0800-0900	0.308211	1.183E-06	1.95018E-05	0.2804914	1.077E-06	1.77479E-05	1.4995596	5.756E-06	9.48836E-05	1.3635432	5.234E-06	8.62773E-05	1.6440346	6.31E-06	0.000104025
Road 8	8	0900-1000	0.32661121	1.036E-06	1.70767E-05	0.2988491	9.479E-07	1.56252E-05	1.5109301	4.792E-06	7.89983E-05	1.3822453	4.384E-06	7.22701E-05	1.6810944	5.332E-06	8.78953E-05
Road 8	8	1000-1100	0.313487722	1.001E-06	1.6495E-05	0.2859206	9.126E-07	1.50445E-05	1.4890244	4.753E-06	7.83489E-05	1.3569988	4.331E-06	7.1402E-05	1.6429194	5.244E-06	8.64465E-05
Road 8	8	1100-1200	0.321489874	1.033E-06	1.70231E-05	0.2920762	9.382E-07	1.54656E-05	1.5483401	4.973E-06	8.19856E-05	1.406301	4.517E-06	7.44645E-05	1.6983772	5.455E-06	8.99301E-05
Road 8	8	1200-1300	0.325511716	1.111E-06	1.83201E-05	0.2962205	1.011E-06	1.66715E-05	1.5840885	5.408E-06	8.91538E-05	1.4406641	4.919E-06	8.10818E-05	1.7368846	5.93E-06	9.77533E-05
Road 8	8	1300-1400	0.298559375	9.65E-07	1.59083E-05	0.2688543	8.69E-07	1.43255E-05	1.4266053	4.611E-06	7.60147E-05	1.2840553	4.15E-06	6.84191E-05	1.5529096	5.02E-06	8.27447E-05
Road 8	8	1400-1500	0.289654388	8.134E-07	1.34081E-05	0.2618052	7.352E-07	1.2119E-05	1.4492994	4.07E-06	6.70883E-05	1.3095224	3.677E-06	6.0618E-05	1.5713276	4.412E-06	7.2737E-05
Road 8	8	1500-1600	0.297241314	8.227E-07	1.35614E-05	0.2712397	7.507E-07	1.23751E-05	1.447789	4.007E-06	6.60541E-05	1.3201051	3.654E-06	6.02286E-05	1.5913448	4.404E-06	7.26037E-05
Road 8	8	1600-1700	0.299752877	8.841E-07	1.45744E-05	0.2718536	8.018E-07	1.32179E-05	1.4418473	4.253E-06	7.01045E-05	1.3070105	3.855E-06	6.35486E-05	1.5788642	4.657E-06	7.67665E-05
Road 8	8	1700-1800	0.245301795	7.731E-07	1.27438E-05	0.2211951	6.971E-07	1.14914E-05	1.2334254	3.887E-06	6.40784E-05	1.1104609	3.5E-06	5.76902E-05	1.331656	4.197E-06	6.91816E-05

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (December) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 8	8	1800-1900	0.24652729	5.329E-07	8.78461E-06	0.2226759	4.813E-07	7.93471E-06	1.2678054	2.741E-06	4.51763E-05	1.1437651	2.472E-06	4.07563E-05	1.366441	2.954E-06	4.8691E-05
Road 8	8	1900-2000	0.245942338	3.826E-07	6.30664E-06	0.2213931	3.444E-07	5.67713E-06	1.2958126	2.016E-06	3.32282E-05	1.1659401	1.814E-06	2.98979E-05	1.3873332	2.158E-06	3.5575E-05
Road 8	8	2000-2100	0.27014	4.148E-07	6.83717E-06	0.2445891	3.755E-07	6.19048E-06	1.293805	1.986E-06	3.27459E-05	1.1703566	1.797E-06	2.96214E-05	1.4149457	2.172E-06	3.58119E-05
Road 8	8	2100-2200	0.222953019	2.387E-07	3.93517E-06	0.2007857	2.15E-07	3.54391E-06	1.1751698	1.258E-06	2.0742E-05	1.0555874	1.13E-06	1.86313E-05	1.256373	1.345E-06	2.21752E-05
Road 8	8	2200-2300	0.268791719	3.475E-07	5.72888E-06	0.2436913	3.151E-07	5.1939E-06	1.3338947	1.725E-06	2.84299E-05	1.2078142	1.562E-06	2.57427E-05	1.4515055	1.877E-06	3.09366E-05
Road 8	8	2300-0000	0.214878846	2.257E-07	3.7211E-06	0.1950748	2.049E-07	3.37815E-06	1.1087188	1.165E-06	1.91999E-05	1.0052458	1.056E-06	1.7408E-05	1.2003206	1.261E-06	2.07862E-05
Road 9	9	0000-0100	0.221498116	5.882E-08	1.75602E-06	0.2036501	5.408E-08	1.61452E-06	1.0267543	2.727E-07	8.14002E-06	0.9357201	2.485E-07	7.41831E-06	1.1393702	3.026E-07	9.03282E-06
Road 9	9	0100-0200	0.240344291	5.015E-08	1.49712E-06	0.2212717	4.617E-08	1.37832E-06	1.0548806	2.201E-07	6.57093E-06	0.9612515	2.006E-07	5.98771E-06	1.1825232	2.468E-07	7.36602E-06
Road 9	9	0200-0300	0.09680477	9.182E-09	2.74093E-07	0.0876418	8.313E-09	2.48149E-07	0.706936	6.705E-08	2.00162E-06	0.6322471	5.997E-08	1.79014E-06	0.7198889	6.828E-08	2.03829E-06
Road 9	9	0300-0400	0.117071153	8.883E-09	2.6518E-07	0.1060267	8.045E-09	2.40163E-07	0.730558	5.543E-08	1.6548E-06	0.6594762	5.004E-08	1.49379E-06	0.765503	5.809E-08	1.73395E-06
Road 9	9	0400-0500	0.259052324	4.914E-08	1.46696E-06	0.2400881	4.554E-08	1.35957E-06	1.0946035	2.076E-07	6.19851E-06	1.0042097	1.905E-07	5.68663E-06	1.2442978	2.36E-07	7.0462E-06
Road 9	9	0500-0600	0.187010491	6.031E-08	1.8003E-06	0.1726708	5.568E-08	1.66226E-06	0.9671498	3.119E-07	9.31051E-06	0.8834069	2.849E-07	8.50434E-06	1.0560777	3.406E-07	1.01666E-05
Road 9	9	0600-0700	0.218037508	1.324E-07	3.95104E-06	0.2018422	1.225E-07	3.65757E-06	1.1778263	7.15E-07	2.13433E-05	1.0734581	6.516E-07	1.94521E-05	1.2753002	7.741E-07	2.31096E-05
Road 9	9	0700-0800	0.186725798	1.7E-07	5.07547E-06	0.1737146	1.582E-07	4.72181E-06	1.1085782	1.009E-06	3.01327E-05	1.0122128	9.217E-07	2.75134E-05	1.1859274	1.08E-06	3.22352E-05
Road 9	9	0800-0900	0.285666919	6.232E-07	1.86032E-05	0.264088	5.761E-07	1.7198E-05	1.4140514	3.085E-06	9.2086E-05	1.2907628	2.816E-06	8.40572E-05	1.5548508	3.392E-06	0.000101255
Road 9	9	0900-1000	0.290243101	4.735E-07	1.41348E-05	0.2707506	4.417E-07	1.31856E-05	1.3073689	2.133E-06	6.36689E-05	1.2031921	1.963E-06	5.85955E-05	1.4739428	2.405E-06	7.1781E-05
Road 9	9	1000-1100	0.306287553	4.125E-07	1.23145E-05	0.2827073	3.808E-07	1.13665E-05	1.3392809	1.804E-06	5.38469E-05	1.2254349	1.65E-06	4.92696E-05	1.5081423	2.031E-06	6.06361E-05
Road 9	9	1100-1200	0.215472718	3.025E-07	9.02931E-06	0.1967132	2.761E-07	8.2432E-06	1.1643556	1.634E-06	4.87919E-05	1.0568316	1.484E-06	4.42862E-05	1.2535448	1.76E-06	5.25294E-05
Road 9	9	1200-1300	0.315789323	4.373E-07	1.30542E-05	0.2930401	4.058E-07	1.21138E-05	1.472001	2.038E-06	6.08502E-05	1.3569415	1.879E-06	5.60938E-05	1.6499816	2.285E-06	6.82076E-05
Road 9	9	1300-1400	0.356249318	4.055E-07	1.21042E-05	0.3288083	3.742E-07	1.11718E-05	1.389087	1.581E-06	4.71967E-05	1.2705835	1.446E-06	4.31703E-05	1.5993917	1.82E-06	5.43421E-05
Road 9	9	1400-1500	0.229377307	2.959E-07	8.83263E-06	0.2128254	2.745E-07	8.19527E-06	1.1578115	1.494E-06	4.45838E-05	1.0570057	1.363E-06	4.07021E-05	1.2698312	1.638E-06	4.88974E-05
Road 9	9	1500-1600	0.192997677	2.087E-07	6.22956E-06	0.1787176	1.932E-07	5.76863E-06	1.0361231	1.12E-06	3.34439E-05	0.9484987	1.026E-06	3.06156E-05	1.1272163	1.219E-06	3.63842E-05
Road 9	9	1600-1700	0.199415761	2.988E-07	8.92108E-06	0.1857243	2.783E-07	8.30858E-06	1.1494571	1.723E-06	5.14222E-05	1.0606496	1.589E-06	4.74493E-05	1.246374	1.868E-06	5.57579E-05
Road 9	9	1700-1800	0.173825372	2.242E-07	6.69349E-06	0.1619522	2.089E-07	6.23629E-06	1.0981377	1.417E-06	4.2286E-05	1.0148881	1.309E-06	3.90803E-05	1.1768403	1.518E-06	4.53166E-05
Road 9	9	1800-1900	0.171430741	1.431E-07	4.27142E-06	0.1605701	1.34E-07	4.00081E-06	1.0649883	8.889E-07	2.65356E-05	0.992793	8.287E-07	2.47367E-05	1.1533631	9.627E-07	2.87375E-05
Road 9	9	1900-2000	0.180346731	1.471E-07	4.39144E-06	0.1671589	1.364E-07	4.07032E-06	0.9994395	8.152E-07	2.43364E-05	0.9125355	7.444E-07	2.22202E-05	1.0796943	8.807E-07	2.62906E-05
Road 9	9	2000-2100	0.195449586	1.075E-07	3.20969E-06	0.1797754	9.89E-08	2.95229E-06	0.8892472	4.892E-07	1.46033E-05	0.8136117	4.476E-07	1.33612E-05	0.9933871	5.465E-07	1.63135E-05
Road 9	9	2100-2200	0.025802754	1.322E-08	3.94512E-07	0.0235615	1.207E-08	3.60244E-07	0.368845	1.889E-07	5.63947E-06	0.3301543	1.691E-07	5.04791E-06	0.3537157	1.812E-07	5.40815E-06
Road 9	9	2200-2300	0.188833522	1.182E-07	3.52877E-06	0.1733019	1.085E-07	3.23853E-06	0.9451009	5.916E-07	1.76613E-05	0.85899	5.377E-07	1.60521E-05	1.0322919	6.462E-07	1.92907E-05
Road 9	9	2300-0000	0.151788954	8.638E-08	2.57865E-06	0.140355	7.987E-08	2.3844E-06	0.8055953	4.585E-07	1.36858E-05	0.7356179	4.186E-07	1.2497E-05	0.8759729	4.985E-07	1.48814E-05
Road 10	10	0000-0100	0.315122304	2.423E-07	5.3871E-06	0.2861851	2.2E-07	4.89241E-06	1.619063	1.245E-06	2.76783E-05	1.4667805	1.128E-06	2.5075E-05	1.7529655	1.348E-06	2.99674E-05
Road 10	10	0100-0200	0.309276135	1.797E-07	3.99475E-06	0.281222	1.634E-07	3.63239E-06	1.5756971	9.153E-07	2.03524E-05	1.4291553	8.302E-07	1.84596E-05	1.7103773	9.936E-07	2.2092E-05
Road 10	10	0200-0300	0.309245437	1.004E-07	2.23214E-06	0.2797531	9.082E-08	2.01926E-06	1.5534949	5.043E-07	1.12131E-05	1.4031524	4.555E-07	1.0128E-05	1.6829054	5.463E-07	1.21472E-05
Road 10	10	0300-0400	0.281268	5.767E-08	1.28223E-06	0.2540696	5.209E-08	1.15824E-06	1.5275611	3.132E-07	6.96376E-06	1.3758571	2.821E-07	6.27218E-06	1.6299267	3.342E-07	7.43041E-06
Road 10	10	0400-0500	0.326776633	1.284E-07	2.85524E-06	0.300053	1.179E-07	2.62174E-06	1.581567	6.215E-07	1.38191E-05	1.4467389	5.685E-07	1.2641E-05	1.7467919	6.864E-07	1.52627E-05
Road 10	10	0500-0600	0.297161648	2.082E-07	4.6285E-06	0.2726563	1.91E-07	4.24681E-06	1.4462248	1.013E-06	2.2526E-05	1.3210737	9.254E-07	2.05766E-05	1.59373	1.116E-06	2.48235E-05
Road 10	10	0600-0700	0.358276918	5.02E-07	1.11608E-05	0.3297184	4.619E-07	1.02712E-05	1.8026212	2.526E-06	5.61542E-05	1.6537913	2.317E-06	5.15179E-05	1.9835097	2.779E-06	6.17891E-05
Road 10	10	0700-0800	0.354467366	7.813E-07	1.73712E-05	0.3263296	7.192E-07	1.59923E-05	1.8001382	3.968E-06	8.82184E-05	1.6505065	3.638E-06	8.08855E-05	1.976836	4.357E-06	9.68778E-05
Road 10	10	0800-0900	0.37834786	1.597E-06	3.55019E-05	0.3451853	1.457E-06	3.23902E-05	1.8829425	7.946E-06	0.000176684	1.7115518	7.223E-06	0.000160602	2.0567371	8.68E-06	0.000192992
Road 10	10	0900-1000	0.415747096	1.392E-06	3.09563E-05	0.3838997	1.286E-06	2.8585E-05	2.017378	6.756E-06	0.000150213	1.8574127	6.22E-06	0.000138302	2.2413124	7.506E-06	0.000166887
Road 10	10	1000-1100	0.414759574	1.509E-06	3.35614E-05	0.3809185	1.386E-06	3.0823E-05	1.8871728	6.868E-06	0.000152706	1.7256284	6.28E-06	0.000139634	2.1065469	7.666E-06	0.000170457
Road 10	10	1100-1200	0.404419476	1.472E-06	3.27247E-05	0.3689211	1.343E-06	2.98522E-05	1.9064854	6.938E-06	0.000154268	1.7339501	6.31E-06	0.000140307	2.1028712	7.653E-06	0.000170159
Road 10	10	1200-1300	0.421061844	1.583E-06	3.51911E-05	0.3861642	1.452E-06	3.22744E-05	2.0107823	7.558E-06	0.000168055	1.8410449	6.92E-06	0.000153869	2.2272091	8.372E-06	0.000186143
Road 10	10	1300-1400	0.410700508	1.347E-06	2.99564E-05	0.3734935	1.225E-06	2.72426E-05	1.9173564	6.29E-06	0.000139852	1.7383412	5.703E-06	0.000126794	2.1118347	6.928E-06	0.000154037
Road 10	10	1400-1500	0.379084065	1.166E-06	2.59222E-05	0.3467964	1.067E-06	2.37143E-05	1.9036727	5.855E-06	0.000130175	1.7367085	5.341E-06	0.000118758	2.0835048	6.408E-06	0.000142472
Road 10	10	1500-1600	0.378493395	1.19E-06	2.6457E-05	0.3475925	1.093E-06	2.4297E-05	1.8288678	5.75E-06	0.000127839	1.6766983	5.271E-06	0.000117202	2.0242908	6.364E-06	0.000141499
Road 10	10	1600-1700	0.362654286	1.27E-06	2.8243E-05	0.3322626	1.164E-06	2.58761E-05	1.7814329	6.24E-06	0.000138735	1.626252	5.696E-06	0.00012665	1.9585145	6.86E-06	0.000152526
Road 10	10	1700-1800	0.336422106	1.104E-06	2.45386E-05	0.3073898	1.008E-06	2.2421E-05	1.7521857	5.748E-06	0.000127804	1.6008296	5.251E-06	0.000116764	1.9082194	6.26E-06	0.000139185
Road 10	10	1800-1900	0.343786206	7.107E-07	1.58029E-05	0.3135156	6.482E-07	1.44115E-05	1.7423706	3.602E-06	8.00921E-05	1.5873955	3.282E-06	7.29683E-05	1.9009111	3.93E-06	8.73798E-05
Road 10	10	1900-2000	0.299782297	5.583E-07	1.24136E-05	0.2730394	5.085E-07	1.13062E-05	1.5959392	2.972E-06	6.60856E-05	1.4504999	2.701E-06	6.00631E-05	1.7235393	3.21E-06	7.13693E-05
Road 10	10	2000-2100	0.350397286	4.31E-07	9.58422E-06	0.3184306	3.917E-07	8.70986E-06	1.7013248	2.093E-06	4.65354E-05	1.5436096	1.899E-06	4.22215E-05	1.8620402	2.291E-06	5.09314E-05
Road 10	10	2100-2200	0.286812252	3.528E-07	7.84502E-06	0.2638948	3.246E-07	7.21817E-06	1.6053162	1.975E-06	4.39093E-05	1.4765948	1.816E-06	4.03885E-05	1.7404896	2.141E-06	4.76067E-05
Road 10	10	2200-2300	0.306125998	3.923E-07	8.72218E-06	0.2803147	3.592E-07	7.98677E-06	1.57641	2.02E-06	4.49153E-05	1.443366	1.85E-06	4.11246E-05	1.7236807	2.209E-06	4.91113E-05
Road 10	10	2300-0000	0.281706774	3.369E-07	7.49133E-06	0.2567991	3.071E-07	6.82897E-06	1.4330351	1.714E-06	3.81082E-05	1.302525	1.558E-06	3.46376E-05	1.5593241	1.865E-06	4.14666E-05
Road 11	11	0000-0100	0.352889908	2.696E-07	2.23609E-06	0.320419	2.448E-07	2.03034E-06	1.775054	1.356E-06	1.12477E-05	1.6082669	1.229E-06	1.01908E-05	1.9286859	1.473E-06	1.22212E-05
Road 11	11	0100-0200	0.352470555	1.897E-07	1.57356E-06	0.3203862	1.724E-07	1.43032E-06	1.7444996	9.389E-07	7.78809E-06	1.581139	8.51E-07	7.05878E-06	1.9015252	1.023E-06	8.48911E-06
Road 11	11	0200-0300	0.30916159	8.051E-08	6.67844E-07	0.2797023	7.284E-08	6.04207E-07	1.6556387	4.312E-07	3.57647E-06	1.4951424	3.894E-07	3.22977E-06	1.7748447	4.622E-07	3.83398E-06
Road 11	11	0300-0400	0.331191758	8.05E-08	6.67737E-07	0.2992648	7.274E-08	6.03367E-07	1.735288	4.218E-07	3.49863E-06	1.5677503	3.811E-07	3.16084E-06	1.8670151	4.538E-07	3.76421E-06
Road 11	11	0400-0500	0.337946162	1.173E-07	9.73365E-07	0.310419	1.078E-07	8.9408E-07	1.6158917	5.611E-07	4.65415E-06	1.4781348	5.132E-07	4.25738E-06	1.7885539	6.21E-07	5.15146E-06
Road 11	11	0500-0600	0.272132532	1.276E-07	1.05814E-06	0.2493888	1.169E-07	9.69703E-07	1.4004943	6.565E-07	5.44557E-06	1.2774735	5.988E-07	4.96723E-06	1.5268623	7.157E-07	5.93693E-06
Road 11	11	0600-0700	0.294769236	2.661E-07	2.20741E-06	0.2702885	2.44E-07	2.02409E-06	1.548347	1.398E-06	1.1595E-05	1.4095565	1.273E-06	1.05556E-05	1.679845	1.517E-06	1.25797E-05
Road 11	11	0700-0800	0.346098133	6.489E-07	5.38296E-06	0.3171478	5.947E-07	4.93269E-06	1.817796	3.408E-06	2.82727E-05	1.658319	3.109E-06	2.57923E-05	1.9754668	3.704E-06	3.0725E-05

Appendix 3.4 Calculation of Vehicular Emisisons

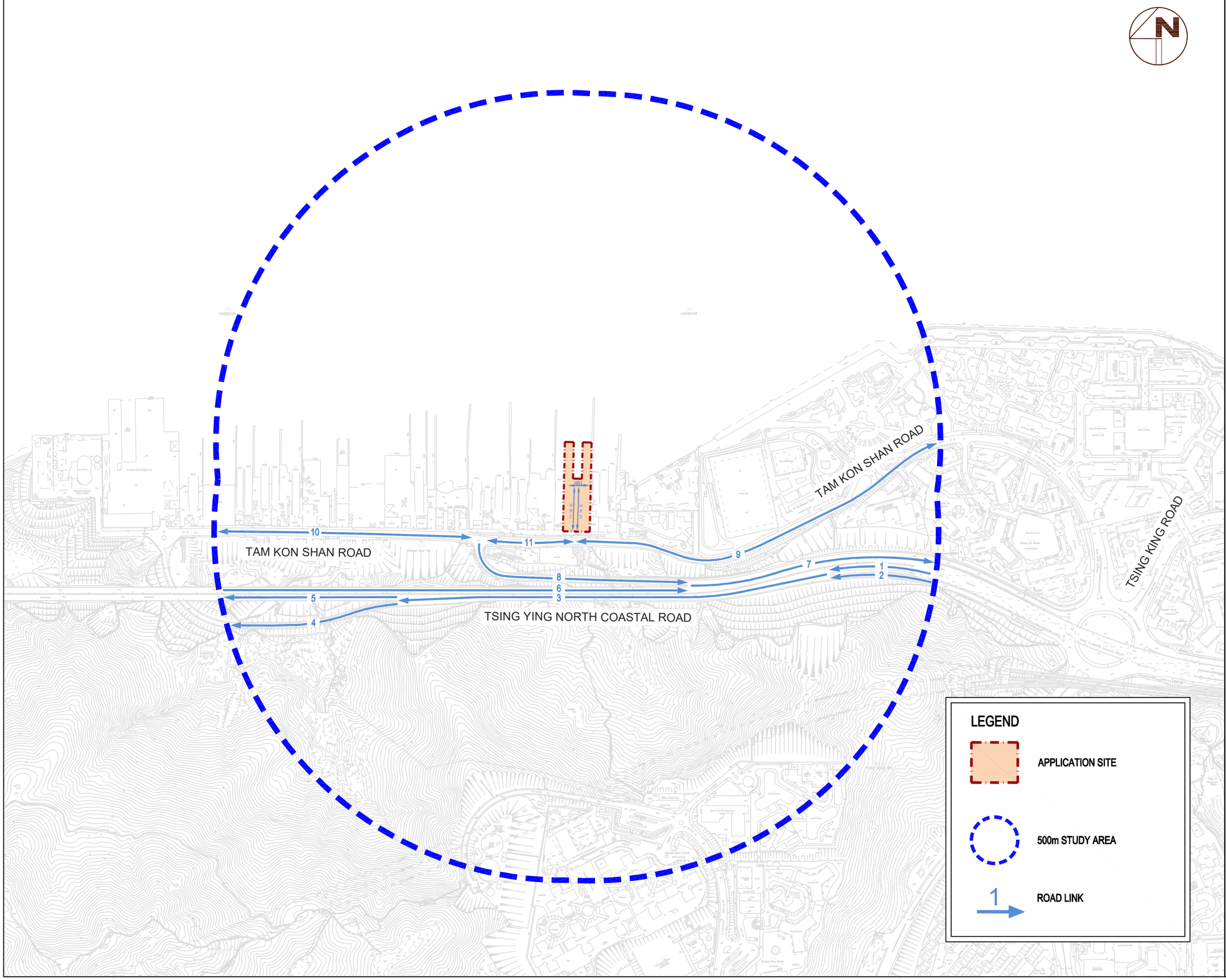
Open Road 24 hour Emission Factors for AERMOD model (December) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Road 11	11	0800-0900	0.37349076	1.329E-06	1.10264E-05	0.3419674	1.217E-06	1.00957E-05	1.8579476	6.612E-06	5.48511E-05	1.6912719	6.019E-06	4.99304E-05	2.0332394	7.236E-06	6.00262E-05
Road 11	11	0900-1000	0.372775264	9.449E-07	7.83787E-06	0.3440838	8.722E-07	7.23461E-06	1.7796786	4.511E-06	3.7419E-05	1.6319032	4.136E-06	3.4312E-05	1.975987	5.009E-06	4.15466E-05
Road 11	11	1000-1100	0.386792521	7.991E-07	6.62862E-06	0.3546587	7.327E-07	6.07793E-06	1.8141009	3.748E-06	3.1089E-05	1.6561857	3.422E-06	2.83827E-05	2.0108444	4.154E-06	3.44607E-05
Road 11	11	1100-1200	0.342489997	7.968E-07	6.60923E-06	0.3114772	7.246E-07	6.01076E-06	1.7623914	4.1E-06	3.40099E-05	1.5992144	3.72E-06	3.0861E-05	1.9106916	4.445E-06	3.68717E-05
Road 11	11	1200-1300	0.41549949	1.176E-06	9.75341E-06	0.3807297	1.077E-06	8.93722E-06	2.0231552	5.725E-06	4.74914E-05	1.8490633	5.233E-06	4.34048E-05	2.229793	6.31E-06	5.2342E-05
Road 11	11	1300-1400	0.432542325	9.011E-07	7.47495E-06	0.3932057	8.192E-07	6.79515E-06	1.9595758	4.082E-06	3.38643E-05	1.7730968	3.694E-06	3.06416E-05	2.1663025	4.513E-06	3.74368E-05
Road 11	11	1400-1500	0.340469669	6.857E-07	5.68767E-06	0.3108281	6.26E-07	5.1925E-06	1.7121848	3.448E-06	2.86027E-05	1.5532118	3.128E-06	2.5947E-05	1.8640399	3.754E-06	3.11395E-05
Road 11	11	1500-1600	0.306160714	6.219E-07	5.15862E-06	0.280757	5.703E-07	4.73058E-06	1.5923582	3.234E-06	2.68303E-05	1.4554801	2.956E-06	2.45239E-05	1.7362371	3.527E-06	2.92545E-05
Road 11	11	1600-1700	0.29197543	7.046E-07	5.84466E-06	0.2674715	6.455E-07	5.35415E-06	1.5691934	3.787E-06	3.14116E-05	1.4330992	3.458E-06	2.86873E-05	1.7005707	4.104E-06	3.40414E-05
Road 11	11	1700-1800	0.29391675	7.246E-07	6.0105E-06	0.2675048	6.595E-07	5.47039E-06	1.6073999	3.963E-06	3.28708E-05	1.4608599	3.601E-06	2.98741E-05	1.7283647	4.261E-06	3.53445E-05
Road 11	11	1800-1900	0.317489538	6.504E-07	5.39523E-06	0.2887852	5.916E-07	4.90744E-06	1.6991513	3.481E-06	2.88744E-05	1.5451132	3.165E-06	2.62567E-05	1.8338984	3.757E-06	3.11642E-05
Road 11	11	1900-2000	0.303929994	4.802E-07	3.98303E-06	0.2758188	4.358E-07	3.61463E-06	1.5937694	2.518E-06	2.08865E-05	1.4403902	2.276E-06	1.88764E-05	1.716209	2.711E-06	2.2491E-05
Road 11	11	2000-2100	0.315531005	4.437E-07	3.68066E-06	0.2867675	4.033E-07	3.34513E-06	1.5813468	2.224E-06	1.84463E-05	1.4352469	2.018E-06	1.67421E-05	1.7220144	2.422E-06	2.00872E-05
Road 11	11	2100-2200	0.230190778	2.278E-07	1.88956E-06	0.2075081	2.053E-07	1.70337E-06	1.2925002	1.279E-06	1.06097E-05	1.1631573	1.151E-06	9.54798E-06	1.3706653	1.356E-06	1.12513E-05
Road 11	11	2200-2300	0.296335013	3.241E-07	2.68857E-06	0.2699264	2.952E-07	2.44897E-06	1.507774	1.649E-06	1.36796E-05	1.3688124	1.497E-06	1.24189E-05	1.6387388	1.792E-06	1.48679E-05
Road 11	11	2300-0000	0.28243863	2.942E-07	2.44047E-06	0.2576575	2.684E-07	2.22634E-06	1.4620071	1.523E-06	1.26328E-05	1.328989	1.384E-06	1.14834E-05	1.5866465	1.653E-06	1.37098E-05
Haul Road 1	HR1	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	0700-0800	1.47643	2.775E-06	4.1741E-06	1.34658	2.531E-06	3.807E-06	6.78481	1.275E-05	1.91817E-05	6.18784	1.163E-05	1.7494E-05	7.53442	1.416E-05	2.1301E-05
Haul Road 1	HR1	0800-0900	1.47444	2.772E-06	4.16848E-06	1.34099	2.521E-06	3.79119E-06	6.7756	1.274E-05	1.91557E-05	6.16224	1.158E-05	1.74216E-05	7.50323	1.41E-05	2.12128E-05
Haul Road 1	HR1	0900-1000	1.46754	2.759E-06	4.14897E-06	1.34229	2.523E-06	3.79487E-06	6.74402	1.268E-05	1.90664E-05	6.16843	1.159E-05	1.74391E-05	7.51072	1.412E-05	2.1234E-05
Haul Road 1	HR1	1000-1100	1.47104	2.765E-06	4.15887E-06	1.34109	2.521E-06	3.79148E-06	6.76021	1.271E-05	1.91122E-05	6.16284	1.158E-05	1.74233E-05	7.50393	1.411E-05	2.12148E-05
Haul Road 1	HR1	1100-1200	1.47593	2.774E-06	4.17269E-06	1.34059	2.52E-06	3.79006E-06	6.78271	1.275E-05	1.91758E-05	6.16074	1.158E-05	1.74174E-05	7.50133	1.41E-05	2.12075E-05
Haul Road 1	HR1	1200-1300	1.47803	2.778E-06	4.17863E-06	1.34449	2.527E-06	3.80109E-06	6.7919	1.277E-05	1.92018E-05	6.17853	1.161E-05	1.74677E-05	7.52302	1.414E-05	2.12688E-05
Haul Road 1	HR1	1300-1400	1.48063	2.783E-06	4.18598E-06	1.33279	2.505E-06	3.76801E-06	6.8039	1.279E-05	1.92357E-05	6.12455	1.151E-05	1.73151E-05	7.45734	1.402E-05	2.10831E-05
Haul Road 1	HR1	1400-1500	1.47494	2.772E-06	4.16989E-06	1.33279	2.505E-06	3.76801E-06	6.7779	1.274E-05	1.91622E-05	6.12455	1.151E-05	1.73151E-05	7.45734	1.402E-05	2.10831E-05
Haul Road 1	HR1	1500-1600	1.46934	2.762E-06	4.15406E-06	1.34059	2.52E-06	3.79006E-06	6.75231	1.269E-05	1.90899E-05	6.16074	1.158E-05	1.74174E-05	7.50133	1.41E-05	2.12075E-05
Haul Road 1	HR1	1600-1700	1.47014	2.763E-06	4.15632E-06	1.33289	2.505E-06	3.76829E-06	6.75601	1.27E-05	1.91003E-05	6.12525	1.151E-05	1.73171E-05	7.45814	1.402E-05	2.10854E-05
Haul Road 1	HR1	1700-1800	1.47534	2.773E-06	4.17102E-06	1.33019	2.5E-06	3.76066E-06	6.78	1.274E-05	1.91681E-05	6.11296	1.149E-05	1.72823E-05	7.44315	1.399E-05	2.1043E-05
Haul Road 1	HR1	1800-1900	1.47534	2.773E-06	4.17102E-06	1.33209	2.504E-06	3.76603E-06	6.78	1.274E-05	1.91681E-05	6.12156	1.151E-05	1.73066E-05	7.45365	1.401E-05	2.10727E-05
Haul Road 1	HR1	1900-2000	1.47274	2.768E-06	4.16367E-06	1.32529	2.491E-06	3.74681E-06	6.768	1.272E-05	1.91342E-05	6.09037	1.145E-05	1.72185E-05	7.41566	1.394E-05	2.09653E-05
Haul Road 1	HR1	2000-2100	1.47014	2.763E-06	4.15632E-06	1.33139	2.503E-06	3.76405E-06	6.75601	1.27E-05	1.91003E-05	6.11836	1.15E-05	1.72976E-05	7.44975	1.4E-05	2.10616E-05
Haul Road 1	HR1	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 1	HR1	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	0700-0800	1.47643	1.912E-06	5.09082E-06	1.34658	1.744E-06	4.64309E-06	6.78481	8.789E-06	2.33944E-05	6.18784	8.015E-06	2.1336E-05	7.53442	9.76E-06	2.59791E-05
Haul Road 2	HR2	0800-0900	1.47444	1.91E-06	5.08396E-06	1.34099	1.737E-06	4.62381E-06	6.7756	8.777E-06	2.33627E-05	6.16224	7.982E-06	2.12478E-05	7.50323	9.719E-06	2.58716E-05
Haul Road 2	HR2	0900-1000	1.46754	1.901E-06	5.06017E-06	1.34229	1.739E-06	4.6283E-06	6.74402	8.736E-06	2.32538E-05	6.16843	7.99E-06	2.12691E-05	7.51072	9.729E-06	2.58974E-05
Haul Road 2	HR2	1000-1100	1.47104	1.905E-06	5.07223E-06	1.34109	1.737E-06	4.62416E-06	6.76021	8.757E-06	2.33096E-05	6.16284	7.983E-06	2.12498E-05	7.50393	9.72E-06	2.5874E-05
Haul Road 2	HR2	1100-1200	1.47593	1.912E-06	5.0891E-06	1.34059	1.737E-06	4.62244E-06	6.78271	8.786E-06	2.33872E-05	6.16074	7.98E-06	2.12426E-05	7.50133	9.717E-06	2.5865E-05
Haul Road 2	HR2	1200-1300	1.47803	1.915E-06	5.09634E-06	1.34449	1.742E-06	4.63588E-06	6.7919	8.798E-06	2.34189E-05	6.17853	8.003E-06	2.13039E-05	7.52302	9.745E-06	2.59398E-05
Haul Road 2	HR2	1300-1400	1.48063	1.918E-06	5.1053E-06	1.33279	1.726E-06	4.59554E-06	6.8039	8.813E-06	2.34603E-05	6.12455	7.933E-06	2.11178E-05	7.45734	9.66E-06	2.57134E-05
Haul Road 2	HR2	1400-1500	1.47494	1.911E-06	5.08568E-06	1.33279	1.726E-06	4.59554E-06	6.7779	8.78E-06	2.33706E-05	6.12455	7.933E-06	2.11178E-05	7.45734	9.66E-06	2.57134E-05
Haul Road 2	HR2	1500-1600	1.46934	1.903E-06	5.06637E-06	1.34059	1.737E-06	4.62244E-06	6.75231	8.747E-06	2.32824E-05	6.16074	7.98E-06	2.12426E-05	7.50133	9.717E-06	2.5865E-05
Haul Road 2	HR2	1600-1700	1.47014	1.904E-06	5.06913E-06	1.33289	1.727E-06	4.59588E-06	6.75601	8.751E-06	2.32951E-05	6.12525	7.934E-06	2.11202E-05	7.45814	9.661E-06	2.57161E-05
Haul Road 2	HR2	1700-1800	1.47534	1.911E-06	5.08706E-06	1.33019	1.723E-06	4.58658E-06	6.78	8.782E-06	2.33778E-05	6.11296	7.918E-06	2.10779E-05	7.44315	9.641E-06	2.56644E-05
Haul Road 2	HR2	1800-1900	1.47534	1.911E-06	5.08706E-06	1.33209	1.726E-06	4.59313E-06	6.78	8.782E-06	2.33778E-05	6.12156	7.929E-06	2.11075E-05	7.45365	9.655E-06	2.57006E-05
Haul Road 2	HR2	1900-2000	1.47274	1.908E-06	5.0781E-06	1.32529	1.717E-06	4.56968E-06	6.768	8.767E-06	2.33365E-05	6.09037	7.889E-06	2.1E-05	7.41566	9.606E-06	2.55696E-05
Haul Road 2	HR2	2000-2100	1.47014	1.904E-06	5.06913E-06	1.33139	1.725E-06	4.59071E-06	6.75601	8.751E-06	2.32951E-05	6.11836	7.925E-06	2.10965E-05	7.44975	9.65E-06	2.56872E-05
Haul Road 2	HR2	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 3.4 Calculation of Vehicular Emisisons

Open Road 24 hour Emission Factors for AERMOD model (December) Year 2027

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission		
			MonthlyHourMin			MonthlyHourAverage			MonthlyHourMin			MonthlyHourAverage			MonthlyHourAverage		
			g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour	g/km/veh	g/s/m2	tonne/hour
Haul Road 2	HR2	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 2	HR2	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	0700-0800	1.47643	1.912E-06	5.08372E-06	1.34658	1.744E-06	4.63662E-06	6.78481	8.789E-06	2.33618E-05	6.18784	8.015E-06	2.13063E-05	7.53442	9.76E-06	2.59429E-05
Haul Road 3	HR3	0800-0900	1.47444	1.91E-06	5.07687E-06	1.34099	1.737E-06	4.61737E-06	6.7756	8.777E-06	2.33301E-05	6.16224	7.982E-06	2.12182E-05	7.50323	9.719E-06	2.58355E-05
Haul Road 3	HR3	0900-1000	1.46754	1.901E-06	5.05311E-06	1.34229	1.739E-06	4.62184E-06	6.74402	8.736E-06	2.32214E-05	6.16843	7.99E-06	2.12395E-05	7.51072	9.729E-06	2.58613E-05
Haul Road 3	HR3	1000-1100	1.47104	1.905E-06	5.06516E-06	1.34109	1.737E-06	4.61771E-06	6.76021	8.757E-06	2.32771E-05	6.16284	7.983E-06	2.12202E-05	7.50393	9.72E-06	2.58379E-05
Haul Road 3	HR3	1100-1200	1.47593	1.912E-06	5.082E-06	1.34059	1.737E-06	4.61599E-06	6.78271	8.786E-06	2.33546E-05	6.16074	7.98E-06	2.1213E-05	7.50133	9.717E-06	2.5829E-05
Haul Road 3	HR3	1200-1300	1.47803	1.915E-06	5.08923E-06	1.34449	1.742E-06	4.62942E-06	6.7919	8.798E-06	2.33862E-05	6.17853	8.003E-06	2.12742E-05	7.52302	9.745E-06	2.59037E-05
Haul Road 3	HR3	1300-1400	1.48063	1.918E-06	5.09818E-06	1.33279	1.726E-06	4.58913E-06	6.8039	8.813E-06	2.34275E-05	6.12455	7.933E-06	2.10884E-05	7.45734	9.66E-06	2.56775E-05
Haul Road 3	HR3	1400-1500	1.47494	1.911E-06	5.07859E-06	1.33279	1.726E-06	4.58913E-06	6.7779	8.78E-06	2.3338E-05	6.12455	7.933E-06	2.10884E-05	7.45734	9.66E-06	2.56775E-05
Haul Road 3	HR3	1500-1600	1.46934	1.903E-06	5.05931E-06	1.34059	1.737E-06	4.61599E-06	6.75231	8.747E-06	2.32499E-05	6.16074	7.98E-06	2.1213E-05	7.50133	9.717E-06	2.5829E-05
Haul Road 3	HR3	1600-1700	1.47014	1.904E-06	5.06206E-06	1.33289	1.727E-06	4.58948E-06	6.75601	8.751E-06	2.32627E-05	6.12525	7.934E-06	2.10908E-05	7.45814	9.661E-06	2.56803E-05
Haul Road 3	HR3	1700-1800	1.47534	1.911E-06	5.07997E-06	1.33019	1.723E-06	4.58018E-06	6.78	8.782E-06	2.33453E-05	6.11296	7.918E-06	2.10485E-05	7.44315	9.641E-06	2.56286E-05
Haul Road 3	HR3	1800-1900	1.47534	1.911E-06	5.07997E-06	1.33209	1.726E-06	4.58672E-06	6.78	8.782E-06	2.33453E-05	6.12156	7.929E-06	2.10781E-05	7.45365	9.655E-06	2.56648E-05
Haul Road 3	HR3	1900-2000	1.47274	1.908E-06	5.07102E-06	1.32529	1.717E-06	4.56331E-06	6.768	8.767E-06	2.33039E-05	6.09037	7.889E-06	2.09707E-05	7.41566	9.606E-06	2.5534E-05
Haul Road 3	HR3	2000-2100	1.47014	1.904E-06	5.06206E-06	1.33139	1.725E-06	4.58431E-06	6.75601	8.751E-06	2.32627E-05	6.11836	7.925E-06	2.10671E-05	7.44975	9.65E-06	2.56514E-05
Haul Road 3	HR3	2100-2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2200-2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Road 3	HR3	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Traffic Forecast for Air Quality Impact Assessment for Section 16 Planning Application of Proposed Temporary Concrete Batching Plant for a Period of 5 Years in "Other Specified Uses" annotated "Boatyard and Marine-oriented Industrial Uses" Zone, Tsing Yi Town Lots Nos. 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi, New Territories

INDEX PLAN

FIGURE 1.1

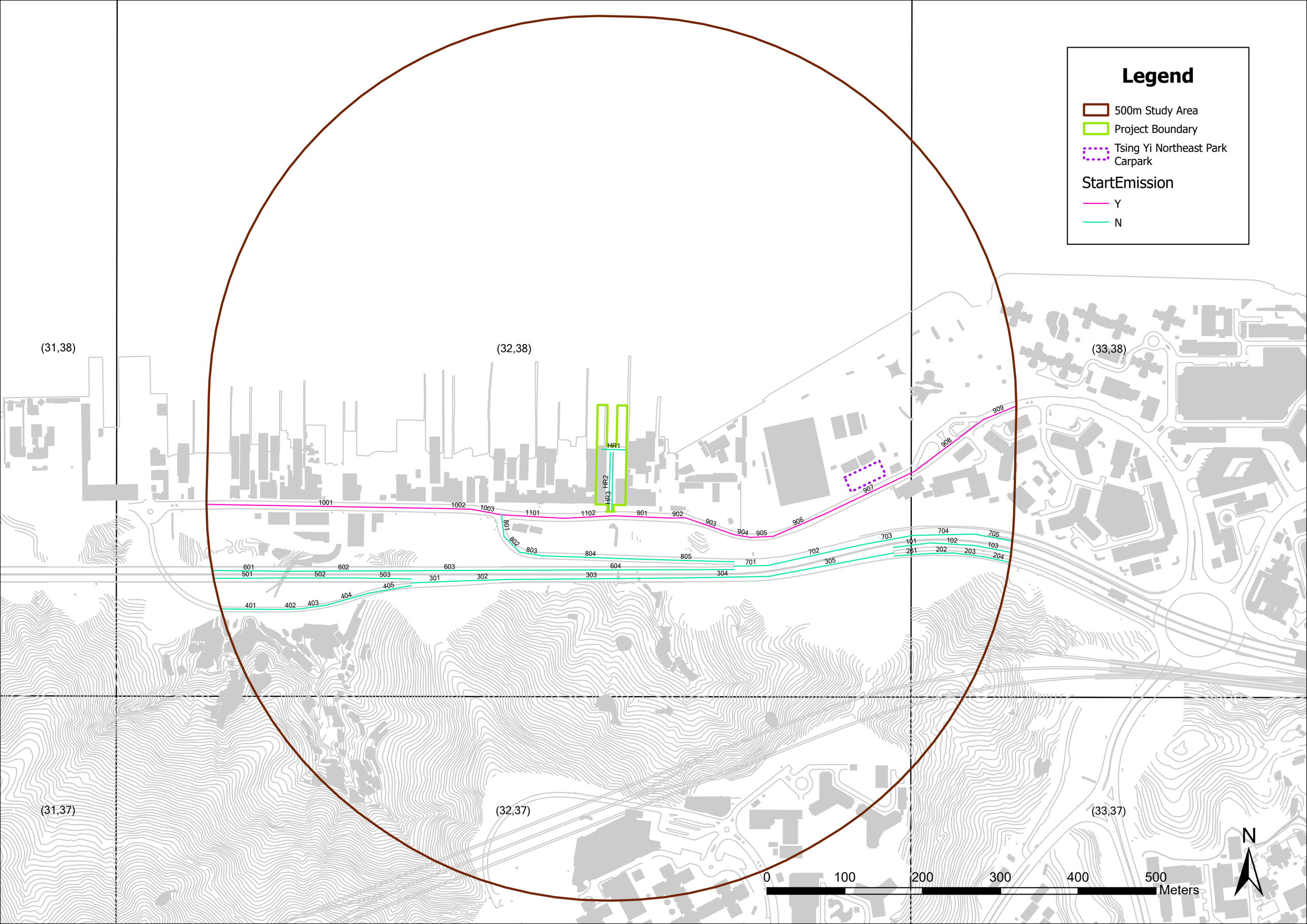
Scale : 1:5000 (A3)

Date : NOV 2024

Rev. : A

AXON CONSULTANCY
http://www.axonhk.com

C:\USERS\USER\DESKTOP\31048\DATA\DRAWING\FIGURE 1.1.DWG


Legend
500m Study Area
Project Boundary
Tsing Yi Northeast Park Carpark
StartEmission
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(33,38)
(31,37)
(32,37)
(33,37)
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From: [redacted]
Sent: Wednesday, March 19, 2025 11:15 AM
To: [redacted]
Subject: RE: Traffic Forecast Methodology for Air Quality Impact Assessment

Dear [redacted]

Thank you for your prompt response. Please be advised that the methodology for the traffic forecast remains consistent with that adopted in the Traffic Impact Assessment for the aforementioned project.

Should you require any further information, please let us know.

Yours sincerely,
[redacted]

AXON

AXON Engineering and Consulting Ltd.
Unit 209, 2/F, No. 19 Science Park West Avenue
Hong Kong Science Park, Shatin, Hong Kong
Office: 2258 6392 Fax: 3020 0321
Office: 2258 6392 Fax: 3020 0321
Email: info@axonhk.com
Homepage: http://www.axonhk.com

From: [redacted]
Sent: Wednesday, March 19, 2025 11:12 AM
To: [redacted]
Subject: Re: Traffic Forecast Methodology for Air Quality Impact Assessment

Dear [redacted]

Please note that Environmental Assessment is not under our purview. We are not in a position to provide comments on the traffic figures tailor-made for the environmental assessment purposes.

Notwithstanding the above, we have no objection in principle to the methodology for traffic forecast provided that it is the same as that adopted in the traffic impact assessment for the captioned project.

Regards,
[redacted]
E/TY,TD

From: [redacted]
To:
Cc: [redacted]
Date: 19/03/2025 11:09 AM

Subject: Traffic Forecast Methodology for Air Quality Impact Assessment

Dear [redacted]

We are the traffic consultant for the Proposed CBP Development at Tam Kon Shan Road, Tsing Yi. As noted in our environmental consultant's correspondence with the Environmental Protection Department (EPD), an Environmental Assessment (EA) has been submitted, in which traffic data has been adopted as part of the Air Quality Impact Assessment.

In this regard, please find attached the proposed methodology for forecasting traffic data, which is solely for use in the Air Quality Impact Assessment, for your review and consideration. Grateful if you could advise whether you have any in-principle objection to the methodology.

Thank you for your time and cooperation.

Yours sincerely,

[redacted]

AXON

AXON Engineering and Consulting Ltd.
Unit 209, 2/F, No. 19 Science Park West Avenue
Hong Kong Science Park, Shatin, Hong Kong
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[attachment "31048-R03-01.pdf" deleted by [redacted]/TD/HKSARG]

APPENDIX 3.5

Calculation of Marine Emissions

Description of Marine Routes

Marine Traffic

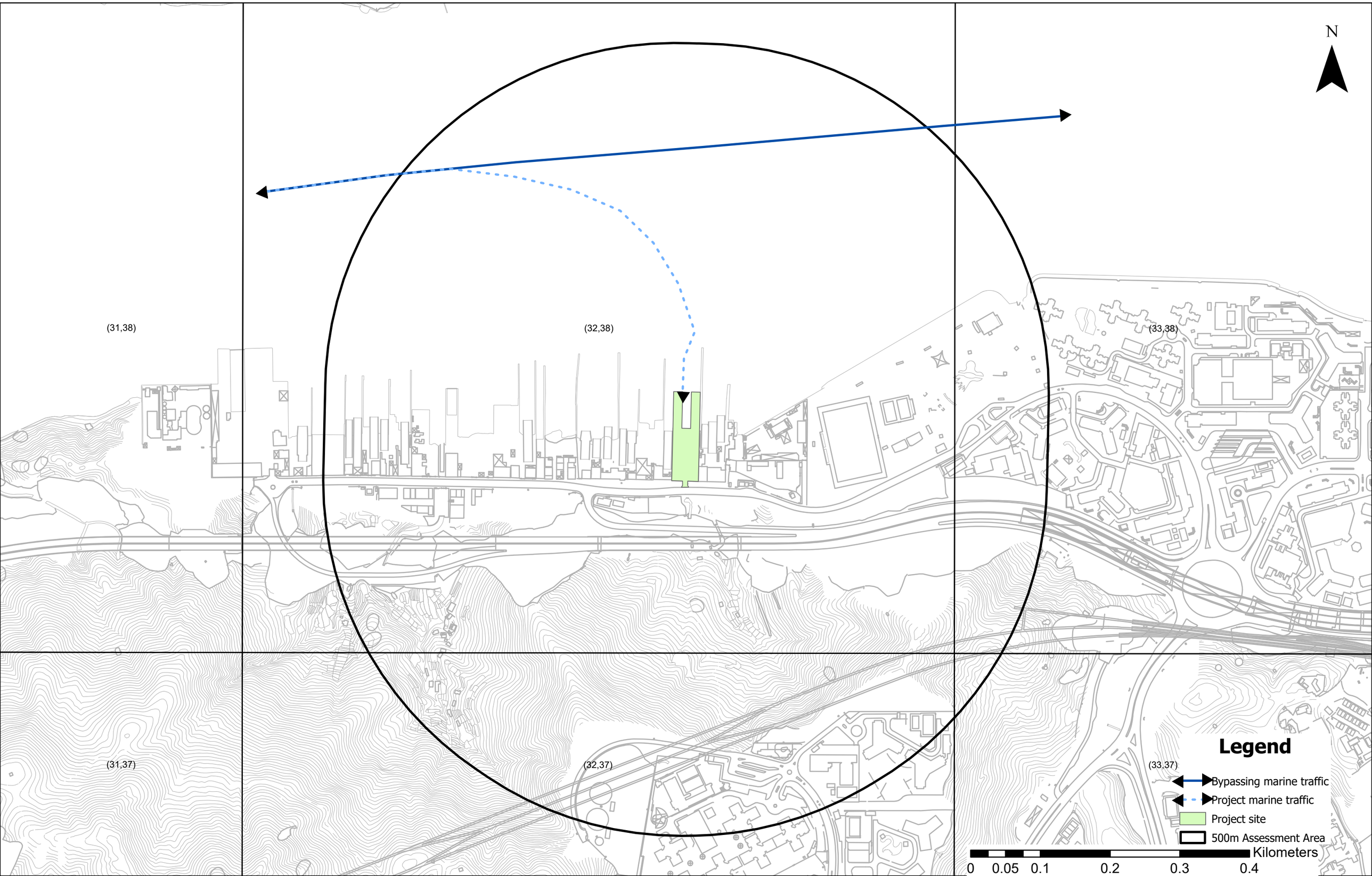
Route 1 is located to the north of the CBP, and the vessels that travel on it are mainly river trade vessels, tug and tows, local ferries, fast launches, small crafts and ocean-going vessels.
The information about Route 1 are obtained by site surveys conducted by Marine Consultant.
Despite the actual routes, all general marine vessels are considered travelling in the water at the nearest and safe distance (i.e. Route 1) from the project site/nearby shipyards.

The bypassing marine traffic consists of the following vessel types:
- River trade vessels: Fully Cellular Container Vessel (RTV01), Dry Bulk Carrier (RTV03)
- Fast launches (FL01)
- Tug and tows (TT01)
- Local ferries (LF01)
- Small crafts: Pleasure Vessel (SC01)
- Ocean-going vessels: Gas Carrier/Tanker (OGV06), Chemical Carrier/Tanker (OGV07), Oil Tanker (OGV08)

The marine traffic induced by the Project consists of the following vessel types:
- River trade vessels: Dry Bulk Carrier (RTV03M, RTV03H, for transporting aggregates), Chemical Carrier/Tanker (RTV07M, RTV07H, for transporting cement)

Appendix 3.5 Calculation of Marine Emissions

Marine Route Map



Marine Traffic

Hourly distribution by vessel type on each route - Future 2026

Route #	ShipType	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Total
1	OGV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.08	1.75	2.25	2.25	3.17	3.92	2.75	1.00	1.25	1.33	1.08	0.58	0.00	0.00	0.00	0.00	0.00	23.42
1	RTV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.42	0.92	1.42	1.42	1.75	4.42	3.50	1.92	3.08	0.83	0.67	1.67	0.00	0.00	0.00	0.00	0.00	23.00
1	TT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.67	0.25	0.33	0.83	0.50	0.33	0.42	0.08	0.17	0.17	0.00	0.00	0.00	0.00	0.00	0.00	4.25
1	LF	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.83	3.75	1.25	2.00	0.00	0.00	2.00	0.00	0.00	2.00	1.92	2.42	0.00	0.00	0.00	0.00	0.00	21.17
1	FL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.04	10.12	3.66	3.66	3.84	3.31	2.44	3.84	3.92	3.14	7.06	13.60	0.00	0.00	0.00	0.00	0.00	70.64
1	SC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.72	6.27	5.67	9.53	7.73	11.25	6.95	5.84	9.19	10.30	11.25	6.61	0.00	0.00	0.00	0.00	0.00	95.30

Hourly distribution by vessel type on each route - Future 2028

Route #	ShipType	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Total
1	OGV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.08	1.75	2.25	2.25	3.17	3.92	2.75	1.00	1.25	1.33	1.08	0.58	0.00	0.00	0.00	0.00	0.00	23.42
1	RTV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.42	0.92	1.42	1.42	1.75	4.42	3.50	1.92	3.08	0.83	0.67	1.67	0.00	0.00	0.00	0.00	0.00	23.00
1	TT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.67	0.25	0.33	0.83	0.50	0.33	0.42	0.08	0.17	0.17	0.00	0.00	0.00	0.00	0.00	0.00	4.25
1	LF	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.83	3.75	1.25	2.00	0.00	0.00	2.00	0.00	0.00	2.00	1.92	2.42	0.00	0.00	0.00	0.00	0.00	21.17
1	FL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.60	10.59	3.83	3.83	4.02	3.47	2.56	4.02	4.11	3.29	7.39	14.24	0.00	0.00	0.00	0.00	0.00	73.93
1	SC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.86	6.46	5.84	9.82	7.96	11.59	7.16	6.01	9.46	10.61	11.59	6.81	0.00	0.00	0.00	0.00	0.00	98.18

Hourly distribution by vessel type on each route - Future 2030

Route #	ShipType	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Total
1	OGV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.08	1.75	2.25	2.25	3.17	3.92	2.75	1.00	1.25	1.33	1.08	0.58	0.00	0.00	0.00	0.00	0.00	23.42
1	RTV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.42	0.92	1.42	1.42	1.75	4.42	3.50	1.92	3.08	0.83	0.67	1.67	0.00	0.00	0.00	0.00	0.00	23.00
1	TT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.67	0.25	0.33	0.83	0.50	0.33	0.42	0.08	0.17	0.17	0.00	0.00	0.00	0.00	0.00	0.00	4.25
1	LF	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.83	3.75	1.25	2.00	0.00	0.00	2.00	0.00	0.00	2.00	1.92	2.42	0.00	0.00	0.00	0.00	0.00	21.17
1	FL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.18	11.08	4.01	4.01	4.20	3.63	2.67	4.20	4.30	3.44	7.74	14.90	0.00	0.00	0.00	0.00	0.00	77.37
1	SC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.01	6.65	6.01	10.11	8.20	11.94	7.38	6.20	9.75	10.93	11.94	7.02	0.00	0.00	0.00	0.00	0.00	101.14

Remark

1. The marine traffics are provided by engineers and endorsed by Marine Department.
2. Marine traffic data for Year 2030 are adopted for assessment, as it represents the highest traffic volume within the five-year Project period and reflects the worst-case scenario.

Speed Distribution

Speed distribution by vessel type (Route 1)

Speed Range (knots)	0 - 2	2 - 4	4 - 6	6 - 8	8 - 10	10 - 12	12 - 14	14 - 16	16 - 18	18 - 20	20 - 22	22 - 24	24 - 26	26 - 28	28 - 30	30 - 32	32 - 34	34 - 36	36 - 38	38 - 40	40 - 42	42 - 44	44 - 46	46 - 48	48 - 50	Total
Speed Median (knots)	1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	
OGV	0.90%	4.50%	3.60%	5.41%	10.81%	8.11%	21.62%	22.52%	8.11%	6.31%	1.80%	0.90%	0.90%	0.00%	0.00%	0.00%	0.90%	0.00%	0.90%	0.00%	0.00%	0.90%	0.90%	0.00%	0.90%	100.00%
RTV	0.00%	0.00%	0.00%	0.00%	6.94%	31.94%	33.33%	18.06%	6.94%	0.00%	0.00%	0.00%	1.39%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.39%	100.00%
TT	0.00%	0.00%	0.00%	0.00%	33.33%	0.00%	33.33%	33.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
LF	0.00%	0.00%	5.26%	0.00%	0.00%	0.00%	0.00%	13.16%	2.63%	21.05%	7.89%	21.05%	10.53%	7.89%	5.26%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.26%	100.00%
FL	3.13%	3.13%	0.00%	1.56%	3.13%	4.69%	12.50%	12.50%	10.94%	9.38%	3.13%	3.13%	6.25%	3.13%	1.56%	3.13%	3.13%	0.00%	0.00%	3.13%	0.00%	1.56%	0.00%	1.56%	9.38%	100.00%
SC	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.53%	21.05%	31.58%	26.32%	5.26%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.26%	100.00%

Remark

1. The speed distributions are provided by marine consultants and endorsed by Marine Department.

Operation Mode by Vessel Speed

Vessel Speed	Operation Mode
0	Hotelling
1	Maneuvering
8	Slow Cruise
12	Fairway Cruise

Vessel Information by Vessel

Vessel Category	Vessel Type [1,2]	Vessel Type (MVEIS) [3]	Vessel Class [4,5]	Number of Vessels / Arrivals [5]	Proportion of Arrivals by vessel type
RTV	Fully Cellular Container Vessel	Fully Cellular Container Vessel	-	23813	80.13%
RTV	Dry Bulk Carrier	Dry Bulk Carrier	-	5905	19.87%
Subtotal	**-**	**-**	**-**	**29718**	**100.00%**
FL	Fast Launch	Others (GRT >=1000)	-	-	100.00%
Subtotal	**-**	**-**	**-**	**-**	**100.00%**
TT	Tug	Tug	-	-	100.00%
Subtotal	**-**	**-**	**-**	**-**	**100.00%**
LF	Local Ferry	Local Ferry	-	-	100.00%
Subtotal	**-**	**-**	**-**	**-**	**100.00%**
SC	Pleasure Vessel	Pleasure Vessel	Class IV	12553	100.00%
Subtotal	**-**	**-**	**-**	**12553**	**100.00%**
OGV	Gas Carrier/Tanker	Gas Carrier/Tanker	-	292	21.50%
OGV	Chemical Carrier/Tanker	Chemical Carrier/Tanker	-	480	35.35%
OGV	Oil Tanker	Oil Tanker	-	586	43.15%
Subtotal	**-**	**-**	**-**	**1358**	**100.00%**

Remark

1. Marine traffic consultant has not further breakdown the marine traffic data of OGV into various vessel types. Therefore, vessel types catalogized by the Marine Department is adopted to breakdown the marine traffic data (https://www.mardep.gov.hk/filemanager/en/share/fact/pdf/portstat_2_y_a2.pdf).
2. According to data from marine consultants, tugs and cross boundary ferry are classified as an independent vessel type and are consequently excluded from calculation of marine emission of RTV.
3. Classification of vessel type refers to Table 3-2 and Table 4-1 of MVEIS, Fast Launch is classifed as "Others (GRT >= 1000)" as a conservative estimation .
4. The vessel class refer to Cap. 548D MERCHANT SHIPPING (LOCAL VESSELS) (CERTIFICATION AND LICENSING) REGULATION – SCHEDULE 1 Class and Type of Local Vessel (https://www.elegislation.gov.hk/hk/cap548D!en@2014-03-03T00:00:00).
5. Number of vessels / arrivals refers to statistics published by Marine Department.
- For RTV and OGV, the number of arrivals refers to Table 3 in Port of Hong Kong Statistical Tables 2023 (https://www.mardep.gov.hk/filemanager/en/share/fact/pdf/portstat_ast_2023.pdf).
- For Small Crafts (SC), the number of licensed vessels in refer to Table 24 in Port of Hong Kong Statistical Tables 2023 (https://www.mardep.gov.hk/filemanager/en/share/fact/pdf/portstat_ast_2023.pdf).

Hourly Traffic Volume of Marine Traffic

Route #
1

Hourly Traffic Volume

Vessel ID	Vessel Category	Vessel Type	0000 - 0100	0100 - 0200	0200 - 0300	0300 - 0400	0400 - 0500	0500 - 0600	0600 - 0700	0700 - 0800	0800 - 0900	0900 - 1000	1000 - 1100	1100 - 1200	1200 - 1300	1300 - 1400	1400 - 1500	1500 - 1600	1600 - 1700	1700 - 1800	1800 - 1900	1900 - 2000	2000 - 2100	2100 - 2200	2200 - 2300	2300 - 2400
R1_RTV01	RTV	Fully Cellular Container Vessel	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV03	RTV	Dry Bulk Carrier	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_FL01	FL	Fast Launch	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_TT01	TT	Tug	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_LF01	LF	Local Ferry	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_SC01	SC	Pleasure Vessel	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_OGV06	OGV	Gas Carrier/Tanker	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07	OGV	Chemical Carrier/Tanker	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV08	OGV	Oil Tanker	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_RTV03M	RTV	Dry Bulk Carrier	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV07M	RTV	Chemical Carrier/Tanker	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV03H	RTV	Dry Bulk Carrier	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	0
R1_RTV07H	RTV	Chemical Carrier/Tanker	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0

Remark

1. The hourly traffic volume of a vessel type is obtained by the following formula:
hourly traffic volume = traffic data x proportion of arrivals

2. The hourly traffic volume for each vessel ID is used as their hourly profile in air dispersion modelling.

3. Maneuvering is assumed for RTV03 during 7:00-8:00, 11:00-12:00, 15:00-16:00 and 19:00-20:00, and for RTV07 during 11:00-12:00 and 15:00-16:00.

4. Hotelling is assumed for RTV03 during 7:00-13:00 and 15:00-19:00, and for RTV07 during 11:00-15:00.

Load Factor by Vessel

Vessel Category	Vessel Type	Engine Category	GRT/DWT/PAX Sub-group	Fairway Cruise	Slow Cruise	Maneuvering	Hotelling
RTV	Fully Cellular Container Vessel	Main Engine	GRT >= 1000	0.450	0.450	0.300	0.000
RTV	Dry Bulk Carrier	Main Engine	GRT >= 1000	0.450	0.450	0.300	0.000
RTV	Chemical Carrier/Tanker	Main Engine	GRT >= 1000	0.450	0.450	0.300	0.000
RTV	Fully Cellular Container Vessel	Auxiliary Engine	GRT >= 1000	0.430	0.430	0.430	0.430
RTV	Dry Bulk Carrier	Auxiliary Engine	GRT >= 1000	0.430	0.430	0.430	0.430
RTV	Chemical Carrier/Tanker	Auxiliary Engine	GRT >= 1000	0.430	0.430	0.430	0.430
FL	Fast Launch	Main Engine	-	0.450	0.450	0.300	0.000
TT	Tug	Main Engine	-	0.310	0.310	0.300	0.000
TT	Tug	Auxiliary Engine	-	0.430	0.430	0.430	0.430
FL	Fast Launch	Auxiliary Engine	-	0.450	0.450	0.450	0.450
LF	Local Ferry	Main Engine	-	0.800	0.600	0.300	0.000
LF	Local Ferry	Auxiliary Engine	-	0.450	0.450	0.450	0.450
SC	Pleasure Vessel	Main Engine	-	-	0.210	0.020	-
SC	Pleasure Vessel	Auxiliary Engine	-	-	0.320	0.320	0.320
OGV	Gas Carrier/Tanker	Main Engine	DWT >= 40000	-	0.375	0.025	-
OGV	Chemical Carrier/Tanker	Main Engine	DWT >= 40000	-	0.396	0.024	-
OGV	Oil Tanker	Main Engine	DWT >= 120000	-	0.382	0.023	-
OGV	Gas Carrier/Tanker	Auxiliary Engine	DWT >= 40000	-	0.273	0.322	0.244
OGV	Chemical Carrier/Tanker	Auxiliary Engine	DWT >= 40000	-	0.297	0.350	0.265
OGV	Oil Tanker	Auxiliary Engine	DWT >= 120000	-	0.283	0.334	0.253

Remark

1. The load factors refers to MVEIS:

- Load factors of main engine of RTV (Table 4-7)
- Load factors of auxiliary engine of RTV (Table 4-10)
- Load factors of main engine of Fast Launch (Table 4-7)
- Load factors of auxiliary engine of Fast Launch (Table 4-10)
- Load factors of main engine of Tug (Table 4-7)
- Load factors of auxiliary engine of Tug (Table 4-10)
- Load factors of main engine of Local Ferry (Table 4-9)
- Load factors of main engine of Local Ferry (Table 4-10)
- Load factors of main engine of Pleasure Vessel of Small Crafts (Table 3-18)
- Load factors of auxiliary engine of Pleasure Vessel of Small Crafts (Table 3-21)
- Load factors of main engine of OGV (Table 3-18)
- Load factors of auxiliary engine of OGV (Table 3-21)

Emission Factors by Vessel

Vessel Category	Vessel Type [1,2]	Vessel Type (MVEIS) [3]	Vessel Class [4]	Route	Route Code	Engine Category	Engine Type [5,6]	Fuel [7,8]	GRT/DWT/PAX Sub-group [9,10]	Vessel Calls [11]	Proportion of each engine type [12]	Engine Power (kW) [13]	Baseline Specific Fuel Consumption (g/kWh) [14]	NOx Emission Factors (g/kWh) [15]	SO_2 Emission Factors (g/kWh) [16]	RSP Emission Factors (g/kWh) [17]	FSP Emission Factor (g/kWh) [18]
RTV	Fully Cellular Container Vessel	-	-	-	1	Main Engine	Diesel Engine	Fuel with sulphur content not exceeding 0.5%	GRT >= 1000	-	100.00%	704.00	213.00	10.00	2.08	0.32	0.31
RTV	Fully Cellular Container Vessel	-	-	-	1	Auxiliary Engine	-	-	GRT >= 1000	-	100.00%	115.00	213.00	10.00	2.08	0.32	0.31
RTV	Dry Bulk Carrier	-	-	-	1	Main Engine	Diesel Engine	Fuel with sulphur content not exceeding 0.5%	GRT >= 1000	-	100.00%	744.00	213.00	10.00	2.08	0.32	0.31
RTV	Dry Bulk Carrier	-	-	-	1	Auxiliary Engine	-	-	GRT >= 1000	-	100.00%	115.00	213.00	10.00	2.08	0.32	0.31
RTV	Chemical Carrier/Tanker	-	-	-	1	Main Engine	Diesel Engine	Fuel with sulphur content not exceeding 0.5%	GRT >= 1000	-	100.00%	1565.00	213.00	13.20	2.08	0.32	0.31
RTV	Chemical Carrier/Tanker	-	-	-	1	Auxiliary Engine	-	-	GRT >= 1000	-	100.00%	375.00	213.00	10.00	2.08	0.32	0.31
TT	Tug	Tug	-	-	1	Main Engine	Diesel Engine	Fuel with sulphur content not exceeding 0.5%	-	-	100.00%	2344.00	213.00	13.20	0.21	0.17	0.16
TT	Tug	Tug	-	-	1	Auxiliary Engine	-	-	-	-	100.00%	520.00	213.00	10.00	0.21	0.17	0.16
FL	Fast Launch	Others (GRT >=1000)	-	-	1	Main Engine	Diesel Engine	Fuel with sulphur content not exceeding 0.5%	GRT >= 1000	-	100.00%	707.00	213.00	10.00	0.21	0.17	0.16
FL	Fast Launch	Others (GRT >=1000)	-	-	1	Auxiliary Engine	-	-	GRT >= 1000	-	100.00%	115.00	213.00	10.00	0.21	0.17	0.16
SC	Pleasure Vessel	Pleasure Vessel	Class IV	-	1	Main Engine	Diesel Engine	Fuel with sulphur content not exceeding 0.5%	-	-	100.00%	786.00	213.00	10.00	0.21	0.17	0.16
SC	Pleasure Vessel	Pleasure Vessel	Class IV	-	1	Auxiliary Engine	-	-	-	-	100.00%	60.00	213.00	13.90	0.21	0.17	0.16
OGV	Gas Carrier/Tanker	-	-	-	1	Main Engine	SSD	Fuel with sulphur content not exceeding 0.5%	DWT >= 40000	55	16.08%	3364.00	205.00	17.00	2.00	0.31	0.29
OGV	Gas Carrier/Tanker	-	-	-	1	Main Engine	MSD	Fuel with sulphur content not exceeding 0.5%	DWT >= 40000	276	80.70%	3364.00	215.00	13.00	2.10	0.32	0.29
OGV	Gas Carrier/Tanker	-	-	-	1	Main Engine	HSD	Fuel with sulphur content not exceeding 0.5%	DWT >= 40000	10	2.92%	3364.00	225.00	9.80	2.20	0.32	0.30
OGV	Gas Carrier/Tanker	-	-	-	1	Main Engine	ST	Fuel with sulphur content not exceeding 0.5%	DWT >= 40000	1	0.29%	3364.00	340.00	2.10	3.32	0.37	0.34
OGV	Gas Carrier/Tanker	-	-	-	1	Auxiliary Engine	-	Fuel with sulphur content not exceeding 0.5%	-	-	100.00%	709.80	225.00	11.20	2.20	0.32	0.30
OGV	Gas Carrier/Tanker	-	-	-	1	Auxiliary Boiler	-	Fuel with sulphur content not exceeding 0.5%	-	-	100.00%	371.00	340.00	2.10	3.32	0.37	0.34
OGV	Chemical Carrier/Tanker	-	-	-	1	Main Engine	SSD	Fuel with sulphur content not exceeding 0.5%	DWT >= 40000	119	26.33%	3515.00	205.00	17.00	2.00	0.31	0.29
OGV	Chemical Carrier/Tanker	-	-	-	1	Main Engine	MSD	Fuel with sulphur content not exceeding 0.5%	DWT >= 40000	313	69.25%	3515.00	215.00	13.00	2.10	0.32	0.29
OGV	Chemical Carrier/Tanker	-	-	-	1	Main Engine	HSD	Fuel with sulphur content not exceeding 0.5%	DWT >= 40000	20	4.42%	3515.00	225.00	9.80	2.20	0.32	0.30
OGV	Chemical Carrier/Tanker	-	-	-	1	Auxiliary Engine	-	Fuel with sulphur content not exceeding 0.5%	-	-	100.00%	741.67	225.00	11.20	2.20	0.32	0.30
OGV	Chemical Carrier/Tanker	-	-	-	1	Auxiliary Boiler	-	Fuel with sulphur content not exceeding 0.5%	-	-	100.00%	371.00	340.00	2.10	3.32	0.37	0.34
OGV	Oil Tanker	-	-	-	1	Main Engine	SSD	Fuel with sulphur content not exceeding 0.5%	DWT >= 120000	682	48.71%	5652.00	205.00	17.00	2.00	0.31	0.29
OGV	Oil Tanker	-	-	-	1	Main Engine	MSD	Fuel with sulphur content not exceeding 0.5%	DWT >= 120000	645	46.07%	5652.00	215.00	13.00	2.10	0.32	0.29
OGV	Oil Tanker	-	-	-	1	Main Engine	HSD	Fuel with sulphur content not exceeding 0.5%	DWT >= 120000	73	5.21%	5652.00	225.00	9.80	2.20	0.32	0.30
OGV	Oil Tanker	-	-	-	1	Auxiliary Engine	-	Fuel with sulphur content not exceeding 0.5%	-	-	100.00%	1192.57	225.00	11.20	2.20	0.32	0.30
OGV	Oil Tanker	-	-	-	1	Auxiliary Boiler	-	Fuel with sulphur content not exceeding 0.5%	-	-	100.00%	371.00	340.00	2.10	3.32	0.37	0.34
LF	Local Ferry	-	-	Sam Ka Tsuen - Tung Lung Island	1	Main Engine	Diesel Engine	Fuel with sulphur content not exceeding 0.5%	-	1	100.00%	786	203	13.2	1.98	0.31	0.30
LF	Local Ferry	-	-	Sam Ka Tsuen - Tung Lung Island	1	Auxiliary Engine	-	Fuel with sulphur content not exceeding 0.5%	-	1	100.00%	60	217	13.9	2.12	0.32	0.31

Remarks

1. Marine traffic consultant has not further breakdown the marine traffic data of OGV into various vessel types. Therefore, vessel types catalogized by the Marine Department is adopted to breakdown the marine traffic data (https://www.mardep.gov.hk/filemanager/en/share/fact/pdf/portstat_2_y_a2.pdf).
2. According to data from marine consultants, tugs and cross boundary ferry are classified as an independent vessel type and are consequently excluded from calculation of marine emission of RTV.
3. Classification of vessel type refers to Table 3-2 and Table 4-1 of MVEIS, Fast Launch is classifed as "Others (GRT >= 1000)" as a conservative estimation .
4. The vessel class refer to Cap. 548D MERCHANT SHIPPING (LOCAL VESSELS) (CERTIFICATION AND LICENSING) REGULATION – SCHEDULE 1 Class and Type of Local Vessel (https://www.elegislation.gov.hk/hk/cap548D!en@2014-03-03T00:00:00).
5. The main engine type of RTV, Tug, FL and SC refers to S4.2.6 of MVEIS.
6. The main engine type of OGV and LF refers to Table 3-17 of MVEIS. SSD, MSD, HSD and ST denote slow speed diesel, medium speed diesel, high speed diesel and steam turbine engine, respectively.
7. According to the Air Pollution Control (Marine Light Diesel) Regulation, the sulphur content of locally supplied marine light diesel is capped at 0.05%. Locally supplied marine light diesel oil are assumed to be used for refueling RTVs, Tugs, FLs and SCs in Hong Kong. Marine gas oil with 0.05% sulphur content is assumed to be used for refueling LFs.
8. All vessels are required to use compliant fuels (sulphur content <= 0.5%) under the Air Pollution Control (Fuel for Vessels) Regulations. Therefore, it is assumed that all OGVs use fuel with sulphur content not exceeding 0.5%.
9. The GRT sub-group refers to Table 4-5; the highest GRT for each vessel type is adopted as a conservative approach.
10. DWT / PAX Sub-Group refers to Table 3-18 of MVEIS; the highest DWT/PAX is adopted as a conservative approach.
11. Vessel calls are the number of vessel arrivals in Hong Kong in a year and refer to Section 1.4.5-1.4.8 and Table 3-17 of MVEIS.
12. Proportion of main engine type for OGV refers to Table 3-17 of MVEIS. Proportion of engine types for local ferry is based on the number of operators for a certain route code. Proportions of engine types for other vessel categories are set as 100%.
13. The average engine power makes references to MVEIS:
- main engine power of RTV (Table 4-5)
- auxiliary engine power of RTV (Table 4-6)
- main engine power of Tug (Table 3-15)
- auxiliary engine power of Tug (Table 3-20)
- main engine power of Fast Launch (Table 4-5)
- auxiliary engine power of Fast Launch (Table 4-6)
- main engine power of Pleasure Vessel (Table 3-15)
- auxiliary engine power of Pleasure Vessel (Table 3-20)
- main engine power of Small Fishing Vessel/Sampan, Tug Boat and Work Boat (Table 4-5)
- auxiliary engine power of Small Fishing Vessel/Sampan, Tug Boat and Work Boat (Table 4-6)
- main engine power of OGV FCCV (Table 3-16)
- auxiliary engine power of OGV FCCV (Table 3-22)
- main engine power of OGV other vessel types (Table 3-15)
- auxiliary engine power of OGV other vessel types (Table 3-20)
- auxiliary boiler power of OGV (Table 3-23)
- main engine power of Local Ferry (Table 3-15)
- auxiliary engine power of Local Ferry (Table 3-20)

With reference to Table 3-23 of MVEIS, there is no boiler for Fishing/Fish Processing Vessel of OGV.

14. The Baseline Specific Fuel Consumption (BSFC) makes reference to MVEIS and IMO Fourth Greenhouse Gas Study 2020:
- BSFC of RTV, Tug, Fast Launch and Small Vessels (Table 4-16, MVEIS)
- BSFC of OGV (Table 19, IMO Fourth Greenhouse Gas Study 2020)
  - SFC_BASE for ships built in Years 1984-2000 is adopted as a balance assumption.
  - According to Page 71 of IMO Fourth Greenhouse Gas Study, it is assumed that the Auxiliary Engine Specific Fuel Consumption Specific Fuel Consumption = Baseline Specific Fuel Consumption of Auxiliary Engines.
  - According to Page 71 of IMO Fourth Greenhouse Gas Study, it is assumed that the Auxiliary Boiler Specific Fuel Consumption Specific Fuel Consumption = Baseline Specific Fuel Consumption of Auxiliary Boilers.
- BSFC of main engine of Local Ferry (Table 3-27, MVEIS)
- BSFC of auxiliary engine of Local Ferry (Table 4-16, MVEIS)

15. The NOx emission factor refers to MVEIS and IMO Fourth Greenhouse Gas Study 2020:
- NOx emission of RTV, Tug and Fast Launch (Table 4-16, MVEIS)
- NOx emission of main engine of Pleasure Vessel (Table 4-16, MVEIS)
- NOx emission of auxiliary engine of Pleasure Vessel (Table 3-28, MVEIS)
- NOx emission of Small Fishing Vessel/Sampan, Tug Boat and Work Boat (Table 4-16, MVEIS)
- NOx emission factor of OGV (Table 49, Annex M, IMO Fourth Greenhouse Gas Study 2020)
- NOx emission factor of main engine of Local Ferry (Table 3-27, MVEIS)
- NOx emission factor of auxiliary engine of Local Ferry (Table 3-28, MVEIS)

16. The SO_2 emission factor is calculated based on the formula stated in Paragraph 4.2.31 of MVEIS:
SO_2 EF = BSFC x 2 x 0.97753 x Fuel Sulphur Fraction

17. The RSP emission factor is calculated based on the formula stated in Paragraph 4.2.31 of MVEIS:
PM_{10} EF = 0.23 + BSFC x 7 x 0.02247 x (Fuel Sulphur Fraction - 0.0024)

18. - According to the Forth IMO Greenhouse Gas Study, the RSP to FSP conversion factor used for OGV is 0.92.
- According to According to Paragraph 4.2.32 of MVEIS, the RSP to FSP conversion factor used for other vessel types is 0.97.

Emission Factors by Engine Category by Vessel

Vessel Category	Vessel Type	Route	Route Code	Engine Category	Operation Mode	Load Factor	NOx Emission Factors (g/hr) [1]	SO_2 Emission Factors (g/hr) [1]	RSP Emission Factors (g/hr) [1]	FSP Emission Factor (g/hr) [1]
RTV	Fully Cellular Container Vessel	-	1	Main Engine	Fairway Cruise	0.45	3.1680E+03	6.5962E+02	1.0046E+02	9.7446E+01
RTV	Fully Cellular Container Vessel	-	1	Auxiliary Engine	Fairway Cruise	0.43	4.9450E+02	1.0296E+02	1.5681E+01	1.5211E+01
RTV	Dry Bulk Carrier	-	1	Main Engine	Fairway Cruise	0.45	3.3480E+03	6.9710E+02	1.0617E+02	1.0298E+02
RTV	Dry Bulk Carrier	-	1	Main Engine	Maneuvering	0.30	2.2320E+03	4.6473E+02	7.0778E+01	6.8655E+01
RTV	Dry Bulk Carrier	-	1	Main Engine	Hotelling	0.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
RTV	Dry Bulk Carrier	-	1	Auxiliary Engine	Fairway Cruise	0.43	4.9450E+02	1.0296E+02	1.5681E+01	1.5211E+01
RTV	Dry Bulk Carrier	-	1	Auxiliary Engine	Maneuvering	0.43	4.9450E+02	1.0296E+02	1.5681E+01	1.5211E+01
RTV	Dry Bulk Carrier	-	1	Auxiliary Engine	Hotelling	0.43	4.9450E+02	1.0296E+02	1.5681E+01	1.5211E+01
RTV	Chemical Carrier/Tanker	-	1	Main Engine	Maneuvering	0.30	6.1974E+03	9.7756E+02	1.4888E+02	1.4442E+02
RTV	Chemical Carrier/Tanker	-	1	Main Engine	Hotelling	0.00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
RTV	Chemical Carrier/Tanker	-	1	Auxiliary Engine	Maneuvering	0.43	1.6125E+03	3.3574E+02	5.1134E+01	4.9600E+01
RTV	Chemical Carrier/Tanker	-	1	Auxiliary Engine	Hotelling	0.43	1.6125E+03	3.3574E+02	5.1134E+01	4.9600E+01
TT	Tug	-	1	Main Engine	Fairway Cruise	0.31	9.5916E+03	1.5130E+02	1.2087E+02	1.1725E+02
TT	Tug	-	1	Auxiliary Engine	Fairway Cruise	0.43	2.2360E+03	4.6557E+01	3.7195E+01	3.6079E+01
FL	Fast Launch	-	1	Main Engine	Fairway Cruise	0.45	3.1815E+03	6.6243E+01	5.2923E+01	5.1335E+01
FL	Fast Launch	-	1	Auxiliary Engine	Fairway Cruise	0.45	5.1750E+02	1.0775E+01	8.6083E+00	8.3501E+00
SC	Pleasure Vessel	-	1	Main Engine	Fairway Cruise	0.02	1.5720E+02	3.2731E+00	2.6149E+00	2.5365E+00
SC	Pleasure Vessel	-	1	Auxiliary Engine	Fairway Cruise	1.00	8.3400E+02	1.2493E+01	9.9807E+00	9.6813E+00
OGV	Gas Carrier/Tanker	-	1	Main Engine	Fairway Cruise	0.02	9.0948E+02	1.4078E+02	2.1364E+01	1.9655E+01
OGV	Gas Carrier/Tanker	-	1	Auxiliary Engine	Fairway Cruise	1.00	7.9498E+03	1.5612E+03	2.2857E+02	2.1028E+02
OGV	Gas Carrier/Tanker	-	1	Auxiliary Boiler	Fairway Cruise	1.00	7.7910E+02	1.2331E+03	1.3692E+02	1.2596E+02
OGV	Chemical Carrier/Tanker	-	1	Main Engine	Fairway Cruise	0.02	9.7798E+02	1.4624E+02	2.2287E+01	2.0504E+01
OGV	Chemical Carrier/Tanker	-	1	Auxiliary Engine	Fairway Cruise	1.00	8.3066E+03	1.6312E+03	2.3883E+02	2.1972E+02
OGV	Chemical Carrier/Tanker	-	1	Auxiliary Boiler	Fairway Cruise	1.00	7.7910E+02	1.2331E+03	1.3692E+02	1.2596E+02
OGV	Oil Tanker	-	1	Main Engine	Fairway Cruise	0.02	1.6709E+03	2.3277E+02	3.5737E+01	3.2878E+01
OGV	Oil Tanker	-	1	Auxiliary Engine	Fairway Cruise	1.00	1.3357E+04	2.6230E+03	3.8403E+02	3.5330E+02
OGV	Oil Tanker	-	1	Auxiliary Boiler	Fairway Cruise	1.00	7.7910E+02	1.2331E+03	1.3692E+02	1.2596E+02
LF	Local Ferry	Sam Ka Tsuen - Tung Lung Island	1	Main Engine	Fairway Cruise	0.80	8.3002E+03	1.2478E+03	1.9683E+02	1.9092E+02
LF	Local Ferry	Sam Ka Tsuen - Tung Lung Island	1	Auxiliary Engine	Fairway Cruise	0.45	3.7530E+02	5.7273E+01	8.6061E+00	8.3479E+00

Remarks

1. The load factor makes reference to the *Load_factor* sheet. Whenever a load factor is not available, it is assumed to be 0.02 for main engine and 1 otherwise for calculation purpose.
1. The calculations of the emission factor of each engine type refer to the following equation: Emission Factor of an Engine Type (g/hr) = Engine Power (kW) * Emission Factor (g/kWh) * Engine Load Factor.

Composite Emission Factors by Vessel

Vessel Category	Vessel Type	Route Code	Operation Mode	Composite NOx Emission Factors (g/hr) [1]	Composite SO2 Emission Factors (g/hr) [1]	Composite RSP Emission Factors (g/hr) [1]	Composite FSP Emission Factor (g/hr) [1]
RTV	Fully Cellular Container Vessel	1	Fairway Cruise	3.6625E+03	7.6258E+02	1.1614E+02	1.1266E+02
RTV	Dry Bulk Carrier	1	Fairway Cruise	3.8425E+03	8.0006E+02	1.2185E+02	1.1819E+02
RTV	Dry Bulk Carrier	1	Maneuvering	2.7265E+03	5.6770E+02	8.6459E+01	8.3866E+01
RTV	Dry Bulk Carrier	1	Hotelling	4.9450E+02	1.0296E+02	1.5681E+01	1.5211E+01
RTV	Chemical Carrier/Tanker	1	Maneuvering	7.8099E+03	1.3133E+03	2.0002E+02	1.9401E+02
RTV	Chemical Carrier/Tanker	1	Hotelling	1.6125E+03	3.3574E+02	5.1134E+01	4.9600E+01
TT	Tug	1	Fairway Cruise	1.1828E+04	1.9785E+02	1.5807E+02	1.5333E+02
FL	Fast Launch	1	Fairway Cruise	3.6990E+03	7.7018E+01	6.1531E+01	5.9685E+01
SC	Pleasure Vessel	1	Fairway Cruise	9.9120E+02	1.5766E+01	1.2596E+01	1.2218E+01
OGV	Gas Carrier/Tanker	1	Fairway Cruise	9.6384E+03	2.9350E+03	3.8685E+02	3.5590E+02
OGV	Chemical Carrier/Tanker	1	Fairway Cruise	1.0064E+04	3.0105E+03	3.9803E+02	3.6619E+02
OGV	Oil Tanker	1	Fairway Cruise	1.5807E+04	4.0888E+03	5.5668E+02	5.1214E+02
LF	Local Ferry	1	Fairway Cruise	3.7530E+02	5.7273E+01	8.6061E+00	8.3479E+00

Remark

1. Total Emission Rate is determined by this equation : Main Engine Emission Rate + Auxiliary Engine Emission Rate + Auxiliary Boiler Emission Rate (if applicable).

Vessel Parameters by Vessel

Vessel Category	Vessel Type	Parameter Group	Source Type	Base Elevation (m)	Release Height (mAG)	Exit Temperature (K)	Exit Velocity (m/s)	Diameter (m)	Remarks
RTV	Fully Cellular Container Vessel	Group 1 of RTV	POINT	1.30	42.00	503.15	24.60	1.90	[1], [2], [5]
RTV	Dry Bulk Carrier	Group 3 of RTV	POINT	1.30	27.00	503.15	25.00	0.80	[1], [2], [5]
RTV	Chemical Carrier/Tanker	Group 5 of RTV	POINT	1.30	30.00	503.15	25.00	0.80	[1], [2], [5]
FL	Fast Launch	Group 1 of FL	POINTHOR	1.30	0.00	313.00	8.00	0.70	[1], [3], [5]
TT	Tug	Group 1 of TT	POINTHOR	1.30	5.00	503.15	8.00	0.30	[1], [2], [5]
LF	Local Ferry	Group 1 of LF	POINTHOR	1.30	0.00	313.00	8.00	0.70	[1], [4], [6]
SC	Pleasure Vessel	Group 1 of SC	POINTHOR	1.30	0.00	313.00	8.00	0.30	[1], [4], [5]
OGV	Gas Carrier/Tanker	Group 4 of OGV	POINT	1.30	20.00	503.15	25.00	0.80	[1], [2], [5]
OGV	Chemical Carrier/Tanker	Group 4 of OGV	POINT	1.30	30.00	503.15	25.00	0.80	[1], [2], [5]
OGV	Oil Tanker	Group 4 of OGV	POINT	1.30	20.00	503.15	25.00	0.80	[1], [2], [5]

Notes

[1] The release height of the vessels are determined by desktop review or on-site observations.

[2] The exhaust temperature refer to the journal article: Dong, Thi Minh Hao & Xuan Phuong Nguyen. (2019). Exhaust Gas Recovery from Marine Diesel Engine in Order to Reduce the Toxic Emission and Save Energy: A Mini Review. Journal of Mechanical Engineering Research & Developments, 42(5):143-147. https://doi.org/10.26480/jmerd.05.2019.143.147. Given that other emission sources identified in this study (i.e., industrial/vehicular emission sources) mostly affect the air quality at a lower level, the lowest temperature of documented in this article was adopted as a conservative approach.

[3] According to desktop review, most of the local ferries and and fast launches are equipped with the water jet propulsion system. As conservative approach, it is assumed the water jet propulsion system is installed in all local ferries and fast launches, and their exhaust temperature refer to the engine specification of VETUS exhaust system (https://webshop.vetus.com/en/products/exhaust-systems). Given that other emission sources identified in this study (i.e., industrial/vehicular emission sources) mostly affect the air quality at a lower level, the lowest temperature documented was adopted as a conservative approach.

[4] Acoording to 'Examination Guidebook on Pleasure Vessel Operator Grade 2 Certificate of Competency' (May 2021) issued by the Hong Kong Marine Department, wet exhaust system would be installed in some pleasure vessels. As a conservative assessment, it it assumed that all pleasure vessels are equiped with water jet proplusion system and their exhaust temperature refer to the engine specification of VETUS exhaust system (https://webshop.vetus.com/en/products/exhaust-systems). Given that other emission sources identified in this study (i.e., industrial/vehicular emission sources) mostly affect the air quality at a lower level, the lowest temperature documented was adopted as a conservative approach.

[5] The stack parameters, except release height and exit temperature, refer to approved EIA - "Route 11 (Section between Yuen Long and North Lantau)" (EIA-297/2023).

[6] The stack parameters, except release height and exit temperature, refer to approved EIA - "Widening of Tsuen Wan Road and the associated junction improvement works" (EIA-296/2023).

Total Emission Rate of the Marine Emission

Route #
1

Total Emission Rate

Vessel ID	Vessel Category	Vessel Type	Route Code [1]	Average Speed (Knot) [2]	Operation Mode	Distance (nautical miles) [3]	Time-in-mode (hr)	NOx Emission Rate (g/s-vessel) [4]	SO_2 Emission Rate (g/s-vessel) [4]	RSP Emission Rate (g/s-vessel) [4]	FSP Emission Rate (g/s-vessel) [4]
R1_RTV01	RTV	Fully Cellular Container Vessel	1	13	Fairway Cruise	0.621	0.046	4.7183E-02	9.8242E-03	1.4962E-03	1.4513E-03
R1_RTV03	RTV	Dry Bulk Carrier	1	13	Fairway Cruise	0.621	0.046	4.9502E-02	1.0307E-02	1.5697E-03	1.5227E-03
R1_FL01	FL	Fast Launch	1	22	Fairway Cruise	0.621	0.029	2.9504E-02	6.1432E-04	4.9079E-04	4.7606E-04
R1_TT01	TT	Tug	1	12	Fairway Cruise	0.621	0.050	1.6541E-01	2.7670E-03	2.2106E-03	2.1443E-03
R1_LF01	LF	Local Ferry	1	22	Fairway Cruise	0.621	0.028	2.9354E-03	4.4797E-04	6.7313E-05	6.5294E-05
R1_SC01	SC	Pleasure Vessel	1	19	Fairway Cruise	0.621	0.033	9.2023E-03	1.4637E-04	1.1694E-04	1.1343E-04
R1_OGV06	OGV	Gas Carrier/Tanker	1	14	Fairway Cruise	0.621	0.044	1.1867E-01	3.6137E-02	4.7631E-03	4.3820E-03
R1_OGV07	OGV	Chemical Carrier/Tanker	1	14	Fairway Cruise	0.621	0.044	1.2391E-01	3.7067E-02	4.9007E-03	4.5087E-03
R1_OGV08	OGV	Oil Tanker	1	14	Fairway Cruise	0.621	0.044	1.9462E-01	5.0344E-02	6.8541E-03	6.3058E-03
R1_RTV03M	RTV	Dry Bulk Carrier	1	1	Maneuvering	0.443	0.443	3.3533E-01	6.9821E-02	1.0634E-02	1.0315E-02
R1_RTV07M	RTV	Chemical Carrier/Tanker	1	1	Maneuvering	0.443	0.443	9.6054E-01	1.6152E-01	2.4600E-02	2.3862E-02
R1_RTV03H	RTV	Dry Bulk Carrier	1	0	Hotelling	0.000	1.000	1.3736E-01	2.8600E-02	4.3558E-03	4.2251E-03
R1_RTV07H	RTV	Chemical Carrier/Tanker	1	0	Hotelling	0.000	1.000	4.4792E-01	9.3262E-02	1.4204E-02	1.3778E-02

Remark

1. Despite the actual routes, all general marine vessels are considered travelling in the water at the nearest and safe distance from the project site / nearby shipyards.
2. The average speed is calculated from the speed distribution for each vessel on each route.
3. The distance is measured for each route.
4. The calculations of emission factors refer to the following equation: Emission Factor (g/s-vessel) = Composite Emission Factor (g/hr) * Time-in-mode (hr) / 3600.

Emission Inventory

Source ID	Vessel ID	Vessel Category	Vessel Type	Source Type	X	Y	Number of Point Sources	Base Elevation (m)	Release Height (mAG)	Exit Temperature (K)	Exit Velocity (m/s)	Diameter (m)	NOx Emission Rate (g/s/vessel)	SO_2 Emission Rate (g/s/vessel)	RSP Emission Rate (g/s/vessel)	FSP Emission Rate (g/s/vessel)
R1_FL01_01	R1_FL01	FL	Fast Launch	POINTHOR	827278.92	825081.10	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_02	R1_FL01	FL	Fast Launch	POINTHOR	827288.83	825082.44	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_03	R1_FL01	FL	Fast Launch	POINTHOR	827298.74	825083.78	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_04	R1_FL01	FL	Fast Launch	POINTHOR	827308.65	825085.12	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_05	R1_FL01	FL	Fast Launch	POINTHOR	827318.56	825086.46	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_06	R1_FL01	FL	Fast Launch	POINTHOR	827328.47	825087.80	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_07	R1_FL01	FL	Fast Launch	POINTHOR	827338.37	825089.13	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_08	R1_FL01	FL	Fast Launch	POINTHOR	827348.28	825090.47	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_09	R1_FL01	FL	Fast Launch	POINTHOR	827358.19	825091.81	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_10	R1_FL01	FL	Fast Launch	POINTHOR	827368.10	825093.15	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_11	R1_FL01	FL	Fast Launch	POINTHOR	827378.01	825094.49	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_12	R1_FL01	FL	Fast Launch	POINTHOR	827387.92	825095.83	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_13	R1_FL01	FL	Fast Launch	POINTHOR	827397.83	825097.17	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_14	R1_FL01	FL	Fast Launch	POINTHOR	827407.74	825098.51	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_15	R1_FL01	FL	Fast Launch	POINTHOR	827417.65	825099.85	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_16	R1_FL01	FL	Fast Launch	POINTHOR	827427.56	825101.19	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_17	R1_FL01	FL	Fast Launch	POINTHOR	827437.47	825102.53	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_18	R1_FL01	FL	Fast Launch	POINTHOR	827447.38	825103.87	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_19	R1_FL01	FL	Fast Launch	POINTHOR	827457.32	825104.96	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_20	R1_FL01	FL	Fast Launch	POINTHOR	827467.27	825105.96	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_21	R1_FL01	FL	Fast Launch	POINTHOR	827477.22	825106.96	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_22	R1_FL01	FL	Fast Launch	POINTHOR	827487.17	825107.95	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_23	R1_FL01	FL	Fast Launch	POINTHOR	827497.12	825108.95	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_24	R1_FL01	FL	Fast Launch	POINTHOR	827507.07	825109.94	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_25	R1_FL01	FL	Fast Launch	POINTHOR	827517.02	825110.94	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_26	R1_FL01	FL	Fast Launch	POINTHOR	827526.97	825111.93	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_27	R1_FL01	FL	Fast Launch	POINTHOR	827536.93	825112.93	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_28	R1_FL01	FL	Fast Launch	POINTHOR	827546.88	825113.92	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_29	R1_FL01	FL	Fast Launch	POINTHOR	827556.83	825114.92	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_30	R1_FL01	FL	Fast Launch	POINTHOR	827566.78	825115.91	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_31	R1_FL01	FL	Fast Launch	POINTHOR	827576.73	825116.91	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_32	R1_FL01	FL	Fast Launch	POINTHOR	827586.68	825117.90	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_33	R1_FL01	FL	Fast Launch	POINTHOR	827596.63	825118.90	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_34	R1_FL01	FL	Fast Launch	POINTHOR	827606.58	825119.89	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_35	R1_FL01	FL	Fast Launch	POINTHOR	827616.53	825120.89	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_36	R1_FL01	FL	Fast Launch	POINTHOR	827626.48	825121.88	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_37	R1_FL01	FL	Fast Launch	POINTHOR	827636.43	825122.86	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_38	R1_FL01	FL	Fast Launch	POINTHOR	827646.40	825123.68	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_39	R1_FL01	FL	Fast Launch	POINTHOR	827656.36	825124.49	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_40	R1_FL01	FL	Fast Launch	POINTHOR	827666.33	825125.30	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_41	R1_FL01	FL	Fast Launch	POINTHOR	827676.30	825126.11	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_42	R1_FL01	FL	Fast Launch	POINTHOR	827686.26	825126.93	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_43	R1_FL01	FL	Fast Launch	POINTHOR	827696.23	825127.74	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_44	R1_FL01	FL	Fast Launch	POINTHOR	827706.20	825128.55	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_45	R1_FL01	FL	Fast Launch	POINTHOR	827716.17	825129.37	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_46	R1_FL01	FL	Fast Launch	POINTHOR	827726.13	825130.18	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_47	R1_FL01	FL	Fast Launch	POINTHOR	827736.10	825130.99	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_48	R1_FL01	FL	Fast Launch	POINTHOR	827746.07	825131.80	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_49	R1_FL01	FL	Fast Launch	POINTHOR	827756.03	825132.62	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_50	R1_FL01	FL	Fast Launch	POINTHOR	827766.00	825133.43	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_51	R1_FL01	FL	Fast Launch	POINTHOR	827775.97	825134.24	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_52	R1_FL01	FL	Fast Launch	POINTHOR	827785.93	825135.05	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_53	R1_FL01	FL	Fast Launch	POINTHOR	827795.90	825135.87	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_54	R1_FL01	FL	Fast Launch	POINTHOR	827805.87	825136.68	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_55	R1_FL01	FL	Fast Launch	POINTHOR	827815.83	825137.49	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_56	R1_FL01	FL	Fast Launch	POINTHOR	827825.80	825138.31	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_57	R1_FL01	FL	Fast Launch	POINTHOR	827835.77	825139.12	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_58	R1_FL01	FL	Fast Launch	POINTHOR	827845.74	825139.93	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_59	R1_FL01	FL	Fast Launch	POINTHOR	827855.70	825140.74	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_60	R1_FL01	FL	Fast Launch	POINTHOR	827865.67	825141.56	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_61	R1_FL01	FL	Fast Launch	POINTHOR	827875.64	825142.37	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_62	R1_FL01	FL	Fast Launch	POINTHOR	827885.60	825143.18	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_63	R1_FL01	FL	Fast Launch	POINTHOR	827895.57	825143.99	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_64	R1_FL01	FL	Fast Launch	POINTHOR	827905.54	825144.81	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_65	R1_FL01	FL	Fast Launch	POINTHOR	827915.50	825145.68	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_66	R1_FL01	FL	Fast Launch	POINTHOR	827925.46	825146.56	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_67	R1_FL01	FL	Fast Launch	POINTHOR	827935.42	825147.43	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_68	R1_FL01	FL	Fast Launch	POINTHOR	827945.38	825148.31	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_69	R1_FL01	FL	Fast Launch	POINTHOR	827955.35	825149.18	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_70	R1_FL01	FL	Fast Launch	POINTHOR	827965.31	825150.06	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_71	R1_FL01	FL	Fast Launch	POINTHOR	827975.27	825150.93	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_72	R1_FL01	FL	Fast Launch	POINTHOR	827985.23	825151.81	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_73	R1_FL01	FL	Fast Launch	POINTHOR	827995.19	825152.68	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_74	R1_FL01	FL	Fast Launch	POINTHOR	828005.15	825153.56	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_75	R1_FL01	FL	Fast Launch	POINTHOR	828015.12	825154.43	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_76	R1_FL01	FL	Fast Launch	POINTHOR	828025.08	825155.31	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_77	R1_FL01	FL	Fast Launch	POINTHOR	828035.04	825156.18	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_78	R1_FL01	FL	Fast Launch	POINTHOR	828045.00	825157.06	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_79	R1_FL01	FL	Fast Launch	POINTHOR	828054.96	825157.93	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_80	R1_FL01	FL	Fast Launch	POINTHOR	828064.92	825158.81	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06

Emission Inventory

Source ID	Vessel ID	Vessel Category	Vessel Type	Source Type	X	Y	Number of Point Sources	Base Elevation (m)	Release Height (mAG)	Exit Temperature (K)	Exit Velocity (m/s)	Diameter (m)	NOx Emission Rate (g/s/vessel)	SO_2 Emission Rate (g/s/vessel)	RSP Emission Rate (g/s/vessel)	FSP Emission Rate (g/s/vessel)
R1_FL01_81	R1_FL01	FL	Fast Launch	POINTHOR	828074.88	825159.68	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_82	R1_FL01	FL	Fast Launch	POINTHOR	828084.85	825160.56	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_83	R1_FL01	FL	Fast Launch	POINTHOR	828094.81	825161.43	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_84	R1_FL01	FL	Fast Launch	POINTHOR	828104.77	825162.31	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_85	R1_FL01	FL	Fast Launch	POINTHOR	828114.73	825163.18	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_86	R1_FL01	FL	Fast Launch	POINTHOR	828124.69	825164.06	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_87	R1_FL01	FL	Fast Launch	POINTHOR	828134.65	825164.93	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_88	R1_FL01	FL	Fast Launch	POINTHOR	828144.62	825165.81	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_89	R1_FL01	FL	Fast Launch	POINTHOR	828154.58	825166.68	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_90	R1_FL01	FL	Fast Launch	POINTHOR	828164.54	825167.56	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_91	R1_FL01	FL	Fast Launch	POINTHOR	828174.50	825168.43	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_92	R1_FL01	FL	Fast Launch	POINTHOR	828184.46	825169.31	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_93	R1_FL01	FL	Fast Launch	POINTHOR	828194.42	825170.18	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_94	R1_FL01	FL	Fast Launch	POINTHOR	828204.39	825171.06	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_95	R1_FL01	FL	Fast Launch	POINTHOR	828214.35	825171.93	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_96	R1_FL01	FL	Fast Launch	POINTHOR	828224.31	825172.81	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_97	R1_FL01	FL	Fast Launch	POINTHOR	828234.27	825173.68	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_98	R1_FL01	FL	Fast Launch	POINTHOR	828244.23	825174.56	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_99	R1_FL01	FL	Fast Launch	POINTHOR	828254.20	825175.40	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_100	R1_FL01	FL	Fast Launch	POINTHOR	828264.16	825176.23	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_101	R1_FL01	FL	Fast Launch	POINTHOR	828274.13	825177.05	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_102	R1_FL01	FL	Fast Launch	POINTHOR	828284.09	825177.88	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_103	R1_FL01	FL	Fast Launch	POINTHOR	828294.06	825178.70	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_104	R1_FL01	FL	Fast Launch	POINTHOR	828304.03	825179.53	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_105	R1_FL01	FL	Fast Launch	POINTHOR	828313.99	825180.35	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_106	R1_FL01	FL	Fast Launch	POINTHOR	828323.96	825181.18	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_107	R1_FL01	FL	Fast Launch	POINTHOR	828333.92	825182.00	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_108	R1_FL01	FL	Fast Launch	POINTHOR	828343.89	825182.83	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_109	R1_FL01	FL	Fast Launch	POINTHOR	828353.86	825183.65	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_110	R1_FL01	FL	Fast Launch	POINTHOR	828363.82	825184.48	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_111	R1_FL01	FL	Fast Launch	POINTHOR	828373.79	825185.30	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_112	R1_FL01	FL	Fast Launch	POINTHOR	828383.75	825186.13	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_113	R1_FL01	FL	Fast Launch	POINTHOR	828393.72	825186.95	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_114	R1_FL01	FL	Fast Launch	POINTHOR	828403.69	825187.78	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_115	R1_FL01	FL	Fast Launch	POINTHOR	828413.65	825188.60	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_FL01_116	R1_FL01	FL	Fast Launch	POINTHOR	828416.64	825188.85	116	1.30	0.00	313.00	8.00	0.70	2.5435E-04	5.2958E-06	4.2309E-06	4.1040E-06
R1_LF01_01	R1_LF01	LF	Local Ferry	POINTHOR	827278.92	825081.10	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_02	R1_LF01	LF	Local Ferry	POINTHOR	827288.83	825082.44	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_03	R1_LF01	LF	Local Ferry	POINTHOR	827298.74	825083.78	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_04	R1_LF01	LF	Local Ferry	POINTHOR	827308.65	825085.12	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_05	R1_LF01	LF	Local Ferry	POINTHOR	827318.56	825086.46	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_06	R1_LF01	LF	Local Ferry	POINTHOR	827328.47	825087.80	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_07	R1_LF01	LF	Local Ferry	POINTHOR	827338.37	825089.13	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_08	R1_LF01	LF	Local Ferry	POINTHOR	827348.28	825090.47	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_09	R1_LF01	LF	Local Ferry	POINTHOR	827358.19	825091.81	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_10	R1_LF01	LF	Local Ferry	POINTHOR	827368.10	825093.15	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_11	R1_LF01	LF	Local Ferry	POINTHOR	827378.01	825094.49	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_12	R1_LF01	LF	Local Ferry	POINTHOR	827387.92	825095.83	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_13	R1_LF01	LF	Local Ferry	POINTHOR	827397.83	825097.17	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_14	R1_LF01	LF	Local Ferry	POINTHOR	827407.74	825098.51	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_15	R1_LF01	LF	Local Ferry	POINTHOR	827417.65	825099.85	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_16	R1_LF01	LF	Local Ferry	POINTHOR	827427.56	825101.19	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_17	R1_LF01	LF	Local Ferry	POINTHOR	827437.47	825102.53	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_18	R1_LF01	LF	Local Ferry	POINTHOR	827447.38	825103.87	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_19	R1_LF01	LF	Local Ferry	POINTHOR	827457.32	825104.96	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_20	R1_LF01	LF	Local Ferry	POINTHOR	827467.27	825105.96	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_21	R1_LF01	LF	Local Ferry	POINTHOR	827477.22	825106.96	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_22	R1_LF01	LF	Local Ferry	POINTHOR	827487.17	825107.95	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_23	R1_LF01	LF	Local Ferry	POINTHOR	827497.12	825108.95	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_24	R1_LF01	LF	Local Ferry	POINTHOR	827507.07	825109.94	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_25	R1_LF01	LF	Local Ferry	POINTHOR	827517.02	825110.94	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_26	R1_LF01	LF	Local Ferry	POINTHOR	827526.97	825111.93	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_27	R1_LF01	LF	Local Ferry	POINTHOR	827536.93	825112.93	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_28	R1_LF01	LF	Local Ferry	POINTHOR	827546.88	825113.92	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_29	R1_LF01	LF	Local Ferry	POINTHOR	827556.83	825114.92	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_30	R1_LF01	LF	Local Ferry	POINTHOR	827566.78	825115.91	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_31	R1_LF01	LF	Local Ferry	POINTHOR	827576.73	825116.91	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_32	R1_LF01	LF	Local Ferry	POINTHOR	827586.68	825117.90	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_33	R1_LF01	LF	Local Ferry	POINTHOR	827596.63	825118.90	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_34	R1_LF01	LF	Local Ferry	POINTHOR	827606.58	825119.89	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_35	R1_LF01	LF	Local Ferry	POINTHOR	827616.53	825120.89	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_36	R1_LF01	LF	Local Ferry	POINTHOR	827626.48	825121.88	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_37	R1_LF01	LF	Local Ferry	POINTHOR	827636.43	825122.86	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_38	R1_LF01	LF	Local Ferry	POINTHOR	827646.40	825123.68	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_39	R1_LF01	LF	Local Ferry	POINTHOR	827656.36	825124.49	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_40	R1_LF01	LF	Local Ferry	POINTHOR	827666.33	825125.30	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_41	R1_LF01	LF	Local Ferry	POINTHOR	827676.30	825126.11	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_42	R1_LF01	LF	Local Ferry	POINTHOR	827686.26	825126.93	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_43	R1_LF01	LF	Local Ferry	POINTHOR	827696.23	825127.74	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_44	R1_LF01	LF	Local Ferry	POINTHOR	827706.20	825128.55	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07

Emission Inventory

Source ID	Vessel ID	Vessel Category	Vessel Type	Source Type	X	Y	Number of Point Sources	Base Elevation (m)	Release Height (mAG)	Exit Temperature (K)	Exit Velocity (m/s)	Diameter (m)	NOx Emission Rate (g/s/vessel)	SO_2 Emission Rate (g/s/vessel)	RSP Emission Rate (g/s/vessel)	FSP Emission Rate (g/s/vessel)
R1_LF01_45	R1_LF01	LF	Local Ferry	POINTHOR	827716.17	825129.37	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_46	R1_LF01	LF	Local Ferry	POINTHOR	827726.13	825130.18	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_47	R1_LF01	LF	Local Ferry	POINTHOR	827736.10	825130.99	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_48	R1_LF01	LF	Local Ferry	POINTHOR	827746.07	825131.80	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_49	R1_LF01	LF	Local Ferry	POINTHOR	827756.03	825132.62	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_50	R1_LF01	LF	Local Ferry	POINTHOR	827766.00	825133.43	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_51	R1_LF01	LF	Local Ferry	POINTHOR	827775.97	825134.24	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_52	R1_LF01	LF	Local Ferry	POINTHOR	827785.93	825135.05	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_53	R1_LF01	LF	Local Ferry	POINTHOR	827795.90	825135.87	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_54	R1_LF01	LF	Local Ferry	POINTHOR	827805.87	825136.68	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_55	R1_LF01	LF	Local Ferry	POINTHOR	827815.83	825137.49	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_56	R1_LF01	LF	Local Ferry	POINTHOR	827825.80	825138.31	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_57	R1_LF01	LF	Local Ferry	POINTHOR	827835.77	825139.12	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_58	R1_LF01	LF	Local Ferry	POINTHOR	827845.74	825139.93	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_59	R1_LF01	LF	Local Ferry	POINTHOR	827855.70	825140.74	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_60	R1_LF01	LF	Local Ferry	POINTHOR	827865.67	825141.56	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_61	R1_LF01	LF	Local Ferry	POINTHOR	827875.64	825142.37	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_62	R1_LF01	LF	Local Ferry	POINTHOR	827885.60	825143.18	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_63	R1_LF01	LF	Local Ferry	POINTHOR	827895.57	825143.99	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_64	R1_LF01	LF	Local Ferry	POINTHOR	827905.54	825144.81	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_65	R1_LF01	LF	Local Ferry	POINTHOR	827915.50	825145.68	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_66	R1_LF01	LF	Local Ferry	POINTHOR	827925.46	825146.56	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_67	R1_LF01	LF	Local Ferry	POINTHOR	827935.42	825147.43	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_68	R1_LF01	LF	Local Ferry	POINTHOR	827945.38	825148.31	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_69	R1_LF01	LF	Local Ferry	POINTHOR	827955.35	825149.18	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_70	R1_LF01	LF	Local Ferry	POINTHOR	827965.31	825150.06	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_71	R1_LF01	LF	Local Ferry	POINTHOR	827975.27	825150.93	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_72	R1_LF01	LF	Local Ferry	POINTHOR	827985.23	825151.81	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_73	R1_LF01	LF	Local Ferry	POINTHOR	827995.19	825152.68	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_74	R1_LF01	LF	Local Ferry	POINTHOR	828005.15	825153.56	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_75	R1_LF01	LF	Local Ferry	POINTHOR	828015.12	825154.43	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_76	R1_LF01	LF	Local Ferry	POINTHOR	828025.08	825155.31	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_77	R1_LF01	LF	Local Ferry	POINTHOR	828035.04	825156.18	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_78	R1_LF01	LF	Local Ferry	POINTHOR	828045.00	825157.06	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_79	R1_LF01	LF	Local Ferry	POINTHOR	828054.96	825157.93	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_80	R1_LF01	LF	Local Ferry	POINTHOR	828064.92	825158.81	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_81	R1_LF01	LF	Local Ferry	POINTHOR	828074.88	825159.68	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_82	R1_LF01	LF	Local Ferry	POINTHOR	828084.85	825160.56	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_83	R1_LF01	LF	Local Ferry	POINTHOR	828094.81	825161.43	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_84	R1_LF01	LF	Local Ferry	POINTHOR	828104.77	825162.31	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_85	R1_LF01	LF	Local Ferry	POINTHOR	828114.73	825163.18	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_86	R1_LF01	LF	Local Ferry	POINTHOR	828124.69	825164.06	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_87	R1_LF01	LF	Local Ferry	POINTHOR	828134.65	825164.93	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_88	R1_LF01	LF	Local Ferry	POINTHOR	828144.62	825165.81	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_89	R1_LF01	LF	Local Ferry	POINTHOR	828154.58	825166.68	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_90	R1_LF01	LF	Local Ferry	POINTHOR	828164.54	825167.56	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_91	R1_LF01	LF	Local Ferry	POINTHOR	828174.50	825168.43	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_92	R1_LF01	LF	Local Ferry	POINTHOR	828184.46	825169.31	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_93	R1_LF01	LF	Local Ferry	POINTHOR	828194.42	825170.18	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_94	R1_LF01	LF	Local Ferry	POINTHOR	828204.39	825171.06	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_95	R1_LF01	LF	Local Ferry	POINTHOR	828214.35	825171.93	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_96	R1_LF01	LF	Local Ferry	POINTHOR	828224.31	825172.81	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_97	R1_LF01	LF	Local Ferry	POINTHOR	828234.27	825173.68	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_98	R1_LF01	LF	Local Ferry	POINTHOR	828244.23	825174.56	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_99	R1_LF01	LF	Local Ferry	POINTHOR	828254.20	825175.40	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_100	R1_LF01	LF	Local Ferry	POINTHOR	828264.16	825176.23	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_101	R1_LF01	LF	Local Ferry	POINTHOR	828274.13	825177.05	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_102	R1_LF01	LF	Local Ferry	POINTHOR	828284.09	825177.88	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_103	R1_LF01	LF	Local Ferry	POINTHOR	828294.06	825178.70	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_104	R1_LF01	LF	Local Ferry	POINTHOR	828304.03	825179.53	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_105	R1_LF01	LF	Local Ferry	POINTHOR	828313.99	825180.35	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_106	R1_LF01	LF	Local Ferry	POINTHOR	828323.96	825181.18	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_107	R1_LF01	LF	Local Ferry	POINTHOR	828333.92	825182.00	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_108	R1_LF01	LF	Local Ferry	POINTHOR	828343.89	825182.83	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_109	R1_LF01	LF	Local Ferry	POINTHOR	828353.86	825183.65	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_110	R1_LF01	LF	Local Ferry	POINTHOR	828363.82	825184.48	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_111	R1_LF01	LF	Local Ferry	POINTHOR	828373.79	825185.30	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_112	R1_LF01	LF	Local Ferry	POINTHOR	828383.75	825186.13	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_113	R1_LF01	LF	Local Ferry	POINTHOR	828393.72	825186.95	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_114	R1_LF01	LF	Local Ferry	POINTHOR	828403.69	825187.78	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_115	R1_LF01	LF	Local Ferry	POINTHOR	828413.65	825188.60	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_LF01_116	R1_LF01	LF	Local Ferry	POINTHOR	828416.64	825188.85	116	1.30	0.00	313.00	8.00	0.70	2.5305E-05	3.8618E-06	5.8028E-07	5.6288E-07
R1_OGV06_01	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827278.92	825081.10	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_02	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827288.83	825082.44	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_03	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827298.74	825083.78	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_04	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827308.65	825085.12	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_05	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827318.56	825086.46	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_06	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827328.47	825087.80	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_07	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827338.37	825089.13	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_08	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827348.28	825090.47	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05

Emission Inventory

Source ID	Vessel ID	Vessel Category	Vessel Type	Source Type	X	Y	Number of Point Sources	Base Elevation (m)	Release Height (mAG)	Exit Temperature (K)	Exit Velocity (m/s)	Diameter (m)	NOx Emission Rate (g/s/vessel)	SO_2 Emission Rate (g/s/vessel)	RSP Emission Rate (g/s/vessel)	FSP Emission Rate (g/s/vessel)
R1_OGV06_09	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827358.19	825091.81	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_10	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827368.10	825093.15	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_11	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827378.01	825094.49	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_12	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827387.92	825095.83	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_13	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827397.83	825097.17	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_14	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827407.74	825098.51	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_15	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827417.65	825099.85	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_16	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827427.56	825101.19	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_17	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827437.47	825102.53	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_18	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827447.38	825103.87	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_19	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827457.32	825104.96	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_20	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827467.27	825105.96	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_21	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827477.22	825106.96	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_22	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827487.17	825107.95	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_23	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827497.12	825108.95	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_24	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827507.07	825109.94	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_25	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827517.02	825110.94	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_26	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827526.97	825111.93	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_27	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827536.93	825112.93	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_28	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827546.88	825113.92	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_29	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827556.83	825114.92	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_30	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827566.78	825115.91	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_31	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827576.73	825116.91	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_32	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827586.68	825117.90	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_33	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827596.63	825118.90	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_34	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827606.58	825119.89	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_35	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827616.53	825120.89	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_36	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827626.48	825121.88	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_37	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827636.43	825122.86	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_38	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827646.40	825123.68	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_39	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827656.36	825124.49	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_40	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827666.33	825125.30	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_41	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827676.30	825126.11	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_42	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827686.26	825126.93	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_43	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827696.23	825127.74	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_44	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827706.20	825128.55	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_45	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827716.17	825129.37	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_46	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827726.13	825130.18	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_47	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827736.10	825130.99	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_48	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827746.07	825131.80	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_49	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827756.03	825132.62	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_50	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827766.00	825133.43	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_51	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827775.97	825134.24	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_52	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827785.93	825135.05	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_53	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827795.90	825135.87	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_54	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827805.87	825136.68	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_55	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827815.83	825137.49	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_56	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827825.80	825138.31	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_57	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827835.77	825139.12	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_58	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827845.74	825139.93	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_59	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827855.70	825140.74	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_60	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827865.67	825141.56	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_61	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827875.64	825142.37	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_62	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827885.60	825143.18	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_63	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827895.57	825143.99	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_64	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827905.54	825144.81	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_65	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827915.50	825145.68	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_66	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827925.46	825146.56	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_67	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827935.42	825147.43	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_68	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827945.38	825148.31	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_69	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827955.35	825149.18	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_70	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827965.31	825150.06	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_71	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827975.27	825150.93	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_72	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827985.23	825151.81	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_73	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	827995.19	825152.68	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_74	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	828005.15	825153.56	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_75	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	828015.12	825154.43	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_76	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	828025.08	825155.31	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_77	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	828035.04	825156.18	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_78	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	828045.00	825157.06	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_79	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	828054.96	825157.93	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_80	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	828064.92	825158.81	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_81	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	828074.88	825159.68	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_82	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	828084.85	825160.56	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_83	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	828094.81	825161.43	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_84	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	828104.77	825162.31	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_85	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	828114.73	825163.18	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_86	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	828124.69	825164.06	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_87	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	828134.65	825164.93	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_88	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	828144.62	825165.81	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05

Emission Inventory

Source ID	Vessel ID	Vessel Category	Vessel Type	Source Type	X	Y	Number of Point Sources	Base Elevation (m)	Release Height (mAG)	Exit Temperature (K)	Exit Velocity (m/s)	Diameter (m)	NOx Emission Rate (g/s/vessel)	SO_2 Emission Rate (g/s/vessel)	RSP Emission Rate (g/s/vessel)	FSP Emission Rate (g/s/vessel)
R1_OGV06_89	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	828154.58	825166.68	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_90	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	828164.54	825167.56	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_91	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	828174.50	825168.43	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_92	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	828184.46	825169.31	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_93	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	828194.42	825170.18	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_94	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	828204.39	825171.06	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_95	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	828214.35	825171.93	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_96	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	828224.31	825172.81	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_97	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	828234.27	825173.68	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_98	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	828244.23	825174.56	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_99	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	828254.20	825175.40	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_100	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	828264.16	825176.23	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_101	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	828274.13	825177.05	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_102	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	828284.09	825177.88	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_103	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	828294.06	825178.70	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_104	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	828304.03	825179.53	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_105	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	828313.99	825180.35	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_106	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	828323.96	825181.18	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_107	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	828333.92	825182.00	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_108	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	828343.89	825182.83	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_109	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	828353.86	825183.65	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_110	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	828363.82	825184.48	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_111	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	828373.79	825185.30	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_112	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	828383.75	825186.13	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_113	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	828393.72	825186.95	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_114	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	828403.69	825187.78	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_115	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	828413.65	825188.60	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV06_116	R1_OGV06	OGV	Gas Carrier/Tanker	POINT	828416.64	825188.85	116	1.30	20.00	503.15	25.00	0.80	1.0230E-03	3.1153E-04	4.1061E-05	3.7776E-05
R1_OGV07_01	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827278.92	825081.10	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_02	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827288.83	825082.44	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_03	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827298.74	825083.78	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_04	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827308.65	825085.12	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_05	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827318.56	825086.46	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_06	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827328.47	825087.80	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_07	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827338.37	825089.13	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_08	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827348.28	825090.47	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_09	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827358.19	825091.81	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_10	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827368.10	825093.15	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_11	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827378.01	825094.49	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_12	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827387.92	825095.83	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_13	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827397.83	825097.17	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_14	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827407.74	825098.51	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_15	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827417.65	825099.85	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_16	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827427.56	825101.19	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_17	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827437.47	825102.53	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_18	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827447.38	825103.87	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_19	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827457.32	825104.96	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_20	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827467.27	825105.96	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_21	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827477.22	825106.96	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_22	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827487.17	825107.95	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_23	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827497.12	825108.95	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_24	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827507.07	825109.94	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_25	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827517.02	825110.94	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_26	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827526.97	825111.93	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_27	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827536.93	825112.93	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_28	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827546.88	825113.92	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_29	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827556.83	825114.92	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_30	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827566.78	825115.91	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_31	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827576.73	825116.91	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_32	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827586.68	825117.90	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_33	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827596.63	825118.90	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_34	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827606.58	825119.89	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_35	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827616.53	825120.89	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_36	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827626.48	825121.88	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_37	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827636.43	825122.86	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_38	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827646.40	825123.68	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_39	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827656.36	825124.49	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_40	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827666.33	825125.30	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_41	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827676.30	825126.11	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_42	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827686.26	825126.93	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_43	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827696.23	825127.74	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_44	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827706.20	825128.55	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_45	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827716.17	825129.37	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_46	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827726.13	825130.18	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_47	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827736.10	825130.99	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_48	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827746.07	825131.80	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_49	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827756.03	825132.62	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_50	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827766.00	825133.43	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_51	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827775.97	825134.24	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_52	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827785.93	825135.05	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05

Emission Inventory

Source ID	Vessel ID	Vessel Category	Vessel Type	Source Type	X	Y	Number of Point Sources	Base Elevation (m)	Release Height (mAG)	Exit Temperature (K)	Exit Velocity (m/s)	Diameter (m)	NOx Emission Rate (g/s/vessel)	SO_2 Emission Rate (g/s/vessel)	RSP Emission Rate (g/s/vessel)	FSP Emission Rate (g/s/vessel)
R1_OGV07_53	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827795.90	825135.87	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_54	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827805.87	825136.68	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_55	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827815.83	825137.49	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_56	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827825.80	825138.31	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_57	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827835.77	825139.12	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_58	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827845.74	825139.93	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_59	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827855.70	825140.74	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_60	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827865.67	825141.56	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_61	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827875.64	825142.37	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_62	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827885.60	825143.18	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_63	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827895.57	825143.99	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_64	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827905.54	825144.81	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_65	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827915.50	825145.68	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_66	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827925.46	825146.56	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_67	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827935.42	825147.43	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_68	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827945.38	825148.31	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_69	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827955.35	825149.18	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_70	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827965.31	825150.06	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_71	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827975.27	825150.93	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_72	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827985.23	825151.81	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_73	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	827995.19	825152.68	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_74	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	828005.15	825153.56	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_75	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	828015.12	825154.43	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_76	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	828025.08	825155.31	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_77	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	828035.04	825156.18	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_78	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	828045.00	825157.06	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_79	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	828054.96	825157.93	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_80	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	828064.92	825158.81	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_81	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	828074.88	825159.68	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_82	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	828084.85	825160.56	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_83	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	828094.81	825161.43	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_84	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	828104.77	825162.31	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_85	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	828114.73	825163.18	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_86	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	828124.69	825164.06	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_87	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	828134.65	825164.93	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_88	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	828144.62	825165.81	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_89	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	828154.58	825166.68	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_90	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	828164.54	825167.56	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_91	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	828174.50	825168.43	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_92	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	828184.46	825169.31	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_93	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	828194.42	825170.18	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_94	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	828204.39	825171.06	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_95	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	828214.35	825171.93	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_96	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	828224.31	825172.81	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_97	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	828234.27	825173.68	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_98	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	828244.23	825174.56	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_99	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	828254.20	825175.40	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_100	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	828264.16	825176.23	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_101	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	828274.13	825177.05	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_102	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	828284.09	825177.88	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_103	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	828294.06	825178.70	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_104	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	828304.03	825179.53	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_105	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	828313.99	825180.35	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_106	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	828323.96	825181.18	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_107	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	828333.92	825182.00	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_108	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	828343.89	825182.83	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_109	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	828353.86	825183.65	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_110	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	828363.82	825184.48	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_111	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	828373.79	825185.30	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_112	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	828383.75	825186.13	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_113	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	828393.72	825186.95	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_114	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	828403.69	825187.78	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_115	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	828413.65	825188.60	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV07_116	R1_OGV07	OGV	Chemical Carrier/Tanker	POINT	828416.64	825188.85	116	1.30	30.00	503.15	25.00	0.80	1.0682E-03	3.1955E-04	4.2248E-05	3.8868E-05
R1_OGV08_01	R1_OGV08	OGV	Oil Tanker	POINT	827278.92	825081.10	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_02	R1_OGV08	OGV	Oil Tanker	POINT	827288.83	825082.44	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_03	R1_OGV08	OGV	Oil Tanker	POINT	827298.74	825083.78	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_04	R1_OGV08	OGV	Oil Tanker	POINT	827308.65	825085.12	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_05	R1_OGV08	OGV	Oil Tanker	POINT	827318.56	825086.46	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_06	R1_OGV08	OGV	Oil Tanker	POINT	827328.47	825087.80	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_07	R1_OGV08	OGV	Oil Tanker	POINT	827338.37	825089.13	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_08	R1_OGV08	OGV	Oil Tanker	POINT	827348.28	825090.47	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_09	R1_OGV08	OGV	Oil Tanker	POINT	827358.19	825091.81	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_10	R1_OGV08	OGV	Oil Tanker	POINT	827368.10	825093.15	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_11	R1_OGV08	OGV	Oil Tanker	POINT	827378.01	825094.49	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_12	R1_OGV08	OGV	Oil Tanker	POINT	827387.92	825095.83	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_13	R1_OGV08	OGV	Oil Tanker	POINT	827397.83	825097.17	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_14	R1_OGV08	OGV	Oil Tanker	POINT	827407.74	825098.51	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_15	R1_OGV08	OGV	Oil Tanker	POINT	827417.65	825099.85	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_16	R1_OGV08	OGV	Oil Tanker	POINT	827427.56	825101.19	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05

Emission Inventory

Source ID	Vessel ID	Vessel Category	Vessel Type	Source Type	X	Y	Number of Point Sources	Base Elevation (m)	Release Height (mAG)	Exit Temperature (K)	Exit Velocity (m/s)	Diameter (m)	NOx Emission Rate (g/s/vessel)	SO_2 Emission Rate (g/s/vessel)	RSP Emission Rate (g/s/vessel)	FSP Emission Rate (g/s/vessel)
R1_OGV08_17	R1_OGV08	OGV	Oil Tanker	POINT	827437.47	825102.53	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_18	R1_OGV08	OGV	Oil Tanker	POINT	827447.38	825103.87	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_19	R1_OGV08	OGV	Oil Tanker	POINT	827457.32	825104.96	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_20	R1_OGV08	OGV	Oil Tanker	POINT	827467.27	825105.96	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_21	R1_OGV08	OGV	Oil Tanker	POINT	827477.22	825106.96	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_22	R1_OGV08	OGV	Oil Tanker	POINT	827487.17	825107.95	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_23	R1_OGV08	OGV	Oil Tanker	POINT	827497.12	825108.95	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_24	R1_OGV08	OGV	Oil Tanker	POINT	827507.07	825109.94	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_25	R1_OGV08	OGV	Oil Tanker	POINT	827517.02	825110.94	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_26	R1_OGV08	OGV	Oil Tanker	POINT	827526.97	825111.93	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_27	R1_OGV08	OGV	Oil Tanker	POINT	827536.93	825112.93	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_28	R1_OGV08	OGV	Oil Tanker	POINT	827546.88	825113.92	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_29	R1_OGV08	OGV	Oil Tanker	POINT	827556.83	825114.92	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_30	R1_OGV08	OGV	Oil Tanker	POINT	827566.78	825115.91	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_31	R1_OGV08	OGV	Oil Tanker	POINT	827576.73	825116.91	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_32	R1_OGV08	OGV	Oil Tanker	POINT	827586.68	825117.90	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_33	R1_OGV08	OGV	Oil Tanker	POINT	827596.63	825118.90	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_34	R1_OGV08	OGV	Oil Tanker	POINT	827606.58	825119.89	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_35	R1_OGV08	OGV	Oil Tanker	POINT	827616.53	825120.89	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_36	R1_OGV08	OGV	Oil Tanker	POINT	827626.48	825121.88	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_37	R1_OGV08	OGV	Oil Tanker	POINT	827636.43	825122.86	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_38	R1_OGV08	OGV	Oil Tanker	POINT	827646.40	825123.68	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_39	R1_OGV08	OGV	Oil Tanker	POINT	827656.36	825124.49	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_40	R1_OGV08	OGV	Oil Tanker	POINT	827666.33	825125.30	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_41	R1_OGV08	OGV	Oil Tanker	POINT	827676.30	825126.11	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_42	R1_OGV08	OGV	Oil Tanker	POINT	827686.26	825126.93	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_43	R1_OGV08	OGV	Oil Tanker	POINT	827696.23	825127.74	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_44	R1_OGV08	OGV	Oil Tanker	POINT	827706.20	825128.55	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_45	R1_OGV08	OGV	Oil Tanker	POINT	827716.17	825129.37	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_46	R1_OGV08	OGV	Oil Tanker	POINT	827726.13	825130.18	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_47	R1_OGV08	OGV	Oil Tanker	POINT	827736.10	825130.99	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_48	R1_OGV08	OGV	Oil Tanker	POINT	827746.07	825131.80	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_49	R1_OGV08	OGV	Oil Tanker	POINT	827756.03	825132.62	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_50	R1_OGV08	OGV	Oil Tanker	POINT	827766.00	825133.43	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_51	R1_OGV08	OGV	Oil Tanker	POINT	827775.97	825134.24	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_52	R1_OGV08	OGV	Oil Tanker	POINT	827785.93	825135.05	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_53	R1_OGV08	OGV	Oil Tanker	POINT	827795.90	825135.87	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_54	R1_OGV08	OGV	Oil Tanker	POINT	827805.87	825136.68	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_55	R1_OGV08	OGV	Oil Tanker	POINT	827815.83	825137.49	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_56	R1_OGV08	OGV	Oil Tanker	POINT	827825.80	825138.31	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_57	R1_OGV08	OGV	Oil Tanker	POINT	827835.77	825139.12	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_58	R1_OGV08	OGV	Oil Tanker	POINT	827845.74	825139.93	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_59	R1_OGV08	OGV	Oil Tanker	POINT	827855.70	825140.74	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_60	R1_OGV08	OGV	Oil Tanker	POINT	827865.67	825141.56	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_61	R1_OGV08	OGV	Oil Tanker	POINT	827875.64	825142.37	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_62	R1_OGV08	OGV	Oil Tanker	POINT	827885.60	825143.18	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_63	R1_OGV08	OGV	Oil Tanker	POINT	827895.57	825143.99	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_64	R1_OGV08	OGV	Oil Tanker	POINT	827905.54	825144.81	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_65	R1_OGV08	OGV	Oil Tanker	POINT	827915.50	825145.68	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_66	R1_OGV08	OGV	Oil Tanker	POINT	827925.46	825146.56	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_67	R1_OGV08	OGV	Oil Tanker	POINT	827935.42	825147.43	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_68	R1_OGV08	OGV	Oil Tanker	POINT	827945.38	825148.31	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_69	R1_OGV08	OGV	Oil Tanker	POINT	827955.35	825149.18	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_70	R1_OGV08	OGV	Oil Tanker	POINT	827965.31	825150.06	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_71	R1_OGV08	OGV	Oil Tanker	POINT	827975.27	825150.93	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_72	R1_OGV08	OGV	Oil Tanker	POINT	827985.23	825151.81	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_73	R1_OGV08	OGV	Oil Tanker	POINT	827995.19	825152.68	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_74	R1_OGV08	OGV	Oil Tanker	POINT	828005.15	825153.56	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_75	R1_OGV08	OGV	Oil Tanker	POINT	828015.12	825154.43	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_76	R1_OGV08	OGV	Oil Tanker	POINT	828025.08	825155.31	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_77	R1_OGV08	OGV	Oil Tanker	POINT	828035.04	825156.18	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_78	R1_OGV08	OGV	Oil Tanker	POINT	828045.00	825157.06	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_79	R1_OGV08	OGV	Oil Tanker	POINT	828054.96	825157.93	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_80	R1_OGV08	OGV	Oil Tanker	POINT	828064.92	825158.81	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_81	R1_OGV08	OGV	Oil Tanker	POINT	828074.88	825159.68	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_82	R1_OGV08	OGV	Oil Tanker	POINT	828084.85	825160.56	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_83	R1_OGV08	OGV	Oil Tanker	POINT	828094.81	825161.43	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_84	R1_OGV08	OGV	Oil Tanker	POINT	828104.77	825162.31	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_85	R1_OGV08	OGV	Oil Tanker	POINT	828114.73	825163.18	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_86	R1_OGV08	OGV	Oil Tanker	POINT	828124.69	825164.06	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_87	R1_OGV08	OGV	Oil Tanker	POINT	828134.65	825164.93	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_88	R1_OGV08	OGV	Oil Tanker	POINT	828144.62	825165.81	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_89	R1_OGV08	OGV	Oil Tanker	POINT	828154.58	825166.68	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_90	R1_OGV08	OGV	Oil Tanker	POINT	828164.54	825167.56	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_91	R1_OGV08	OGV	Oil Tanker	POINT	828174.50	825168.43	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_92	R1_OGV08	OGV	Oil Tanker	POINT	828184.46	825169.31	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_93	R1_OGV08	OGV	Oil Tanker	POINT	828194.42	825170.18	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_94	R1_OGV08	OGV	Oil Tanker	POINT	828204.39	825171.06	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_95	R1_OGV08	OGV	Oil Tanker	POINT	828214.35	825171.93	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_96	R1_OGV08	OGV	Oil Tanker	POINT	828224.31	825172.81	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05

Emission Inventory

Source ID	Vessel ID	Vessel Category	Vessel Type	Source Type	X	Y	Number of Point Sources	Base Elevation (m)	Release Height (mAG)	Exit Temperature (K)	Exit Velocity (m/s)	Diameter (m)	NOx Emission Rate (g/s/vessel)	SO_2 Emission Rate (g/s/vessel)	RSP Emission Rate (g/s/vessel)	FSP Emission Rate (g/s/vessel)
R1_OGV08_97	R1_OGV08	OGV	Oil Tanker	POINT	828234.27	825173.68	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_98	R1_OGV08	OGV	Oil Tanker	POINT	828244.23	825174.56	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_99	R1_OGV08	OGV	Oil Tanker	POINT	828254.20	825175.40	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_100	R1_OGV08	OGV	Oil Tanker	POINT	828264.16	825176.23	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_101	R1_OGV08	OGV	Oil Tanker	POINT	828274.13	825177.05	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_102	R1_OGV08	OGV	Oil Tanker	POINT	828284.09	825177.88	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_103	R1_OGV08	OGV	Oil Tanker	POINT	828294.06	825178.70	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_104	R1_OGV08	OGV	Oil Tanker	POINT	828304.03	825179.53	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_105	R1_OGV08	OGV	Oil Tanker	POINT	828313.99	825180.35	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_106	R1_OGV08	OGV	Oil Tanker	POINT	828323.96	825181.18	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_107	R1_OGV08	OGV	Oil Tanker	POINT	828333.92	825182.00	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_108	R1_OGV08	OGV	Oil Tanker	POINT	828343.89	825182.83	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_109	R1_OGV08	OGV	Oil Tanker	POINT	828353.86	825183.65	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_110	R1_OGV08	OGV	Oil Tanker	POINT	828363.82	825184.48	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_111	R1_OGV08	OGV	Oil Tanker	POINT	828373.79	825185.30	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_112	R1_OGV08	OGV	Oil Tanker	POINT	828383.75	825186.13	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_113	R1_OGV08	OGV	Oil Tanker	POINT	828393.72	825186.95	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_114	R1_OGV08	OGV	Oil Tanker	POINT	828403.69	825187.78	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_115	R1_OGV08	OGV	Oil Tanker	POINT	828413.65	825188.60	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_OGV08_116	R1_OGV08	OGV	Oil Tanker	POINT	828416.64	825188.85	116	1.30	20.00	503.15	25.00	0.80	1.6778E-03	4.3400E-04	5.9087E-05	5.4360E-05
R1_RTV01_01	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827278.92	825081.10	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_02	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827288.83	825082.44	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_03	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827298.74	825083.78	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_04	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827308.65	825085.12	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_05	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827318.56	825086.46	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_06	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827328.47	825087.80	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_07	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827338.37	825089.13	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_08	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827348.28	825090.47	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_09	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827358.19	825091.81	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_10	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827368.10	825093.15	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_11	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827378.01	825094.49	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_12	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827387.92	825095.83	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_13	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827397.83	825097.17	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_14	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827407.74	825098.51	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_15	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827417.65	825099.85	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_16	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827427.56	825101.19	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_17	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827437.47	825102.53	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_18	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827447.38	825103.87	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_19	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827457.32	825104.96	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_20	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827467.27	825105.96	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_21	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827477.22	825106.96	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_22	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827487.17	825107.95	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_23	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827497.12	825108.95	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_24	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827507.07	825109.94	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_25	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827517.02	825110.94	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_26	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827526.97	825111.93	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_27	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827536.93	825112.93	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_28	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827546.88	825113.92	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_29	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827556.83	825114.92	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_30	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827566.78	825115.91	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_31	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827576.73	825116.91	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_32	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827586.68	825117.90	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_33	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827596.63	825118.90	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_34	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827606.58	825119.89	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_35	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827616.53	825120.89	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_36	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827626.48	825121.88	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_37	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827636.43	825122.86	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_38	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827646.40	825123.68	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_39	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827656.36	825124.49	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_40	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827666.33	825125.30	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_41	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827676.30	825126.11	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_42	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827686.26	825126.93	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_43	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827696.23	825127.74	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_44	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827706.20	825128.55	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_45	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827716.17	825129.37	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_46	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827726.13	825130.18	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_47	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827736.10	825130.99	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_48	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827746.07	825131.80	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_49	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827756.03	825132.62	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_50	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827766.00	825133.43	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_51	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827775.97	825134.24	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_52	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827785.93	825135.05	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_53	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827795.90	825135.87	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_54	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827805.87	825136.68	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_55	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827815.83	825137.49	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_56	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827825.80	825138.31	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_57	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827835.77	825139.12	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_58	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827845.74	825139.93	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_59	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827855.70	825140.74	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_60	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827865.67	825141.56	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05

Emission Inventory

Source ID	Vessel ID	Vessel Category	Vessel Type	Source Type	X	Y	Number of Point Sources	Base Elevation (m)	Release Height (mAG)	Exit Temperature (K)	Exit Velocity (m/s)	Diameter (m)	NOx Emission Rate (g/s/vessel)	SO_2 Emission Rate (g/s/vessel)	RSP Emission Rate (g/s/vessel)	FSP Emission Rate (g/s/vessel)
R1_RTV01_61	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827875.64	825142.37	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_62	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827885.60	825143.18	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_63	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827895.57	825143.99	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_64	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827905.54	825144.81	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_65	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827915.50	825145.68	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_66	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827925.46	825146.56	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_67	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827935.42	825147.43	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_68	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827945.38	825148.31	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_69	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827955.35	825149.18	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_70	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827965.31	825150.06	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_71	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827975.27	825150.93	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_72	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827985.23	825151.81	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_73	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	827995.19	825152.68	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_74	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	828005.15	825153.56	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_75	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	828015.12	825154.43	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_76	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	828025.08	825155.31	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_77	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	828035.04	825156.18	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_78	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	828045.00	825157.06	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_79	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	828054.96	825157.93	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_80	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	828064.92	825158.81	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_81	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	828074.88	825159.68	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_82	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	828084.85	825160.56	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_83	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	828094.81	825161.43	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_84	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	828104.77	825162.31	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_85	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	828114.73	825163.18	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_86	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	828124.69	825164.06	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_87	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	828134.65	825164.93	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_88	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	828144.62	825165.81	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_89	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	828154.58	825166.68	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_90	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	828164.54	825167.56	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_91	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	828174.50	825168.43	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_92	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	828184.46	825169.31	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_93	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	828194.42	825170.18	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_94	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	828204.39	825171.06	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_95	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	828214.35	825171.93	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_96	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	828224.31	825172.81	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_97	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	828234.27	825173.68	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_98	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	828244.23	825174.56	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_99	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	828254.20	825175.40	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_100	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	828264.16	825176.23	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_101	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	828274.13	825177.05	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_102	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	828284.09	825177.88	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_103	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	828294.06	825178.70	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_104	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	828304.03	825179.53	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_105	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	828313.99	825180.35	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_106	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	828323.96	825181.18	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_107	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	828333.92	825182.00	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_108	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	828343.89	825182.83	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_109	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	828353.86	825183.65	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_110	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	828363.82	825184.48	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_111	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	828373.79	825185.30	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_112	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	828383.75	825186.13	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_113	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	828393.72	825186.95	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_114	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	828403.69	825187.78	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_115	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	828413.65	825188.60	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV01_116	R1_RTV01	RTV	Fully Cellular Container Vessel	POINT	828416.64	825188.85	116	1.30	42.00	503.15	24.60	1.90	4.0675E-04	8.4691E-05	1.2898E-05	1.2511E-05
R1_RTV03_01	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827278.92	825081.10	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_02	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827288.83	825082.44	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_03	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827298.74	825083.78	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_04	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827308.65	825085.12	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_05	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827318.56	825086.46	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_06	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827328.47	825087.80	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_07	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827338.37	825089.13	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_08	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827348.28	825090.47	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_09	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827358.19	825091.81	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_10	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827368.10	825093.15	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_11	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827378.01	825094.49	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_12	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827387.92	825095.83	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_13	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827397.83	825097.17	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_14	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827407.74	825098.51	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_15	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827417.65	825099.85	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_16	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827427.56	825101.19	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_17	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827437.47	825102.53	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_18	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827447.38	825103.87	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_19	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827457.32	825104.96	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_20	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827467.27	825105.96	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_21	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827477.22	825106.96	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_22	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827487.17	825107.95	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_23	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827497.12	825108.95	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_24	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827507.07	825109.94	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05

Emission Inventory

Source ID	Vessel ID	Vessel Category	Vessel Type	Source Type	X	Y	Number of Point Sources	Base Elevation (m)	Release Height (mAG)	Exit Temperature (K)	Exit Velocity (m/s)	Diameter (m)	NOx Emission Rate (g/s/vessel)	SO_2 Emission Rate (g/s/vessel)	RSP Emission Rate (g/s/vessel)	FSP Emission Rate (g/s/vessel)
R1_RTV03_25	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827517.02	825110.94	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_26	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827526.97	825111.93	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_27	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827536.93	825112.93	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_28	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827546.88	825113.92	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_29	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827556.83	825114.92	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_30	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827566.78	825115.91	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_31	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827576.73	825116.91	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_32	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827586.68	825117.90	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_33	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827596.63	825118.90	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_34	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827606.58	825119.89	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_35	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827616.53	825120.89	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_36	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827626.48	825121.88	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_37	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827636.43	825122.86	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_38	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827646.40	825123.68	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_39	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827656.36	825124.49	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_40	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827666.33	825125.30	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_41	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827676.30	825126.11	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_42	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827686.26	825126.93	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_43	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827696.23	825127.74	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_44	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827706.20	825128.55	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_45	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827716.17	825129.37	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_46	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827726.13	825130.18	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_47	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827736.10	825130.99	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_48	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827746.07	825131.80	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_49	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827756.03	825132.62	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_50	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827766.00	825133.43	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_51	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827775.97	825134.24	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_52	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827785.93	825135.05	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_53	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827795.90	825135.87	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_54	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827805.87	825136.68	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_55	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827815.83	825137.49	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_56	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827825.80	825138.31	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_57	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827835.77	825139.12	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_58	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827845.74	825139.93	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_59	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827855.70	825140.74	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_60	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827865.67	825141.56	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_61	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827875.64	825142.37	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_62	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827885.60	825143.18	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_63	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827895.57	825143.99	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_64	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827905.54	825144.81	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_65	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827915.50	825145.68	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_66	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827925.46	825146.56	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_67	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827935.42	825147.43	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_68	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827945.38	825148.31	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_69	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827955.35	825149.18	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_70	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827965.31	825150.06	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_71	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827975.27	825150.93	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_72	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827985.23	825151.81	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_73	R1_RTV03	RTV	Dry Bulk Carrier	POINT	827995.19	825152.68	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_74	R1_RTV03	RTV	Dry Bulk Carrier	POINT	828005.15	825153.56	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_75	R1_RTV03	RTV	Dry Bulk Carrier	POINT	828015.12	825154.43	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_76	R1_RTV03	RTV	Dry Bulk Carrier	POINT	828025.08	825155.31	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_77	R1_RTV03	RTV	Dry Bulk Carrier	POINT	828035.04	825156.18	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_78	R1_RTV03	RTV	Dry Bulk Carrier	POINT	828045.00	825157.06	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_79	R1_RTV03	RTV	Dry Bulk Carrier	POINT	828054.96	825157.93	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_80	R1_RTV03	RTV	Dry Bulk Carrier	POINT	828064.92	825158.81	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_81	R1_RTV03	RTV	Dry Bulk Carrier	POINT	828074.88	825159.68	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_82	R1_RTV03	RTV	Dry Bulk Carrier	POINT	828084.85	825160.56	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_83	R1_RTV03	RTV	Dry Bulk Carrier	POINT	828094.81	825161.43	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_84	R1_RTV03	RTV	Dry Bulk Carrier	POINT	828104.77	825162.31	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_85	R1_RTV03	RTV	Dry Bulk Carrier	POINT	828114.73	825163.18	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_86	R1_RTV03	RTV	Dry Bulk Carrier	POINT	828124.69	825164.06	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_87	R1_RTV03	RTV	Dry Bulk Carrier	POINT	828134.65	825164.93	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_88	R1_RTV03	RTV	Dry Bulk Carrier	POINT	828144.62	825165.81	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_89	R1_RTV03	RTV	Dry Bulk Carrier	POINT	828154.58	825166.68	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_90	R1_RTV03	RTV	Dry Bulk Carrier	POINT	828164.54	825167.56	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_91	R1_RTV03	RTV	Dry Bulk Carrier	POINT	828174.50	825168.43	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_92	R1_RTV03	RTV	Dry Bulk Carrier	POINT	828184.46	825169.31	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_93	R1_RTV03	RTV	Dry Bulk Carrier	POINT	828194.42	825170.18	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_94	R1_RTV03	RTV	Dry Bulk Carrier	POINT	828204.39	825171.06	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_95	R1_RTV03	RTV	Dry Bulk Carrier	POINT	828214.35	825171.93	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_96	R1_RTV03	RTV	Dry Bulk Carrier	POINT	828224.31	825172.81	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_97	R1_RTV03	RTV	Dry Bulk Carrier	POINT	828234.27	825173.68	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_98	R1_RTV03	RTV	Dry Bulk Carrier	POINT	828244.23	825174.56	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_99	R1_RTV03	RTV	Dry Bulk Carrier	POINT	828254.20	825175.40	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_100	R1_RTV03	RTV	Dry Bulk Carrier	POINT	828264.16	825176.23	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_101	R1_RTV03	RTV	Dry Bulk Carrier	POINT	828274.13	825177.05	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_102	R1_RTV03	RTV	Dry Bulk Carrier	POINT	828284.09	825177.88	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_103	R1_RTV03	RTV	Dry Bulk Carrier	POINT	828294.06	825178.70	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_104	R1_RTV03	RTV	Dry Bulk Carrier	POINT	828304.03	825179.53	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05

Emission Inventory

Source ID	Vessel ID	Vessel Category	Vessel Type	Source Type	X	Y	Number of Point Sources	Base Elevation (m)	Release Height (mAG)	Exit Temperature (K)	Exit Velocity (m/s)	Diameter (m)	NOx Emission Rate (g/s/vessel)	SO_2 Emission Rate (g/s/vessel)	RSP Emission Rate (g/s/vessel)	FSP Emission Rate (g/s/vessel)
R1_RTV03_105	R1_RTV03	RTV	Dry Bulk Carrier	POINT	828313.99	825180.35	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_106	R1_RTV03	RTV	Dry Bulk Carrier	POINT	828323.96	825181.18	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_107	R1_RTV03	RTV	Dry Bulk Carrier	POINT	828333.92	825182.00	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_108	R1_RTV03	RTV	Dry Bulk Carrier	POINT	828343.89	825182.83	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_109	R1_RTV03	RTV	Dry Bulk Carrier	POINT	828353.86	825183.65	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_110	R1_RTV03	RTV	Dry Bulk Carrier	POINT	828363.82	825184.48	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_111	R1_RTV03	RTV	Dry Bulk Carrier	POINT	828373.79	825185.30	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_112	R1_RTV03	RTV	Dry Bulk Carrier	POINT	828383.75	825186.13	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_113	R1_RTV03	RTV	Dry Bulk Carrier	POINT	828393.72	825186.95	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_114	R1_RTV03	RTV	Dry Bulk Carrier	POINT	828403.69	825187.78	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_115	R1_RTV03	RTV	Dry Bulk Carrier	POINT	828413.65	825188.60	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03_116	R1_RTV03	RTV	Dry Bulk Carrier	POINT	828416.64	825188.85	116	1.30	27.00	503.15	25.00	0.80	4.2674E-04	8.8854E-05	1.3532E-05	1.3126E-05
R1_RTV03H_01	R1_RTV03H	RTV	Dry Bulk Carrier	POINT	827874.99	824793.69	1	1.30	27.00	503.15	25.00	0.80	1.3736E-01	2.8600E-02	4.3558E-03	4.2251E-03
R1_RTV03M_01	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827278.92	825081.10	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_02	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827288.83	825082.44	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_03	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827298.74	825083.78	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_04	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827308.65	825085.12	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_05	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827318.56	825086.46	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_06	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827328.47	825087.80	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_07	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827338.37	825089.13	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_08	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827348.28	825090.47	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_09	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827358.19	825091.81	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_10	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827368.10	825093.15	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_11	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827378.01	825094.49	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_12	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827387.92	825095.83	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_13	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827397.83	825097.17	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_14	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827407.74	825098.51	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_15	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827417.65	825099.85	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_16	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827427.56	825101.19	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_17	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827437.47	825102.53	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_18	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827447.38	825103.87	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_19	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827457.32	825104.96	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_20	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827467.27	825105.96	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_21	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827477.22	825106.96	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_22	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827487.17	825107.95	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_23	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827497.12	825108.95	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_24	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827507.07	825109.94	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_25	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827517.02	825110.94	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_26	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827526.97	825111.93	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_27	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827536.93	825112.93	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_28	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827546.86	825112.72	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_29	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827556.79	825111.52	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_30	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827566.72	825110.32	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_31	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827576.65	825109.12	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_32	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827586.57	825107.92	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_33	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827596.50	825106.72	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_34	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827606.43	825105.52	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_35	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827616.36	825104.32	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_36	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827626.29	825103.12	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_37	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827636.17	825101.66	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_38	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827645.92	825099.45	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_39	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827655.67	825097.23	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_40	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827665.42	825095.02	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_41	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827675.17	825092.80	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_42	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827684.93	825090.58	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_43	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827694.68	825088.37	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_44	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827704.43	825086.15	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_45	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827714.18	825083.93	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_46	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827723.42	825080.16	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_47	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827732.60	825076.20	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_48	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827741.79	825072.24	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_49	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827750.97	825068.27	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_50	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827760.15	825064.31	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_51	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827769.33	825060.35	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_52	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827778.51	825056.39	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_53	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827787.25	825051.77	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_54	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827794.44	825044.81	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_55	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827801.62	825037.85	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_56	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827808.80	825030.89	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_57	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827815.98	825023.93	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_58	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827823.17	825016.98	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_59	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827830.35	825010.02	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_60	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827836.31	825002.09	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_61	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827841.50	824993.54	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_62	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827846.70	824985.00	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_63	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827851.89	824976.45	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_64	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827857.08	824967.90	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_65	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827862.27	824959.36	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_66	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827867.47	824950.81	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_67	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827871.19	824941.57	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04

Emission Inventory

Source ID	Vessel ID	Vessel Category	Vessel Type	Source Type	X	Y	Number of Point Sources	Base Elevation (m)	Release Height (mAG)	Exit Temperature (K)	Exit Velocity (m/s)	Diameter (m)	NOx Emission Rate (g/s/vessel)	SO_2 Emission Rate (g/s/vessel)	RSP Emission Rate (g/s/vessel)	FSP Emission Rate (g/s/vessel)
R1_RTV03M_68	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827874.44	824932.12	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_69	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827877.70	824922.66	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_70	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827880.95	824913.21	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_71	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827884.20	824903.75	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_72	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827887.46	824894.30	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_73	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827890.71	824884.84	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_74	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827890.71	824875.47	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_75	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827886.96	824866.20	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_76	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827883.22	824856.92	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_77	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827879.47	824847.65	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_78	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827876.76	824838.16	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_79	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827876.36	824828.17	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_80	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827875.96	824818.17	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_81	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827875.56	824808.18	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_82	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827875.17	824798.19	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV03M_83	R1_RTV03M	RTV	Dry Bulk Carrier	POINT	827874.99	824793.69	83	1.30	27.00	503.15	25.00	0.80	4.0402E-03	8.4122E-04	1.2812E-04	1.2427E-04
R1_RTV07H_01	R1_RTV07H	RTV	Chemical Carrier/Tanker	POINT	827874.99	824793.69	1	1.30	30.00	503.15	25.00	0.80	4.4792E-01	9.3262E-02	1.4204E-02	1.3778E-02
R1_RTV07M_01	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827278.92	825081.10	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_02	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827288.83	825082.44	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_03	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827298.74	825083.78	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_04	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827308.65	825085.12	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_05	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827318.56	825086.46	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_06	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827328.47	825087.80	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_07	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827338.37	825089.13	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_08	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827348.28	825090.47	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_09	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827358.19	825091.81	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_10	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827368.10	825093.15	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_11	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827378.01	825094.49	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_12	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827387.92	825095.83	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_13	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827397.83	825097.17	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_14	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827407.74	825098.51	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_15	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827417.65	825099.85	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_16	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827427.56	825101.19	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_17	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827437.47	825102.53	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_18	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827447.38	825103.87	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_19	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827457.32	825104.96	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_20	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827467.27	825105.96	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_21	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827477.22	825106.96	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_22	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827487.17	825107.95	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_23	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827497.12	825108.95	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_24	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827507.07	825109.94	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_25	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827517.02	825110.94	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_26	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827526.97	825111.93	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_27	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827536.93	825112.93	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_28	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827546.86	825112.72	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_29	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827556.79	825111.52	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_30	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827566.72	825110.32	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_31	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827576.65	825109.12	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_32	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827586.57	825107.92	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_33	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827596.50	825106.72	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_34	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827606.43	825105.52	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_35	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827616.36	825104.32	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_36	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827626.29	825103.12	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_37	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827636.17	825101.66	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_38	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827645.92	825099.45	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_39	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827655.67	825097.23	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_40	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827665.42	825095.02	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_41	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827675.17	825092.80	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_42	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827684.93	825090.58	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_43	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827694.68	825088.37	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_44	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827704.43	825086.15	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_45	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827714.18	825083.93	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_46	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827723.42	825080.16	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_47	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827732.60	825076.20	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_48	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827741.79	825072.24	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_49	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827750.97	825068.27	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_50	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827760.15	825064.31	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_51	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827769.33	825060.35	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_52	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827778.51	825056.39	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_53	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827787.25	825051.77	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_54	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827794.44	825044.81	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_55	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827801.62	825037.85	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_56	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827808.80	825030.89	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_57	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827815.98	825023.93	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_58	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827823.17	825016.98	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_59	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827830.35	825010.02	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_60	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827836.31	825002.09	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_61	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827841.50	824993.54	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_62	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827846.70	824985.00	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_63	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827851.89	824976.45	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04

Emission Inventory

Source ID	Vessel ID	Vessel Category	Vessel Type	Source Type	X	Y	Number of Point Sources	Base Elevation (m)	Release Height (mAG)	Exit Temperature (K)	Exit Velocity (m/s)	Diameter (m)	NOx Emission Rate (g/s/vessel)	SO_2 Emission Rate (g/s/vessel)	RSP Emission Rate (g/s/vessel)	FSP Emission Rate (g/s/vessel)
R1_RTV07M_64	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827857.08	824967.90	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_65	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827862.27	824959.36	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_66	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827867.47	824950.81	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_67	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827871.19	824941.57	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_68	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827874.44	824932.12	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_69	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827877.70	824922.66	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_70	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827880.95	824913.21	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_71	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827884.20	824903.75	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_72	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827887.46	824894.30	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_73	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827890.71	824884.84	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_74	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827890.71	824875.47	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_75	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827886.96	824866.20	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_76	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827883.22	824856.92	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_77	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827879.47	824847.65	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_78	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827876.76	824838.16	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_79	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827876.36	824828.17	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_80	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827875.96	824818.17	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_81	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827875.56	824808.18	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_82	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827875.17	824798.19	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_RTV07M_83	R1_RTV07M	RTV	Chemical Carrier/Tanker	POINT	827874.99	824793.69	83	1.30	30.00	503.15	25.00	0.80	1.1573E-02	1.9461E-03	2.9638E-04	2.8749E-04
R1_SC01_01	R1_SC01	SC	Pleasure Vessel	POINTHOR	827278.92	825081.10	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_02	R1_SC01	SC	Pleasure Vessel	POINTHOR	827288.83	825082.44	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_03	R1_SC01	SC	Pleasure Vessel	POINTHOR	827298.74	825083.78	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_04	R1_SC01	SC	Pleasure Vessel	POINTHOR	827308.65	825085.12	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_05	R1_SC01	SC	Pleasure Vessel	POINTHOR	827318.56	825086.46	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_06	R1_SC01	SC	Pleasure Vessel	POINTHOR	827328.47	825087.80	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_07	R1_SC01	SC	Pleasure Vessel	POINTHOR	827338.37	825089.13	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_08	R1_SC01	SC	Pleasure Vessel	POINTHOR	827348.28	825090.47	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_09	R1_SC01	SC	Pleasure Vessel	POINTHOR	827358.19	825091.81	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_10	R1_SC01	SC	Pleasure Vessel	POINTHOR	827368.10	825093.15	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_11	R1_SC01	SC	Pleasure Vessel	POINTHOR	827378.01	825094.49	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_12	R1_SC01	SC	Pleasure Vessel	POINTHOR	827387.92	825095.83	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_13	R1_SC01	SC	Pleasure Vessel	POINTHOR	827397.83	825097.17	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_14	R1_SC01	SC	Pleasure Vessel	POINTHOR	827407.74	825098.51	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_15	R1_SC01	SC	Pleasure Vessel	POINTHOR	827417.65	825099.85	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_16	R1_SC01	SC	Pleasure Vessel	POINTHOR	827427.56	825101.19	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_17	R1_SC01	SC	Pleasure Vessel	POINTHOR	827437.47	825102.53	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_18	R1_SC01	SC	Pleasure Vessel	POINTHOR	827447.38	825103.87	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_19	R1_SC01	SC	Pleasure Vessel	POINTHOR	827457.32	825104.96	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_20	R1_SC01	SC	Pleasure Vessel	POINTHOR	827467.27	825105.96	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_21	R1_SC01	SC	Pleasure Vessel	POINTHOR	827477.22	825106.96	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_22	R1_SC01	SC	Pleasure Vessel	POINTHOR	827487.17	825107.95	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_23	R1_SC01	SC	Pleasure Vessel	POINTHOR	827497.12	825108.95	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_24	R1_SC01	SC	Pleasure Vessel	POINTHOR	827507.07	825109.94	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_25	R1_SC01	SC	Pleasure Vessel	POINTHOR	827517.02	825110.94	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_26	R1_SC01	SC	Pleasure Vessel	POINTHOR	827526.97	825111.93	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_27	R1_SC01	SC	Pleasure Vessel	POINTHOR	827536.93	825112.93	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_28	R1_SC01	SC	Pleasure Vessel	POINTHOR	827546.88	825113.92	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_29	R1_SC01	SC	Pleasure Vessel	POINTHOR	827556.83	825114.92	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_30	R1_SC01	SC	Pleasure Vessel	POINTHOR	827566.78	825115.91	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_31	R1_SC01	SC	Pleasure Vessel	POINTHOR	827576.73	825116.91	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_32	R1_SC01	SC	Pleasure Vessel	POINTHOR	827586.68	825117.90	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_33	R1_SC01	SC	Pleasure Vessel	POINTHOR	827596.63	825118.90	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_34	R1_SC01	SC	Pleasure Vessel	POINTHOR	827606.58	825119.89	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_35	R1_SC01	SC	Pleasure Vessel	POINTHOR	827616.53	825120.89	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_36	R1_SC01	SC	Pleasure Vessel	POINTHOR	827626.48	825121.88	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_37	R1_SC01	SC	Pleasure Vessel	POINTHOR	827636.43	825122.86	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_38	R1_SC01	SC	Pleasure Vessel	POINTHOR	827646.40	825123.68	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_39	R1_SC01	SC	Pleasure Vessel	POINTHOR	827656.36	825124.49	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_40	R1_SC01	SC	Pleasure Vessel	POINTHOR	827666.33	825125.30	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_41	R1_SC01	SC	Pleasure Vessel	POINTHOR	827676.30	825126.11	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_42	R1_SC01	SC	Pleasure Vessel	POINTHOR	827686.26	825126.93	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_43	R1_SC01	SC	Pleasure Vessel	POINTHOR	827696.23	825127.74	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_44	R1_SC01	SC	Pleasure Vessel	POINTHOR	827706.20	825128.55	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_45	R1_SC01	SC	Pleasure Vessel	POINTHOR	827716.17	825129.37	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_46	R1_SC01	SC	Pleasure Vessel	POINTHOR	827726.13	825130.18	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_47	R1_SC01	SC	Pleasure Vessel	POINTHOR	827736.10	825130.99	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_48	R1_SC01	SC	Pleasure Vessel	POINTHOR	827746.07	825131.80	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_49	R1_SC01	SC	Pleasure Vessel	POINTHOR	827756.03	825132.62	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_50	R1_SC01	SC	Pleasure Vessel	POINTHOR	827766.00	825133.43	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_51	R1_SC01	SC	Pleasure Vessel	POINTHOR	827775.97	825134.24	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_52	R1_SC01	SC	Pleasure Vessel	POINTHOR	827785.93	825135.05	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_53	R1_SC01	SC	Pleasure Vessel	POINTHOR	827795.90	825135.87	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_54	R1_SC01	SC	Pleasure Vessel	POINTHOR	827805.87	825136.68	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_55	R1_SC01	SC	Pleasure Vessel	POINTHOR	827815.83	825137.49	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_56	R1_SC01	SC	Pleasure Vessel	POINTHOR	827825.80	825138.31	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_57	R1_SC01	SC	Pleasure Vessel	POINTHOR	827835.77	825139.12	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_58	R1_SC01	SC	Pleasure Vessel	POINTHOR	827845.74	825139.93	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_59	R1_SC01	SC	Pleasure Vessel	POINTHOR	827855.70	825140.74	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_60	R1_SC01	SC	Pleasure Vessel	POINTHOR	827865.67	825141.56	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07

Emission Inventory

Source ID	Vessel ID	Vessel Category	Vessel Type	Source Type	X	Y	Number of Point Sources	Base Elevation (m)	Release Height (mAG)	Exit Temperature (K)	Exit Velocity (m/s)	Diameter (m)	NOx Emission Rate (g/s/vessel)	SO_2 Emission Rate (g/s/vessel)	RSP Emission Rate (g/s/vessel)	FSP Emission Rate (g/s/vessel)
R1_SC01_61	R1_SC01	SC	Pleasure Vessel	POINTHOR	827875.64	825142.37	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_62	R1_SC01	SC	Pleasure Vessel	POINTHOR	827885.60	825143.18	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_63	R1_SC01	SC	Pleasure Vessel	POINTHOR	827895.57	825143.99	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_64	R1_SC01	SC	Pleasure Vessel	POINTHOR	827905.54	825144.81	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_65	R1_SC01	SC	Pleasure Vessel	POINTHOR	827915.50	825145.68	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_66	R1_SC01	SC	Pleasure Vessel	POINTHOR	827925.46	825146.56	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_67	R1_SC01	SC	Pleasure Vessel	POINTHOR	827935.42	825147.43	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_68	R1_SC01	SC	Pleasure Vessel	POINTHOR	827945.38	825148.31	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_69	R1_SC01	SC	Pleasure Vessel	POINTHOR	827955.35	825149.18	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_70	R1_SC01	SC	Pleasure Vessel	POINTHOR	827965.31	825150.06	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_71	R1_SC01	SC	Pleasure Vessel	POINTHOR	827975.27	825150.93	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_72	R1_SC01	SC	Pleasure Vessel	POINTHOR	827985.23	825151.81	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_73	R1_SC01	SC	Pleasure Vessel	POINTHOR	827995.19	825152.68	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_74	R1_SC01	SC	Pleasure Vessel	POINTHOR	828005.15	825153.56	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_75	R1_SC01	SC	Pleasure Vessel	POINTHOR	828015.12	825154.43	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_76	R1_SC01	SC	Pleasure Vessel	POINTHOR	828025.08	825155.31	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_77	R1_SC01	SC	Pleasure Vessel	POINTHOR	828035.04	825156.18	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_78	R1_SC01	SC	Pleasure Vessel	POINTHOR	828045.00	825157.06	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_79	R1_SC01	SC	Pleasure Vessel	POINTHOR	828054.96	825157.93	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_80	R1_SC01	SC	Pleasure Vessel	POINTHOR	828064.92	825158.81	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_81	R1_SC01	SC	Pleasure Vessel	POINTHOR	828074.88	825159.68	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_82	R1_SC01	SC	Pleasure Vessel	POINTHOR	828084.85	825160.56	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_83	R1_SC01	SC	Pleasure Vessel	POINTHOR	828094.81	825161.43	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_84	R1_SC01	SC	Pleasure Vessel	POINTHOR	828104.77	825162.31	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_85	R1_SC01	SC	Pleasure Vessel	POINTHOR	828114.73	825163.18	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_86	R1_SC01	SC	Pleasure Vessel	POINTHOR	828124.69	825164.06	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_87	R1_SC01	SC	Pleasure Vessel	POINTHOR	828134.65	825164.93	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_88	R1_SC01	SC	Pleasure Vessel	POINTHOR	828144.62	825165.81	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_89	R1_SC01	SC	Pleasure Vessel	POINTHOR	828154.58	825166.68	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_90	R1_SC01	SC	Pleasure Vessel	POINTHOR	828164.54	825167.56	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_91	R1_SC01	SC	Pleasure Vessel	POINTHOR	828174.50	825168.43	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_92	R1_SC01	SC	Pleasure Vessel	POINTHOR	828184.46	825169.31	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_93	R1_SC01	SC	Pleasure Vessel	POINTHOR	828194.42	825170.18	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_94	R1_SC01	SC	Pleasure Vessel	POINTHOR	828204.39	825171.06	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_95	R1_SC01	SC	Pleasure Vessel	POINTHOR	828214.35	825171.93	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_96	R1_SC01	SC	Pleasure Vessel	POINTHOR	828224.31	825172.81	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_97	R1_SC01	SC	Pleasure Vessel	POINTHOR	828234.27	825173.68	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_98	R1_SC01	SC	Pleasure Vessel	POINTHOR	828244.23	825174.56	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_99	R1_SC01	SC	Pleasure Vessel	POINTHOR	828254.20	825175.40	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_100	R1_SC01	SC	Pleasure Vessel	POINTHOR	828264.16	825176.23	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_101	R1_SC01	SC	Pleasure Vessel	POINTHOR	828274.13	825177.05	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_102	R1_SC01	SC	Pleasure Vessel	POINTHOR	828284.09	825177.88	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_103	R1_SC01	SC	Pleasure Vessel	POINTHOR	828294.06	825178.70	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_104	R1_SC01	SC	Pleasure Vessel	POINTHOR	828304.03	825179.53	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_105	R1_SC01	SC	Pleasure Vessel	POINTHOR	828313.99	825180.35	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_106	R1_SC01	SC	Pleasure Vessel	POINTHOR	828323.96	825181.18	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_107	R1_SC01	SC	Pleasure Vessel	POINTHOR	828333.92	825182.00	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_108	R1_SC01	SC	Pleasure Vessel	POINTHOR	828343.89	825182.83	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_109	R1_SC01	SC	Pleasure Vessel	POINTHOR	828353.86	825183.65	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_110	R1_SC01	SC	Pleasure Vessel	POINTHOR	828363.82	825184.48	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_111	R1_SC01	SC	Pleasure Vessel	POINTHOR	828373.79	825185.30	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_112	R1_SC01	SC	Pleasure Vessel	POINTHOR	828383.75	825186.13	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_113	R1_SC01	SC	Pleasure Vessel	POINTHOR	828393.72	825186.95	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_114	R1_SC01	SC	Pleasure Vessel	POINTHOR	828403.69	825187.78	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_115	R1_SC01	SC	Pleasure Vessel	POINTHOR	828413.65	825188.60	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_SC01_116	R1_SC01	SC	Pleasure Vessel	POINTHOR	828416.64	825188.85	116	1.30	0.00	313.00	8.00	0.30	7.9330E-05	1.2618E-06	1.0081E-06	9.7784E-07
R1_TT01_01	R1_TT01	TT	Tug	POINTHOR	827278.92	825081.10	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_02	R1_TT01	TT	Tug	POINTHOR	827288.83	825082.44	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_03	R1_TT01	TT	Tug	POINTHOR	827298.74	825083.78	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_04	R1_TT01	TT	Tug	POINTHOR	827308.65	825085.12	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_05	R1_TT01	TT	Tug	POINTHOR	827318.56	825086.46	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_06	R1_TT01	TT	Tug	POINTHOR	827328.47	825087.80	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_07	R1_TT01	TT	Tug	POINTHOR	827338.37	825089.13	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_08	R1_TT01	TT	Tug	POINTHOR	827348.28	825090.47	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_09	R1_TT01	TT	Tug	POINTHOR	827358.19	825091.81	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_10	R1_TT01	TT	Tug	POINTHOR	827368.10	825093.15	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_11	R1_TT01	TT	Tug	POINTHOR	827378.01	825094.49	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_12	R1_TT01	TT	Tug	POINTHOR	827387.92	825095.83	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_13	R1_TT01	TT	Tug	POINTHOR	827397.83	825097.17	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_14	R1_TT01	TT	Tug	POINTHOR	827407.74	825098.51	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_15	R1_TT01	TT	Tug	POINTHOR	827417.65	825099.85	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_16	R1_TT01	TT	Tug	POINTHOR	827427.56	825101.19	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_17	R1_TT01	TT	Tug	POINTHOR	827437.47	825102.53	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_18	R1_TT01	TT	Tug	POINTHOR	827447.38	825103.87	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_19	R1_TT01	TT	Tug	POINTHOR	827457.32	825104.96	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_20	R1_TT01	TT	Tug	POINTHOR	827467.27	825105.96	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_21	R1_TT01	TT	Tug	POINTHOR	827477.22	825106.96	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_22	R1_TT01	TT	Tug	POINTHOR	827487.17	825107.95	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_23	R1_TT01	TT	Tug	POINTHOR	827497.12	825108.95	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_24	R1_TT01	TT	Tug	POINTHOR	827507.07	825109.94	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05

Emission Inventory

Source ID	Vessel ID	Vessel Category	Vessel Type	Source Type	X	Y	Number of Point Sources	Base Elevation (m)	Release Height (mAG)	Exit Temperature (K)	Exit Velocity (m/s)	Diameter (m)	NOx Emission Rate (g/s/vessel)	SO_2 Emission Rate (g/s/vessel)	RSP Emission Rate (g/s/vessel)	FSP Emission Rate (g/s/vessel)
R1_TT01_25	R1_TT01	TT	Tug	POINTHOR	827517.02	825110.94	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_26	R1_TT01	TT	Tug	POINTHOR	827526.97	825111.93	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_27	R1_TT01	TT	Tug	POINTHOR	827536.93	825112.93	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_28	R1_TT01	TT	Tug	POINTHOR	827546.88	825113.92	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_29	R1_TT01	TT	Tug	POINTHOR	827556.83	825114.92	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_30	R1_TT01	TT	Tug	POINTHOR	827566.78	825115.91	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_31	R1_TT01	TT	Tug	POINTHOR	827576.73	825116.91	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_32	R1_TT01	TT	Tug	POINTHOR	827586.68	825117.90	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_33	R1_TT01	TT	Tug	POINTHOR	827596.63	825118.90	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_34	R1_TT01	TT	Tug	POINTHOR	827606.58	825119.89	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_35	R1_TT01	TT	Tug	POINTHOR	827616.53	825120.89	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_36	R1_TT01	TT	Tug	POINTHOR	827626.48	825121.88	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_37	R1_TT01	TT	Tug	POINTHOR	827636.43	825122.86	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_38	R1_TT01	TT	Tug	POINTHOR	827646.40	825123.68	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_39	R1_TT01	TT	Tug	POINTHOR	827656.36	825124.49	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_40	R1_TT01	TT	Tug	POINTHOR	827666.33	825125.30	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_41	R1_TT01	TT	Tug	POINTHOR	827676.30	825126.11	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_42	R1_TT01	TT	Tug	POINTHOR	827686.26	825126.93	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_43	R1_TT01	TT	Tug	POINTHOR	827696.23	825127.74	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_44	R1_TT01	TT	Tug	POINTHOR	827706.20	825128.55	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_45	R1_TT01	TT	Tug	POINTHOR	827716.17	825129.37	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_46	R1_TT01	TT	Tug	POINTHOR	827726.13	825130.18	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_47	R1_TT01	TT	Tug	POINTHOR	827736.10	825130.99	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_48	R1_TT01	TT	Tug	POINTHOR	827746.07	825131.80	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_49	R1_TT01	TT	Tug	POINTHOR	827756.03	825132.62	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_50	R1_TT01	TT	Tug	POINTHOR	827766.00	825133.43	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_51	R1_TT01	TT	Tug	POINTHOR	827775.97	825134.24	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_52	R1_TT01	TT	Tug	POINTHOR	827785.93	825135.05	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_53	R1_TT01	TT	Tug	POINTHOR	827795.90	825135.87	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_54	R1_TT01	TT	Tug	POINTHOR	827805.87	825136.68	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_55	R1_TT01	TT	Tug	POINTHOR	827815.83	825137.49	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_56	R1_TT01	TT	Tug	POINTHOR	827825.80	825138.31	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_57	R1_TT01	TT	Tug	POINTHOR	827835.77	825139.12	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_58	R1_TT01	TT	Tug	POINTHOR	827845.74	825139.93	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_59	R1_TT01	TT	Tug	POINTHOR	827855.70	825140.74	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_60	R1_TT01	TT	Tug	POINTHOR	827865.67	825141.56	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_61	R1_TT01	TT	Tug	POINTHOR	827875.64	825142.37	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_62	R1_TT01	TT	Tug	POINTHOR	827885.60	825143.18	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_63	R1_TT01	TT	Tug	POINTHOR	827895.57	825143.99	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_64	R1_TT01	TT	Tug	POINTHOR	827905.54	825144.81	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_65	R1_TT01	TT	Tug	POINTHOR	827915.50	825145.68	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_66	R1_TT01	TT	Tug	POINTHOR	827925.46	825146.56	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_67	R1_TT01	TT	Tug	POINTHOR	827935.42	825147.43	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_68	R1_TT01	TT	Tug	POINTHOR	827945.38	825148.31	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_69	R1_TT01	TT	Tug	POINTHOR	827955.35	825149.18	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_70	R1_TT01	TT	Tug	POINTHOR	827965.31	825150.06	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_71	R1_TT01	TT	Tug	POINTHOR	827975.27	825150.93	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_72	R1_TT01	TT	Tug	POINTHOR	827985.23	825151.81	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_73	R1_TT01	TT	Tug	POINTHOR	827995.19	825152.68	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_74	R1_TT01	TT	Tug	POINTHOR	828005.15	825153.56	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_75	R1_TT01	TT	Tug	POINTHOR	828015.12	825154.43	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_76	R1_TT01	TT	Tug	POINTHOR	828025.08	825155.31	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_77	R1_TT01	TT	Tug	POINTHOR	828035.04	825156.18	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_78	R1_TT01	TT	Tug	POINTHOR	828045.00	825157.06	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_79	R1_TT01	TT	Tug	POINTHOR	828054.96	825157.93	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_80	R1_TT01	TT	Tug	POINTHOR	828064.92	825158.81	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_81	R1_TT01	TT	Tug	POINTHOR	828074.88	825159.68	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_82	R1_TT01	TT	Tug	POINTHOR	828084.85	825160.56	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_83	R1_TT01	TT	Tug	POINTHOR	828094.81	825161.43	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_84	R1_TT01	TT	Tug	POINTHOR	828104.77	825162.31	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_85	R1_TT01	TT	Tug	POINTHOR	828114.73	825163.18	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_86	R1_TT01	TT	Tug	POINTHOR	828124.69	825164.06	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_87	R1_TT01	TT	Tug	POINTHOR	828134.65	825164.93	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_88	R1_TT01	TT	Tug	POINTHOR	828144.62	825165.81	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_89	R1_TT01	TT	Tug	POINTHOR	828154.58	825166.68	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_90	R1_TT01	TT	Tug	POINTHOR	828164.54	825167.56	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_91	R1_TT01	TT	Tug	POINTHOR	828174.50	825168.43	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_92	R1_TT01	TT	Tug	POINTHOR	828184.46	825169.31	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_93	R1_TT01	TT	Tug	POINTHOR	828194.42	825170.18	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_94	R1_TT01	TT	Tug	POINTHOR	828204.39	825171.06	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_95	R1_TT01	TT	Tug	POINTHOR	828214.35	825171.93	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_96	R1_TT01	TT	Tug	POINTHOR	828224.31	825172.81	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_97	R1_TT01	TT	Tug	POINTHOR	828234.27	825173.68	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_98	R1_TT01	TT	Tug	POINTHOR	828244.23	825174.56	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_99	R1_TT01	TT	Tug	POINTHOR	828254.20	825175.40	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_100	R1_TT01	TT	Tug	POINTHOR	828264.16	825176.23	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_101	R1_TT01	TT	Tug	POINTHOR	828274.13	825177.05	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_102	R1_TT01	TT	Tug	POINTHOR	828284.09	825177.88	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_103	R1_TT01	TT	Tug	POINTHOR	828294.06	825178.70	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_104	R1_TT01	TT	Tug	POINTHOR	828304.03	825179.53	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05

Emission Inventory

Source ID	Vessel ID	Vessel Category	Vessel Type	Source Type	X	Y	Number of Point Sources	Base Elevation (m)	Release Height (mAG)	Exit Temperature (K)	Exit Velocity (m/s)	Diameter (m)	NOx Emission Rate (g/s/vessel)	SO_2 Emission Rate (g/s/vessel)	RSP Emission Rate (g/s/vessel)	FSP Emission Rate (g/s/vessel)
R1_TT01_105	R1_TT01	TT	Tug	POINTHOR	828313.99	825180.35	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_106	R1_TT01	TT	Tug	POINTHOR	828323.96	825181.18	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_107	R1_TT01	TT	Tug	POINTHOR	828333.92	825182.00	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_108	R1_TT01	TT	Tug	POINTHOR	828343.89	825182.83	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_109	R1_TT01	TT	Tug	POINTHOR	828353.86	825183.65	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_110	R1_TT01	TT	Tug	POINTHOR	828363.82	825184.48	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_111	R1_TT01	TT	Tug	POINTHOR	828373.79	825185.30	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_112	R1_TT01	TT	Tug	POINTHOR	828383.75	825186.13	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_113	R1_TT01	TT	Tug	POINTHOR	828393.72	825186.95	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_114	R1_TT01	TT	Tug	POINTHOR	828403.69	825187.78	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_115	R1_TT01	TT	Tug	POINTHOR	828413.65	825188.60	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05
R1_TT01_116	R1_TT01	TT	Tug	POINTHOR	828416.64	825188.85	116	1.30	5.00	503.15	8.00	0.30	1.4260E-03	2.3854E-05	1.9057E-05	1.8485E-05

Hourly Profile

Source ID	Vessel ID	0000 - 0100	0100 - 0200	0200 - 0300	0300 - 0400	0400 - 0500	0500 - 0600	0600 - 0700	0700 - 0800	0800 - 0900	0900 - 1000	1000 - 1100	1100 - 1200	1200 - 1300	1300 - 1400	1400 - 1500	1500 - 1600	1600 - 1700	1700 - 1800	1800 - 1900	1900 - 2000	2000 - 2100	2100 - 2200	2200 - 2300	2300 - 2400
R1_FL01_01	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_02	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_03	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_04	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_05	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_06	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_07	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_08	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_09	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_10	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_11	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_12	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_13	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_14	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_15	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_16	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_17	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_18	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_19	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_20	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_21	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_22	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_23	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_24	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_25	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_26	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_27	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_28	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_29	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_30	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_31	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_32	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_33	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_34	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_35	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_36	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_37	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_38	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_39	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_40	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_41	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_42	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_43	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_44	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_45	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_46	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_47	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_48	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_49	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_50	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_51	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_52	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_53	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_54	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_55	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_56	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_57	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_58	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_59	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_60	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_61	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_62	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_63	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_64	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_65	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_66	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_67	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_68	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_69	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0

Hourly Profile

Source ID	Vessel ID	0000 - 0100	0100 - 0200	0200 - 0300	0300 - 0400	0400 - 0500	0500 - 0600	0600 - 0700	0700 - 0800	0800 - 0900	0900 - 1000	1000 - 1100	1100 - 1200	1200 - 1300	1300 - 1400	1400 - 1500	1500 - 1600	1600 - 1700	1700 - 1800	1800 - 1900	1900 - 2000	2000 - 2100	2100 - 2200	2200 - 2300	2300 - 2400
R1_FL01_70	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_71	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_72	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_73	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_74	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_75	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_76	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_77	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_78	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_79	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_80	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_81	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_82	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_83	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_84	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_85	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_86	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_87	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_88	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_89	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_90	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_91	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_92	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_93	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_94	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_95	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_96	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_97	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_98	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_99	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_100	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_101	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_102	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_103	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_104	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_105	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_106	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_107	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_108	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_109	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_110	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_111	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_112	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_113	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_114	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_115	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_FL01_116	R1_FL01	0	0	0	0	0	0	0	13	11	4	4	4	4	3	4	4	3	8	15	0	0	0	0	0
R1_LF01_01	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_02	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_03	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_04	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_05	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_06	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_07	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_08	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_09	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_10	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_11	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_12	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_13	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_14	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_15	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_16	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_17	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_18	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_19	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_20	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_21	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_22	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0

Hourly Profile

Source ID	Vessel ID	0000 - 0100	0100 - 0200	0200 - 0300	0300 - 0400	0400 - 0500	0500 - 0600	0600 - 0700	0700 - 0800	0800 - 0900	0900 - 1000	1000 - 1100	1100 - 1200	1200 - 1300	1300 - 1400	1400 - 1500	1500 - 1600	1600 - 1700	1700 - 1800	1800 - 1900	1900 - 2000	2000 - 2100	2100 - 2200	2200 - 2300	2300 - 2400
R1_LF01_23	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_24	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_25	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_26	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_27	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_28	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_29	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_30	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_31	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_32	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_33	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_34	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_35	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_36	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_37	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_38	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_39	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_40	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_41	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_42	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_43	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_44	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_45	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_46	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_47	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_48	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_49	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_50	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_51	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_52	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_53	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_54	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_55	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_56	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_57	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_58	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_59	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_60	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_61	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_62	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_63	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_64	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_65	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_66	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_67	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_68	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_69	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_70	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_71	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_72	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_73	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_74	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_75	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_76	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_77	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_78	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_79	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_80	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_81	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_82	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_83	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_84	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_85	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_86	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_87	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_88	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_89	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_90	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_91	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0

Hourly Profile

Source ID	Vessel ID	0000 - 0100	0100 - 0200	0200 - 0300	0300 - 0400	0400 - 0500	0500 - 0600	0600 - 0700	0700 - 0800	0800 - 0900	0900 - 1000	1000 - 1100	1100 - 1200	1200 - 1300	1300 - 1400	1400 - 1500	1500 - 1600	1600 - 1700	1700 - 1800	1800 - 1900	1900 - 2000	2000 - 2100	2100 - 2200	2200 - 2300	2300 - 2400
R1_LF01_92	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_93	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_94	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_95	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_96	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_97	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_98	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_99	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_100	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_101	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_102	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_103	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_104	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_105	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_106	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_107	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_108	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_109	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_110	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_111	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_112	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_113	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_114	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_115	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_LF01_116	R1_LF01	0	0	0	0	0	0	0	6	4	1	2	0	0	2	0	0	2	2	2	0	0	0	0	0
R1_OGV06_01	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_02	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_03	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_04	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_05	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_06	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_07	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_08	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_09	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_10	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_11	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_12	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_13	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_14	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_15	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_16	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_17	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_18	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_19	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_20	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_21	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_22	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_23	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_24	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_25	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_26	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_27	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_28	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_29	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_30	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_31	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_32	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_33	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_34	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_35	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_36	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_37	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_38	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_39	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_40	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_41	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_42	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_43	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_44	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0

Hourly Profile

Source ID	Vessel ID	0000 - 0100	0100 - 0200	0200 - 0300	0300 - 0400	0400 - 0500	0500 - 0600	0600 - 0700	0700 - 0800	0800 - 0900	0900 - 1000	1000 - 1100	1100 - 1200	1200 - 1300	1300 - 1400	1400 - 1500	1500 - 1600	1600 - 1700	1700 - 1800	1800 - 1900	1900 - 2000	2000 - 2100	2100 - 2200	2200 - 2300	2300 - 2400
R1_OGV06_45	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_46	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_47	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_48	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_49	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_50	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_51	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_52	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_53	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_54	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_55	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_56	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_57	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_58	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_59	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_60	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_61	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_62	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_63	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_64	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_65	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_66	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_67	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_68	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_69	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_70	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_71	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_72	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_73	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_74	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_75	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_76	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_77	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_78	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_79	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_80	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_81	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_82	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_83	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_84	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_85	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_86	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_87	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_88	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_89	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_90	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_91	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_92	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_93	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_94	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_95	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_96	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_97	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_98	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_99	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_100	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_101	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_102	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_103	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_104	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_105	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_106	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_107	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_108	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_109	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_110	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_111	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_112	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_113	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0

Hourly Profile

Source ID	Vessel ID	0000 - 0100	0100 - 0200	0200 - 0300	0300 - 0400	0400 - 0500	0500 - 0600	0600 - 0700	0700 - 0800	0800 - 0900	0900 - 1000	1000 - 1100	1100 - 1200	1200 - 1300	1300 - 1400	1400 - 1500	1500 - 1600	1600 - 1700	1700 - 1800	1800 - 1900	1900 - 2000	2000 - 2100	2100 - 2200	2200 - 2300	2300 - 2400
R1_OGV06_114	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_115	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV06_116	R1_OGV06	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_01	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_02	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_03	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_04	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_05	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_06	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_07	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_08	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_09	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_10	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_11	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_12	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_13	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_14	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_15	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_16	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_17	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_18	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_19	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_20	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_21	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_22	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_23	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_24	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_25	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_26	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_27	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_28	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_29	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_30	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_31	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_32	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_33	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_34	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_35	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_36	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_37	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_38	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_39	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_40	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_41	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_42	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_43	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_44	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_45	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_46	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_47	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_48	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_49	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_50	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_51	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_52	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_53	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_54	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_55	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_56	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_57	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_58	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_59	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_60	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_61	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_62	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_63	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_64	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_65	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_66	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0

Hourly Profile

Source ID	Vessel ID	0000 - 0100	0100 - 0200	0200 - 0300	0300 - 0400	0400 - 0500	0500 - 0600	0600 - 0700	0700 - 0800	0800 - 0900	0900 - 1000	1000 - 1100	1100 - 1200	1200 - 1300	1300 - 1400	1400 - 1500	1500 - 1600	1600 - 1700	1700 - 1800	1800 - 1900	1900 - 2000	2000 - 2100	2100 - 2200	2200 - 2300	2300 - 2400
R1_OGV07_67	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_68	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_69	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_70	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_71	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_72	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_73	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_74	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_75	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_76	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_77	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_78	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_79	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_80	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_81	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_82	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_83	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_84	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_85	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_86	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_87	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_88	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_89	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_90	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_91	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_92	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_93	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_94	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_95	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_96	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_97	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_98	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_99	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_100	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_101	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_102	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_103	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_104	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_105	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_106	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_107	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_108	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_109	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_110	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_111	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_112	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_113	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_114	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_115	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV07_116	R1_OGV07	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
R1_OGV08_01	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_02	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_03	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_04	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_05	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_06	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_07	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_08	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_09	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_10	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_11	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_12	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_13	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_14	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_15	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_16	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_17	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_18	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_19	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0

Hourly Profile

Source ID	Vessel ID	0000 - 0100	0100 - 0200	0200 - 0300	0300 - 0400	0400 - 0500	0500 - 0600	0600 - 0700	0700 - 0800	0800 - 0900	0900 - 1000	1000 - 1100	1100 - 1200	1200 - 1300	1300 - 1400	1400 - 1500	1500 - 1600	1600 - 1700	1700 - 1800	1800 - 1900	1900 - 2000	2000 - 2100	2100 - 2200	2200 - 2300	2300 - 2400
R1_OGV08_20	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_21	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_22	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_23	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_24	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_25	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_26	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_27	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_28	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_29	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_30	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_31	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_32	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_33	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_34	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_35	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_36	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_37	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_38	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_39	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_40	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_41	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_42	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_43	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_44	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_45	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_46	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_47	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_48	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_49	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_50	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_51	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_52	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_53	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_54	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_55	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_56	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_57	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_58	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_59	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_60	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_61	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_62	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_63	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_64	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_65	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_66	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_67	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_68	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_69	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_70	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_71	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_72	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_73	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_74	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_75	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_76	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_77	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_78	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_79	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_80	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_81	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_82	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_83	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_84	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_85	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_86	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_87	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_88	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0

Hourly Profile

Source ID	Vessel ID	0000 - 0100	0100 - 0200	0200 - 0300	0300 - 0400	0400 - 0500	0500 - 0600	0600 - 0700	0700 - 0800	0800 - 0900	0900 - 1000	1000 - 1100	1100 - 1200	1200 - 1300	1300 - 1400	1400 - 1500	1500 - 1600	1600 - 1700	1700 - 1800	1800 - 1900	1900 - 2000	2000 - 2100	2100 - 2200	2200 - 2300	2300 - 2400
R1_OGV08_89	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_90	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_91	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_92	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_93	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_94	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_95	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_96	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_97	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_98	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_99	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_100	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_101	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_102	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_103	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_104	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_105	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_106	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_107	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_108	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_109	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_110	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_111	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_112	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_113	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_114	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_115	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_OGV08_116	R1_OGV08	0	0	0	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0
R1_RTV01_01	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_02	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_03	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_04	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_05	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_06	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_07	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_08	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_09	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_10	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_11	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_12	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_13	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_14	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_15	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_16	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_17	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_18	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_19	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_20	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_21	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_22	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_23	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_24	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_25	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_26	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_27	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_28	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_29	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_30	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_31	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_32	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_33	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_34	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_35	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_36	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_37	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_38	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_39	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_40	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_41	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0

Hourly Profile

Source ID	Vessel ID	0000 - 0100	0100 - 0200	0200 - 0300	0300 - 0400	0400 - 0500	0500 - 0600	0600 - 0700	0700 - 0800	0800 - 0900	0900 - 1000	1000 - 1100	1100 - 1200	1200 - 1300	1300 - 1400	1400 - 1500	1500 - 1600	1600 - 1700	1700 - 1800	1800 - 1900	1900 - 2000	2000 - 2100	2100 - 2200	2200 - 2300	2300 - 2400
R1_RTV01_42	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_43	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_44	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_45	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_46	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_47	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_48	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_49	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_50	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_51	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_52	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_53	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_54	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_55	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_56	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_57	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_58	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_59	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_60	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_61	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_62	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_63	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_64	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_65	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_66	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_67	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_68	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_69	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_70	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_71	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_72	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_73	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_74	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_75	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_76	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_77	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_78	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_79	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_80	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_81	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_82	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_83	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_84	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_85	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_86	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_87	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_88	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_89	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_90	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_91	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_92	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_93	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_94	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_95	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_96	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_97	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_98	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_99	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_100	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_101	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_102	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_103	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_104	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_105	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_106	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_107	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_108	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_109	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_110	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0

Hourly Profile

Source ID	Vessel ID	0000 - 0100	0100 - 0200	0200 - 0300	0300 - 0400	0400 - 0500	0500 - 0600	0600 - 0700	0700 - 0800	0800 - 0900	0900 - 1000	1000 - 1100	1100 - 1200	1200 - 1300	1300 - 1400	1400 - 1500	1500 - 1600	1600 - 1700	1700 - 1800	1800 - 1900	1900 - 2000	2000 - 2100	2100 - 2200	2200 - 2300	2300 - 2400
R1_RTV01_111	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_112	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_113	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_114	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_115	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV01_116	R1_RTV01	0	0	0	0	0	0	0	1	1	1	1	1	4	3	2	2	1	1	1	0	0	0	0	0
R1_RTV03_01	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_02	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_03	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_04	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_05	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_06	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_07	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_08	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_09	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_10	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_11	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_12	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_13	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_14	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_15	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_16	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_17	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_18	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_19	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_20	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_21	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_22	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_23	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_24	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_25	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_26	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_27	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_28	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_29	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_30	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_31	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_32	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_33	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_34	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_35	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_36	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_37	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_38	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_39	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_40	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_41	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_42	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_43	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_44	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_45	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_46	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_47	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_48	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_49	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_50	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_51	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_52	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_53	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_54	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_55	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_56	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_57	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_58	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_59	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_60	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_61	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_62	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_63	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0

Hourly Profile

Source ID	Vessel ID	0000 - 0100	0100 - 0200	0200 - 0300	0300 - 0400	0400 - 0500	0500 - 0600	0600 - 0700	0700 - 0800	0800 - 0900	0900 - 1000	1000 - 1100	1100 - 1200	1200 - 1300	1300 - 1400	1400 - 1500	1500 - 1600	1600 - 1700	1700 - 1800	1800 - 1900	1900 - 2000	2000 - 2100	2100 - 2200	2200 - 2300	2300 - 2400
R1_RTV03_64	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_65	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_66	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_67	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_68	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_69	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_70	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_71	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_72	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_73	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_74	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_75	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_76	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_77	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_78	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_79	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_80	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_81	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_82	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_83	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_84	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_85	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_86	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_87	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_88	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_89	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_90	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_91	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_92	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_93	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_94	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_95	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_96	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_97	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_98	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_99	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_100	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_101	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_102	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_103	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_104	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_105	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_106	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_107	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_108	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_109	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_110	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_111	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_112	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_113	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_114	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_115	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03_116	R1_RTV03	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
R1_RTV03H_01	R1_RTV03H	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	0
R1_RTV03M_01	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_02	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_03	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_04	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_05	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_06	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_07	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_08	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_09	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_10	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_11	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_12	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_13	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_14	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_15	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0

Hourly Profile

Source ID	Vessel ID	0000 - 0100	0100 - 0200	0200 - 0300	0300 - 0400	0400 - 0500	0500 - 0600	0600 - 0700	0700 - 0800	0800 - 0900	0900 - 1000	1000 - 1100	1100 - 1200	1200 - 1300	1300 - 1400	1400 - 1500	1500 - 1600	1600 - 1700	1700 - 1800	1800 - 1900	1900 - 2000	2000 - 2100	2100 - 2200	2200 - 2300	2300 - 2400
R1_RTV03M_16	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_17	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_18	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_19	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_20	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_21	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_22	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_23	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_24	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_25	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_26	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_27	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_28	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_29	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_30	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_31	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_32	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_33	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_34	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_35	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_36	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_37	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_38	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_39	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_40	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_41	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_42	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_43	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_44	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_45	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_46	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_47	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_48	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_49	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_50	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_51	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_52	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_53	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_54	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_55	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_56	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_57	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_58	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_59	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_60	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_61	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_62	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_63	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_64	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_65	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_66	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_67	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_68	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_69	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_70	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_71	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_72	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_73	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_74	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_75	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_76	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_77	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_78	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_79	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_80	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_81	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_82	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV03M_83	R1_RTV03M	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
R1_RTV07H_01	R1_RTV07H	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0

Hourly Profile

Source ID	Vessel ID	0000 - 0100	0100 - 0200	0200 - 0300	0300 - 0400	0400 - 0500	0500 - 0600	0600 - 0700	0700 - 0800	0800 - 0900	0900 - 1000	1000 - 1100	1100 - 1200	1200 - 1300	1300 - 1400	1400 - 1500	1500 - 1600	1600 - 1700	1700 - 1800	1800 - 1900	1900 - 2000	2000 - 2100	2100 - 2200	2200 - 2300	2300 - 2400
R1_RTV07M_01	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_02	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_03	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_04	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_05	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_06	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_07	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_08	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_09	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_10	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_11	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_12	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_13	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_14	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_15	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_16	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_17	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_18	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_19	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_20	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_21	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_22	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_23	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_24	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_25	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_26	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_27	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_28	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_29	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_30	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_31	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_32	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_33	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_34	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_35	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_36	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_37	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_38	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_39	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_40	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_41	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_42	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_43	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_44	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_45	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_46	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_47	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_48	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_49	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_50	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_51	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_52	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_53	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_54	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_55	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_56	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_57	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_58	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_59	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_60	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_61	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_62	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_63	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_64	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_65	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_66	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_67	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_68	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_69	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0

Hourly Profile

Source ID	Vessel ID	0000 - 0100	0100 - 0200	0200 - 0300	0300 - 0400	0400 - 0500	0500 - 0600	0600 - 0700	0700 - 0800	0800 - 0900	0900 - 1000	1000 - 1100	1100 - 1200	1200 - 1300	1300 - 1400	1400 - 1500	1500 - 1600	1600 - 1700	1700 - 1800	1800 - 1900	1900 - 2000	2000 - 2100	2100 - 2200	2200 - 2300	2300 - 2400
R1_RTV07M_70	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_71	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_72	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_73	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_74	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_75	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_76	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_77	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_78	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_79	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_80	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_81	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_82	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_RTV07M_83	R1_RTV07M	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
R1_SC01_01	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_02	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_03	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_04	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_05	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_06	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_07	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_08	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_09	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_10	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_11	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_12	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_13	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_14	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_15	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_16	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_17	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_18	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_19	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_20	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_21	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_22	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_23	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_24	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_25	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_26	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_27	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_28	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_29	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_30	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_31	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_32	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_33	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_34	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_35	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_36	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_37	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_38	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_39	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_40	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_41	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_42	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_43	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_44	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_45	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_46	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_47	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_48	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_49	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_50	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_51	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_52	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_53	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_54	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_55	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0

Hourly Profile

Source ID	Vessel ID	0000 - 0100	0100 - 0200	0200 - 0300	0300 - 0400	0400 - 0500	0500 - 0600	0600 - 0700	0700 - 0800	0800 - 0900	0900 - 1000	1000 - 1100	1100 - 1200	1200 - 1300	1300 - 1400	1400 - 1500	1500 - 1600	1600 - 1700	1700 - 1800	1800 - 1900	1900 - 2000	2000 - 2100	2100 - 2200	2200 - 2300	2300 - 2400
R1_SC01_56	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_57	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_58	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_59	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_60	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_61	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_62	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_63	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_64	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_65	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_66	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_67	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_68	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_69	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_70	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_71	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_72	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_73	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_74	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_75	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_76	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_77	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_78	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_79	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_80	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_81	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_82	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_83	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_84	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_85	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_86	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_87	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_88	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_89	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_90	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_91	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_92	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_93	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_94	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_95	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_96	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_97	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_98	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_99	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_100	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_101	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
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R1_SC01_103	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_104	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_105	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_106	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_107	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_108	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_109	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_110	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_111	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_112	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_113	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_114	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_115	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_SC01_116	R1_SC01	0	0	0	0	0	0	0	5	7	6	10	8	12	7	6	10	11	12	7	0	0	0	0	0
R1_TT01_01	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
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R1_TT01_05	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_06	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
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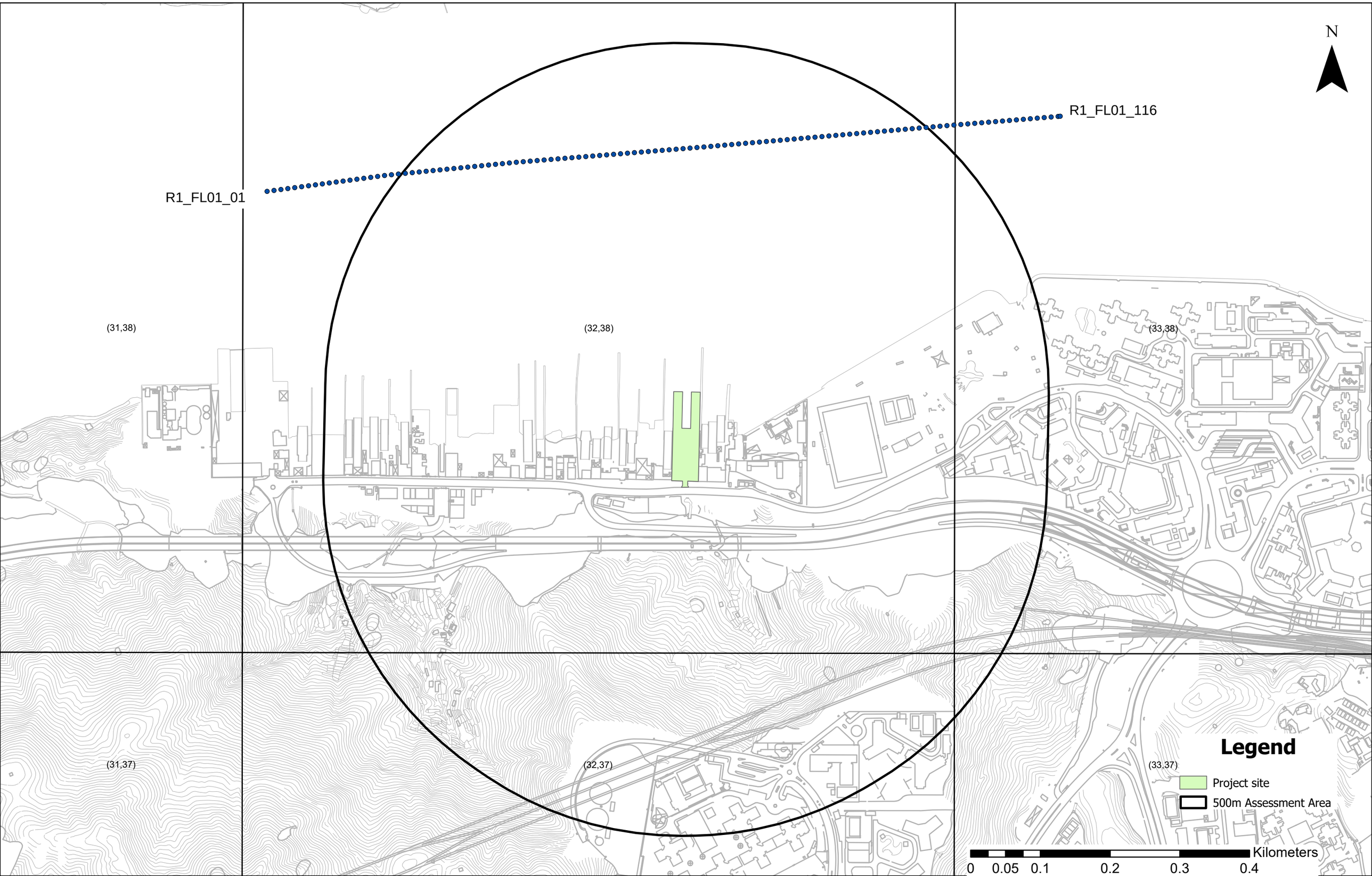
Hourly Profile

Source ID	Vessel ID	0000 - 0100	0100 - 0200	0200 - 0300	0300 - 0400	0400 - 0500	0500 - 0600	0600 - 0700	0700 - 0800	0800 - 0900	0900 - 1000	1000 - 1100	1100 - 1200	1200 - 1300	1300 - 1400	1400 - 1500	1500 - 1600	1600 - 1700	1700 - 1800	1800 - 1900	1900 - 2000	2000 - 2100	2100 - 2200	2200 - 2300	2300 - 2400
R1_TT01_09	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_10	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_11	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_12	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_13	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_14	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_15	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_16	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_17	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_18	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_19	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_20	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_21	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
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R1_TT01_23	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_24	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_25	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_26	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_27	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_28	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_29	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_30	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
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R1_TT01_32	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
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R1_TT01_34	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_35	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_36	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_37	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_38	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_39	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_40	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_41	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_42	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_43	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
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R1_TT01_45	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_46	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_47	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_48	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_49	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_50	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_51	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
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R1_TT01_57	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
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R1_TT01_60	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_61	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_62	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
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R1_TT01_65	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
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R1_TT01_67	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
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R1_TT01_75	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
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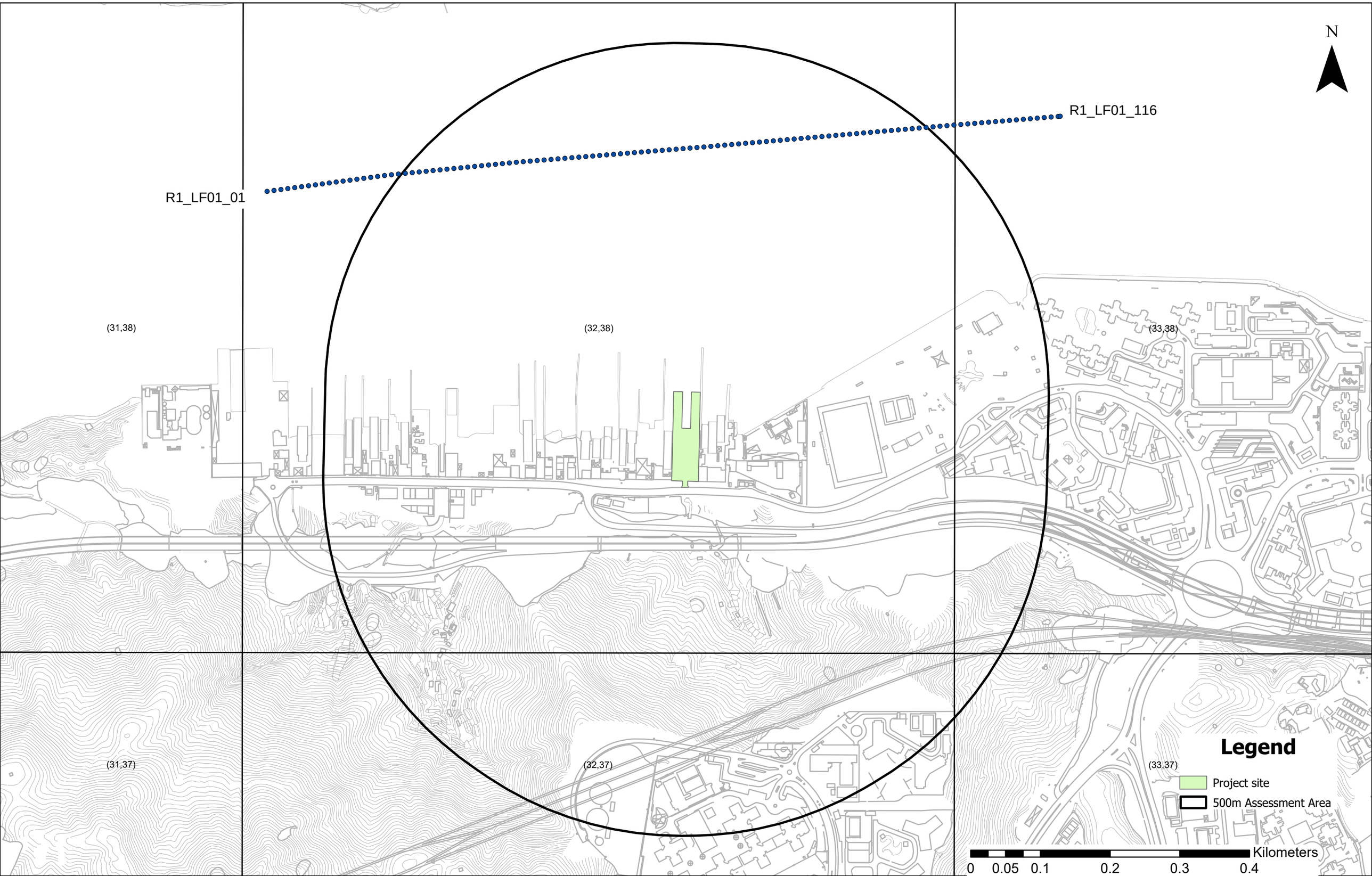
Hourly Profile

Source ID	Vessel ID	0000 - 0100	0100 - 0200	0200 - 0300	0300 - 0400	0400 - 0500	0500 - 0600	0600 - 0700	0700 - 0800	0800 - 0900	0900 - 1000	1000 - 1100	1100 - 1200	1200 - 1300	1300 - 1400	1400 - 1500	1500 - 1600	1600 - 1700	1700 - 1800	1800 - 1900	1900 - 2000	2000 - 2100	2100 - 2200	2200 - 2300	2300 - 2400
R1_TT01_78	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_79	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_80	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_81	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_82	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_83	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_84	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_85	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_86	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_87	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_88	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_89	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_90	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_91	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
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R1_TT01_93	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_94	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_95	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_96	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_97	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_98	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_99	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_100	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_101	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_102	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_103	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_104	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_105	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_106	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_107	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_108	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_109	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_110	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_111	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_112	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_113	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_114	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_115	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
R1_TT01_116	R1_TT01	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0

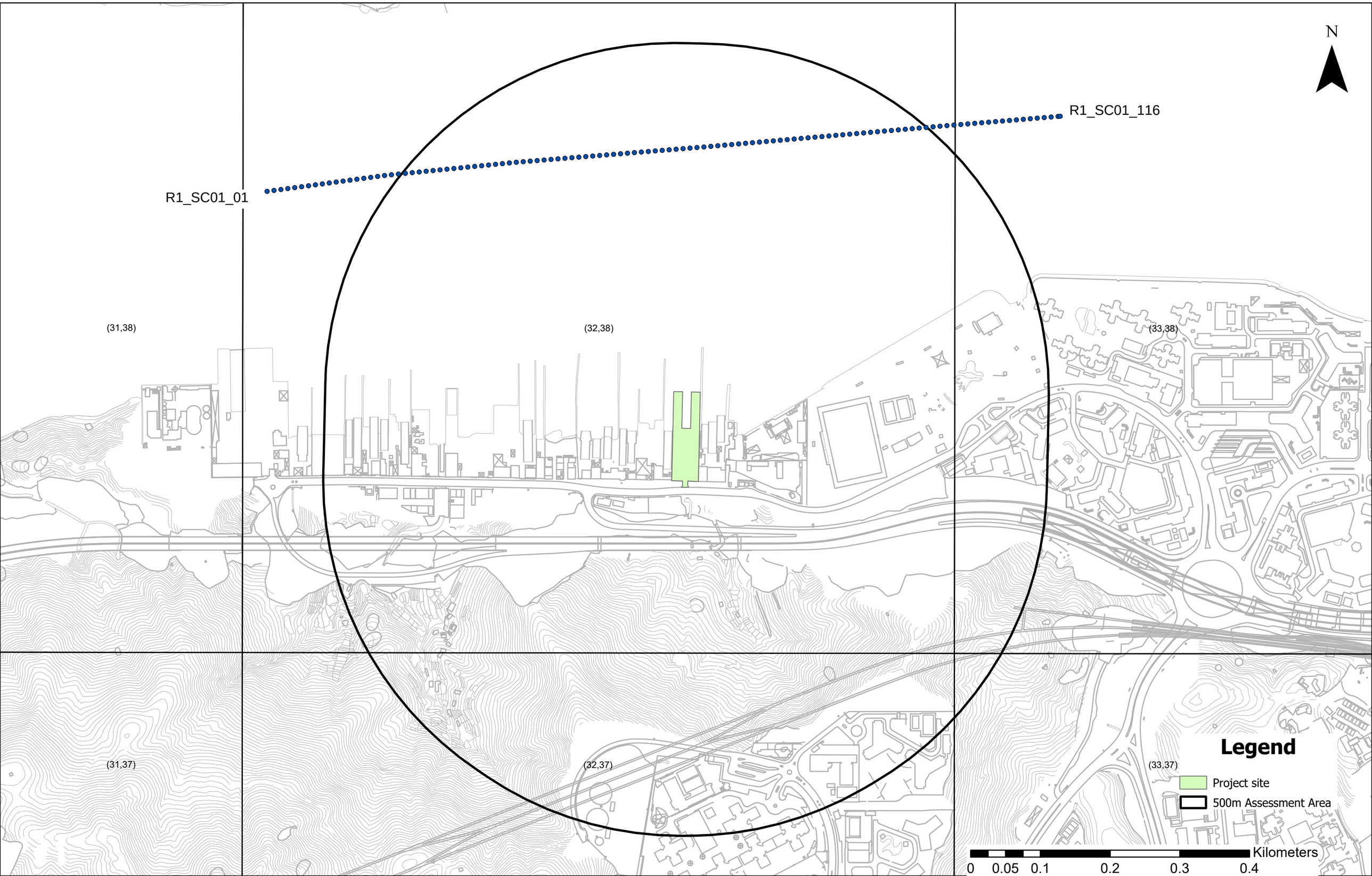
Location of Marine Emission Sources (marine routes in the vicinity of the Project, Fast Launch FL01)



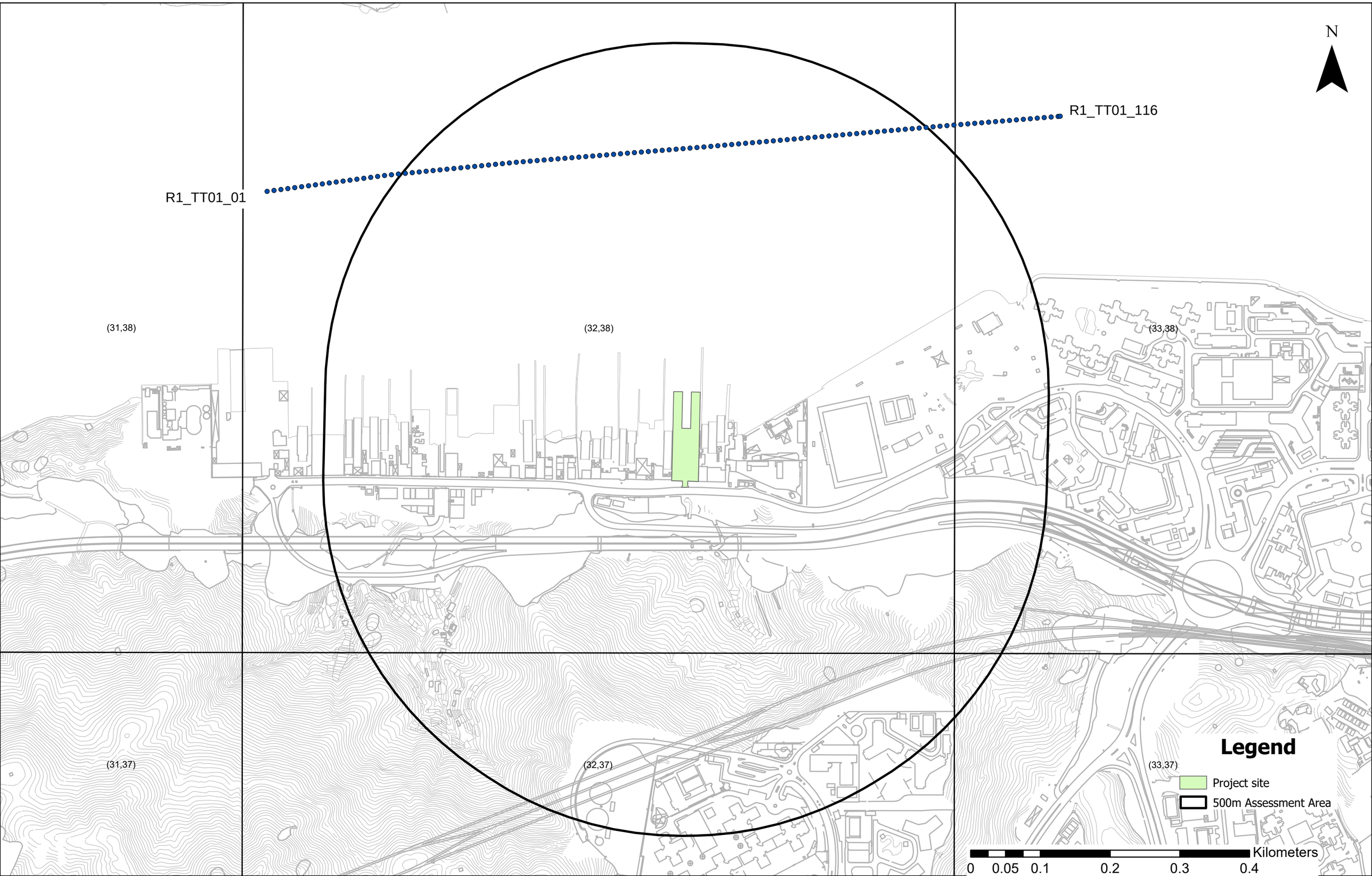
Location of Marine Emission Sources (marine routes in the vicinity of the Project, Local Ferry LF01)



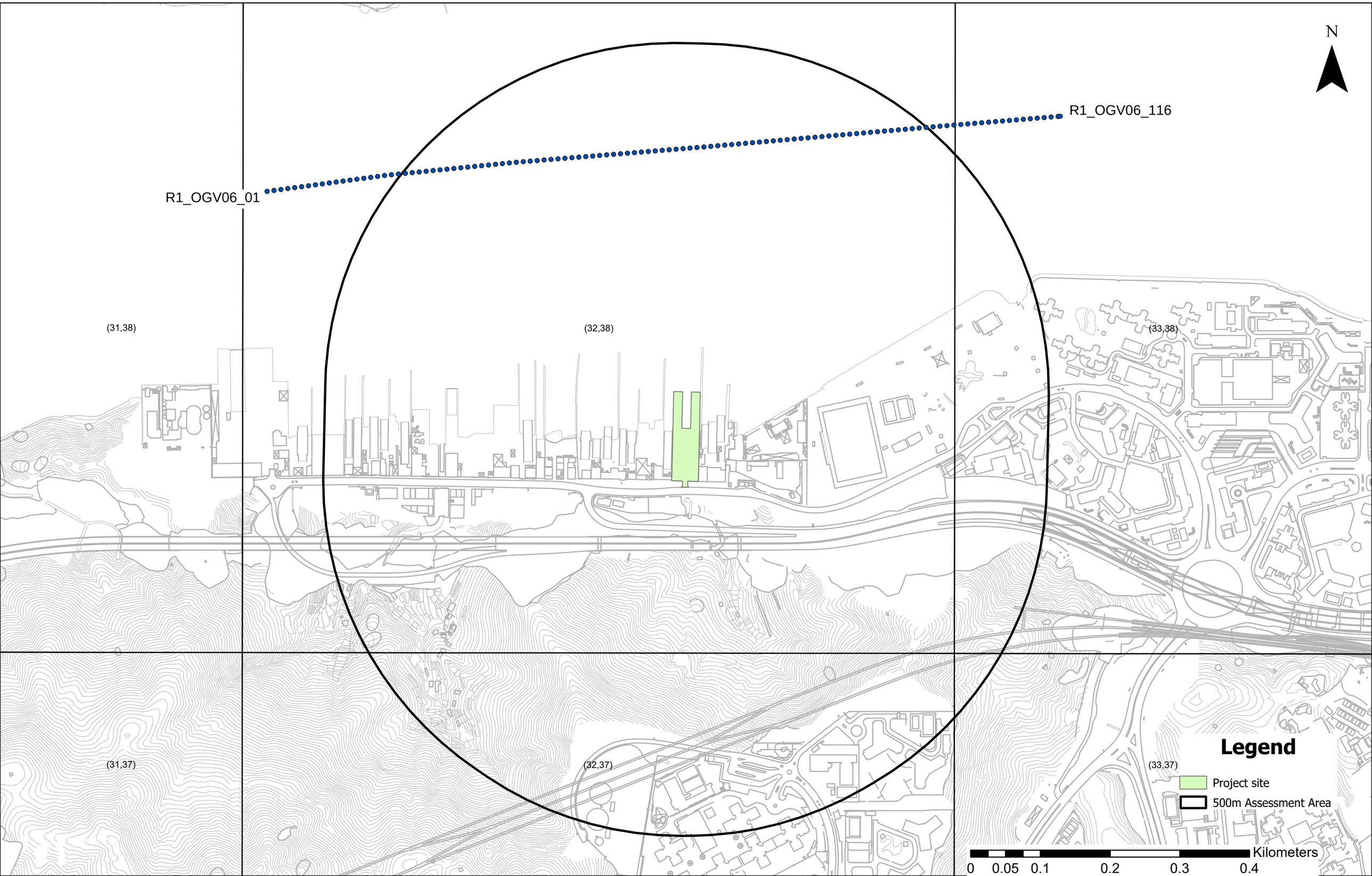
Location of Marine Emission Sources (marine routes in the vicinity of the Project, Small Craft SC01)



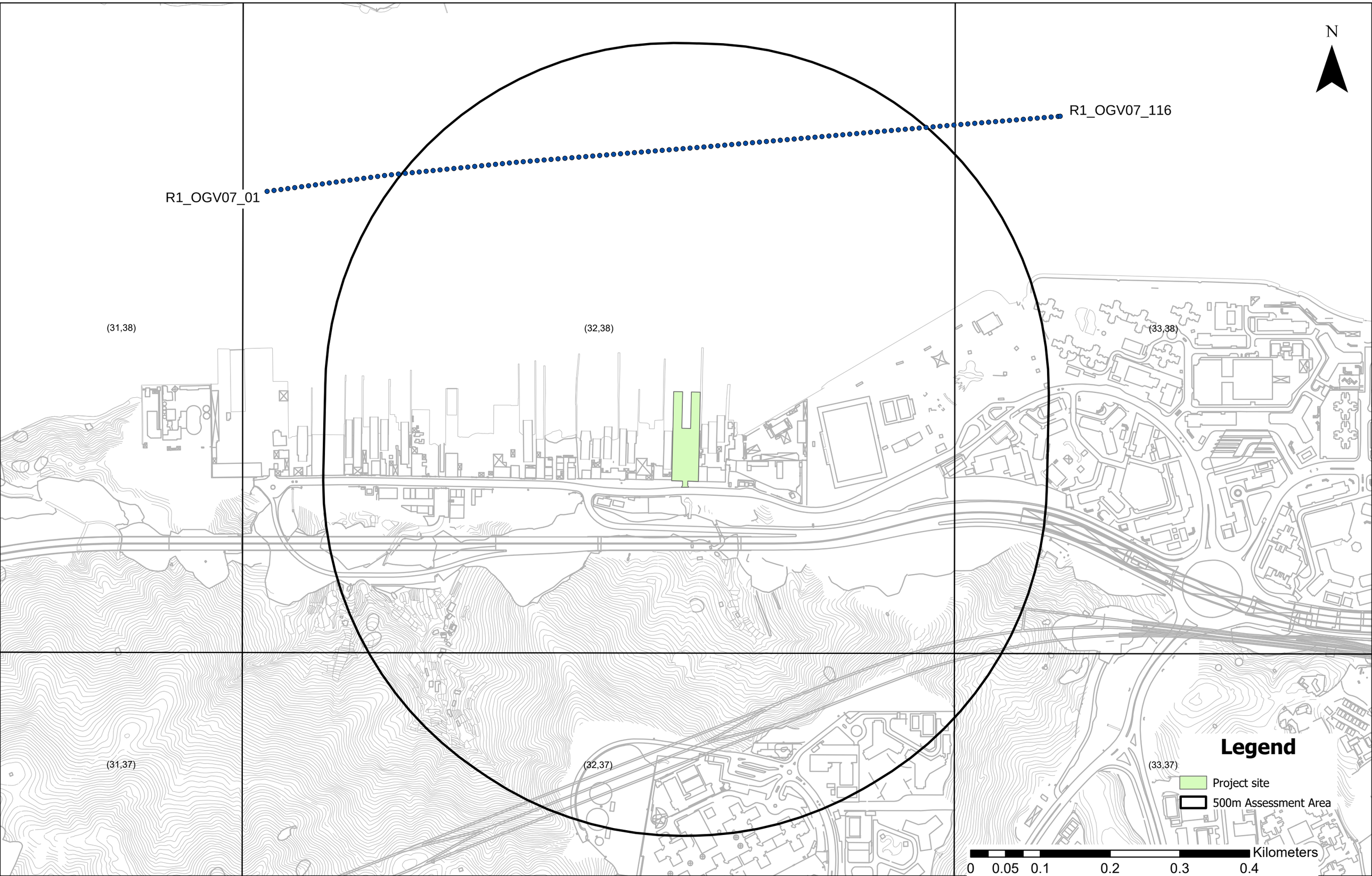
Location of Marine Emission Sources (marine routes in the vicinity of the Project, Tug and Tow TT01)



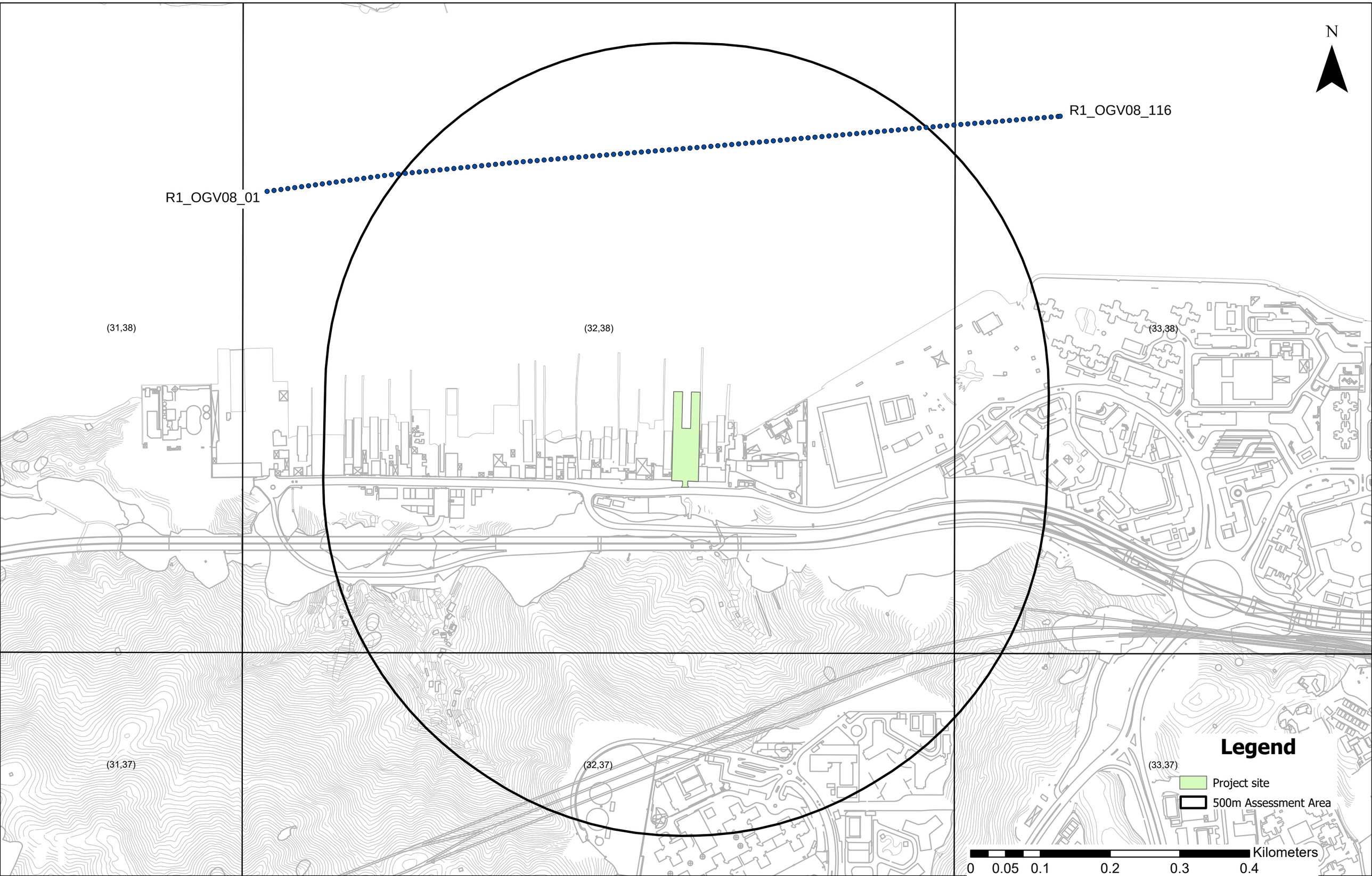
Location of Marine Emission Sources (marine routes in the vicinity of the Project, Ocean-going Vessel OGV06)



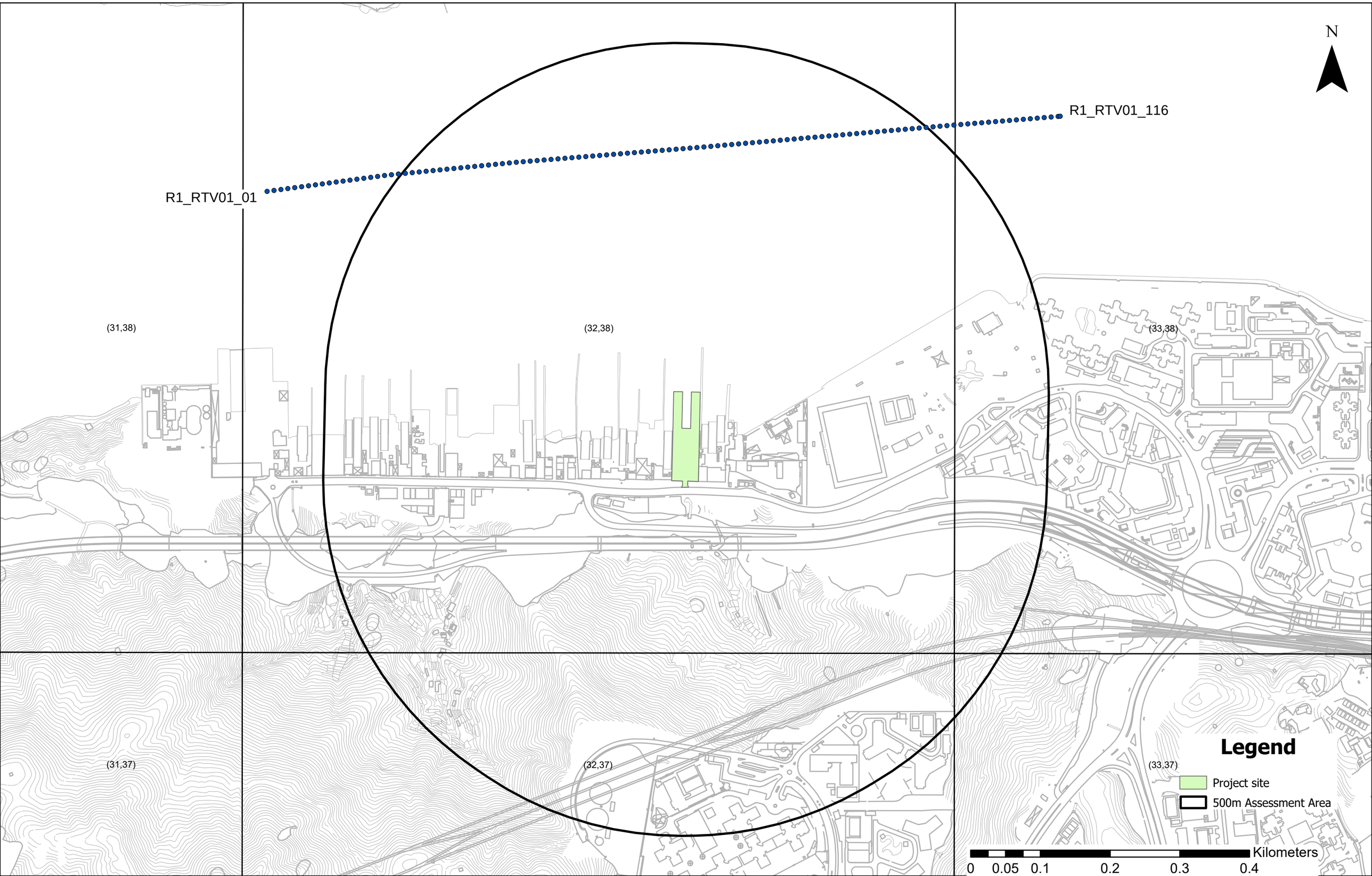
Location of Marine Emission Sources (marine routes in the vicinity of the Project, Ocean-going Vessel OGV07)



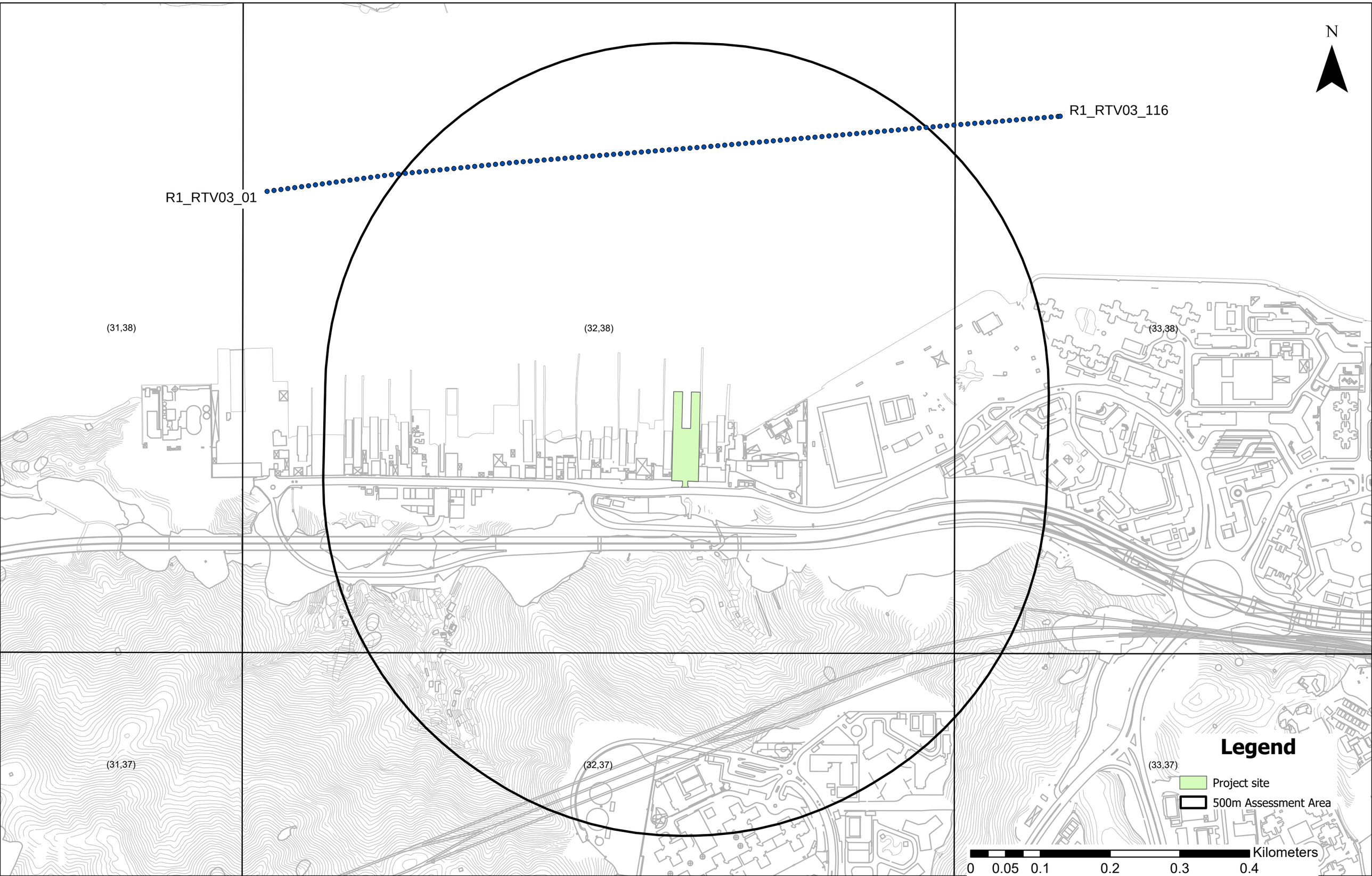
Location of Marine Emission Sources (marine routes in the vicinity of the Project, Ocean-going Vessel OGV08)



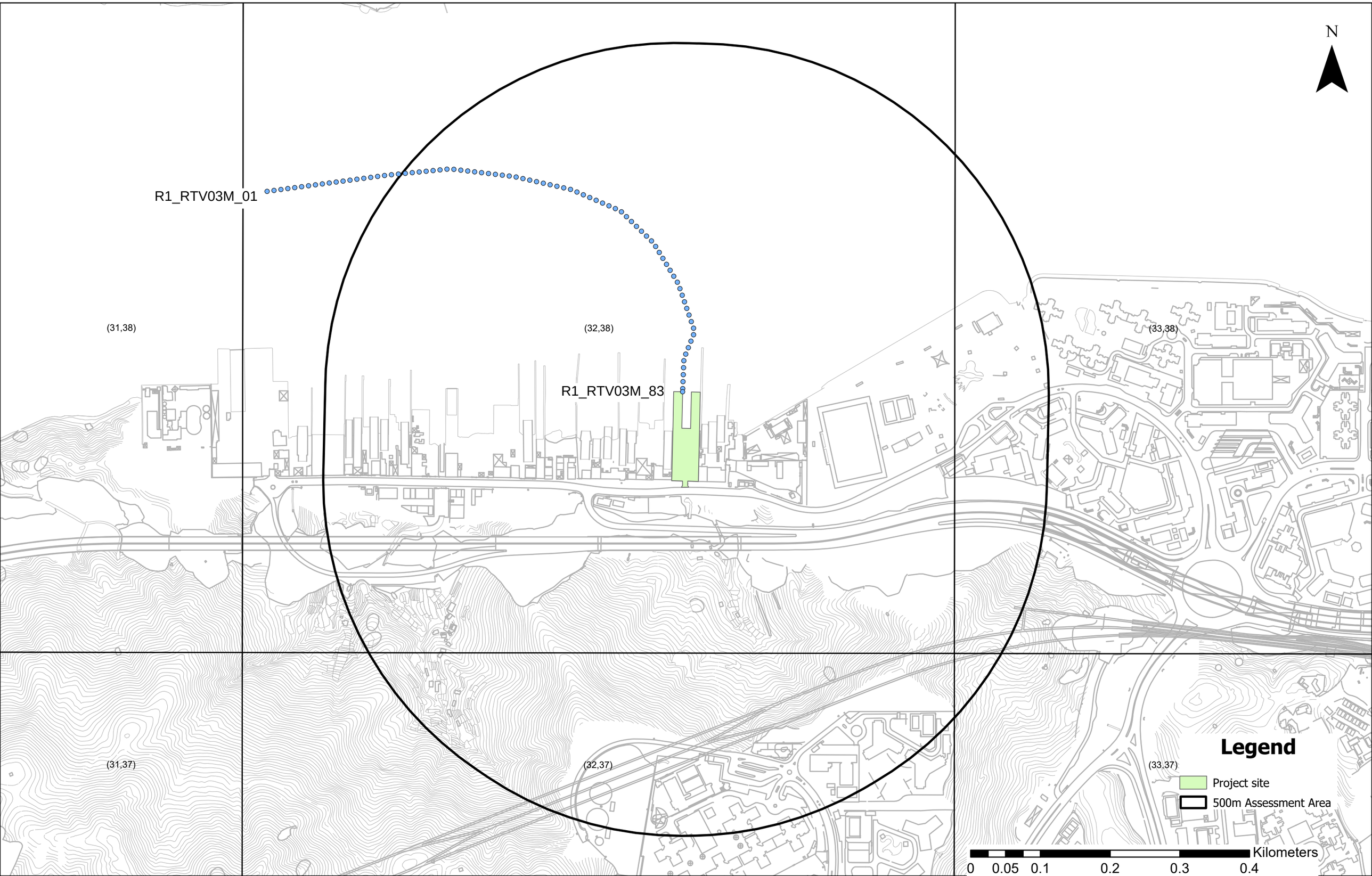
Location of Marine Emission Sources (marine routes in the vicinity of the Project, River Trade Vessel RTV01)



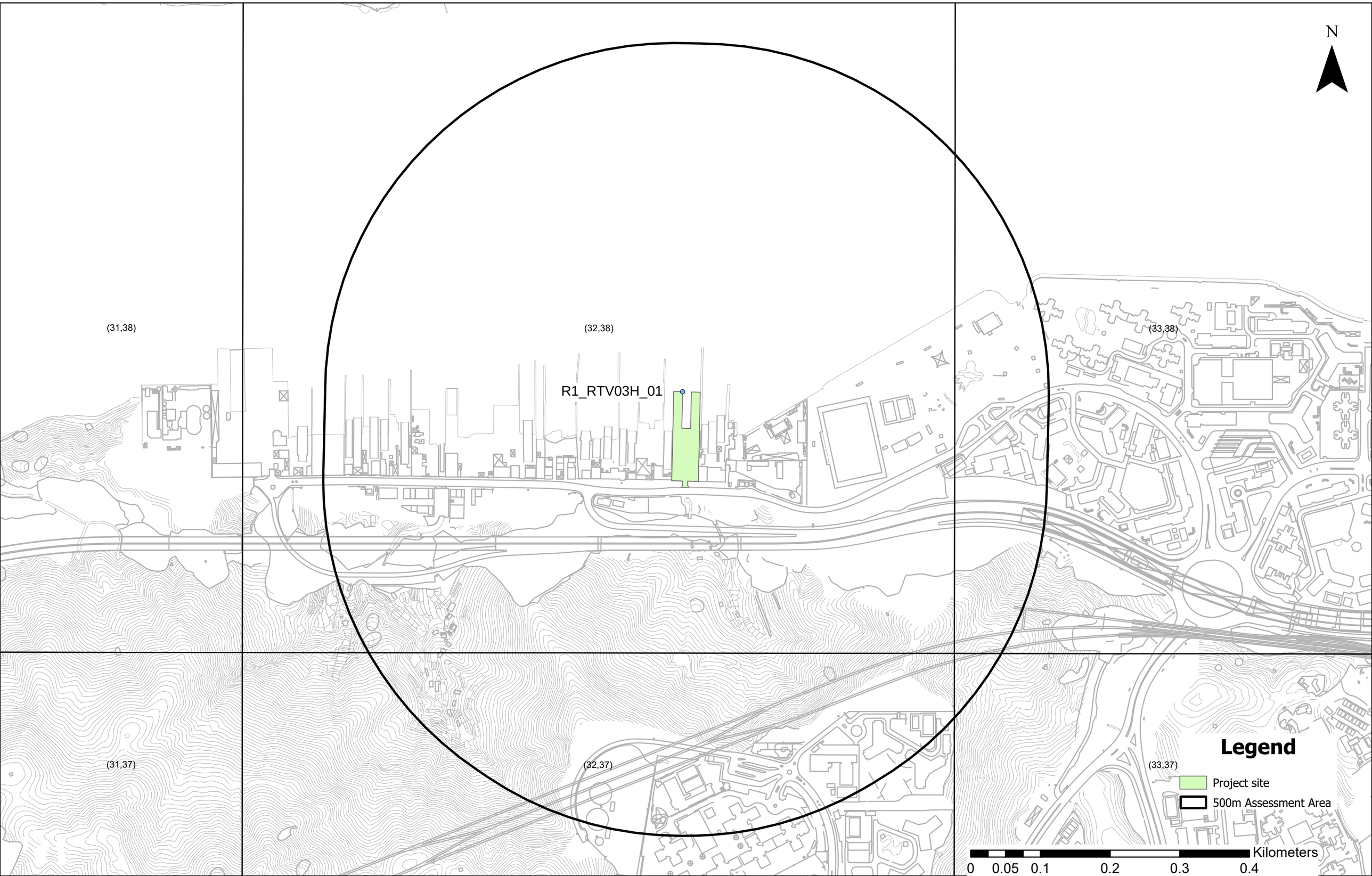
Location of Marine Emission Sources (marine routes in the vicinity of the Project, River Trade Vessel RTV03)



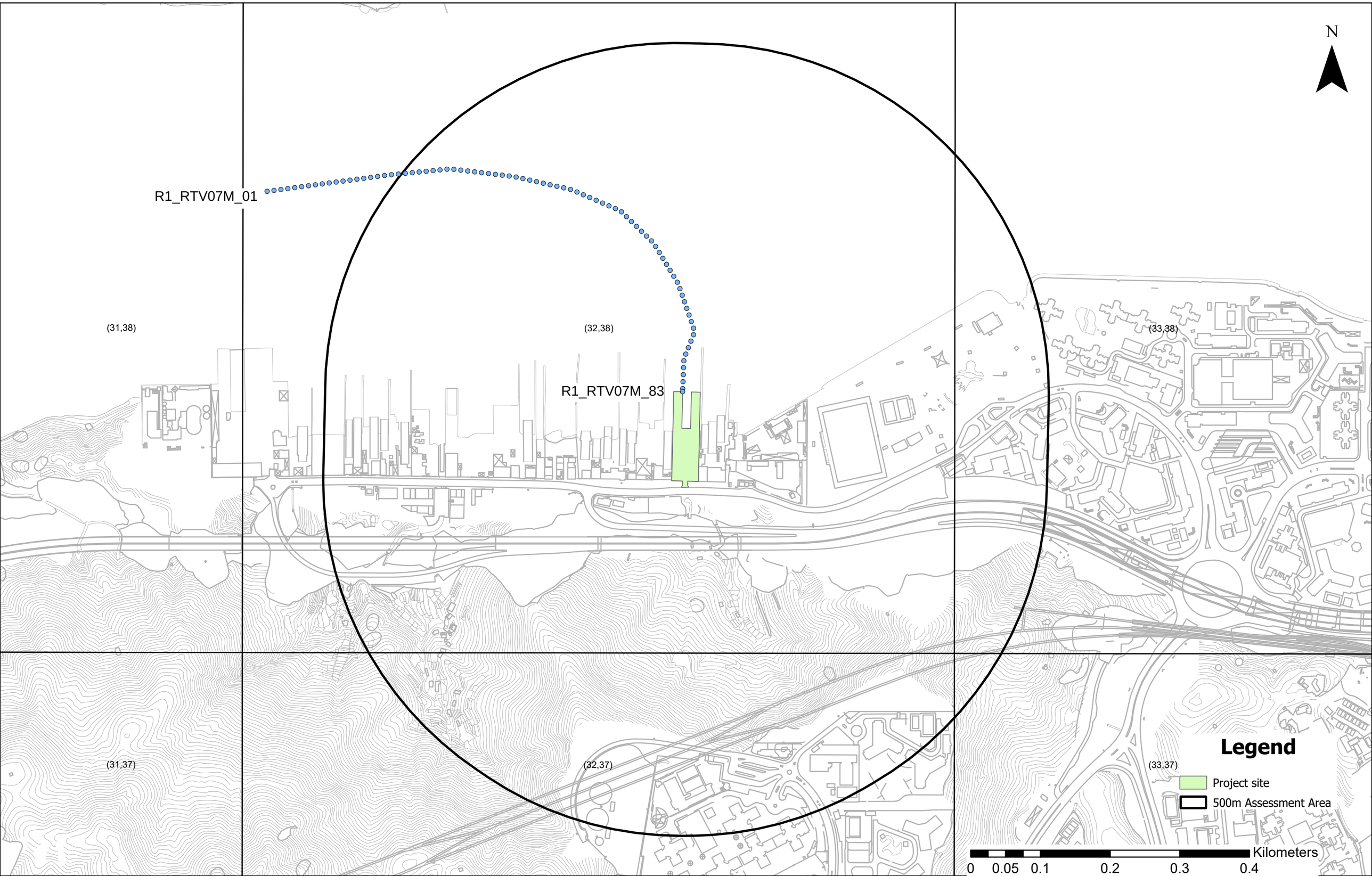
Location of Marine Emission Sources (marine route of the Project, River Trade Vessel RTV03M)



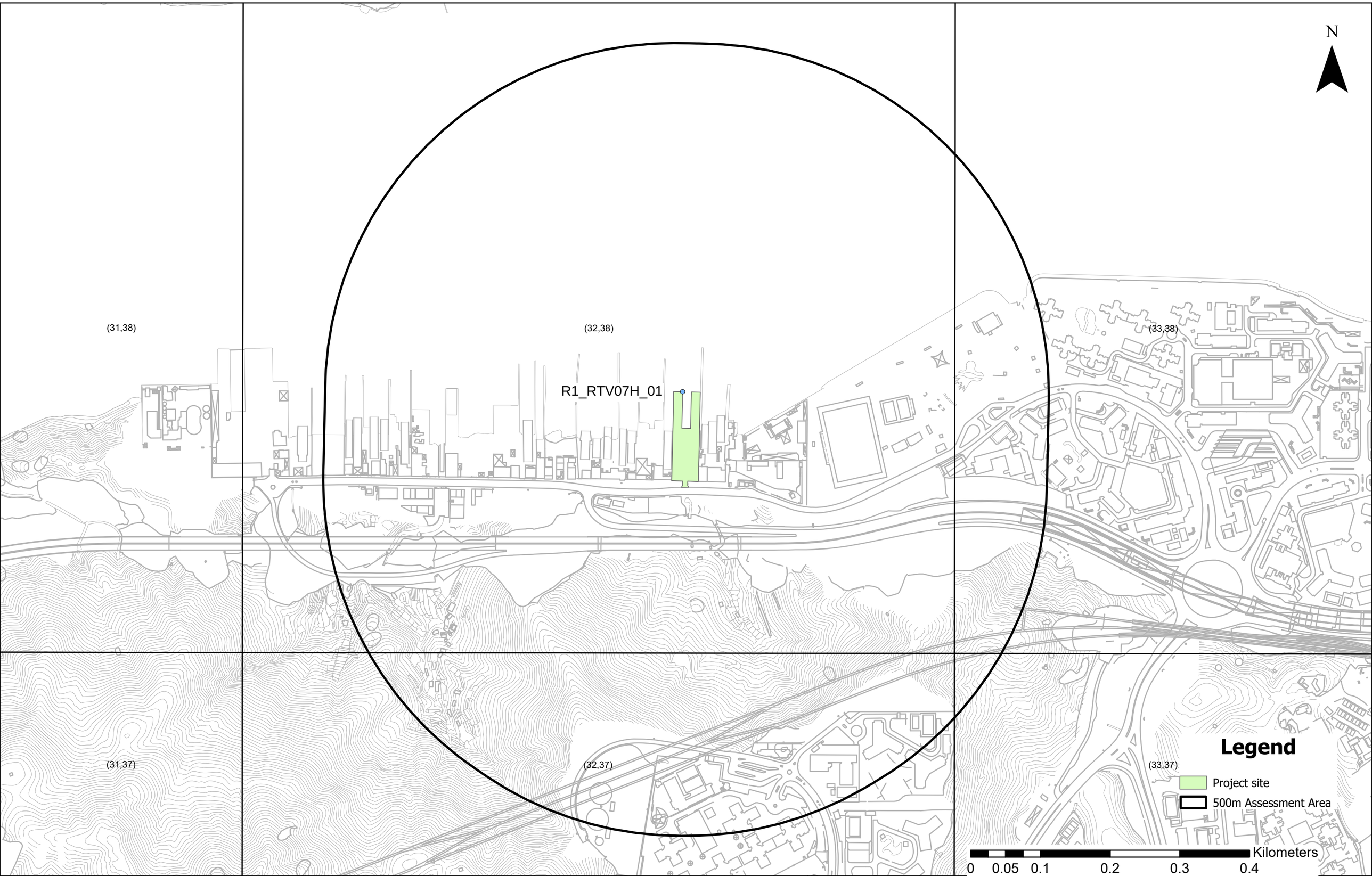
Location of Marine Emission Sources (marine route of the Project, River Trade Vessel Hotelling RTV03H)



Location of Marine Emission Sources (marine route of the Project, River Trade Vessel RTV07M)



Location of Marine Emission Sources (marine route of the Project, River Trade Vessel Hotelling RTV07H)



From: [redacted]
Sent: Thursday, March 20, 2025 10:31 AM
To: [redacted]
Cc:
Subject: Re: Marine Traffic Forecast Methodology for Air Quality Impact Assessment
Attachments: 31048-R04-01.pdf

Dear [redacted],

Thank you for your email regarding the methodology for forecasting marine traffic data for the Air Quality Impact Assessment.

As the Air Quality Impact Assessment falls under the purview of the EPD, please consult directly with them regarding this matter.

Regarding the Marine Traffic Visual Survey on Part 3, I have no comments on its content.

For Part 6 - Major Planned/Other Committed Developments, I noticed that you mentioned the Kau Yi Chau Artificial Islands (KYCAI) Project. If you require details or the commencement timeline of this project, I suggest reaching out directly to CEDD for clarification.

Thank you.

[redacted]
Senior Marine Officer / Planning and Development (2)
Marine Department
Tele: 2852 4453 Fax: 2581 1765

From: [redacted]
To:
Cc:
Date: 2025-03-19 11:04
Subject: Marine Traffic Forecast Methodology for Air Quality Impact Assessment

Dear [redacted],

We are the marine consultant for the Proposed CBP Development at Tam Kon Shan Road, Tsing YiAs noted in our environmental consultant's correspondence with the Environmental Protection Department (EPD), an Environmental Assessment (EA) has been submitted, in which marine traffic data has been adopted as part of the Air Quality Impact Assessment.

In this regard, please find attached the proposed methodology for forecasting marine traffic data, which is solely for use in the Air Quality Impact Assessment, for your review and consideration. Grateful if you could advise whether you have any in-principle objection to the methodology.

Thank you for your time and cooperation.

Yours sincerely,

[redacted]

AXON

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Unit 209, 2/F, No. 19 Science Park West Avenue
Hong Kong Science Park, Shatin, Hong Kong
Office: 2258 6392 Fax: 3020 0321
Office: 2258 6392 Fax: 3020 0321
Email: info@axonhk.com
Homepage: http://www.axonhk.com

APPENDIX 3.6

Calculation of Start Emissions

Appendix 3.6 Calculation of Start Emissions

https://www.elegislation.gov.hk/hk/cap374A!en-zh-Hant-HK?INDEX_CS=N

Cap. 374A Road Traffic (Construction and Maintenance of Vehicles) Regulations

First Schedule

Code	**車輛類型 (Vehicle Type)**	EMFAC	Vehicle Class
1	私家車	PC	01 - Private Cars
2	的士(請註明)	Taxi	02 - Taxi
3	輕型貨VAN	LGV3	03 - Light Goods Vehicles<=2.5t
4	輕型貨車	LGV6	05 - Light Goods Vehicles>3.5t
5	中型貨車	HGV7	06 - Medium Goods Vehicles<=15t
6	重型貨車	HGV8	07 - Medium Goods Vehicles15-24t
7	12座以下輕型巴士	PV4	09 - Private Light Bus <=3.5t
8	12-19座輕型巴士	PLB	08 - Public Light Buses
9	20座或以上輕型校巴	PV5	10 - Private Light Bus >3.5t
10	20座或以上輕型巴士	NFB8	13 - Non-franchised Bus 15-24t
11	旅遊巴士	NFB9	18 - Non-franchised Bus >24t
12	單層巴士	FBSD	14 - Franchised Bus (SD)
13	雙層巴士	FBDD	15 - Franchised Bus (DD)
14	貨櫃車	HGV9	17 - Heavy Goods Vehicles>24t
15	電單車	MC	16 - Motorcycles

Vehicle Class	Overall Height (m)
PC	2.0
Taxi	2.0
Invalid Carriage	2.0
Light Bus	3.0
Bus - SD	3.5
Bus - DD	4.6
Bus - Articulated	3.5
LGV	3.5
MGV	4.6
HGV - Rigid	4.6
HGV - Articulated	4.6
Special Purpose Vehicle	4.6
Tricycle	-
Trailer	4.6
Pedestrian-controlled Vehicle	-

Appendix 3.6 Calculation of Start Emissions

Calculation of Iding Emission Factor

PC (Diesel)

NO/NO_2 Ratio [1] = 7.92 From EMFAC

	Population	Idling Emission Factor				Mass Factor [19]	AC Factor [6]	Average Idling Emission Factor (g/min)							
		Cold Idling		Hot Idling				Cold Idling				Hot Idling			
	%	NOx (g/s) [2]	PM (g/hr) [3]	NOx (g/hr) [4]	PM (g/hr) [5]			NOx	NO	NO_2	PM [7]	NOx	NO	NO_2	PM [7]
Euro VI	46.75%	4.47E-04	5.00E-02	1.61E+00	5.00E-02	-	1.3	5.657E-02	5.023E-02	6.339E-03	7.908E-04	5.657E-02	5.023E-02	6.339E-03	7.908E-04
Euro V	52.41%	9.58E-04	2.00E-02	3.45E+00	2.00E-02										
Euro IV	0.56%	1.66E-03	1.60E-01	5.96E+00	1.60E-01										
Euro I	0.13%	1.36E-03	5.80E-01	4.88E+00	5.80E-01										
Pre-Euro	0.16%	1.83E-03	6.30E-01	6.57E+00	6.30E-01										

PC (Petrol)

NO/NO_2 Ratio [1] = 18.88 From EMFAC

	Population	Idling Emission Factor				Mass Factor [19]	AC Factor [6]	Average Idling Emission Factor (g/min)							
		Cold Idling		Hot Idling				Cold Idling				Hot Idling			
	%	NOx (g/s) [2]	PM (g/hr) [3]	NOx (g/hr) [8]	PM (g/hr) [9]			NOx	NO	NO_2	PM [7]	NOx	NO	NO_2	PM [7]
Euro VI	80.49%	1.67E-05	0.00E+00	6.00E-02	0.00E+00	-	1.3	1.567E-03	1.488E-03	7.880E-05	3.174E-05	1.567E-03	1.488E-03	7.880E-05	3.174E-05
Euro V	14.56%	2.22E-05	1.00E-02	8.00E-02	1.00E-02										
Euro IV	4.41%	6.39E-05	0.00E+00	2.30E-01	0.00E+00										
Euro III	0.44%	8.33E-05	0.00E+00	3.00E-01	0.00E+00										
Euro II	0.07%	2.67E-04	1.00E-02	9.60E-01	1.00E-02										
Euro I	0.01%	2.11E-04	1.00E-02	7.60E-01	1.00E-02										
Pre-Euro	0.01%	3.28E-04	1.00E-02	1.18E+00	1.00E-02										

Taxi (Petrol)

NO/NO_2 Ratio [1] = 18.96 From EMFAC

	Population	Idling Emission Factor				Mass Factor [19]	AC Factor [6]	Average Idling Emission Factor (g/min)							
		Cold Idling		Hot Idling				Cold Idling				Hot Idling			
	%	NOx (g/s) [2]	PM (g/hr) [3]	NOx (g/hr) [11]	PM (g/hr) [11]			NOx	NO	NO_2	PM [7]	NOx	NO	NO_2	PM [7]
Euro V	100.00%	2.22E-05	1.00E-02	8.00E-02	1.00E-02	-	1.3	1.733E-03	1.646E-03	8.683E-05	2.167E-04	1.733E-03	1.646E-03	8.683E-05	2.167E-04

Taxi (LPG)

NO/NO_2 Ratio [1] = 35.88 From EMFAC

	Population	Idling Emission Factor				Mass Factor [19]	AC Factor [6]	Average Idling Emission Factor (g/min)							
		Cold Idling		Hot Idling				Cold Idling				Hot Idling			
	%	NOx (g/s) [12]	PM (g/hr) [10]	NOx (g/hr) [12]	PM (g/hr) [10]			NOx	NO	NO_2	PM [7]	NOx	NO	NO_2	PM [7]
Euro VI	73.40%	2.80E-03	0.00E+00	1.01E+01	0.00E+00	-	1.3	1.685E-01	1.639E-01	4.569E-03	0.000E+00	2.190E-01	2.131E-01	5.939E-03	0.000E+00
Euro V	26.04%	2.80E-03	0.00E+00	1.01E+01	0.00E+00										
Euro IV	0.37%	3.50E-03	0.00E+00	1.26E+01	0.00E+00										
Euro II/III	0.19%	5.70E-03	0.00E+00	2.05E+01	0.00E+00										

LGV3 (Diesel)

NO/NO_2 Ratio [1] = 11.14 From EMFAC

	Population	Idling Emission Factor				Mass Factor [19]	AC Factor [6]	Average Idling Emission Factor (g/min)							
		Cold Idling		Hot Idling				Cold Idling				Hot Idling			
	%	NOx (g/s) [2]	PM (g/hr) [3]	NOx (g/hr) [13]	PM (g/hr) [14]			NOx	NO	NO_2	PM [7]	NOx	NO	NO_2	PM [7]
Euro VI	62.97%	3.56E-04	2.00E-02	1.28E+00	2.00E-02	-	1.3	4.635E-02	4.253E-02	3.816E-03	4.333E-04	4.635E-02	4.253E-02	3.816E-03	4.333E-04
Euro V	37.03%	1.00E-03	2.00E-02	3.60E+00	2.00E-02										

LGV3 (Petrol)

NO/NO_2 Ratio [1] = 18.99 From EMFAC

	Population	Idling Emission Factor				Mass Factor [19]	AC Factor [6]	Average Idling Emission Factor (g/min)							
		Cold Idling		Hot Idling				Cold Idling				Hot Idling			
	%	NOx (g/s) [2]	PM (g/hr) [3]	NOx (g/hr) [15]	PM (g/hr) [16]			NOx	NO	NO_2	PM [7]	NOx	NO	NO_2	PM [7]
Euro VI	54.60%	1.94E-05	0.00E+00	7.00E-02	0.00E+00	-	1.3	4.395E-03	4.175E-03	2.199E-04	3.106E-05	4.395E-03	4.175E-03	2.199E-04	3.106E-05
Euro V	19.40%	1.67E-05	0.00E+00	6.00E-02	0.00E+00										
Euro IV	4.89%	4.72E-05	0.00E+00	1.70E-01	0.00E+00										
Euro III	6.77%	9.44E-05	0.00E+00	3.40E-01	0.00E+00										
Euro II	2.51%	1.67E-04	1.00E-02	6.00E-01	1.00E-02										
Euro I	2.77%	4.69E-04	1.00E-02	1.69E+00	1.00E-02										
Pre-Euro	9.06%	1.83E-04	1.00E-02	6.60E-01	1.00E-02										

Appendix 3.6 Calculation of Start Emissions

Calculation of Iding Emission Factor

LGV6 (Diesel)

NO/NO_2 Ratio [1] = 2.57 From EMFAC

	Population	Idling Emission Factor				Mass Factor [19]	AC Factor [6]	Average Idling Emission Factor (g/min)							
		Cold Idling		Hot Idling				Cold Idling				Hot Idling			
	%	NOx (g/s) [12]	PM (g/hr) [3]	NOx (g/hr) [13]	PM (g/hr) [14]			NOx	NO	NO_2	PM [7]	NOx	NO	NO_2	PM [7]
Euro VI	58.17%	1.00E-03	2.00E-02	1.28E+00	2.00E-02	-	1.3	1.052E-01	7.573E-02	2.945E-02	4.336E-04	4.876E-02	3.511E-02	1.365E-02	4.336E-04
Euro V	41.83%	2.80E-03	2.00E-02	3.60E+00	2.00E-02										
Euro IV	0.01%	2.80E-03	1.60E-01	3.62E+00	1.60E-01										
Euro III	0.00%	2.80E-03	1.00E-01	4.12E+00	1.00E-01										
Euro II	0.00%	2.80E-03	5.40E-01	5.53E+00	5.40E-01										
Euro I	0.00%	2.80E-03	6.30E-01	5.88E+00	6.30E-01										
Pre-Euro	0.00%	2.80E-03	1.59E+00	6.52E+00	1.59E+00										

HGV7 (Diesel)

NO/NO_2 Ratio [1] = 2.28 From EMFAC

	Population	Idling Emission Factor				Mass Factor [19]	AC Factor [6]	Average Idling Emission Factor (g/min)							
		Cold Idling		Hot Idling				Cold Idling				Hot Idling			
	%	NOx (g/s) [12]	PM (g/hr) [3]	NOx (g/hr) [17]	PM (g/hr) [18]			NOx	NO	NO_2	PM [7]	NOx	NO	NO_2	PM [7]
Euro VI	53.78%	5.90E-03	1.00E-02	1.75E+00	1.00E-02	0.9	1.3	3.540E-01	2.461E-01	1.079E-01	1.006E-03	1.239E-01	8.614E-02	3.775E-02	1.006E-03
Euro V	46.21%	5.90E-03	1.00E-01	1.17E+01	1.00E-01										
Euro IV	0.01%	5.90E-03	2.00E-01	7.51E+00	2.00E-01										

HGV8 (Diesel)

NO/NO_2 Ratio [1] = 3.92 From EMFAC

	Population	Idling Emission Factor				Mass Factor [19]	AC Factor [6]	Average Idling Emission Factor (g/min)							
		Cold Idling		Hot Idling				Cold Idling				Hot Idling			
	%	NOx (g/s) [12]	PM (g/hr) [3]	NOx (g/hr) [17]	PM (g/hr) [18]			NOx	NO	NO_2	PM [7]	NOx	NO	NO_2	PM [7]
Euro VI	61.37%	3.70E-03	1.00E-02	1.75E+00	1.00E-02	1.0	1.3	6.693E-01	5.332E-01	1.361E-01	9.704E-04	1.213E-01	9.661E-02	2.467E-02	9.704E-04
Euro V	38.62%	2.30E-02	1.00E-01	1.17E+01	1.00E-01										
Euro IV	0.01%	1.44E-02	2.00E-01	7.51E+00	2.00E-01										
Euro III	0.00%	1.44E-02	1.29E+00	4.21E+01	1.29E+00										
Euro II	0.00%	1.44E-02	1.43E+00	4.06E+01	1.43E+00										
Euro I	0.00%	1.44E-02	5.53E+00	3.26E+01	5.53E+00										
Pre-Euro	0.00%	1.44E-02	6.62E+00	4.06E+01	6.62E+00										

PLB (Diesel)

NO/NO_2 Ratio [1] = 2.57 From EMFAC

	Population	Idling Emission Factor				Mass Factor [19]	AC Factor [6]	Average Idling Emission Factor (g/min)							
		Cold Idling		Hot Idling				Cold Idling				Hot Idling			
	%	NOx (g/s) [12]	PM (g/hr) [3]	NOx (g/hr) [13]	PM (g/hr) [14]			NOx	NO	NO_2	PM [7]	NOx	NO	NO_2	PM [7]
Euro VI	79.43%	1.00E-03	2.00E-02	1.28E+00	2.00E-02	-	1.3	6.000E-02	4.320E-02	1.680E-02	4.334E-04	3.807E-02	2.742E-02	1.066E-02	4.334E-04
Euro V	20.57%	1.00E-03	2.00E-02	3.60E+00	2.00E-02										
Euro IV	0.00%	1.00E-03	1.60E-01	3.62E+00	1.60E-01										
Euro III	0.00%	1.00E-03	1.00E-01	4.12E+00	1.00E-01										
Euro II	0.00%	1.00E-03	5.40E-01	5.53E+00	5.40E-01										
Euro I	0.00%	1.00E-03	6.30E-01	5.88E+00	6.30E-01										
Pre-Euro	0.00%	1.00E-03	1.59E+00	6.52E+00	1.59E+00										

PLB (LPG)

NO/NO_2 Ratio [1] = 189.13 From EMFAC

	Population	Idling Emission Factor				Mass Factor [19]	AC Factor [6]	Average Idling Emission Factor (g/min)							
		Cold Idling		Hot Idling				Cold Idling				Hot Idling			
	%	NOx (g/s) [12]	PM (g/hr) [3]	NOx (g/hr) [13]	PM (g/hr) [14]			NOx	NO	NO_2	PM [7]	NOx	NO	NO_2	PM [7]
Euro V	89.29%	3.90E-03	2.00E-02	3.60E+00	2.00E-02	-	1.3	2.526E-01	2.513E-01	1.329E-03	6.820E-04	7.868E-02	7.827E-02	4.138E-04	6.820E-04
Euro IV	4.85%	3.90E-03	1.60E-01	3.62E+00	1.60E-01										
Euro III	5.86%	9.20E-03	1.00E-01	4.12E+00	1.00E-01										

PV4 (Diesel)

NO/NO_2 Ratio [1] = 4.00 From EMFAC

	Population	Idling Emission Factor				Mass Factor [19]	AC Factor [6]	Average Idling Emission Factor (g/min)							
		Cold Idling		Hot Idling				Cold Idling				Hot Idling			
	%	NOx (g/s) [2]	PM (g/hr) [3]	NOx (g/hr) [13]	PM (g/hr) [14]			NOx	NO	NO_2	PM [7]	NOx	NO	NO_2	PM [7]
Euro VI	91.04%	3.56E-04	2.00E-02	1.28E+00	2.00E-02	-	1.3	3.224E-02	2.579E-02	6.446E-03	4.335E-04	3.224E-02	2.579E-02	6.446E-03	4.335E-04
Euro V	8.95%	1.00E-03	2.00E-02	3.60E+00	2.00E-02										
Euro IV	0.01%	1.01E-03	1.60E-01	3.62E+00	1.60E-01										

Appendix 3.6 Calculation of Start Emissions

Calculation of Iding Emission Factor

PV4 (Petrol)

NO/NO_2 Ratio [1] = 18.94 From EMFAC

	Population	Idling Emission Factor				Mass Factor [19]	AC Factor [6]	Average Idling Emission Factor (g/min)							
		Cold Idling		Hot Idling				Cold Idling				Hot Idling			
	%	NOx (g/s) [2]	PM (g/hr) [3]	NOx (g/hr) [15]	PM (g/hr) [16]			NOx	NO	NO_2	PM [7]	NOx	NO	NO_2	PM [7]
Euro V	40.50%	1.67E-05	0.00E+00	6.00E-02	0.00E+00	-	1.3	3.367E-03	3.198E-03	1.689E-04	7.880E-07	3.367E-03	3.198E-03	1.689E-04	7.880E-07
Euro IV	42.43%	4.72E-05	0.00E+00	1.70E-01	0.00E+00										
Euro III	16.71%	9.44E-05	0.00E+00	3.40E-01	0.00E+00										
Euro II	0.36%	1.67E-04	1.00E-02	6.00E-01	1.00E-02										

PV5 (Diesel)

NO/NO_2 Ratio [1] = 2.57 From EMFAC

	Population	Idling Emission Factor				Mass Factor [19]	AC Factor [6]	Average Idling Emission Factor (g/min)							
		Cold Idling		Hot Idling				Cold Idling				Hot Idling			
	%	NOx (g/s) [12]	PM (g/hr) [3]	NOx (g/hr) [13]	PM (g/hr) [14]			NOx	NO	NO_2	PM [7]	NOx	NO	NO_2	PM [7]
Euro VI	70.26%	1.00E-03	2.00E-02	1.28E+00	2.00E-02	-	1.3	6.000E-02	4.320E-02	1.680E-02	4.336E-04	4.268E-02	3.073E-02	1.195E-02	4.336E-04
Euro V	29.73%	1.00E-03	2.00E-02	3.60E+00	2.00E-02										
Euro IV	0.01%	1.00E-03	1.60E-01	3.62E+00	1.60E-01										
Euro III	0.00%	1.00E-03	1.00E-01	4.12E+00	1.00E-01										
Euro II	0.00%	1.00E-03	5.40E-01	5.53E+00	5.40E-01										
Euro I	0.00%	1.00E-03	6.30E-01	5.88E+00	6.30E-01										
Pre-Euro	0.00%	1.00E-03	1.59E+00	6.52E+00	1.59E+00										

PV5 (LPG)

NO/NO_2 Ratio [1] = 195.55 From EMFAC

	Population	Idling Emission Factor				Mass Factor [19]	AC Factor [6]	Average Idling Emission Factor (g/min)							
		Cold Idling		Hot Idling				Cold Idling				Hot Idling			
	%	NOx (g/s) [2]	PM (g/hr) [3]	NOx (g/hr) [13]	PM (g/hr) [14]			NOx	NO	NO_2	PM [7]	NOx	NO	NO_2	PM [7]
Euro V	74.12%	1.00E-03	2.00E-02	3.60E+00	2.00E-02	-	1.3	7.888E-02	7.848E-02	4.013E-04	1.126E-03	7.888E-02	7.848E-02	4.013E-04	1.126E-03
Euro IV	18.76%	1.01E-03	1.60E-01	3.62E+00	1.60E-01										
Euro III	7.12%	1.14E-03	1.00E-01	4.12E+00	1.00E-01										

PV5 (Petrol)

NO/NO_2 Ratio [1] = 19.02 From EMFAC

	Population	Idling Emission Factor				Mass Factor [19]	AC Factor [6]	Average Idling Emission Factor (g/min)							
		Cold Idling		Hot Idling				Cold Idling				Hot Idling			
	%	NOx (g/s) [2]	PM (g/hr) [3]	NOx (g/hr) [15]	PM (g/hr) [16]			NOx	NO	NO_2	PM [7]	NOx	NO	NO_2	PM [7]
Euro V	61.78%	1.67E-05	0.00E+00	6.00E-02	0.00E+00	-	1.3	9.506E-03	9.031E-03	4.748E-04	4.799E-05	9.506E-03	9.031E-03	4.748E-04	4.799E-05
Euro IV	16.07%	4.72E-05	0.00E+00	1.70E-01	0.00E+00										
Euro I	22.15%	4.69E-04	1.00E-02	1.69E+00	1.00E-02										

NFB8 (Diesel)

NO/NO_2 Ratio [1] = 5.11 From EMFAC

	Population	Idling Emission Factor				Mass Factor [19]	AC Factor [6]	Average Idling Emission Factor (g/min)							
		Cold Idling		Hot Idling				Cold Idling				Hot Idling			
	%	NOx (g/s) [12]	PM (g/hr) [3]	NOx (g/hr) [17]	PM (g/hr) [18]			NOx	NO	NO_2	PM [7]	NOx	NO	NO_2	PM [7]
Euro VI	70.94%	7.70E-03	1.00E-02	1.75E+00	1.00E-02	1.0	1.3	1.154E+00	9.652E-01	1.890E-01	7.850E-04	1.007E-01	8.417E-02	1.648E-02	7.850E-04
Euro V	29.05%	4.74E-02	1.00E-01	1.17E+01	1.00E-01										
Euro IV	0.00%	5.73E-02	2.00E-01	7.51E+00	2.00E-01										
Euro II	0.01%	5.73E-02	1.43E+00	4.06E+01	1.43E+00										

FBSD (Diesel)

NO/NO_2 Ratio [1] = 16.01 From EMFAC

	Population	Idling Emission Factor				Mass Factor [19]	AC Factor [6]	Average Idling Emission Factor (g/min)							
		Cold Idling		Hot Idling				Cold Idling				Hot Idling			
	%	NOx (g/s) [12]	PM (g/hr) [3]	NOx (g/hr) [17]	PM (g/hr) [18]			NOx	NO	NO_2	PM [7]	NOx	NO	NO_2	PM [7]
Euro VI	43.27%	7.70E-03	1.00E-02	1.75E+00	1.00E-02	1.0	1.3	1.813E+00	1.707E+00	1.066E-01	1.323E-03	1.603E-01	1.509E-01	9.425E-03	1.323E-03
Euro V	56.73%	4.74E-02	1.00E-01	1.17E+01	1.00E-01										
Euro IV	0.00%	5.73E-02	2.00E-01	7.51E+00	2.00E-01										

Appendix 3.6 Calculation of Start Emissions

Calculation of Iding Emission Factor

FBDD (Diesel)

NO/NO_2 Ratio [1] = 19.75 From EMFAC

	Population	Idling Emission Factor				Mass Factor [19]	AC Factor [6]	Average Idling Emission Factor (g/min)							
		Cold Idling		Hot Idling				Cold Idling				Hot Idling			
	%	NOx (g/s) [12]	PM (g/hr) [3]	NOx (g/hr) [17]	PM (g/hr) [18]			NOx	NO	NO_2	PM [7]	NOx	NO	NO_2	PM [7]
Euro VI	27.01%	2.25E-02	1.00E-02	1.75E+00	1.00E-02	1.2	1.3	7.087E+00	6.746E+00	3.416E-01	1.973E-03	2.343E-01	2.230E-01	1.129E-02	1.973E-03
Euro V	72.81%	1.54E-01	1.00E-01	1.17E+01	1.00E-01										
Euro IV	0.19%	1.54E-01	2.00E-01	7.51E+00	2.00E-01										
Euro III	0.00%	7.37E-02	1.29E+00	4.21E+01	1.29E+00										
Euro II	0.00%	7.37E-02	1.43E+00	4.06E+01	1.43E+00										
Euro I	0.00%	7.37E-02	5.53E+00	3.26E+01	5.53E+00										
Pre-Euro	0.00%	7.37E-02	6.62E+00	4.06E+01	6.62E+00										

MC (Petrol)

NO/NO_2 Ratio [1] = 18.99 From EMFAC

	Population	Idling Emission Factor				Mass Factor [19]	AC Factor [6]	Average Idling Emission Factor (g/min)							
		Cold Idling		Hot Idling				Cold Idling				Hot Idling			
	%	NOx (g/s) [2]	PM (g/hr) [3]	NOx (g/hr) [8]	PM (g/hr) [9]			NOx	NO	NO_2	PM [7]	NOx	NO	NO_2	PM [7]
Euro IV	62.01%	6.39E-05	0.00E+00	2.30E-01	0.00E+00	-	1.3	6.204E-03	5.894E-03	3.104E-04	1.240E-05	6.204E-03	5.894E-03	3.104E-04	1.240E-05
Euro III	32.27%	8.33E-05	0.00E+00	3.00E-01	0.00E+00										
Euro I	4.91%	2.11E-04	1.00E-02	7.60E-01	1.00E-02										
Pre-Euro	0.81%	3.28E-04	1.00E-02	1.18E+00	1.00E-02										

HGV9 (Diesel)

NO/NO_2 Ratio [1] = 4.45 From EMFAC

	Population	Idling Emission Factor				Mass Factor [19]	AC Factor [6]	Average Idling Emission Factor (g/min)							
		Cold Idling		Hot Idling				Cold Idling				Hot Idling			
	%	NOx (g/s) [12]	PM (g/hr) [3]	NOx (g/hr) [17]	PM (g/hr) [18]			NOx	NO	NO_2	PM [7]	NOx	NO	NO_2	PM [7]
Euro VI	51.79%	3.70E-03	1.00E-02	1.75E+00	1.00E-02	1.2	1.3	7.802E-01	6.370E-01	1.432E-01	1.389E-03	1.703E-01	1.391E-01	3.127E-02	1.389E-03
Euro V	48.19%	2.30E-02	1.00E-01	1.17E+01	1.00E-01										
Euro IV	0.02%	1.44E-02	2.00E-01	7.51E+00	2.00E-01										
Euro III	0.00%	1.44E-02	1.29E+00	4.21E+01	1.29E+00										
Euro II	0.00%	1.44E-02	1.43E+00	4.06E+01	1.43E+00										
Euro I	0.00%	1.44E-02	5.53E+00	3.26E+01	5.53E+00										
Pre-Euro	0.00%	1.44E-02	6.62E+00	4.06E+01	6.62E+00										

NFB9 (Diesel)

NO/NO_2 Ratio = 2.03 From EMFAC

	Population	Idling Emission Factor				Mass Factor	AC Factor [6]	Average Idling Emission Factor (g/min)							
		Cold Idling		Hot Idling				Cold Idling				Hot Idling			
	%	NOx (g/s) [20]	PM (g/hr) [3]	NOx (g/hr) [17]	PM (g/hr) [18]			NOx	NO	NO_2	PM [7]	NOx	NO	NO_2	PM [7]
Euro VI	100.00%	7.70E-03	1.00E-02	1.75E+00	1.00E-02	1.2	1.3	4.550E-02	3.049E-02	1.501E-02	2.600E-04	4.550E-02	3.049E-02	1.501E-02	2.600E-04
Euro V	0.00%	4.74E-02	1.00E-01	1.17E+01	1.00E-01										
Euro IV	0.00%	5.73E-02	2.00E-01	7.51E+00	2.00E-01										
Euro III	0.00%	1.17E-02	1.29E+00	4.21E+01	1.29E+00										
Euro II	0.00%	1.13E-02	1.43E+00	4.06E+01	1.43E+00										
Euro I	0.00%	9.06E-03	5.53E+00	3.26E+01	5.53E+00										
Pre-Euro	0.00%	1.13E-02	6.62E+00	4.06E+01	6.62E+00										

Remarks

[1] NO/NO2 ratio, at the respective running speed, was calculated based on emisison factors extracted from EMFAC-HK.
[2] Due to the lack of information, NOx cold idling emission factor was referenced to the corresponding hot idling emission factor.
[3] Due to the lack of information, PM cold idling emission factor was referenced to the corresponding hot idling emission factor.
[4] Reference made to Table 36 of Vehicle Emissions and Air Demand for Ventilation (VEADV).
[5] Reference made to Table 37 of VEADV.
[6] Reference made to the approved Liantang / Heung Yuen Wai Boundary Control Point and Associated Works EIA Report.
[7] All TSP (PM) emissions were assumed for RSP and FSP as a conservative approach.
[8] Reference made to Table 33 of VEADV.
[9] Reference made to Table 34 of VEADV.
[10] PM cold and hot idling emission factors are assumed to be 0 as the running and starting emission factors from EMFAC-HK are also 0.
[11] Due to the lack of information and similarity in taxi and PC, hot idling emission factors were referenced to corresponding hot idling emission factor of PC (petrol).
[12] NOx idling emission factor was referenced to Calculation of Start Emissions in Air Quality Impact Assessment published by EPD whenever available; otherwise the highest emission factor in the same vehicle class was adopted as a conservative approach.
[13] Reference made to Table 42 of VEADV.
[14] Reference made to Table 43 of VEADV.
[15] Reference made to Table 39 of VEADV.
[16] Reference made to Table 40 of VEADV.
[17] Reference made to Table 45 of VEADV.
[18] Reference made to Table 46 of VEADV.
[19] Reference made to Table 27 of VEADV.
[20] NOx cold idling emission factor was referenced to Calculation of Start Emissions in Air Quality Impact Assessment published by EPD whenever possible; otherwise it was referenced to the corresponding hot idling emission factor.

HGV on-street parking site outside Tsing Yi Northeast Park Car Park

Site Parameters

Average Distance from Starting Place to PTI/Parking Site Egress (m)	0
Average Travelling Distance within PTI/Parking Site (m)	0
Average Travelling Speed (km/h)	15

Frequency

Hour	01 - Private Cars	02 - Taxi	03 - Light Goods Vehicles<= 2.5t	04 - Lt Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5 t	06 - Medium Goods Vehicles<=1 5t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus (SD)	15 - Franchised Bus (DD)	16 - Motorcycles	17 - Heavy Goods Vehicles>24 t	18 - Non-franchised Bus >24t
0000 - 0100	0	0	0		0	0	0	0	0	0			0	0	0	0	10	0
0100 - 0200	0	0	0		0	0	0	0	0	0			0	0	0	0	10	0
0200 - 0300	0	0	0		0	0	0	0	0	0			0	0	0	0	10	0
0300 - 0400	0	0	0		0	0	0	0	0	0			0	0	0	0	10	0
0400 - 0500	0	0	0		0	0	0	0	0	0			0	0	0	0	10	0
0500 - 0600	0	0	0		0	0	0	0	0	0			0	0	0	0	10	0
0600 - 0700	0	0	0		0	0	0	0	0	0			0	0	0	0	10	0
0700 - 0800	0	0	0		0	0	0	0	0	0			0	0	0	0	0	0
0800 - 0900	0	0	0		0	0	0	0	0	0			0	0	0	0	0	0
0900 - 1000	0	0	0		0	0	0	0	0	0			0	0	0	0	0	0
1000 - 1100	0	0	0		0	0	0	0	0	0			0	0	0	0	0	0
1100 - 1200	0	0	0		0	0	0	0	0	0			0	0	0	0	0	0
1200 - 1300	0	0	0		0	0	0	0	0	0			0	0	0	0	0	0
1300 - 1400	0	0	0		0	0	0	0	0	0			0	0	0	0	0	0
1400 - 1500	0	0	0		0	0	0	0	0	0			0	0	0	0	0	0
1500 - 1600	0	0	0		0	0	0	0	0	0			0	0	0	0	0	0
1600 - 1700	0	0	0		0	0	0	0	0	0			0	0	0	0	0	0
1700 - 1800	0	0	0		0	0	0	0	0	0			0	0	0	0	0	0
1800 - 1900	0	0	0		0	0	0	0	0	0			0	0	0	0	0	0
1900 - 2000	0	0	0		0	0	0	0	0	0			0	0	0	0	0	0
2000 - 2100	0	0	0		0	0	0	0	0	0			0	0	0	0	10	0
2100 - 2200	0	0	0		0	0	0	0	0	0			0	0	0	0	10	0
2200 - 2300	0	0	0		0	0	0	0	0	0			0	0	0	0	10	0
2300 - 2400	0	0	0		0	0	0	0	0	0			0	0	0	0	10	0

Vehicle Parameters

	01 - Private Cars	01 - Private Cars	02 - Taxi	02 - Taxi	03 - Light Goods Vehicles<=2.5t	03 - Light Goods Vehicles<=2.5t	04 - Lt Goods Vehicles 2.5-3.5t	05 - Light Goods Vehicles>3.5t	06 - Medium Goods Vehicles<=15t	07 - Medium Goods Vehicles15-24t	08 - Public Light Buses	08 - Public Light Buses	09 - Private Light Bus <=3.5t	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	10 - Private Light Bus >3.5t	10 - Private Light Bus >3.5t	11 - Non-franchised Bus<=6.4t	12 - Non-franchised Bus 6.4-15t	13 - Non-franchised Bus 15-24t	14 - Franchised Bus (SD)	15 - Franchised Bus (DD)	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchised Bus >24t
	Diesel	Petrol	LPG	Petrol	Diesel	Petrol		Diesel	Diesel	Diesel	Diesel	LPG	Diesel	Petrol	Diesel	LPG	Petrol			Diesel	Diesel	Diesel	Petrol	Diesel	Diesel
Spread Distance of Adjusted Start Emission (m)	700	0	150	0	700	0		700	700	700	700	150	700	0	700	150	0			700	700	700	0	700	700
Max. Idling Time for Adjusting Starting Emission (min)	1	0	0.5	0	1	0		1	1	1	1	1	1	0	1	1	0			1	1	1	0	1	1
Soak Time (duration of engine off prior to engine ignition) (min)	60	240	240	240	60	240		60	60	60	60	240	60	240	60	240	240			60	60	60	240	60	60
Average Spread Distance outside PTI/Parking Site (m)	700	0	150	0	700	0		700	700	700	700	150	700	0	700	150	0			700	700	700	0	700	700
Idling Time for Terminating Vehicle (min)	2	2	2	2	2	2		2	2	2	2	2	2	2	2	2	2			2	2	2	2	2	2
Idling Time for Non-terminating Vehicle (min)	0.67	0.67	1.5	1.5	1.5	1.5		7.17	112.44	112.44	1.5	1.5	1.5	1.5	1.5	1.5	1.5			1.5	1.5	1.5	1.5	63.91	1.5
Vehicle Percentage (%)	1.66%	98.34%	99.99%	0.01%	96.72%	3.28%		100.00%	100.00%	100.00%	69.27%	30.73%	81.13%	18.87%	85.83%	14.05%	0.12%			100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
NO Cold Idling Emission Factor (g/min)	5.023E-02	1.488E-03	1.639E-01	1.646E-03	4.253E-02	4.175E-03		7.573E-02	2.461E-01	5.332E-01	4.320E-02	2.513E-01	2.579E-02	3.198E-03	4.320E-02	7.848E-02	9.031E-03			9.652E-01	1.707E+00	6.746E+00	5.894E-03	6.370E-01	3.049E-02
NO Hot Idling Emission Factor (g/min)	5.023E-02	1.488E-03	2.131E-01	1.646E-03	4.253E-02	4.175E-03		3.511E-02	8.614E-02	9.661E-02	2.742E-02	7.827E-02	2.579E-02	3.198E-03	3.073E-02	7.848E-02	9.031E-03			8.417E-02	1.509E-01	2.230E-01	5.894E-03	1.391E-01	3.049E-02
NO_2 Cold Idling Emission Factor (g/min)	6.339E-03	7.880E-05	4.569E-03	8.683E-05	3.816E-03	2.199E-04		2.945E-02	1.079E-01	1.361E-01	1.680E-02	1.329E-03	6.446E-03	1.689E-04	1.680E-02	4.013E-04	4.748E-04			1.890E-01	1.066E-01	3.416E-01	3.104E-04	1.432E-01	1.501E-02
NO_2 Hot Idling Emission Factor (g/min)	6.339E-03	7.880E-05	5.939E-03	8.683E-05	3.816E-03	2.199E-04		1.365E-02	3.775E-02	2.467E-02	1.066E-02	4.138E-04	6.446E-03	1.689E-04	1.195E-02	4.013E-04	4.748E-04			1.648E-02	9.425E-03	1.129E-02	3.104E-04	3.127E-02	1.501E-02
TSP Cold Idling Emission Factor (g/min)	7.908E-04	3.174E-05	0.000E+00	2.167E-04	4.333E-04	3.106E-05		4.336E-04	1.006E-03	9.704E-04	4.334E-04	6.820E-04	4.335E-04	7.880E-07	4.336E-04	1.126E-03	4.799E-05			7.850E-04	1.323E-03	1.973E-03	1.240E-05	1.389E-03	2.600E-04
TSP Hot Idling Emission Factor (g/min)	7.908E-04	3.174E-05	0.000E+00	2.167E-04	4.333E-04	3.106E-05		4.336E-04	1.006E-03	9.704E-04	4.334E-04	6.820E-04	4.335E-04	7.880E-07	4.336E-04	1.126E-03	4.799E-05			7.850E-04	1.323E-03	1.973E-03	1.240E-05	1.389E-03	2.600E-04
RSP Cold Idling Emission Factor (g/min)	7.908E-04	3.174E-05	0.000E+00	2.167E-04	4.333E-04	3.106E-05		4.336E-04	1.006E-03	9.704E-04	4.334E-04	6.820E-04	4.335E-04	7.880E-07	4.336E-04	1.126E-03	4.799E-05			7.850E-04	1.323E-03	1.973E-03	1.240E-05	1.389E-03	2.600E-04
RSP Hot Idling Emission Factor (g/min)	7.908E-04	3.174E-05	0.000E+00	2.167E-04	4.333E-04	3.106E-05		4.336E-04	1.006E-03	9.704E-04	4.334E-04	6.820E-04	4.335E-04	7.880E-07	4.336E-04	1.126E-03	4.799E-05			7.850E-04	1.323E-03	1.973E-03	1.240E-05	1.389E-03	2.600E-04
FSP Cold Idling Emission Factor (g/min)	7.908E-04	3.174E-05	0.000E+00	2.167E-04	4.333E-04	3.106E-05		4.336E-04	1.006E-03	9.704E-04	4.334E-04	6.820E-04	4.335E-04	7.880E-07	4.336E-04	1.126E-03	4.799E-05			7.850E-04	1.323E-03	1.973E-03	1.240E-05	1.389E-03	2.600E-04
FSP Hot Idling Emission Factor (g/min)	7.908E-04	3.174E-05	0.000E+00	2.167E-04	4.333E-04	3.106E-05		4.336E-04	1.006E-03	9.704E-04	4.334E-04	6.820E-04	4.335E-04	7.880E-07	4.336E-04	1.126E-03	4.799E-05			7.850E-04	1.323E-03	1.973E-03	1.240E-05	1.389E-03	2.600E-04
NO Running Emission Factor (g/mile/vehicle)	1.339E-01	5.185E-02	1.189E+00	7.934E-02	2.473E+00	8.987E-01		2.147E+00	3.349E+00	5.595E+00	1.097E+00	2.678E+00	1.704E+00	5.274E-01	1.265E+00	1.951E+00	8.755E-01			7.463E+00	6.795E+00	1.324E+01	4.736E-01	6.836E+00	2.964E+00
NO_2 Running Emission Factor (g/mile/vehicle)	1.690E-02	2.746E-03	3.315E-02	4.184E-03	2.219E-01	4.733E-02		8.349E-01	1.468E+00	1.429E+00	4.265E-01	1.416E-02	4.260E-01	2.784E-02	4.921E-01	9.978E-03	4.603E-02			1.461E+00	4.244E-01	6.703E-01	2.501E-02	1.537E+00	1.460E+00
TSP Running Emission Factor (g/mile/vehicle)	9.012E-03	1.272E-02	0.000E+00	1.271E-02	3.396E-02	3.117E-02		8.288E-02	1.271E-01	2.915E-01	8.916E-02	0.000E+00	1.352E-02	7.226E-02	8.127E-02	0.000E+00	1.271E-02			3.251E-01	2.655E-01	5.240E-01	1.675E-02	3.454E-01	1.024E-01
RSP Running Emission Factor (g/mile/vehicle)	9.012E-03	1.240E-02	0.000E+00	1.239E-02	3.396E-02	2.974E-02		8.288E-02	1.271E-01	2.915E-01	8.916E-02	0.000E+00	1.352E-02	7.017E-02	8.127E-02	0.000E+00	1.239E-02			3.251E-01	2.655E-01	5.240E-01	1.578E-02	3.454E-01	1.024E-01
FSP Running Emission Factor (g/mile/vehicle)	8.369E-03	1.143E-02	0.000E+00	1.143E-02	3.122E-02	2.627E-02		7.628E-02	1.168E-01	2.681E-01	8.208E-02	0.000E+00	1.239E-02	6.502E-02	7.467E-02	0.000E+00	1.143E-02			2.990E-01	2.443E-01	4.820E-01	1.342E-02	3.177E-01	9.415E-02

Appendix 3.6 Calculation of Start Emissions

Assumption on Start Emission [1], [2]

17 - Heavy Goods Vehicles>24t (Code: 14)

Sitting Time (min)	Bypass	5	10	20	30	40	50	60	120	180	240	300	360	420	480	540	600	660	720	Total
0000 - 0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10
0100 - 0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10
0200 - 0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10
0300 - 0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10
0400 - 0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10
0500 - 0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10
0600 - 0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10
0700 - 0800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800 - 0900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900 - 1000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000 - 1100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100 - 1200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200 - 1300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300 - 1400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400 - 1500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500 - 1600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600 - 1700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700 - 1800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800 - 1900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900 - 2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000 - 2100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10
2100 - 2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10
2200 - 2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10
2300 - 2400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	110	110

Remark

[1] Maximum number of HGVs allowed to be parked overnight is determined by observation based on the length of the parking site (i.e. 10 HGVs).

[2] 10 HGVs are assumed to leave the parking site in each hour from 8PM to 7AM (i.e. allowed parking hours) as a conservative approach.

HGV on-street parking site outside Tsing Yi Northeast Park Car Park
NO

Running Emission within PTI/Parking Site (g)

Hour	17 - Heavy Goods Vehicles>24t
	Diesel
0000 - 0100	0.000E+00
0100 - 0200	0.000E+00
0200 - 0300	0.000E+00
0300 - 0400	0.000E+00
0400 - 0500	0.000E+00
0500 - 0600	0.000E+00
0600 - 0700	0.000E+00
0700 - 0800	0.000E+00
0800 - 0900	0.000E+00
0900 - 1000	0.000E+00
1000 - 1100	0.000E+00
1100 - 1200	0.000E+00
1200 - 1300	0.000E+00
1300 - 1400	0.000E+00
1400 - 1500	0.000E+00
1500 - 1600	0.000E+00
1600 - 1700	0.000E+00
1700 - 1800	0.000E+00
1800 - 1900	0.000E+00
1900 - 2000	0.000E+00
2000 - 2100	0.000E+00
2100 - 2200	0.000E+00
2200 - 2300	0.000E+00
2300 - 2400	0.000E+00

Remark
1. $R = E_i * f * d_i * p$
where
R: running emission at a specific speed for a vehicle type with a fuel type in an hour,
E_i: running emission factor for the vehicle type at the specific speed, obtained from the *EMFACEmf* tab,
f: total traffic frequency of the vehicle type in the hour, obtained from the *Frequency* table,
d_i: average travelling distance within PTI, obtained from the *Site Parameters* table,
p: vehicle percentage of the fuel type, obtained from the *Vehicle Parameters* table.

HGV on-street parking site outside Tsing Yi Northeast Park Car Park
NO_2

Running Emission within PTI/Parking Site (g)

Hour	17 - Heavy Goods Vehicles>24t
	Diesel
0000 - 0100	0.000E+00
0100 - 0200	0.000E+00
0200 - 0300	0.000E+00
0300 - 0400	0.000E+00
0400 - 0500	0.000E+00
0500 - 0600	0.000E+00
0600 - 0700	0.000E+00
0700 - 0800	0.000E+00
0800 - 0900	0.000E+00
0900 - 1000	0.000E+00
1000 - 1100	0.000E+00
1100 - 1200	0.000E+00
1200 - 1300	0.000E+00
1300 - 1400	0.000E+00
1400 - 1500	0.000E+00
1500 - 1600	0.000E+00
1600 - 1700	0.000E+00
1700 - 1800	0.000E+00
1800 - 1900	0.000E+00
1900 - 2000	0.000E+00
2000 - 2100	0.000E+00
2100 - 2200	0.000E+00
2200 - 2300	0.000E+00
2300 - 2400	0.000E+00

Remark
1. $R = E_i * f * d_i * p$
where
R: running emission at a specific speed for a vehicle type with a fuel type in an hour,
E_i: running emission factor for the vehicle type at the specific speed, obtained from the *EMFACEmf* tab,
f: total traffic frequency of the vehicle type in the hour, obtained from the *Frequency* table,
d_i: average travelling distance within PTI, obtained from the *Site Parameters* table,
p: vehicle percentage of the fuel type, obtained from the *Vehicle Parameters* table.

HGV on-street parking site outside Tsing Yi Northeast Park Car Park
TSP

Running Emission within PTI/Parking Site (g)

Hour	17 - Heavy Goods Vehicles>24t
	Diesel
0000 - 0100	0.000E+00
0100 - 0200	0.000E+00
0200 - 0300	0.000E+00
0300 - 0400	0.000E+00
0400 - 0500	0.000E+00
0500 - 0600	0.000E+00
0600 - 0700	0.000E+00
0700 - 0800	0.000E+00
0800 - 0900	0.000E+00
0900 - 1000	0.000E+00
1000 - 1100	0.000E+00
1100 - 1200	0.000E+00
1200 - 1300	0.000E+00
1300 - 1400	0.000E+00
1400 - 1500	0.000E+00
1500 - 1600	0.000E+00
1600 - 1700	0.000E+00
1700 - 1800	0.000E+00
1800 - 1900	0.000E+00
1900 - 2000	0.000E+00
2000 - 2100	0.000E+00
2100 - 2200	0.000E+00
2200 - 2300	0.000E+00
2300 - 2400	0.000E+00

Remark
1. $R = E_i * f * d_i * p$
where
R: running emission at a specific speed for a vehicle type with a fuel type in an hour,
E_i: running emission factor for the vehicle type at the specific speed, obtained from the *EMFACEmf* tab,
f: total traffic frequency of the vehicle type in the hour, obtained from the *Frequency* table,
d_i: average travelling distance within PTI, obtained from the *Site Parameters* table,
p: vehicle percentage of the fuel type, obtained from the *Vehicle Parameters* table.

HGV on-street parking site outside Tsing Yi Northeast Park Car Park
RSP

RSP Running Emission within PTI/Parking Site (g)

Hour	17 - Heavy Goods Vehicles>24t
	Diesel
0000 - 0100	0.000E+00
0100 - 0200	0.000E+00
0200 - 0300	0.000E+00
0300 - 0400	0.000E+00
0400 - 0500	0.000E+00
0500 - 0600	0.000E+00
0600 - 0700	0.000E+00
0700 - 0800	0.000E+00
0800 - 0900	0.000E+00
0900 - 1000	0.000E+00
1000 - 1100	0.000E+00
1100 - 1200	0.000E+00
1200 - 1300	0.000E+00
1300 - 1400	0.000E+00
1400 - 1500	0.000E+00
1500 - 1600	0.000E+00
1600 - 1700	0.000E+00
1700 - 1800	0.000E+00
1800 - 1900	0.000E+00
1900 - 2000	0.000E+00
2000 - 2100	0.000E+00
2100 - 2200	0.000E+00
2200 - 2300	0.000E+00
2300 - 2400	0.000E+00

Remark
1. $R = E_i * f * d_i * p$
where
R: running emission at a specific speed for a vehicle type with a fuel type in an hour,
E_i: running emission factor for the vehicle type at the specific speed, obtained from the *EMFACEmf* tab,
f: total traffic frequency of the vehicle type in the hour, obtained from the *Frequency* table,
d_i: average travelling distance within PTI, obtained from the *Site Parameters* table,
p: vehicle percentage of the fuel type, obtained from the *Vehicle Parameters* table.

HGV on-street parking site outside Tsing Yi Northeast Park Car Park
FSP

Running Emission within PTI/Parking Site (g)

Hour	17 - Heavy Goods Vehicles>24t
	Diesel
0000 - 0100	0.000E+00
0100 - 0200	0.000E+00
0200 - 0300	0.000E+00
0300 - 0400	0.000E+00
0400 - 0500	0.000E+00
0500 - 0600	0.000E+00
0600 - 0700	0.000E+00
0700 - 0800	0.000E+00
0800 - 0900	0.000E+00
0900 - 1000	0.000E+00
1000 - 1100	0.000E+00
1100 - 1200	0.000E+00
1200 - 1300	0.000E+00
1300 - 1400	0.000E+00
1400 - 1500	0.000E+00
1500 - 1600	0.000E+00
1600 - 1700	0.000E+00
1700 - 1800	0.000E+00
1800 - 1900	0.000E+00
1900 - 2000	0.000E+00
2000 - 2100	0.000E+00
2100 - 2200	0.000E+00
2200 - 2300	0.000E+00
2300 - 2400	0.000E+00

Remark
1. $R = E_i * f * d_i * p$
where
R: running emission at a specific speed for a vehicle type with a fuel type in an hour,
E_i: running emission factor for the vehicle type at the specific speed, obtained from the *EMFACEmf* tab,
f: total traffic frequency of the vehicle type in the hour, obtained from the *Frequency* table,
d_i: average travelling distance within PTI, obtained from the *Site Parameters* table,
p: vehicle percentage of the fuel type, obtained from the *Vehicle Parameters* table.

NO Total Start Emission (g)

Hour	17 - Heavy Goods Vehicles>24t
	Diesel
0000 - 0100	5.793E+01
0100 - 0200	5.793E+01
0200 - 0300	5.793E+01
0300 - 0400	5.793E+01
0400 - 0500	5.793E+01
0500 - 0600	5.793E+01
0600 - 0700	5.793E+01
0700 - 0800	0.000E+00
0800 - 0900	0.000E+00
0900 - 1000	0.000E+00
1000 - 1100	0.000E+00
1100 - 1200	0.000E+00
1200 - 1300	0.000E+00
1300 - 1400	0.000E+00
1400 - 1500	0.000E+00
1500 - 1600	0.000E+00
1600 - 1700	0.000E+00
1700 - 1800	0.000E+00
1800 - 1900	0.000E+00
1900 - 2000	0.000E+00
2000 - 2100	5.793E+01
2100 - 2200	5.793E+01
2200 - 2300	5.793E+01
2300 - 2400	5.793E+01

Remark
1. $S_{total} = \sum(E_{s,i} * f_i) * p$
where
S_{total}: total start emission for a vehicle type with a fuel type in an hour,
$E_{s,i}$: start emission factor of the vehicle type with sitting time i min, obtained from the *EMFACEmf* tab,
f_i traffic frequency of the vehicle type with sitting time i min in the hour, obtained from the *Traffic Flow* table of the vehicle type,
p: vehicle percentage of the fuel type, obtained from the *Vehicle Parameters* table.

NO_2 Total Start Emission (g)

Hour	17 - Heavy Goods Vehicles>24t
	Diesel
0000 - 0100	8.081E+00
0100 - 0200	8.081E+00
0200 - 0300	8.081E+00
0300 - 0400	8.081E+00
0400 - 0500	8.081E+00
0500 - 0600	8.081E+00
0600 - 0700	8.081E+00
0700 - 0800	0.000E+00
0800 - 0900	0.000E+00
0900 - 1000	0.000E+00
1000 - 1100	0.000E+00
1100 - 1200	0.000E+00
1200 - 1300	0.000E+00
1300 - 1400	0.000E+00
1400 - 1500	0.000E+00
1500 - 1600	0.000E+00
1600 - 1700	0.000E+00
1700 - 1800	0.000E+00
1800 - 1900	0.000E+00
1900 - 2000	0.000E+00
2000 - 2100	8.081E+00
2100 - 2200	8.081E+00
2200 - 2300	8.081E+00
2300 - 2400	8.081E+00

Remark
1. $S_{total} = \sum(E_{s,i} * f_i) * p$
where
S_{total}: total start emission for a vehicle type with a fuel type in an hour,
$E_{s,i}$: start emission factor of the vehicle type with sitting time i min, obtained from the *EMFACEmf* tab,
f_i traffic frequency of the vehicle type with sitting time i min in the hour, obtained from the *Traffic Flow* table of the vehicle type,
p: vehicle percentage of the fuel type, obtained from the *Vehicle Parameters* table.

TSP Total Start Emission (g)

Hour	17 - Heavy Goods Vehicles>24t
	Diesel
0000 - 0100	0.000E+00
0100 - 0200	0.000E+00
0200 - 0300	0.000E+00
0300 - 0400	0.000E+00
0400 - 0500	0.000E+00
0500 - 0600	0.000E+00
0600 - 0700	0.000E+00
0700 - 0800	0.000E+00
0800 - 0900	0.000E+00
0900 - 1000	0.000E+00
1000 - 1100	0.000E+00
1100 - 1200	0.000E+00
1200 - 1300	0.000E+00
1300 - 1400	0.000E+00
1400 - 1500	0.000E+00
1500 - 1600	0.000E+00
1600 - 1700	0.000E+00
1700 - 1800	0.000E+00
1800 - 1900	0.000E+00
1900 - 2000	0.000E+00
2000 - 2100	0.000E+00
2100 - 2200	0.000E+00
2200 - 2300	0.000E+00
2300 - 2400	0.000E+00

Remark
1. $S_{total} = \sum(E_{s,i} * f_i) * p$
where
S_{total}: total start emission for a vehicle type with a fuel type in an hour,
$E_{s,i}$: start emission factor of the vehicle type with sitting time i min, obtained from the *EMFACEmf* tab,
f_i traffic frequency of the vehicle type with sitting time i min in the hour, obtained from the *Traffic Flow* table of the vehicle type,
p: vehicle percentage of the fuel type, obtained from the *Vehicle Parameters* table.

RSP Total Start Emission (g)

Hour	17 - Heavy Goods Vehicles>24t
	Diesel
0000 - 0100	0.000E+00
0100 - 0200	0.000E+00
0200 - 0300	0.000E+00
0300 - 0400	0.000E+00
0400 - 0500	0.000E+00
0500 - 0600	0.000E+00
0600 - 0700	0.000E+00
0700 - 0800	0.000E+00
0800 - 0900	0.000E+00
0900 - 1000	0.000E+00
1000 - 1100	0.000E+00
1100 - 1200	0.000E+00
1200 - 1300	0.000E+00
1300 - 1400	0.000E+00
1400 - 1500	0.000E+00
1500 - 1600	0.000E+00
1600 - 1700	0.000E+00
1700 - 1800	0.000E+00
1800 - 1900	0.000E+00
1900 - 2000	0.000E+00
2000 - 2100	0.000E+00
2100 - 2200	0.000E+00
2200 - 2300	0.000E+00
2300 - 2400	0.000E+00

Remark
1. $S_{total} = \sum(E_{s,i} * f_i) * p$
where
S_{total}: total start emission for a vehicle type with a fuel type in an hour,
$E_{s,i}$: start emission factor of the vehicle type with sitting time i min, obtained from the *EMFACEmf* tab,
f_i traffic frequency of the vehicle type with sitting time i min in the hour, obtained from the *Traffic Flow* table of the vehicle type,
p: vehicle percentage of the fuel type, obtained from the *Vehicle Parameters* table.

FSP Total Start Emission (g)

Hour	17 - Heavy Goods Vehicles>24t
	Diesel
0000 - 0100	0.000E+00
0100 - 0200	0.000E+00
0200 - 0300	0.000E+00
0300 - 0400	0.000E+00
0400 - 0500	0.000E+00
0500 - 0600	0.000E+00
0600 - 0700	0.000E+00
0700 - 0800	0.000E+00
0800 - 0900	0.000E+00
0900 - 1000	0.000E+00
1000 - 1100	0.000E+00
1100 - 1200	0.000E+00
1200 - 1300	0.000E+00
1300 - 1400	0.000E+00
1400 - 1500	0.000E+00
1500 - 1600	0.000E+00
1600 - 1700	0.000E+00
1700 - 1800	0.000E+00
1800 - 1900	0.000E+00
1900 - 2000	0.000E+00
2000 - 2100	0.000E+00
2100 - 2200	0.000E+00
2200 - 2300	0.000E+00
2300 - 2400	0.000E+00

Remark
1. $S_{total} = \sum(E_{s,i} * f_i) * p$
where
S_{total}: total start emission for a vehicle type with a fuel type in an hour,
$E_{s,i}$: start emission factor of the vehicle type with sitting time i min, obtained from the *EMFACEmf* tab,
f_i traffic frequency of the vehicle type with sitting time i min in the hour, obtained from the *Traffic Flow* table of the vehicle type,
p: vehicle percentage of the fuel type, obtained from the *Vehicle Parameters* table.

NO Idling Emission within PTI/Parking Site (Terminating Vehicle) (g)

Hour	17 - Heavy Goods Vehicles>24t
	Diesel
0000 - 0100	1.274E+01
0100 - 0200	1.274E+01
0200 - 0300	1.274E+01
0300 - 0400	1.274E+01
0400 - 0500	1.274E+01
0500 - 0600	1.274E+01
0600 - 0700	1.274E+01
0700 - 0800	0.000E+00
0800 - 0900	0.000E+00
0900 - 1000	0.000E+00
1000 - 1100	0.000E+00
1100 - 1200	0.000E+00
1200 - 1300	0.000E+00
1300 - 1400	0.000E+00
1400 - 1500	0.000E+00
1500 - 1600	0.000E+00
1600 - 1700	0.000E+00
1700 - 1800	0.000E+00
1800 - 1900	0.000E+00
1900 - 2000	0.000E+00
2000 - 2100	1.274E+01
2100 - 2200	1.274E+01
2200 - 2300	1.274E+01
2300 - 2400	1.274E+01

Remark
1. $I_i = E_c * T_i * f_c * p + E_h * T_i * f_h * p$
where
I_i: idling emission within PTI of a vehicle type with a fuel type in an hour (terminating vehicle),
E_c: cold idling emission rate of the vehicle type with the fuel type, obtained from the *Vehicle Parameters* table,
E_h: hot idling emission rate of the vehicle type with the fuel type, obtained from the *Vehicle Parameters* table,
T_i: idling time of the terminating vehicle, obtained from the *Vehicle Parameters* table,
p: vehicle percentage of the fuel type, obtained from the *Vehicle Parameters* table,
f_c: total traffic frequency of the vehicle type with the fuel type for cold idling emission, obtained from the *Traffic Flow* table of the vehicle type,
f_h: total traffic frequency of the vehicle type with the fuel type for hot idling emission, obtained from the *Traffic Flow*
2. According to *Calculation of Start Emissions in Air Quality Impact Assessment*, the soak time for cold idling is longer than or equal

NO_2 Idling Emission within PTI/Parking Site (Terminating Vehicle) (g)

Hour	17 - Heavy Goods Vehicles>24t
	Diesel
0000 - 0100	2.864E+00
0100 - 0200	2.864E+00
0200 - 0300	2.864E+00
0300 - 0400	2.864E+00
0400 - 0500	2.864E+00
0500 - 0600	2.864E+00
0600 - 0700	2.864E+00
0700 - 0800	0.000E+00
0800 - 0900	0.000E+00
0900 - 1000	0.000E+00
1000 - 1100	0.000E+00
1100 - 1200	0.000E+00
1200 - 1300	0.000E+00
1300 - 1400	0.000E+00
1400 - 1500	0.000E+00
1500 - 1600	0.000E+00
1600 - 1700	0.000E+00
1700 - 1800	0.000E+00
1800 - 1900	0.000E+00
1900 - 2000	0.000E+00
2000 - 2100	2.864E+00
2100 - 2200	2.864E+00
2200 - 2300	2.864E+00
2300 - 2400	2.864E+00

Remark
1. $I_i = E_c * T_i * f_c * p + E_h * T_i * f_h * p$
where
I_i: idling emission within PTI of a vehicle type with a fuel type in an hour (terminating vehicle),
E_c: cold idling emission rate of the vehicle type with the fuel type, obtained from the *Vehicle Parameters* table,
E_h: hot idling emission rate of the vehicle type with the fuel type, obtained from the *Vehicle Parameters* table,
T_i: idling time of the terminating vehicle, obtained from the *Vehicle Parameters* table,
p: vehicle percentage of the fuel type, obtained from the *Vehicle Parameters* table,
f_c: total traffic frequency of the vehicle type with the fuel type for cold idling emission, obtained from the *Traffic Flow* table of the vehicle type,
f_h: total traffic frequency of the vehicle type with the fuel type for hot idling emission, obtained from the *Traffic Flow*
2. According to *Calculation of Start Emissions in Air Quality Impact Assessment*, the soak time for cold idling is longer than or equal

TSP Idling Emission within PTI/Parking Site (Terminating Vehicle) (g)

Hour	17 - Heavy Goods Vehicles>24t
	Diesel
0000 - 0100	2.777E-02
0100 - 0200	2.777E-02
0200 - 0300	2.777E-02
0300 - 0400	2.777E-02
0400 - 0500	2.777E-02
0500 - 0600	2.777E-02
0600 - 0700	2.777E-02
0700 - 0800	0.000E+00
0800 - 0900	0.000E+00
0900 - 1000	0.000E+00
1000 - 1100	0.000E+00
1100 - 1200	0.000E+00
1200 - 1300	0.000E+00
1300 - 1400	0.000E+00
1400 - 1500	0.000E+00
1500 - 1600	0.000E+00
1600 - 1700	0.000E+00
1700 - 1800	0.000E+00
1800 - 1900	0.000E+00
1900 - 2000	0.000E+00
2000 - 2100	2.777E-02
2100 - 2200	2.777E-02
2200 - 2300	2.777E-02
2300 - 2400	2.777E-02

Remark
1. $I_i = E_c * T_i * f_c * p + E_h * T_i * f_h * p$
where
I_i: idling emission within PTI of a vehicle type with a fuel type in an hour (terminating vehicle),
E_c: cold idling emission rate of the vehicle type with the fuel type, obtained from the *Vehicle Parameters* table,
E_h: hot idling emission rate of the vehicle type with the fuel type, obtained from the *Vehicle Parameters* table,
T_i: idling time of the terminating vehicle, obtained from the *Vehicle Parameters* table,
p: vehicle percentage of the fuel type, obtained from the *Vehicle Parameters* table,
f_c: total traffic frequency of the vehicle type with the fuel type for cold idling emission, obtained from the *Traffic Flow* table of the vehicle type,
f_h: total traffic frequency of the vehicle type with the fuel type for hot idling emission, obtained from the *Traffic Flow*
2. According to *Calculation of Start Emissions in Air Quality Impact Assessment*, the soak time for cold idling is longer than or equal

RSP Idling Emission within PTI/Parking Site (Terminating Vehicle) (g)

Hour	17 - Heavy Goods Vehicles>24t
	Diesel
0000 - 0100	2.777E-02
0100 - 0200	2.777E-02
0200 - 0300	2.777E-02
0300 - 0400	2.777E-02
0400 - 0500	2.777E-02
0500 - 0600	2.777E-02
0600 - 0700	2.777E-02
0700 - 0800	0.000E+00
0800 - 0900	0.000E+00
0900 - 1000	0.000E+00
1000 - 1100	0.000E+00
1100 - 1200	0.000E+00
1200 - 1300	0.000E+00
1300 - 1400	0.000E+00
1400 - 1500	0.000E+00
1500 - 1600	0.000E+00
1600 - 1700	0.000E+00
1700 - 1800	0.000E+00
1800 - 1900	0.000E+00
1900 - 2000	0.000E+00
2000 - 2100	2.777E-02
2100 - 2200	2.777E-02
2200 - 2300	2.777E-02
2300 - 2400	2.777E-02

Remark
1. $I_i = E_c * T_i * f_c * p + E_h * T_i * f_h * p$
where
I_i: idling emission within PTI of a vehicle type with a fuel type in an hour (terminating vehicle),
E_c: cold idling emission rate of the vehicle type with the fuel type, obtained from the *Vehicle Parameters* table,
E_h: hot idling emission rate of the vehicle type with the fuel type, obtained from the *Vehicle Parameters* table,
T_i: idling time of the terminating vehicle, obtained from the *Vehicle Parameters* table,
p: vehicle percentage of the fuel type, obtained from the *Vehicle Parameters* table,
f_c: total traffic frequency of the vehicle type with the fuel type for cold idling emission, obtained from the *Traffic Flow* table of the vehicle type,
f_h: total traffic frequency of the vehicle type with the fuel type for hot idling emission, obtained from the *Traffic Flow*
2. According to *Calculation of Start Emissions in Air Quality Impact Assessment*, the soak time for cold idling is longer than or equal

FSP Idling Emission within PTI/Parking Site (Terminating Vehicle) (g)

Hour	17 - Heavy Goods Vehicles>24t
	Diesel
0000 - 0100	2.777E-02
0100 - 0200	2.777E-02
0200 - 0300	2.777E-02
0300 - 0400	2.777E-02
0400 - 0500	2.777E-02
0500 - 0600	2.777E-02
0600 - 0700	2.777E-02
0700 - 0800	0.000E+00
0800 - 0900	0.000E+00
0900 - 1000	0.000E+00
1000 - 1100	0.000E+00
1100 - 1200	0.000E+00
1200 - 1300	0.000E+00
1300 - 1400	0.000E+00
1400 - 1500	0.000E+00
1500 - 1600	0.000E+00
1600 - 1700	0.000E+00
1700 - 1800	0.000E+00
1800 - 1900	0.000E+00
1900 - 2000	0.000E+00
2000 - 2100	2.777E-02
2100 - 2200	2.777E-02
2200 - 2300	2.777E-02
2300 - 2400	2.777E-02

Remark
1. $I_i = E_c * T_i * f_c * p + E_h * T_i * f_h * p$
where
I_i: idling emission within PTI of a vehicle type with a fuel type in an hour (terminating vehicle),
E_c: cold idling emission rate of the vehicle type with the fuel type, obtained from the *Vehicle Parameters* table,
E_h: hot idling emission rate of the vehicle type with the fuel type, obtained from the *Vehicle Parameters* table,
T_i: idling time of the terminating vehicle, obtained from the *Vehicle Parameters* table,
p: vehicle percentage of the fuel type, obtained from the *Vehicle Parameters* table,
f_c: total traffic frequency of the vehicle type with the fuel type for cold idling emission, obtained from the *Traffic Flow* table of the vehicle type,
f_h: total traffic frequency of the vehicle type with the fuel type for hot idling emission, obtained from the *Traffic Flow*
2. According to *Calculation of Start Emissions in Air Quality Impact Assessment*, the soak time for cold idling is longer t

HGV on-street parking site outside Tsing Yi Northeast Park Car Park
NO Idling Emission for the Purpose of Start Emission Adjustment (g)

Hour	17 - Heavy Goods Vehicles>24t
	Diesel
0000 - 0100	6.370E+00
0100 - 0200	6.370E+00
0200 - 0300	6.370E+00
0300 - 0400	6.370E+00
0400 - 0500	6.370E+00
0500 - 0600	6.370E+00
0600 - 0700	6.370E+00
0700 - 0800	0.000E+00
0800 - 0900	0.000E+00
0900 - 1000	0.000E+00
1000 - 1100	0.000E+00
1100 - 1200	0.000E+00
1200 - 1300	0.000E+00
1300 - 1400	0.000E+00
1400 - 1500	0.000E+00
1500 - 1600	0.000E+00
1600 - 1700	0.000E+00
1700 - 1800	0.000E+00
1800 - 1900	0.000E+00
1900 - 2000	0.000E+00
2000 - 2100	6.370E+00
2100 - 2200	6.370E+00
2200 - 2300	6.370E+00
2300 - 2400	6.370E+00

Remark
1. $I_a = I_t * T_a / T_t$
where
I_a: idling emission for the purpose of start emission adjustment of a vehicle type with a fuel type in an hour,
I_t: idling emission within PTI of the vehicle type with the fuel type in an hour (terminating vehicle), obtained from the *Idling Emission within PTI (Terminating Vehicle) (g)* table above,
T_a: max. idling time for adjusting start emission of the vehicle type with the fuel type, obtained from the *Vehicle Parameters* table,

HGV on-street parking site outside Tsing Yi Northeast Park Car Park
NO_2 Idling Emission for the Purpose of Start Emission Adjustment (g)

Hour	17 - Heavy Goods Vehicles>24t
	Diesel
0000 - 0100	1.432E+00
0100 - 0200	1.432E+00
0200 - 0300	1.432E+00
0300 - 0400	1.432E+00
0400 - 0500	1.432E+00
0500 - 0600	1.432E+00
0600 - 0700	1.432E+00
0700 - 0800	0.000E+00
0800 - 0900	0.000E+00
0900 - 1000	0.000E+00
1000 - 1100	0.000E+00
1100 - 1200	0.000E+00
1200 - 1300	0.000E+00
1300 - 1400	0.000E+00
1400 - 1500	0.000E+00
1500 - 1600	0.000E+00
1600 - 1700	0.000E+00
1700 - 1800	0.000E+00
1800 - 1900	0.000E+00
1900 - 2000	0.000E+00
2000 - 2100	1.432E+00
2100 - 2200	1.432E+00
2200 - 2300	1.432E+00
2300 - 2400	1.432E+00

Remark
1. $I_a = I_t * T_a / T_t$
where
I_a: idling emission for the purpose of start emission adjustment of a vehicle type with a fuel type in an hour,
I_t: idling emission within PTI of the vehicle type with the fuel type in an hour (terminating vehicle), obtained from the *Idling Emission within PTI (Terminating Vehicle) (g)* table above,
T_a: max. idling time for adjusting start emission of the vehicle type with the fuel type, obtained from the *Vehicle Parameters* table,

HGV on-street parking site outside Tsing Yi Northeast Park Car Park
TSP Idling Emission for the Purpose of Start Emission Adjustment (g)

Hour	17 - Heavy Goods Vehicles>24t
	Diesel
0000 - 0100	1.389E-02
0100 - 0200	1.389E-02
0200 - 0300	1.389E-02
0300 - 0400	1.389E-02
0400 - 0500	1.389E-02
0500 - 0600	1.389E-02
0600 - 0700	1.389E-02
0700 - 0800	0.000E+00
0800 - 0900	0.000E+00
0900 - 1000	0.000E+00
1000 - 1100	0.000E+00
1100 - 1200	0.000E+00
1200 - 1300	0.000E+00
1300 - 1400	0.000E+00
1400 - 1500	0.000E+00
1500 - 1600	0.000E+00
1600 - 1700	0.000E+00
1700 - 1800	0.000E+00
1800 - 1900	0.000E+00
1900 - 2000	0.000E+00
2000 - 2100	1.389E-02
2100 - 2200	1.389E-02
2200 - 2300	1.389E-02
2300 - 2400	1.389E-02

Remark
1. $I_a = I_t * T_a / T_t$
where
I_a: idling emission for the purpose of start emission adjustment of a vehicle type with a fuel type in an hour,
I_t: idling emission within PTI of the vehicle type with the fuel type in an hour (terminating vehicle), obtained from the *Idling Emission within PTI (Terminating Vehicle) (g)* table above,
T_a: max. idling time for adjusting start emission of the vehicle type with the fuel type, obtained from the *Vehicle Parameters* table,

HGV on-street parking site outside Tsing Yi Northeast Park Car Park
RSP Idling Emission for the Purpose of Start Emission Adjustment (g)

Hour	17 - Heavy Goods Vehicles>24t
	Diesel
0000 - 0100	1.389E-02
0100 - 0200	1.389E-02
0200 - 0300	1.389E-02
0300 - 0400	1.389E-02
0400 - 0500	1.389E-02
0500 - 0600	1.389E-02
0600 - 0700	1.389E-02
0700 - 0800	0.000E+00
0800 - 0900	0.000E+00
0900 - 1000	0.000E+00
1000 - 1100	0.000E+00
1100 - 1200	0.000E+00
1200 - 1300	0.000E+00
1300 - 1400	0.000E+00
1400 - 1500	0.000E+00
1500 - 1600	0.000E+00
1600 - 1700	0.000E+00
1700 - 1800	0.000E+00
1800 - 1900	0.000E+00
1900 - 2000	0.000E+00
2000 - 2100	1.389E-02
2100 - 2200	1.389E-02
2200 - 2300	1.389E-02
2300 - 2400	1.389E-02

Remark
1. $I_a = I_t * T_a / T_t$
where
I_a: idling emission for the purpose of start emission adjustment of a vehicle type with a fuel type in an hour,
I_t: idling emission within PTI of the vehicle type with the fuel type in an hour (terminating vehicle), obtained from the *Idling Emission within PTI (Terminating Vehicle) (g)* table above,
T_a: max. idling time for adjusting start emission of the vehicle type with the fuel type, obtained from the *Vehicle Parameters* table,

HGV on-street parking site outside Tsing Yi Northeast Park Car Park
FSP Idling Emission for the Purpose of Start Emission Adjustment (g)

Hour	17 - Heavy Goods Vehicles>24t
	Diesel
0000 - 0100	1.389E-02
0100 - 0200	1.389E-02
0200 - 0300	1.389E-02
0300 - 0400	1.389E-02
0400 - 0500	1.389E-02
0500 - 0600	1.389E-02
0600 - 0700	1.389E-02
0700 - 0800	0.000E+00
0800 - 0900	0.000E+00
0900 - 1000	0.000E+00
1000 - 1100	0.000E+00
1100 - 1200	0.000E+00
1200 - 1300	0.000E+00
1300 - 1400	0.000E+00
1400 - 1500	0.000E+00
1500 - 1600	0.000E+00
1600 - 1700	0.000E+00
1700 - 1800	0.000E+00
1800 - 1900	0.000E+00
1900 - 2000	0.000E+00
2000 - 2100	1.389E-02
2100 - 2200	1.389E-02
2200 - 2300	1.389E-02
2300 - 2400	1.389E-02

Remark
1. $I_a = I_t * T_a / T_t$
where
I_a: idling emission for the purpose of start emission adjustment of a vehicle type with a fuel type in an hour,
I_t: idling emission within PTI of the vehicle type with the fuel type in an hour (terminating vehicle), obtained from the *Idling Emission within PTI (Terminating Vehicle) (g)* table above,
T_a: max. idling time for adjusting start emission of the vehicle type with the fuel type, obtained from the *Vehicle Parameters* table,

HGV on-street parking site outside Tsing Yi Northeast Park Car Park
NO Adjusted Start Emission within PTI/Parking Site (g)

Hour	17 - Heavy Goods Vehicles>24t
	Diesel
0000 - 0100	0.000E+00
0100 - 0200	0.000E+00
0200 - 0300	0.000E+00
0300 - 0400	0.000E+00
0400 - 0500	0.000E+00
0500 - 0600	0.000E+00
0600 - 0700	0.000E+00
0700 - 0800	0.000E+00
0800 - 0900	0.000E+00
0900 - 1000	0.000E+00
1000 - 1100	0.000E+00
1100 - 1200	0.000E+00
1200 - 1300	0.000E+00
1300 - 1400	0.000E+00
1400 - 1500	0.000E+00
1500 - 1600	0.000E+00
1600 - 1700	0.000E+00
1700 - 1800	0.000E+00
1800 - 1900	0.000E+00
1900 - 2000	0.000E+00
2000 - 2100	0.000E+00
2100 - 2200	0.000E+00
2200 - 2300	0.000E+00
2300 - 2400	0.000E+00

Remark
1. S_{aw}
= 0, if $S_{total} - I_a < 0$
or
$= (S_{total} - I_a) * d_t / (d_t + d_s)$, otherwise
where
S_{aw}: adjusted start emission within PTI,
S_{total}: total start emission, obtained from the *Total Start Emission (g)* table above,
I_a: idling emission for the purpose of start emission adjustment, obtained from the *Idling emission for the purpose of start emission adjustment (g)* table above,
d_t: average travelling distance within PTI, obtained from the *Site Parameters* table,
d_s: average spread distance outside PTI, obtained from the *Vehicle Parameters* table.

HGV on-street parking site outside Tsing Yi Northeast Park Car Park
NO_2 Adjusted Start Emission within PTI/Parking Site (g)

Hour	17 - Heavy Goods Vehicles>24t
	Diesel
0000 - 0100	0.000E+00
0100 - 0200	0.000E+00
0200 - 0300	0.000E+00
0300 - 0400	0.000E+00
0400 - 0500	0.000E+00
0500 - 0600	0.000E+00
0600 - 0700	0.000E+00
0700 - 0800	0.000E+00
0800 - 0900	0.000E+00
0900 - 1000	0.000E+00
1000 - 1100	0.000E+00
1100 - 1200	0.000E+00
1200 - 1300	0.000E+00
1300 - 1400	0.000E+00
1400 - 1500	0.000E+00
1500 - 1600	0.000E+00
1600 - 1700	0.000E+00
1700 - 1800	0.000E+00
1800 - 1900	0.000E+00
1900 - 2000	0.000E+00
2000 - 2100	0.000E+00
2100 - 2200	0.000E+00
2200 - 2300	0.000E+00
2300 - 2400	0.000E+00

Remark
1. S_{aw}
= 0, if $S_{total} - I_a < 0$
or
$= (S_{total} - I_a) * d_t / (d_t + d_s)$, otherwise
where
S_{aw}: adjusted start emission within PTI,
S_{total}: total start emission, obtained from the *Total Start Emission (g)* table above,
I_a: idling emission for the purpose of start emission adjustment, obtained from the *Idling emission for the purpose of start emission adjustment (g)* table above,
d_t: average travelling distance within PTI, obtained from the *Site Parameters* table,
d_s: average spread distance outside PTI, obtained from the *Vehicle Parameters* table.

HGV on-street parking site outside Tsing Yi Northeast Park Car Park
TSP Adjusted Start Emission within PTI/Parking Site (g)

Hour	17 - Heavy Goods Vehicles>24t
	Diesel
0000 - 0100	0.000E+00
0100 - 0200	0.000E+00
0200 - 0300	0.000E+00
0300 - 0400	0.000E+00
0400 - 0500	0.000E+00
0500 - 0600	0.000E+00
0600 - 0700	0.000E+00
0700 - 0800	0.000E+00
0800 - 0900	0.000E+00
0900 - 1000	0.000E+00
1000 - 1100	0.000E+00
1100 - 1200	0.000E+00
1200 - 1300	0.000E+00
1300 - 1400	0.000E+00
1400 - 1500	0.000E+00
1500 - 1600	0.000E+00
1600 - 1700	0.000E+00
1700 - 1800	0.000E+00
1800 - 1900	0.000E+00
1900 - 2000	0.000E+00
2000 - 2100	0.000E+00
2100 - 2200	0.000E+00
2200 - 2300	0.000E+00
2300 - 2400	0.000E+00

Remark
1. S_{aw}
= 0, if $S_{total} - I_a < 0$
or
$= (S_{total} - I_a) * d_t / (d_t + d_s)$, otherwise
where
S_{aw}: adjusted start emission outside PTI,
S_{total}: total start emission, obtained from the *Total Start Emission (g)* table above,
I_a: idling emission for the purpose of start emission adjustment, obtained from the *Idling emission for the purpose of start emission adjustment (g)* table above,
d_t: average travelling distance within PTI, obtained from the *Site Parameters* table,
d_s: average spread distance outside PTI, obtained from the *Vehicle Parameters* table.

HGV on-street parking site outside Tsing Yi Northeast Park Car Park
RSP Adjusted Start Emission within PTI/Parking Site (g)

Hour	17 - Heavy Goods Vehicles>24t
	Diesel
0000 - 0100	0.000E+00
0100 - 0200	0.000E+00
0200 - 0300	0.000E+00
0300 - 0400	0.000E+00
0400 - 0500	0.000E+00
0500 - 0600	0.000E+00
0600 - 0700	0.000E+00
0700 - 0800	0.000E+00
0800 - 0900	0.000E+00
0900 - 1000	0.000E+00
1000 - 1100	0.000E+00
1100 - 1200	0.000E+00
1200 - 1300	0.000E+00
1300 - 1400	0.000E+00
1400 - 1500	0.000E+00
1500 - 1600	0.000E+00
1600 - 1700	0.000E+00
1700 - 1800	0.000E+00
1800 - 1900	0.000E+00
1900 - 2000	0.000E+00
2000 - 2100	0.000E+00
2100 - 2200	0.000E+00
2200 - 2300	0.000E+00
2300 - 2400	0.000E+00

Remark
1. S_{aw}
= 0, if $S_{total} - I_a < 0$
or
$= (S_{total} - I_a) * d_t / (d_t + d_s)$, otherwise
where
S_{aw}: adjusted start emission within PTI,
S_{total}: total start emission, obtained from the *Total Start Emission (g)* table above,
I_a: idling emission for the purpose of start emission adjustment, obtained from the *Idling emission for the purpose of start emission adjustment (g)* table above,
d_t: average travelling distance within PTI, obtained from the *Site Parameters* table,
d_s: average spread distance outside PTI, obtained from the *Vehicle Parameters* table.

HGV on-street parking site outside Tsing Yi Northeast Park Car Park
FSP Adjusted Start Emission within PTI/Parking Site (g)

Hour	17 - Heavy Goods Vehicles>24t
	Diesel
0000 - 0100	0.000E+00
0100 - 0200	0.000E+00
0200 - 0300	0.000E+00
0300 - 0400	0.000E+00
0400 - 0500	0.000E+00
0500 - 0600	0.000E+00
0600 - 0700	0.000E+00
0700 - 0800	0.000E+00
0800 - 0900	0.000E+00
0900 - 1000	0.000E+00
1000 - 1100	0.000E+00
1100 - 1200	0.000E+00
1200 - 1300	0.000E+00
1300 - 1400	0.000E+00
1400 - 1500	0.000E+00
1500 - 1600	0.000E+00
1600 - 1700	0.000E+00
1700 - 1800	0.000E+00
1800 - 1900	0.000E+00
1900 - 2000	0.000E+00
2000 - 2100	0.000E+00
2100 - 2200	0.000E+00
2200 - 2300	0.000E+00
2300 - 2400	0.000E+00

Remark
1. S_{aw}
= 0, if $S_{total} - I_a < 0$
or
$= (S_{total} - I_a) * d_t / (d_t + d_s)$, otherwise
where
S_{aw}: adjusted start emission within PTI,
S_{total}: total start emission, obtained from the *Total Start Emission (g)* table above,
I_a: idling emission for the purpose of start emission adjustment, obtained from the *Idling emission for the purpose of start emission adjustment (g)* table above,
d_t: average travelling distance within PTI, obtained from the *Site Parameters* table,
d_s: average spread distance outside PTI, obtained from the *Vehicle Parameters* table.

HGV on-street parking site outside Tsing Yi Northeast Park Car Park
NO Adjusted Start Emission outside PTI/Parking Site (g)

Hour	17 - Heavy Goods Vehicles>24t
	Diesel
0000 - 0100	5.156E+01
0100 - 0200	5.156E+01
0200 - 0300	5.156E+01
0300 - 0400	5.156E+01
0400 - 0500	5.156E+01
0500 - 0600	5.156E+01
0600 - 0700	5.156E+01
0700 - 0800	0.000E+00
0800 - 0900	0.000E+00
0900 - 1000	0.000E+00
1000 - 1100	0.000E+00
1100 - 1200	0.000E+00
1200 - 1300	0.000E+00
1300 - 1400	0.000E+00
1400 - 1500	0.000E+00
1500 - 1600	0.000E+00
1600 - 1700	0.000E+00
1700 - 1800	0.000E+00
1800 - 1900	0.000E+00
1900 - 2000	0.000E+00
2000 - 2100	5.156E+01
2100 - 2200	5.156E+01
2200 - 2300	5.156E+01
2300 - 2400	5.156E+01

Remark
1. S_{aw}
= 0, if $S_{total} - I_a < 0$
or
$= (S_{total} - I_a) * d_s / (d_t + d_s)$, otherwise
where
S_{aw}: adjusted start emission outside PTI,
S_{total}: total start emission, obtained from the *Total Start Emission (g)* table above,
I_a: idling emission for the purpose of start emission adjustment, obtained from the *Idling emission for the purpose of start emission adjustment (g)* table above,
d_t: average travelling distance within PTI, obtained from the *Site Parameters* table,
d_s: average spread distance outside PTI, obtained from the *Vehicle Parameters* table.

HGV on-street parking site outside Tsing Yi Northeast Park Car Park
NO_2 Adjusted Start Emission outside PTI/Parking Site (g)

Hour	17 - Heavy Goods Vehicles>24t
	Diesel
0000 - 0100	6.649E+00
0100 - 0200	6.649E+00
0200 - 0300	6.649E+00
0300 - 0400	6.649E+00
0400 - 0500	6.649E+00
0500 - 0600	6.649E+00
0600 - 0700	6.649E+00
0700 - 0800	0.000E+00
0800 - 0900	0.000E+00
0900 - 1000	0.000E+00
1000 - 1100	0.000E+00
1100 - 1200	0.000E+00
1200 - 1300	0.000E+00
1300 - 1400	0.000E+00
1400 - 1500	0.000E+00
1500 - 1600	0.000E+00
1600 - 1700	0.000E+00
1700 - 1800	0.000E+00
1800 - 1900	0.000E+00
1900 - 2000	0.000E+00
2000 - 2100	6.649E+00
2100 - 2200	6.649E+00
2200 - 2300	6.649E+00
2300 - 2400	6.649E+00

Remark
1. S_{aw}
= 0, if $S_{total} - I_a < 0$
or
$= (S_{total} - I_a) * d_s / (d_t + d_s)$, otherwise
where
S_{aw}: adjusted start emission outside PTI,
S_{total}: total start emission, obtained from the *Total Start Emission (g)* table above,
I_a: idling emission for the purpose of start emission adjustment, obtained from the *Idling emission for the purpose of start emission adjustment (g)* table above,
d_t: average travelling distance within PTI, obtained from the *Site Parameters* table,
d_s: average spread distance outside PTI, obtained from the *Vehicle Parameters* table.

HGV on-street parking site outside Tsing Yi Northeast Park Car Park
TSP Adjusted Start Emission outside PTI/Parking Site (g)

Hour	17 - Heavy Goods Vehicles>24t
	Diesel
0000 - 0100	0.000E+00
0100 - 0200	0.000E+00
0200 - 0300	0.000E+00
0300 - 0400	0.000E+00
0400 - 0500	0.000E+00
0500 - 0600	0.000E+00
0600 - 0700	0.000E+00
0700 - 0800	0.000E+00
0800 - 0900	0.000E+00
0900 - 1000	0.000E+00
1000 - 1100	0.000E+00
1100 - 1200	0.000E+00
1200 - 1300	0.000E+00
1300 - 1400	0.000E+00
1400 - 1500	0.000E+00
1500 - 1600	0.000E+00
1600 - 1700	0.000E+00
1700 - 1800	0.000E+00
1800 - 1900	0.000E+00
1900 - 2000	0.000E+00
2000 - 2100	0.000E+00
2100 - 2200	0.000E+00
2200 - 2300	0.000E+00
2300 - 2400	0.000E+00

Remark
1. S_{aw}
= 0, if $S_{total} - I_a < 0$
or
$= (S_{total} - I_a) * d_s / (d_t + d_s)$, otherwise
where
S_{aw}: adjusted start emission outside PTI,
S_{total}: total start emission, obtained from the *Total Start Emission (g)* table above,
I_a: idling emission for the purpose of start emission adjustment, obtained from the *Idling emission for the purpose of start emission adjustment (g)* table above,
d_t: average travelling distance within PTI, obtained from the *Site Parameters* table,
d_s: average spread distance outside PTI, obtained from the *Vehicle Parameters* table.

HGV on-street parking site outside Tsing Yi Northeast Park Car Park
RSP Adjusted Start Emission outside PTI/Parking Site (g)

Hour	17 - Heavy Goods Vehicles>24t
	Diesel
0000 - 0100	0.000E+00
0100 - 0200	0.000E+00
0200 - 0300	0.000E+00
0300 - 0400	0.000E+00
0400 - 0500	0.000E+00
0500 - 0600	0.000E+00
0600 - 0700	0.000E+00
0700 - 0800	0.000E+00
0800 - 0900	0.000E+00
0900 - 1000	0.000E+00
1000 - 1100	0.000E+00
1100 - 1200	0.000E+00
1200 - 1300	0.000E+00
1300 - 1400	0.000E+00
1400 - 1500	0.000E+00
1500 - 1600	0.000E+00
1600 - 1700	0.000E+00
1700 - 1800	0.000E+00
1800 - 1900	0.000E+00
1900 - 2000	0.000E+00
2000 - 2100	0.000E+00
2100 - 2200	0.000E+00
2200 - 2300	0.000E+00
2300 - 2400	0.000E+00

Remark
1. S_{aw}
= 0, if $S_{total} - I_a < 0$
or
$= (S_{total} - I_a) * d_s / (d_t + d_s)$, otherwise
where
S_{aw}: adjusted start emission outside PTI,
S_{total}: total start emission, obtained from the *Total Start Emission (g)* table above,
I_a: idling emission for the purpose of start emission adjustment, obtained from the *Idling emission for the purpose of start emission adjustment (g)* table above,
d_t: average travelling distance within PTI, obtained from the *Site Parameters* table,
d_s: average spread distance outside PTI, obtained from the *Vehicle Parameters* table.

HGV on-street parking site outside Tsing Yi Northeast Park Car Park
FSP Adjusted Start Emission outside PTI/Parking Site (g)

Hour	17 - Heavy Goods Vehicles>24t
	Diesel
0000 - 0100	0.000E+00
0100 - 0200	0.000E+00
0200 - 0300	0.000E+00
0300 - 0400	0.000E+00
0400 - 0500	0.000E+00
0500 - 0600	0.000E+00
0600 - 0700	0.000E+00
0700 - 0800	0.000E+00
0800 - 0900	0.000E+00
0900 - 1000	0.000E+00
1000 - 1100	0.000E+00
1100 - 1200	0.000E+00
1200 - 1300	0.000E+00
1300 - 1400	0.000E+00
1400 - 1500	0.000E+00
1500 - 1600	0.000E+00
1600 - 1700	0.000E+00
1700 - 1800	0.000E+00
1800 - 1900	0.000E+00
1900 - 2000	0.000E+00
2000 - 2100	0.000E+00
2100 - 2200	0.000E+00
2200 - 2300	0.000E+00
2300 - 2400	0.000E+00

Remark
1. S_{aw}
= 0, if $S_{total} - I_a < 0$
or
$= (S_{total} - I_a) * d_s / (d_t + d_s)$, otherwise
where
S_{aw}: adjusted start emission outside PTI,
S_{total}: total start emission, obtained from the *Total Start Emission (g)* table above,
I_a: idling emission for the purpose of start emission adjustment, obtained from the *Idling emission for the purpose of start emission adjustment (g)* table above,
d_t: average travelling distance within PTI, obtained from the *Site Parameters* table,
d_s: average spread distance outside PTI, obtained from the *Vehicle Parameters* table.

HGV on-street parking site outside Tsing Yi Northeast Park Car Park

NO Idling Emission within PTI/Parking Site (g)

Hour	17 - Heavy Goods Vehicles>24t
	Diesel
0000 - 0100	1.274E+01
0100 - 0200	1.274E+01
0200 - 0300	1.274E+01
0300 - 0400	1.274E+01
0400 - 0500	1.274E+01
0500 - 0600	1.274E+01
0600 - 0700	1.274E+01
0700 - 0800	0.000E+00
0800 - 0900	0.000E+00
0900 - 1000	0.000E+00
1000 - 1100	0.000E+00
1100 - 1200	0.000E+00
1200 - 1300	0.000E+00
1300 - 1400	0.000E+00
1400 - 1500	0.000E+00
1500 - 1600	0.000E+00
1600 - 1700	0.000E+00
1700 - 1800	0.000E+00
1800 - 1900	0.000E+00
1900 - 2000	0.000E+00
2000 - 2100	1.274E+01
2100 - 2200	1.274E+01
2200 - 2300	1.274E+01
2300 - 2400	1.274E+01

Remark
1. $I = I_t + I_o$
where
I: idling emission within PTI of a vehicle type with a fuel type in an hour,
I_t: idling emission within PTI of the vehicle type with the fuel type in the hour (terminating vehicle), obtained from the *Idling Emission within PTI (Terminating Vehicle) (g)* table above,
I_o: idling emission within PTI of the vehicle type with the fuel type in the hour (non-terminating vehicle), obtained from

NO Total Emission within PTI/Parking Site (Running + Adjusted Start + Idling) (g)

Hour	17 - Heavy Goods Vehicles>24t
	Diesel
0000 - 0100	1.274E+01
0100 - 0200	1.274E+01
0200 - 0300	1.274E+01
0300 - 0400	1.274E+01
0400 - 0500	1.274E+01
0500 - 0600	1.274E+01
0600 - 0700	1.274E+01
0700 - 0800	0.000E+00
0800 - 0900	0.000E+00
0900 - 1000	0.000E+00
1000 - 1100	0.000E+00
1100 - 1200	0.000E+00
1200 - 1300	0.000E+00
1300 - 1400	0.000E+00
1400 - 1500	0.000E+00
1500 - 1600	0.000E+00
1600 - 1700	0.000E+00
1700 - 1800	0.000E+00
1800 - 1900	0.000E+00
1900 - 2000	0.000E+00
2000 - 2100	1.274E+01
2100 - 2200	1.274E+01
2200 - 2300	1.274E+01
2300 - 2400	1.274E+01

Remark
1. $W = R + S_{aw} + I$
where
W: total emission within PTI of a vehicle type with a fuel type in an hour,
R: running emission within PTI of the vehicle type with the fuel type in the hour, obtained from the *Running Emission within PTI (g)* table above,
S_{aw}: adjusted start emission within PTI of the vehicle type with the fuel type in the hour, obtained from the *Adjusted*

HGV on-street parking site outside Tsing Yi Northeast Park Car Park

NO_2 Idling Emission within PTI/Parking Site (g)

Hour	17 - Heavy Goods Vehicles>24t
	Diesel
0000 - 0100	2.864E+00
0100 - 0200	2.864E+00
0200 - 0300	2.864E+00
0300 - 0400	2.864E+00
0400 - 0500	2.864E+00
0500 - 0600	2.864E+00
0600 - 0700	2.864E+00
0700 - 0800	0.000E+00
0800 - 0900	0.000E+00
0900 - 1000	0.000E+00
1000 - 1100	0.000E+00
1100 - 1200	0.000E+00
1200 - 1300	0.000E+00
1300 - 1400	0.000E+00
1400 - 1500	0.000E+00
1500 - 1600	0.000E+00
1600 - 1700	0.000E+00
1700 - 1800	0.000E+00
1800 - 1900	0.000E+00
1900 - 2000	0.000E+00
2000 - 2100	2.864E+00
2100 - 2200	2.864E+00
2200 - 2300	2.864E+00
2300 - 2400	2.864E+00

Remark
1. $I = I_t + I_o$
where
I: idling emission within PTI of a vehicle type with a fuel type in an hour,
I_t: idling emission within PTI of the vehicle type with the fuel type in the hour (terminating vehicle), obtained from the *Idling Emission within PTI (Terminating Vehicle) (g)* table above,
I_o: idling emission within PTI of the vehicle type with the fuel type in the hour (non-terminating vehicle), obtained from

NO_2 Total Emission within PTI/Parking Site (Running + Adjusted Start + Idling) (g)

Hour	17 - Heavy Goods Vehicles>24t
	Diesel
0000 - 0100	2.864E+00
0100 - 0200	2.864E+00
0200 - 0300	2.864E+00
0300 - 0400	2.864E+00
0400 - 0500	2.864E+00
0500 - 0600	2.864E+00
0600 - 0700	2.864E+00
0700 - 0800	0.000E+00
0800 - 0900	0.000E+00
0900 - 1000	0.000E+00
1000 - 1100	0.000E+00
1100 - 1200	0.000E+00
1200 - 1300	0.000E+00
1300 - 1400	0.000E+00
1400 - 1500	0.000E+00
1500 - 1600	0.000E+00
1600 - 1700	0.000E+00
1700 - 1800	0.000E+00
1800 - 1900	0.000E+00
1900 - 2000	0.000E+00
2000 - 2100	2.864E+00
2100 - 2200	2.864E+00
2200 - 2300	2.864E+00
2300 - 2400	2.864E+00

Remark
1. $W = R + S_{aw} + I$
where
W: total emission within PTI of a vehicle type with a fuel type in an hour,
R: running emission within PTI of the vehicle type with the fuel type in the hour, obtained from the *Running Emission within PTI (g)* table above,
S_{aw}: adjusted start emission within PTI of the vehicle type with the fuel type in the hour, obtained from the *Adjusted*

HGV on-street parking site outside Tsing Yi Northeast Park Car Park

TSP Idling Emission within PTI/Parking Site (g)

Hour	17 - Heavy Goods Vehicles>24t
	Diesel
0000 - 0100	2.777E-02
0100 - 0200	2.777E-02
0200 - 0300	2.777E-02
0300 - 0400	2.777E-02
0400 - 0500	2.777E-02
0500 - 0600	2.777E-02
0600 - 0700	2.777E-02
0700 - 0800	0.000E+00
0800 - 0900	0.000E+00
0900 - 1000	0.000E+00
1000 - 1100	0.000E+00
1100 - 1200	0.000E+00
1200 - 1300	0.000E+00
1300 - 1400	0.000E+00
1400 - 1500	0.000E+00
1500 - 1600	0.000E+00
1600 - 1700	0.000E+00
1700 - 1800	0.000E+00
1800 - 1900	0.000E+00
1900 - 2000	0.000E+00
2000 - 2100	2.777E-02
2100 - 2200	2.777E-02
2200 - 2300	2.777E-02
2300 - 2400	2.777E-02

Remark
1. $I = I_t + I_o$
where
I: idling emission within PTI of a vehicle type with a fuel type in an hour,
I_t: idling emission within PTI of the vehicle type with the fuel type in the hour (terminating vehicle), obtained from the *Idling Emission within PTI (Terminating Vehicle) (g)* table above,
I_o: idling emission within PTI of the vehicle type with the fuel type in the hour (non-terminating vehicle), obtained from

TSP Total Emission within PTI/Parking Site (Running + Adjusted Start + Idling) (g)

Hour	17 - Heavy Goods Vehicles>24t
	Diesel
0000 - 0100	2.777E-02
0100 - 0200	2.777E-02
0200 - 0300	2.777E-02
0300 - 0400	2.777E-02
0400 - 0500	2.777E-02
0500 - 0600	2.777E-02
0600 - 0700	2.777E-02
0700 - 0800	0.000E+00
0800 - 0900	0.000E+00
0900 - 1000	0.000E+00
1000 - 1100	0.000E+00
1100 - 1200	0.000E+00
1200 - 1300	0.000E+00
1300 - 1400	0.000E+00
1400 - 1500	0.000E+00
1500 - 1600	0.000E+00
1600 - 1700	0.000E+00
1700 - 1800	0.000E+00
1800 - 1900	0.000E+00
1900 - 2000	0.000E+00
2000 - 2100	2.777E-02
2100 - 2200	2.777E-02
2200 - 2300	2.777E-02
2300 - 2400	2.777E-02

Remark
1. $W = R + S_{aw} + I$
where
W: total emission within PTI of a vehicle type with a fuel type in an hour,
R: running emission within PTI of the vehicle type with the fuel type in the hour, obtained from the *Running Emission within PTI (g)* table above,
S_{aw}: adjusted start emission within PTI of the vehicle type with the fuel type in the hour, obtained from the *Adjusted*

HGV on-street parking site outside Tsing Yi Northeast Park Car Park

RSP Idling Emission within PTI/Parking Site (g)

Hour	17 - Heavy Goods Vehicles>24t
	Diesel
0000 - 0100	2.777E-02
0100 - 0200	2.777E-02
0200 - 0300	2.777E-02
0300 - 0400	2.777E-02
0400 - 0500	2.777E-02
0500 - 0600	2.777E-02
0600 - 0700	2.777E-02
0700 - 0800	0.000E+00
0800 - 0900	0.000E+00
0900 - 1000	0.000E+00
1000 - 1100	0.000E+00
1100 - 1200	0.000E+00
1200 - 1300	0.000E+00
1300 - 1400	0.000E+00
1400 - 1500	0.000E+00
1500 - 1600	0.000E+00
1600 - 1700	0.000E+00
1700 - 1800	0.000E+00
1800 - 1900	0.000E+00
1900 - 2000	0.000E+00
2000 - 2100	2.777E-02
2100 - 2200	2.777E-02
2200 - 2300	2.777E-02
2300 - 2400	2.777E-02

Remark
1. $I = I_t + I_o$
where
I: idling emission within PTI of a vehicle type with a fuel type in an hour,
I_t: idling emission within PTI of the vehicle type with the fuel type in the hour (terminating vehicle), obtained from the *Idling Emission within PTI (Terminating Vehicle) (g)* table above,
I_o: idling emission within PTI of the vehicle type with the fuel type in the hour (non-terminating vehicle), obtained from

RSP Total Emission within PTI/Parking Site (Running + Adjusted Start + Idling) (g)

Hour	17 - Heavy Goods Vehicles>24t
	Diesel
0000 - 0100	2.777E-02
0100 - 0200	2.777E-02
0200 - 0300	2.777E-02
0300 - 0400	2.777E-02
0400 - 0500	2.777E-02
0500 - 0600	2.777E-02
0600 - 0700	2.777E-02
0700 - 0800	0.000E+00
0800 - 0900	0.000E+00
0900 - 1000	0.000E+00
1000 - 1100	0.000E+00
1100 - 1200	0.000E+00
1200 - 1300	0.000E+00
1300 - 1400	0.000E+00
1400 - 1500	0.000E+00
1500 - 1600	0.000E+00
1600 - 1700	0.000E+00
1700 - 1800	0.000E+00
1800 - 1900	0.000E+00
1900 - 2000	0.000E+00
2000 - 2100	2.777E-02
2100 - 2200	2.777E-02
2200 - 2300	2.777E-02
2300 - 2400	2.777E-02

Remark
1. $W = R + S_{aw} + I$
where
W: total emission within PTI of a vehicle type with a fuel type in an hour,
R: running emission within PTI of the vehicle type with the fuel type in the hour, obtained from the *Running Emission within PTI (g)* table above,
S_{aw}: adjusted start emission within PTI of the vehicle type with the fuel type in the hour, obtained from the *Adjusted*

HGV on-street parking site outside Tsing Yi Northeast Park Car Park

FSP Idling Emission within PTI/Parking Site (g)

Hour	17 - Heavy Goods Vehicles>24t
	Diesel
0000 - 0100	2.777E-02
0100 - 0200	2.777E-02
0200 - 0300	2.777E-02
0300 - 0400	2.777E-02
0400 - 0500	2.777E-02
0500 - 0600	2.777E-02
0600 - 0700	2.777E-02
0700 - 0800	0.000E+00
0800 - 0900	0.000E+00
0900 - 1000	0.000E+00
1000 - 1100	0.000E+00
1100 - 1200	0.000E+00
1200 - 1300	0.000E+00
1300 - 1400	0.000E+00
1400 - 1500	0.000E+00
1500 - 1600	0.000E+00
1600 - 1700	0.000E+00
1700 - 1800	0.000E+00
1800 - 1900	0.000E+00
1900 - 2000	0.000E+00
2000 - 2100	2.777E-02
2100 - 2200	2.777E-02
2200 - 2300	2.777E-02
2300 - 2400	2.777E-02

Remark
1. $I = I_t + I_o$
where
I: idling emission within PTI of a vehicle type with a fuel type in an hour,
I_t: idling emission within PTI of the vehicle type with the fuel type in the hour (terminating vehicle), obtained from the *Idling Emission within PTI (Terminating Vehicle) (g)* table above,
I_o: idling emission within PTI of the vehicle type with the fuel type in the hour (non-terminating vehicle), obtained from

FSP Total Emission within PTI/Parking Site (Running + Adjusted Start + Idling) (g)

Hour	17 - Heavy Goods Vehicles>24t
	Diesel
0000 - 0100	2.777E-02
0100 - 0200	2.777E-02
0200 - 0300	2.777E-02
0300 - 0400	2.777E-02
0400 - 0500	2.777E-02
0500 - 0600	2.777E-02
0600 - 0700	2.777E-02
0700 - 0800	0.000E+00
0800 - 0900	0.000E+00
0900 - 1000	0.000E+00
1000 - 1100	0.000E+00
1100 - 1200	0.000E+00
1200 - 1300	0.000E+00
1300 - 1400	0.000E+00
1400 - 1500	0.000E+00
1500 - 1600	0.000E+00
1600 - 1700	0.000E+00
1700 - 1800	0.000E+00
1800 - 1900	0.000E+00
1900 - 2000	0.000E+00
2000 - 2100	2.777E-02
2100 - 2200	2.777E-02
2200 - 2300	2.777E-02
2300 - 2400	2.777E-02

Remark
1. $W = R + S_{aw} + I$
where
W: total emission within PTI of a vehicle type with a fuel type in an hour,
R: running emission within PTI of the vehicle type with the fuel type in the hour, obtained from the *Running Emission within PTI (g)* table above,
S_{aw}: adjusted start emission within PTI of the vehicle type with the fuel type in the hour, obtained from the *Adjusted*

HGV on-street parking site outside Tsing Yi Northeast Park Car Park

Hourly Profile

Hour	Emission Within PTI/Parking Site				
	Total Emission Rate (g/s)				
	NO	NO_2	TSP	RSP	FSP
0000 - 0100	3.539E-03	7.956E-04	7.715E-06	7.715E-06	7.715E-06
0100 - 0200	3.539E-03	7.956E-04	7.715E-06	7.715E-06	7.715E-06
0200 - 0300	3.539E-03	7.956E-04	7.715E-06	7.715E-06	7.715E-06
0300 - 0400	3.539E-03	7.956E-04	7.715E-06	7.715E-06	7.715E-06
0400 - 0500	3.539E-03	7.956E-04	7.715E-06	7.715E-06	7.715E-06
0500 - 0600	3.539E-03	7.956E-04	7.715E-06	7.715E-06	7.715E-06
0600 - 0700	3.539E-03	7.956E-04	7.715E-06	7.715E-06	7.715E-06
0700 - 0800	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0800 - 0900	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0900 - 1000	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
1000 - 1100	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
1100 - 1200	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
1200 - 1300	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
1300 - 1400	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
1400 - 1500	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
1500 - 1600	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
1600 - 1700	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
1700 - 1800	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
1800 - 1900	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
1900 - 2000	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2000 - 2100	3.539E-03	7.956E-04	7.715E-06	7.715E-06	7.715E-06
2100 - 2200	3.539E-03	7.956E-04	7.715E-06	7.715E-06	7.715E-06
2200 - 2300	3.539E-03	7.956E-04	7.715E-06	7.715E-06	7.715E-06
2300 - 2400	3.539E-03	7.956E-04	7.715E-06	7.715E-06	7.715E-06
Max	3.539E-03	7.956E-04	7.715E-06	7.715E-06	7.715E-06

Hour	Hourly Profile				
	NO	NO_2	TSP	RSP	FSP
0000 - 0100	1.0000	1.0000	1.0000	1.0000	1.0000
0100 - 0200	1.0000	1.0000	1.0000	1.0000	1.0000
0200 - 0300	1.0000	1.0000	1.0000	1.0000	1.0000
0300 - 0400	1.0000	1.0000	1.0000	1.0000	1.0000
0400 - 0500	1.0000	1.0000	1.0000	1.0000	1.0000
0500 - 0600	1.0000	1.0000	1.0000	1.0000	1.0000
0600 - 0700	1.0000	1.0000	1.0000	1.0000	1.0000
0700 - 0800	0.0000	0.0000	0.0000	0.0000	0.0000
0800 - 0900	0.0000	0.0000	0.0000	0.0000	0.0000
0900 - 1000	0.0000	0.0000	0.0000	0.0000	0.0000
1000 - 1100	0.0000	0.0000	0.0000	0.0000	0.0000
1100 - 1200	0.0000	0.0000	0.0000	0.0000	0.0000
1200 - 1300	0.0000	0.0000	0.0000	0.0000	0.0000
1300 - 1400	0.0000	0.0000	0.0000	0.0000	0.0000
1400 - 1500	0.0000	0.0000	0.0000	0.0000	0.0000
1500 - 1600	0.0000	0.0000	0.0000	0.0000	0.0000
1600 - 1700	0.0000	0.0000	0.0000	0.0000	0.0000
1700 - 1800	0.0000	0.0000	0.0000	0.0000	0.0000
1800 - 1900	0.0000	0.0000	0.0000	0.0000	0.0000
1900 - 2000	0.0000	0.0000	0.0000	0.0000	0.0000
2000 - 2100	1.0000	1.0000	1.0000	1.0000	1.0000
2100 - 2200	1.0000	1.0000	1.0000	1.0000	1.0000
2200 - 2300	1.0000	1.0000	1.0000	1.0000	1.0000
2300 - 2400	1.0000	1.0000	1.0000	1.0000	1.0000

Hour	Emission Outside PTI/Parking Site (Spread Distance = 700m)				
	Total Emission Rate (g/s)				
	NO	NO_2	TSP	RSP	FSP
0000 - 0100	1.432E-02	1.847E-03	0.000E+00	0.000E+00	0.000E+00
0100 - 0200	1.432E-02	1.847E-03	0.000E+00	0.000E+00	0.000E+00
0200 - 0300	1.432E-02	1.847E-03	0.000E+00	0.000E+00	0.000E+00
0300 - 0400	1.432E-02	1.847E-03	0.000E+00	0.000E+00	0.000E+00
0400 - 0500	1.432E-02	1.847E-03	0.000E+00	0.000E+00	0.000E+00
0500 - 0600	1.432E-02	1.847E-03	0.000E+00	0.000E+00	0.000E+00
0600 - 0700	1.432E-02	1.847E-03	0.000E+00	0.000E+00	0.000E+00
0700 - 0800	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0800 - 0900	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0900 - 1000	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
1000 - 1100	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
1100 - 1200	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
1200 - 1300	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
1300 - 1400	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
1400 - 1500	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
1500 - 1600	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
1600 - 1700	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
1700 - 1800	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
1800 - 1900	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
1900 - 2000	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2000 - 2100	1.432E-02	1.847E-03	0.000E+00	0.000E+00	0.000E+00
2100 - 2200	1.432E-02	1.847E-03	0.000E+00	0.000E+00	0.000E+00
2200 - 2300	1.432E-02	1.847E-03	0.000E+00	0.000E+00	0.000E+00
2300 - 2400	1.432E-02	1.847E-03	0.000E+00	0.000E+00	0.000E+00
Max	1.432E-02	1.847E-03	-	-	-

Hour	Hourly Profile				
	NO	NO_2	TSP	RSP	FSP
0000 - 0100	1.0000	1.0000	-	-	-
0100 - 0200	1.0000	1.0000	-	-	-
0200 - 0300	1.0000	1.0000	-	-	-
0300 - 0400	1.0000	1.0000	-	-	-
0400 - 0500	1.0000	1.0000	-	-	-
0500 - 0600	1.0000	1.0000	-	-	-
0600 - 0700	1.0000	1.0000	-	-	-
0700 - 0800	0.0000	0.0000	-	-	-
0800 - 0900	0.0000	0.0000	-	-	-
0900 - 1000	0.0000	0.0000	-	-	-
1000 - 1100	0.0000	0.0000	-	-	-
1100 - 1200	0.0000	0.0000	-	-	-
1200 - 1300	0.0000	0.0000	-	-	-
1300 - 1400	0.0000	0.0000	-	-	-
1400 - 1500	0.0000	0.0000	-	-	-
1500 - 1600	0.0000	0.0000	-	-	-
1600 - 1700	0.0000	0.0000	-	-	-
1700 - 1800	0.0000	0.0000	-	-	-
1800 - 1900	0.0000	0.0000	-	-	-
1900 - 2000	0.0000	0.0000	-	-	-
2000 - 2100	1.0000	1.0000	-	-	-
2100 - 2200	1.0000	1.0000	-	-	-
2200 - 2300	1.0000	1.0000	-	-	-
2300 - 2400	1.0000	1.0000	-	-	-

Hour	Emission Outside PTI/Parking Site (Spread Distance = 150m)				
	Total Emission Rate (g/s)				
	NO	NO_2	TSP	RSP	FSP
0000 - 0100	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0100 - 0200	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0200 - 0300	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0300 - 0400	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0400 - 0500	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0500 - 0600	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0600 - 0700	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0700 - 0800	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0800 - 0900	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0900 - 1000	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
1000 - 1100	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
1100 - 1200	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
1200 - 1300	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
1300 - 1400	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
1400 - 1500	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
1500 - 1600	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
1600 - 1700	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
1700 - 1800	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
1800 - 1900	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
1900 - 2000	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2000 - 2100	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2100 - 2200	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2200 - 2300	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2300 - 2400	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Max	-	-	-	-	-

Hour	Hourly Profile				
	NO	NO_2	TSP	RSP	FSP
0000 - 0100	-	-	-	-	-
0100 - 0200	-	-	-	-	-
0200 - 0300	-	-	-	-	-
0300 - 0400	-	-	-	-	-
0400 - 0500	-	-	-	-	-
0500 - 0600	-	-	-	-	-
0600 - 0700	-	-	-	-	-
0700 - 0800	-	-	-	-	-
0800 - 0900	-	-	-	-	-
0900 - 1000	-	-	-	-	-
1000 - 1100	-	-	-	-	-
1100 - 1200	-	-	-	-	-
1200 - 1300	-	-	-	-	-
1300 - 1400	-	-	-	-	-
1400 - 1500	-	-	-	-	-
1500 - 1600	-	-	-	-	-
1600 - 1700	-	-	-	-	-
1700 - 1800	-	-	-	-	-
1800 - 1900	-	-	-	-	-
1900 - 2000	-	-	-	-	-
2000 - 2100	-	-	-	-	-
2100 - 2200	-	-	-	-	-
2200 - 2300	-	-	-	-	-
2300 - 2400	-	-	-	-	-

Appendix 3.6 Calculation of Start Emissions

Emission Source Listing in AERMOD
Cold Start (Operation Phase)

Bus Terminus	Source ID	Type	X Start	Y Start	X End	Y End	Road ID	Road Width (m)	Release Height (mAG)	No. of Vertices	Sylnit	Sznit	Operation Period (hr)	Area (m^2)	Travel Distance outside Bus Terminus (m)	Flow Percentage (%)	NO Emission Rate (g/s or $g/m^2/s$)	NO_2 Emission Rate (g/s or $g/m^2/s$)	RSP Emission Rate (g/s or $g/m^2/s$)	FSP Emission Rate (g/s or $g/m^2/s$)
Start Emission inside Parking Area																				
Car_Park	CPV01	AREAPOLY	828153.22	824658.13	-	-	-	-	0.50	4	-	-	11	709	-	-	4.9940E-06	1.1229E-06	1.0888E-08	1.0888E-08
Start Emission outside Parking Area (Spread Distance = 700m)																				
Car_Park	CPL01	LINE	828288.40	824750.10	828319.60	824774.30	-	10.00	3.31	-	-	3.08	11	395	39.52	50%	1.0240E-06	1.3205E-07	-	-
Car_Park	CPL02	LINE	828319.40	824774.20	828354.40	824776.40	-	10.00	3.31	-	-	3.08	11	351	35.08	50%	1.0233E-06	1.3195E-07	-	-
Car_Park	CPL03	LINE	828190.60	824672.60	828267.60	824711.10	-	10.00	3.31	-	-	3.08	11	861	86.12	100%	2.0470E-06	2.6395E-07	-	-
Car_Park	CPL04	LINE	828267.60	824711.10	828288.40	824750.10	-	10.00	3.31	-	-	3.08	11	442	44.17	100%	2.0447E-06	2.6365E-07	-	-
Car_Park	CPL05	LINE	828288.40	824750.10	828300.30	824750.30	-	10.00	3.31	-	-	3.08	11	119	11.83	50%	1.0170E-06	1.3113E-07	-	-
Car_Park	CPL06	LINE	828300.30	824750.30	828306.50	824734.80	-	10.00	3.31	-	-	3.08	11	167	16.62	50%	1.0185E-06	1.3133E-07	-	-
Car_Park	CPL07	LINE	828306.50	824734.80	828273.00	824708.00	-	10.00	3.31	-	-	3.08	11	429	42.93	50%	1.0238E-06	1.3201E-07	-	-
Car_Park	CPL08	LINE	828273.00	824708.00	828187.10	824666.60	-	10.00	3.31	-	-	3.08	11	954	95.35	50%	1.0230E-06	1.3192E-07	-	-
Car_Park	CPL09	LINE	828187.10	824666.60	828113.80	824632.80	-	10.00	3.31	-	-	3.08	11	807	80.68	50%	1.0226E-06	1.3186E-07	-	-
Car_Park	CPL10	LINE	828113.80	824632.80	828078.10	824624.90	-	10.00	3.31	-	-	3.08	11	366	36.57	50%	1.0232E-06	1.3194E-07	-	-
Car_Park	CPL11	LINE	828078.10	824624.90	828033.50	824627.70	-	10.00	3.31	-	-	3.08	11	447	44.70	50%	1.0233E-06	1.3195E-07	-	-
Car_Park	CPL12	LINE	828033.50	824627.70	827976.30	824646.40	-	10.00	3.31	-	-	3.08	11	602	60.29	50%	1.0249E-06	1.3216E-07	-	-
Car_Park	CPL13	LINE	827976.30	824646.40	827896.10	824651.60	-	10.00	3.31	-	-	3.08	11	804	80.26	50%	1.0217E-06	1.3174E-07	-	-
Car_Park	CPL14	LINE	827896.10	824651.60	827795.30	824648.40	-	10.00	3.31	-	-	3.08	11	1009	100.89	50%	1.0235E-06	1.3197E-07	-	-
Car_Park	CPL15	LINE	828354.40	824776.40	828400.30	824794.90	-	10.00	3.31	-	-	3.08	11	495	49.46	50%	1.0226E-06	1.3186E-07	-	-

Hourly Profile for CPV01

Hour	NO	NO2	RSP	FSP
Hour 1	1.0000	1.0000	1.0000	1.0000
Hour 2	1.0000	1.0000	1.0000	1.0000
Hour 3	1.0000	1.0000	1.0000	1.0000
Hour 4	1.0000	1.0000	1.0000	1.0000
Hour 5	1.0000	1.0000	1.0000	1.0000
Hour 6	1.0000	1.0000	1.0000	1.0000
Hour 7	1.0000	1.0000	1.0000	1.0000
Hour 8	0.0000	0.0000	0.0000	0.0000
Hour 9	0.0000	0.0000	0.0000	0.0000
Hour 10	0.0000	0.0000	0.0000	0.0000
Hour 11	0.0000	0.0000	0.0000	0.0000
Hour 12	0.0000	0.0000	0.0000	0.0000
Hour 13	0.0000	0.0000	0.0000	0.0000
Hour 14	0.0000	0.0000	0.0000	0.0000
Hour 15	0.0000	0.0000	0.0000	0.0000
Hour 16	0.0000	0.0000	0.0000	0.0000
Hour 17	0.0000	0.0000	0.0000	0.0000
Hour 18	0.0000	0.0000	0.0000	0.0000
Hour 19	0.0000	0.0000	0.0000	0.0000
Hour 20	0.0000	0.0000	0.0000	0.0000
Hour 21	1.0000	1.0000	1.0000	1.0000
Hour 22	1.0000	1.0000	1.0000	1.0000
Hour 23	1.0000	1.0000	1.0000	1.0000
Hour 24	1.0000	1.0000	1.0000	1.0000

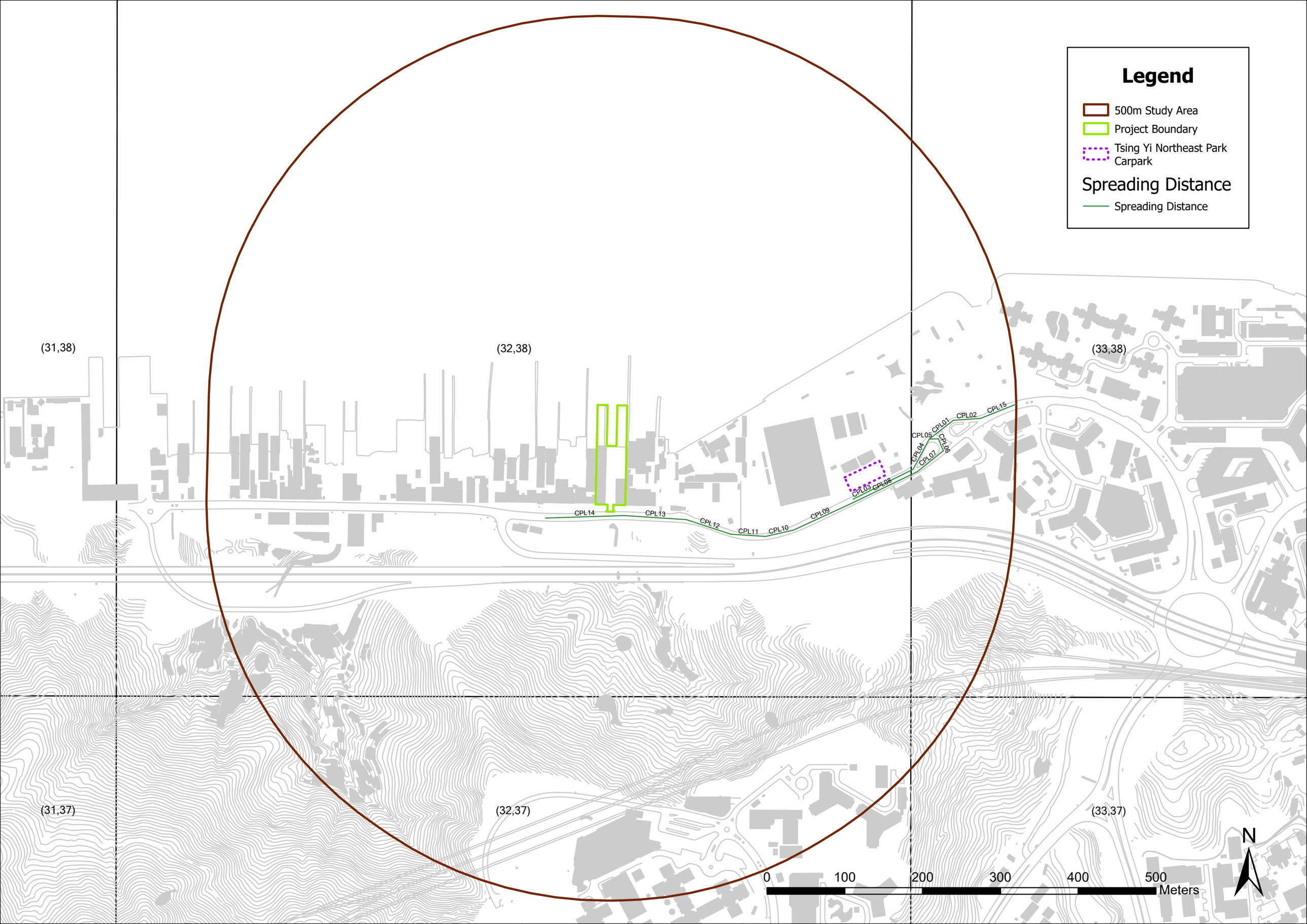
Hourly Profile for CPL01-CPL15

Hour	NO	NO2	RSP	FSP
Hour 1	1.0000	1.0000	-	-
Hour 2	1.0000	1.0000	-	-
Hour 3	1.0000	1.0000	-	-
Hour 4	1.0000	1.0000	-	-
Hour 5	1.0000	1.0000	-	-
Hour 6	1.0000	1.0000	-	-
Hour 7	1.0000	1.0000	-	-
Hour 8	0.0000	0.0000	-	-
Hour 9	0.0000	0.0000	-	-
Hour 10	0.0000	0.0000	-	-
Hour 11	0.0000	0.0000	-	-
Hour 12	0.0000	0.0000	-	-
Hour 13	0.0000	0.0000	-	-
Hour 14	0.0000	0.0000	-	-
Hour 15	0.0000	0.0000	-	-
Hour 16	0.0000	0.0000	-	-
Hour 17	0.0000	0.0000	-	-
Hour 18	0.0000	0.0000	-	-
Hour 19	0.0000	0.0000	-	-
Hour 20	0.0000	0.0000	-	-
Hour 21	1.0000	1.0000	-	-
Hour 22	1.0000	1.0000	-	-
Hour 23	1.0000	1.0000	-	-
Hour 24	1.0000	1.0000	-	-

Appendix 3.6 Calculation of Start Emissions

Vertices of Area Source

	Vertex 1		Vertex 2		Vertex 3		Vertex 4	
Source ID	X	Y	X	Y	X	Y	X	Y
CPV01	828153.22	824658.13	828215.70	824688.72	828220.28	824679.42	828157.79	824649.20


Legend
500m Study Area
Project Boundary
Tsing Yi Northeast Park Carpark
Spreading Distance
Spreading Distance
(31,38)
(32,38)
(33,38)
(31,37)
(32,37)
(33,37)
CPL01
CPL02
CPL03
CPL04
CPL05
CPL06
CPL07
CPL08
CPL09
CPL10
CPL11
CPL12
CPL13
CPL14
CPL15
0
100
200
300
400
500
Meters
N

APPENDIX 3.7

Derivation of Cumulative Annual Average NOX-to-NO2 Conversion Equation using Jenkin Method

Appendix 3.7 Derivation of Cumulative Annual Average NOX-to-NO2 Conversion Equation using Jenkin Method

Jenkin Method for Long-term Cumulative NO_2 Assessment

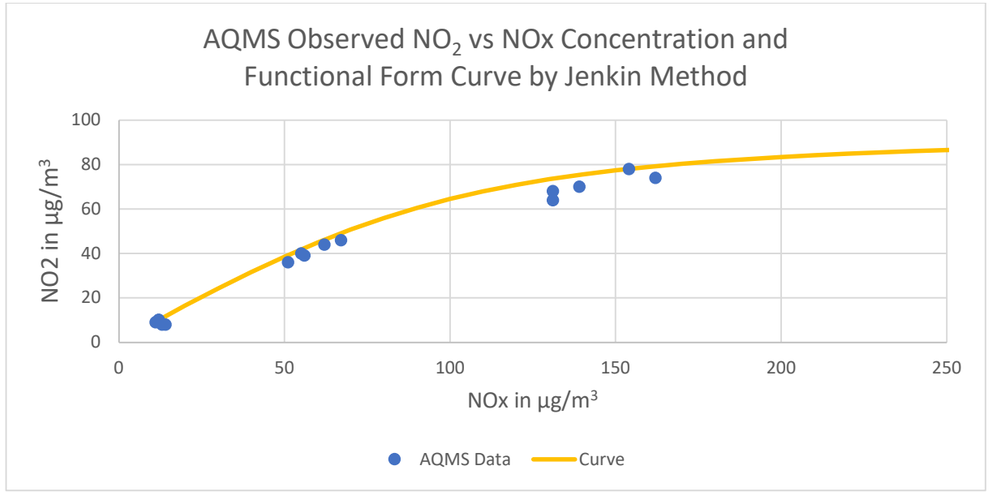
With reference to the *Review of Methods for NO to NO_2 Conversion in plumes at short ranges*[1], Jenkin method was adopted for the conversion of cumulative annual average NO_x to NO_2 by using the functional form of annual mean of NO_2-to-NOx. The mentioned functional form is referenced from Jenkin, 2004a[2] and is presented below:

$$[NO2] = \frac{\left([\mathrm{NOx}] + [\mathrm{OX}] + \frac{\mathrm{J}}{\mathrm{k}}\right) - \sqrt{([NOx] + [OX] + \frac{J}{k})^2 - 4[NOx][OX]}}{2}$$

where

$[NO_2]$	is the NO_2 concentration
$[NO_x]$	is the NOx concentration
[OX]	is the sum of NO_2 concentration and O_3 concentration (i.e. [OX] = $[NO_2]$ + $[O_3]$)
J	is the photolysis rate of NO_2
k	is the rate coefficient for reaction between NO and O_3

The above functional form was used to analyze the annual mean data obtained from the nearest EPD's air quality monitoring stations (AQMS) including Tsuen Wan general station, Tap Mun general station and Roadside AQMS (i.e. Mong Kok roadside station). The recent five years annual mean data are extracted and presented in below table. Scattered plot for recent 5 years annual means NO_2 versus NO_x concentrations obtained from relevant AQMS was created. The functional form curve would fit the annual mean data when [OX] = 95.57 µg/m^3 and J/k = 17.114 µg/m^3. The value of [OX] and J/k are considered reasonable as they are within typical value range for Hong Kong. The resulting functional form curve was adopted for the cumulative annual average NO_x to NO_2 conversion. The curve is slightly higher than all the annual mean data obtained from AQMS, the calculated annual average NO_2 concentration using the obtained functional form curve based on the observed annual average NO_x obtained from AQMS are presented in below table, the calculated annual average NO_2 concentration are higher than the observed annual average NO_2 concentration, no underestimation of the annual average NO_2 concentration is expected.



For the long-term cumulative NO_2 assessment (i.e. predictions of annual average NO_2 concentration), cumulative annual average NO_x to NO_2 conversion equation for this assessment was calculated as follows:

$$[NO2]_c = \frac{([NOx]_c + 95.57 + 17.11) - \sqrt{([NOx]_c + 95.57 + 17.11)^2 - 4[NOx]_c \times 95.57}}{2}$$

where

$[NO_2]_c$	is the predicted cumulative NO_2 concentration
$[NO_x]_c$	is the predicted cumulative NO_x concentration

[1] Environment Agency. 2007. *Review of methods for NO to NO_2 conversion in plumes at short range*. Prepared by Environmental Agency.

[2] Jenkin. 2004a. *Analysis of sources and partitioning of oxidant in the UK – Part 1: The NOx-dependence of annual mean concentrations of nitrogen dioxide and ozone.* Atmospheric Environment, 38, 5117-5129.

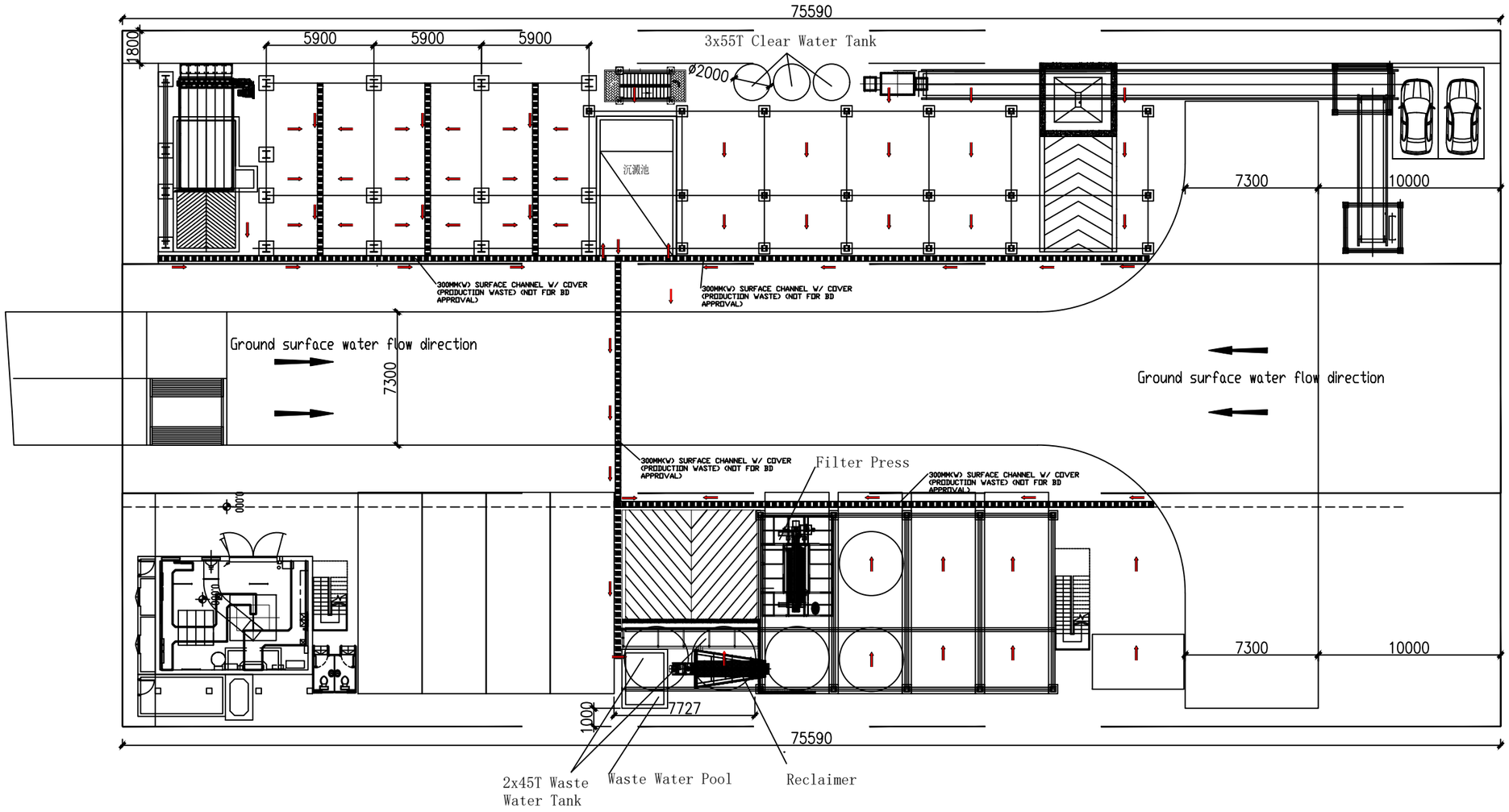
Appendix 3.7 Derivation of Cumulative Annual Average NOX-to-NO2 Conversion Equation using Jenkin Method

Annual Average NO_X, NO_2 and OX concentration in Recent Five Years (Year 2019-2023) at Selected EPD AQMS

AQMS Data of the Past 5 Years				
Year	**Station**	**NO2 (ug/m3)**	**NOx (ug/m3)**	**Conversion**
2019	TSUEN WAN	46	67	49.0
2020	TSUEN WAN	36	51	39.1
2021	TSUEN WAN	44	62	46.1
2022	TSUEN WAN	39	56	42.4
2023	TSUEN WAN	40	55	41.7
2019	TAP MUN	10	12	10.0
2020	TAP MUN	9	11	9.2
2021	TAP MUN	10	12	10.0
2022	TAP MUN	8	13	10.8
2023	TAP MUN	8	14	11.6
2019	MONG KOK	78	154	78.0
2020	MONG KOK	74	162	79.2
2021	MONG KOK	70	139	75.3
2022	MONG KOK	64	131	73.6
2023	MONG KOK	68	131	73.6

APPENDIX 5.1

Surface Channel Plan



Remark:

Surface channel

Ground surface water flow direction

工程编号:

合同编号:

圳通(香港)钢结构设备有限公
ZhenTong(HONGKONG)Steel structure Equipment Co.LTD
深圳市圳通钢结构设备有限公司
ZhenTong Steelstructure Equipment Co.LTD In ShenZhen

典型平面:
key plan

设计变更说明:
Revision

A 版

备注说明:
Remark
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建设单位:
Client
中港混凝土有限公司

建设地点:
Site
青衣

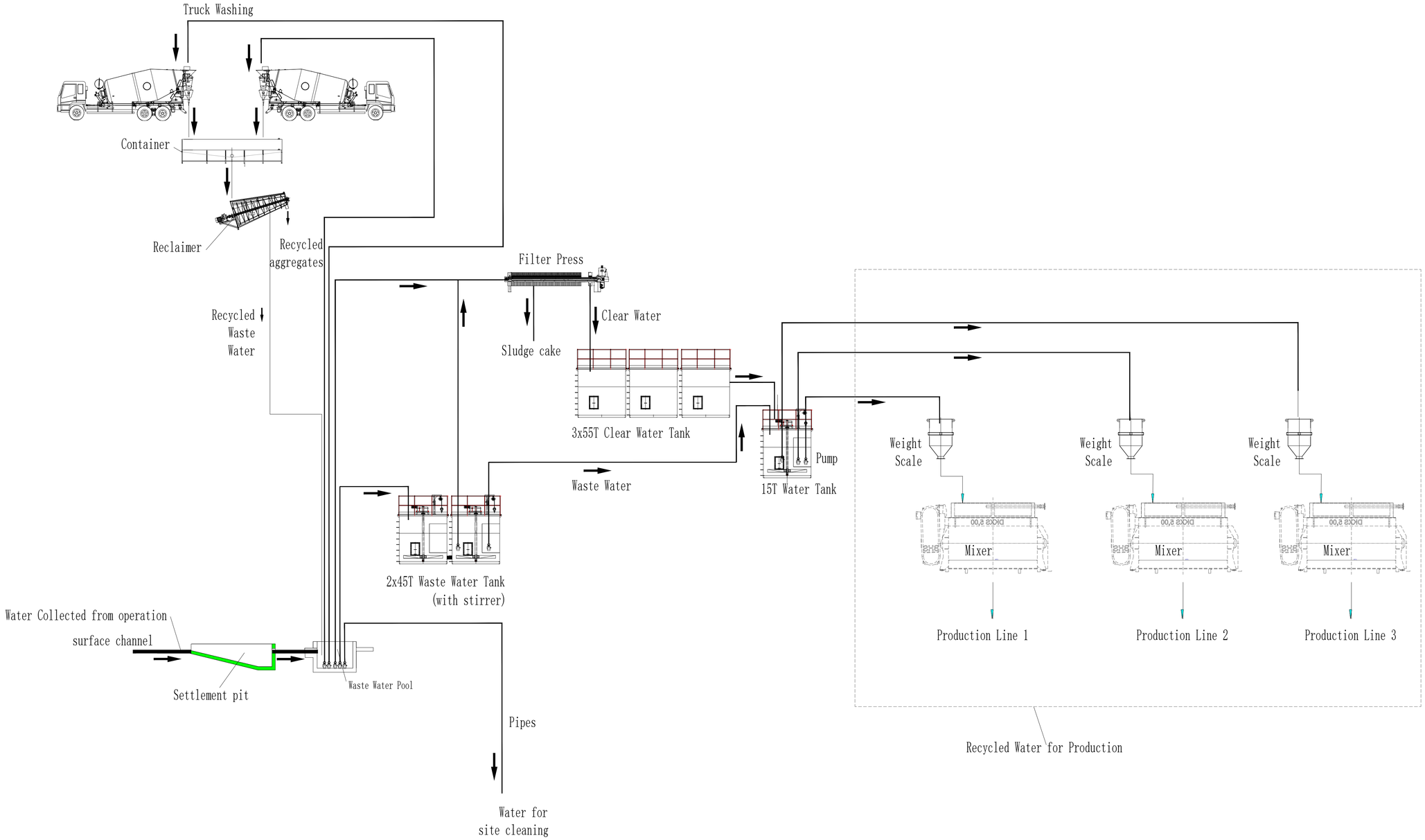
工程名称	3*HZS300混凝土生产线		
审定		核对	
审核		设计	
设计负责		绘图	
设计阶段		版本	

名称: 污水溝渠平面圖

比例	日期	图号
1:1	2024-11-25	

APPENDIX 5.2

Wastewater Treatment Plan



工程编号:

合同编号:

圳通(香港）钢结构设备有限公
ZhenTong(HONGKONG)Steel structure Equipment Co.LTD

深圳市圳通钢结构设备有限公司
ZhenTong Steelstructure Equipment Co.LTD In ShenZhen

典型平面:

key plan

设计变更说明:

Revision

A 版

备注说明:

Remark

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建设单位:

Client

建设地点:

Site

青衣

工程名称	3*HZS300混凝土生产线		
审 定		核对	
审 核		设计	
设计负责		绘图	
设计阶段		版本	

名称	回收水工藝流程圖		
比 例	日 期	图 号	
1:1	2024-11-25		

APPENDIX 7.1

Reviewed Aerial Photographs

ISO A1 594mm x 841mm

Approved:

Checked:

Designer:

Project Management Initials:



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11/2/2025
Plot File by: haiquan.zhao
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LOT NOS. 14 & 15

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STATUS
現狀

SCALE 比例
A3 1 : 2500

DIMENSION UNIT 尺寸單位
METRES

KEY PLAN
索引圖

PROJECT NO. 項目編號
60739290

CONTRACT NO. 合約編號

SHEET TITLE
圖紙名稱
AERIAL PHOTOGRAPH 1963

SHEET NUMBER
圖紙編號
60739290/EA/AP1

ISO A1 594mm x 841mm

Approved:

Checked:

Designer:

Project Management Initials:

LEGEND:

SITE BOUNDARY

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828000 E

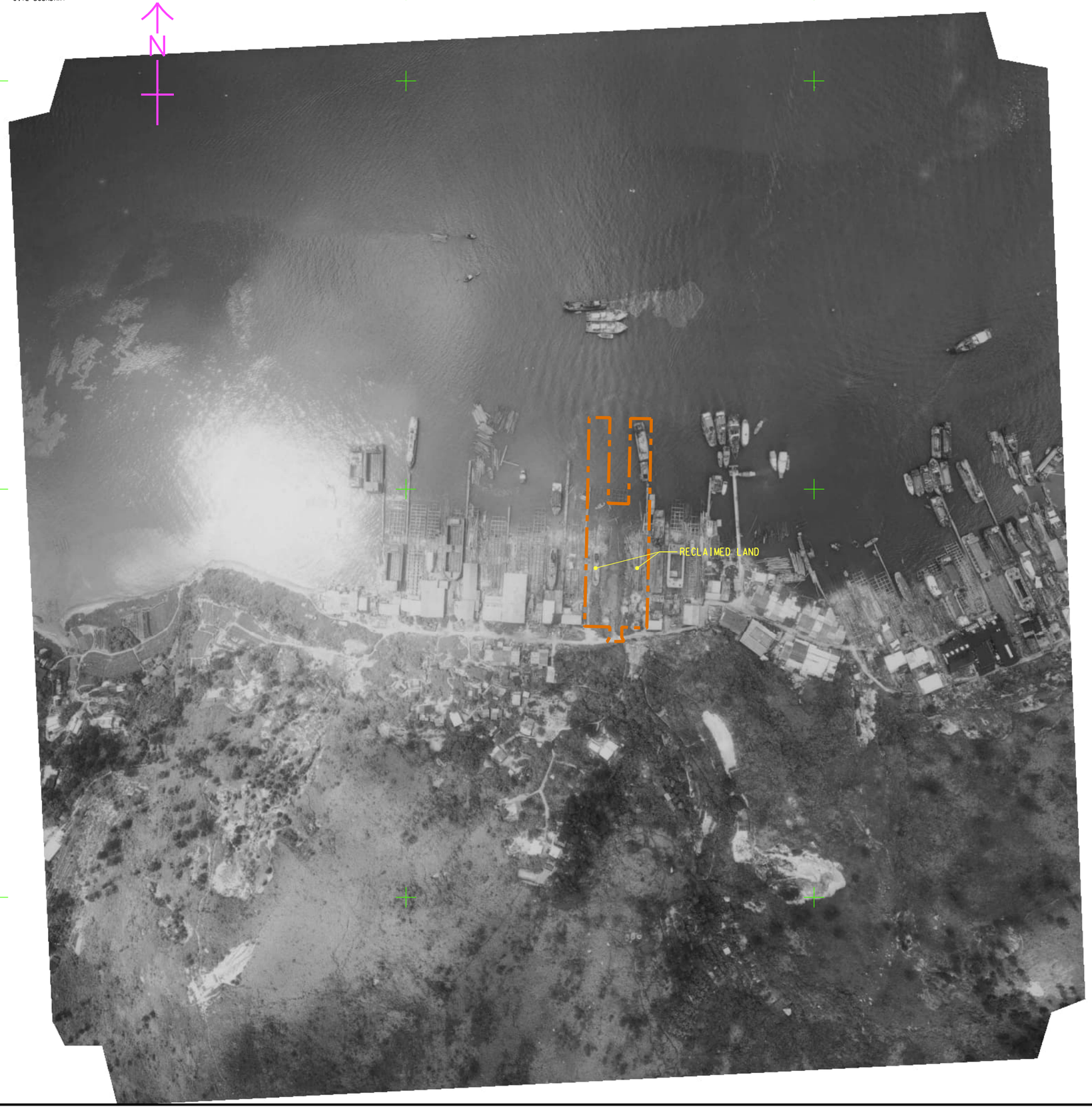
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825000 N

824750 N

824500 N

N



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DIMENSION UNIT 尺寸單位
METRES

KEY PLAN
索引圖

PROJECT NO. 項目編號
60739290

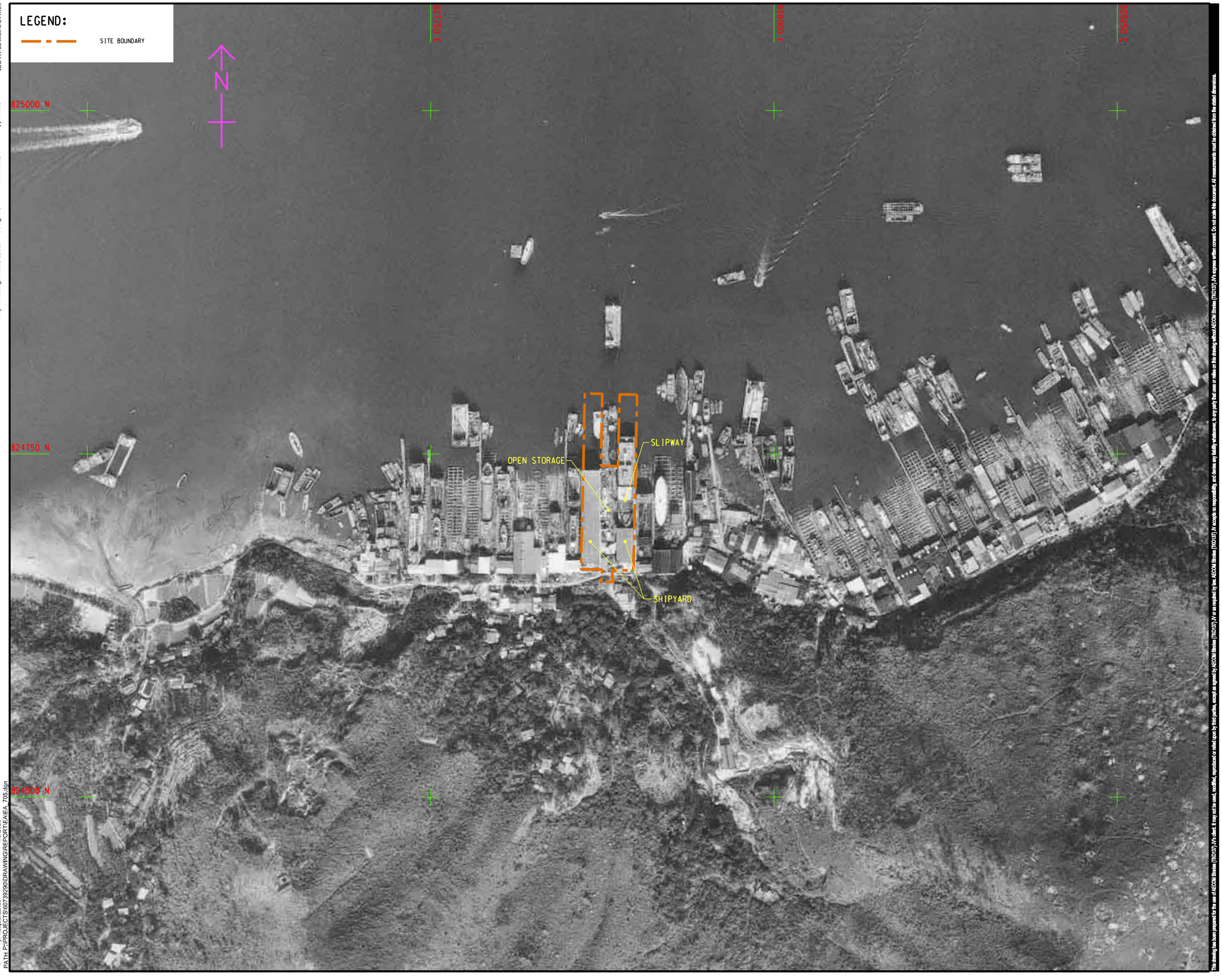
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圖紙名稱
AERIAL PHOTOGRAPH 1973

SHEET NUMBER
圖紙編號
60739290/EA/AP2

LEGEND:

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A3 1 : 2500

DIMENSION UNIT 尺寸單位
METRES

KEY PLAN
索引圖

PROJECT NO. 項目編號
60739290

CONTRACT NO. 合約編號

SHEET TITLE
圖紙名稱
AERIAL PHOTOGRAPH 1983

SHEET NUMBER
圖紙編號
60739290/EA/AP3

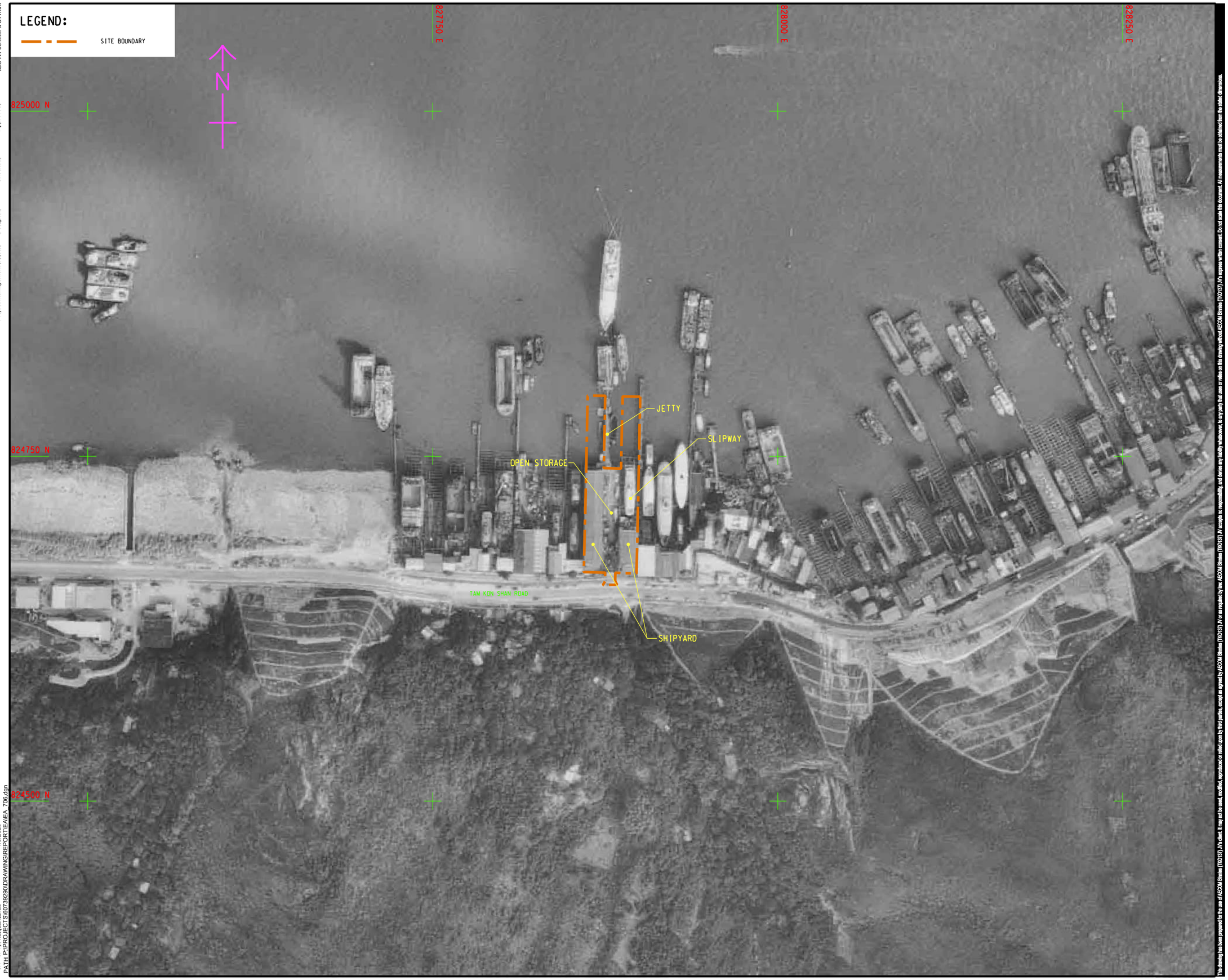
ISO A1 594mm x 841mm

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Designer:

Project Management Initials:



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階段

SCALE 比例
A3 1 : 2500

DIMENSION UNIT 尺寸單位
METRES

KEY PLAN
索引圖

PROJECT NO. 項目編號
60739290

CONTRACT NO. 合約編號

SHEET TITLE
圖紙名稱
AERIAL PHOTOGRAPH 1993

SHEET NUMBER
圖紙編號
60739290/EA/AP4

ISO A1 594mm x 841mm

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Project Management Initials:



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SCALE 比例
A3 1 : 2500

DIMENSION UNIT 尺寸單位
METRES

KEY PLAN
索引圖

PROJECT NO. 項目編號
60739290

AGREEMENT NO. 協議編號

SHEET TITLE
圖紙名稱
AERIAL PHOTOGRAPH 2003

SHEET NUMBER
圖紙編號
60739290/EA/AP5

ISO A1 594mm x 841mm

Project Management Initials:
Designer:
Checked:
Approved:



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2025/2/18
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STATUS
階段

SCALE 比例
A3 1 : 2500

DIMENSION UNIT 尺寸單位
METRES

KEY PLAN
索引圖

PROJECT NO. 項目編號
60739290

AGREEMENT NO. 協議編號

SHEET TITLE
圖紙名稱
AERIAL PHOTOGRAPH 2013

SHEET NUMBER
圖紙編號
60739290/EA/AP6

ISO A1 594mm x 841mm

Approved:

Checked:

Designer:

Project Management Initials:

827500 E

827750 E

828000 E

828250 E

825000 N

824750 N

824500 N



LEGEND:

SITE BOUNDARY

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AECOM

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PLANNING APPLICATION
OF A CONCRETE BATCHING
PLANT AT TSING YI TOWN
LOT NOS. 14 & 15

CLIENT
業主

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修訂

I/R 修訂	DATE 日期	DESCRIPTION 內容摘要	CHK. 核對

STATUS
狀況

SCALE 比例
A3 1 : 2500

DIMENSION UNIT 尺寸單位
METRES

KEY PLAN
索引圖

PROJECT NO. 項目編號
60739290

AGREEMENT NO. 協議編號

SHEET TITLE
圖紙名稱
AERIAL PHOTOGRAPH 2023

SHEET NUMBER
圖紙編號
60739290/EA/AP7

APPENDIX 7.2

Site Walkover Checklist

Annex C1
Site Walkover Checklist

DATE OF INSPECTION 12 December 2024

GENERAL SITE DETAILS

~~SITE OWNER~~/CLIENT [redacted]

PROPERTY ADDRESS Tsing Yi Town Lot Nos. 14 and 15 and adjoining Government Land, Tam Kon Shan Road, Tsing Yi, New Territories

PERSON CONDUCTING THE QUESTIONNAIRE

NAME Mr. Alex Fan / Ms. Chloe Ng

POSITION Graduate / Senior Environmental Consultant, AECOM

AUTHORIZED OWNER/CLIENT REPRESENTATIVE (IF APPLICABLE)

NAME [redacted]

POSITION [redacted]

TELEPHONE [redacted]

SITE ACTIVITIES

Briefly describe activities carried out on site, including types of products/chemicals/materials handled. **Obtain a flow schematic if possible.**

Number of employees:	Full-time:	1
	Part-time:	N/A
	Temporary/Seasonal:	N/A
Maximum no. of people on site at any time:		50
Typical hours of operation:		8am – 5pm
Number of shifts:		N/A
Days per week:		6
Weeks per year:		52
Scheduled plant shut-down:		N/A

Detail the main sources of energy at the site:

Gas	~~Yes~~/No
Electricity	Yes/~~No~~
Coal	~~Yes~~/No
Oil	~~Yes~~/No
Other	~~Yes~~/No

SITE DESCRIPTION

This section is intended to gather information on site setting and environmental receptors on, adjacent or close to the site.

What is the total site area: Approx. 4,335 m^2

What area of the site is covered by buildings (%): 30 %

Please list all current and previous owners/occupiers if possible. Supreme Enterprises, Limited

---

Is a site plan available? If yes, please attach. Yes/~~No~~ Refer to **Figure 7.1**

Are there any other parties on site as tenants or sub-tenants? ~~Yes~~/No

If yes, identify those parties: N/A

Describe surrounding land use (residential, industrial, rural, etc.) and identify neighbouring facilities and types of industry.

North: Open water

South: Tam Kon Shan Road

East: Shipyard (Industrial)

West: Shipyard (Industrial)

Annex C1
Site Walkover Checklist

Describe the topography of the area (flat terrain, rolling hills, mountains, by a large body of water, vegetation, etc.).

Flat reclaimed land by the sea.

State the size and location of the nearest residential communities.

Cheung On Estate (approx. 450m east of the Site, area of about 7.9 ha)

Are there any sensitive habitats nearby, such as nature reserves, parks, wetlands or sites of special scientific interest?

No.

Questionnaire with Existing/Previous Site Owner or Occupier

	Yes/No	Notes
1. What are the main activities/operations at the above address?	--	Private parking site
2. How long have you been occupying the site?	--	48 years, since 1976
3. Were you the first occupant on site? (If yes, what was the usage of the site prior to occupancy.)	Yes	Open water
4. Prior to your occupancy, who occupied the site?	N/A	
5. What were the main activities/operations during their occupancy?	--	Shipyard from 1976 to 1994
6. Have there been any major changes in operations carried out at the site in the last 10 years?	No	
7. Have any polluting activities been carried out in the vicinity of the site in the past?	No	
8. To the best of your knowledge, has the site ever been used as a petrol filling station/car service garage?	No	
9. Are there any boreholes/wells or natural springs either on the site or in the surrounding area?	Yes	
10. Do you have any registered hazardous installations as defined under relevant ordinances? (If yes, please provide details.)	Yes	There is a disused Dangerous Goods (DG) store previously used for storing oxy-acetylene cylinders located in the western building of the Site.
11. Are any chemicals used in your daily operations? (If yes, please provide details.)	No	
• Where do you store these chemicals?	N/A	
12. Material inventory lists, including quantities and locations available? (If yes, how often are these inventories updated?)	No	
13. Has the facility produced a separate hazardous substance inventory?	No	
14. Have there ever been any incidents or accidents (e.g. spills, fires, injuries, etc.) involving any of these materials? (If yes, please provide details.)	No	

	Yes/No	Notes
15. How are materials received (e.g. rail, truck, etc.) and stored on site (e.g. drums, tanks, carboys, bags, silos, cisterns, vaults and cylinders)?	N/A	No materials are received and stored for use on-site.
16. Do you have any underground storage tanks? (If yes, please provide details.)	No	
• How many underground storage tanks do you have on site?	N/A	
• What are the tanks constructed of?	N/A	
• What are the contents of these tanks?	N/A	
• Are the pipelines above or below ground?	N/A	
• If the pipelines are below ground, has any leak and integrity testing been performed?	N/A	
• Have there been any spills associated with these tanks?	N/A	
17. Are there any disused underground storage tanks?	No	
18. Do you have regular check for any spillage and monitoring of chemicals handled? (If yes, please provide details.)	No	
19. How are the wastes disposed of?	--	Wastes are disposed to the nearby refuse collection point.
20. Have you ever received any notices of violation of environmental regulations or received public complaints? (If yes, please provide details.)	No	
21. Have any spills occurred on site? (If yes, please provide details.)	No	
• When did the spill occur?	N/A	
• What were the substances spilled?	N/A	
• What was the quantity of material spilled?	N/A	
• Did you notify the relevant departments of the spill?	N/A	
• What were the actions taken to clean up the spill?	N/A	
• What were the areas affected?	N/A	
22. Do you have any records of major renovation of your site or re-arrangement of underground utilities, pipe work/underground tanks (If yes, please provide details.)	No	
23. Have disused underground tanks been removed or otherwise secured (e.g. concrete, sand, etc.)?	No	
24. Are there any known contaminations on site? (If yes, please provide details.)	No	
25. Has the site ever been remediated? (If yes, please provide details.)	No	

Annex C1
Site Walkover Checklist

Observations

	Yes/No	Notes
1. Are chemical storage areas provided with secondary containment (i.e. bund walls and floors)?	No	The chemicals are stored on a covered box / wooden plank or directly above concrete paved ground.
2. What are the conditions of the bund walls and floors?	--	The covered box / wooden plank and concrete paved ground were observed to be intact.
3. Are any surface water drains located near to drum storage and unloading areas?	N/A	
4. Are any solid or liquid waste (other than wastewater) generated at the site? (If yes, please provide details.)	No	
5. Is there a storage site for the wastes?	No	
6. Is there an on-site landfill?	No	
7. Were any stressed vegetation noted on site during the site reconnaissance? (If yes, please indicate location and approximate size.)	No	
8. Were any stained surfaces noted on-site during the site reconnaissance? (If yes, please provide details.)	No	
9. Are there any potential off-site sources of contamination?	No	
10. Does the site have any equipment which might contain polychlorinated biphenyls (PCBs)?	No	
11. Are there any sumps, effluent pits, interceptors or lagoons on site?	No	
12. Any noticeable odours during site walkover?	No	
13. Are any of the following chemicals used on site: fuels, lubricating oils, hydraulic fluids, cleaning solvents, used chemical solutions, acids, anti-corrosive paints, thinners, coal, ash, oily tanks and bilge sludge, metal wastes, wood preservatives and polyurethane foam?	No	

APPENDIX 7.3

Acquisition of Information from Government Departments

AECOM
12/F, Grand Central Plaza, Tower 2,
138 Shatin Rural Committee Road,
Shatin, Hong Kong
香港新界沙田鄉事會路 138 號
新城市中央廣場第 2 座 12 樓
www.aecom.com

+852 3922 9000 tel
+852 3922 9797 fax

Your Ref:
Our Ref: 60739290/AYMC202412122

By Post and Fax (F: 2411 3073)

Environmental Protection Department
Regional Office (West)
8/F., Tsuen Wan Government Offices,
38 Sai Lau Kok Road, Tsuen Wan,
New Territories

12 December 2024

Dear Sir/Madam,

Land Contamination Assessment for Tsing Yi Town Lots 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi

Request for Information of Chemical Waste Producer and Chemical Spillage Accident

AECOM Asia Co. Ltd. has been commissioned by Supreme Enterprise Limited as the Consultant to undertake land contamination assessment for the captioned project. The concerned site is indicated in the figure enclosed.

As part of the land contamination assessment and following the *Practice Guide for Investigation and Remediation of Contaminated Land* issued by EPD, we have to collect historical information regarding the past and present activities of the site. In order to facilitate our assessment, we would like to request for the following information regarding the captioned concerned site:

1. Current and past (as early as the records are available) registered Chemical Waste Producer(s) within the concerned site (preferably with the registration date, status (moved out or active), nature and quantity of the chemical waste); and
2. Reported accidents of spillage / leakage of chemicals within the concerned site.

Please feel free to contact our Ms. Chloe Ng at 3856 5662 / chloe.ng@aecom.com or Mr. Alex Fan at 3856 5244 / alex.fan@aecom.com should you have any queries.

Thank you very much for your kind assistance.

Yours faithfully,
AECOM Asia Co. Ltd.

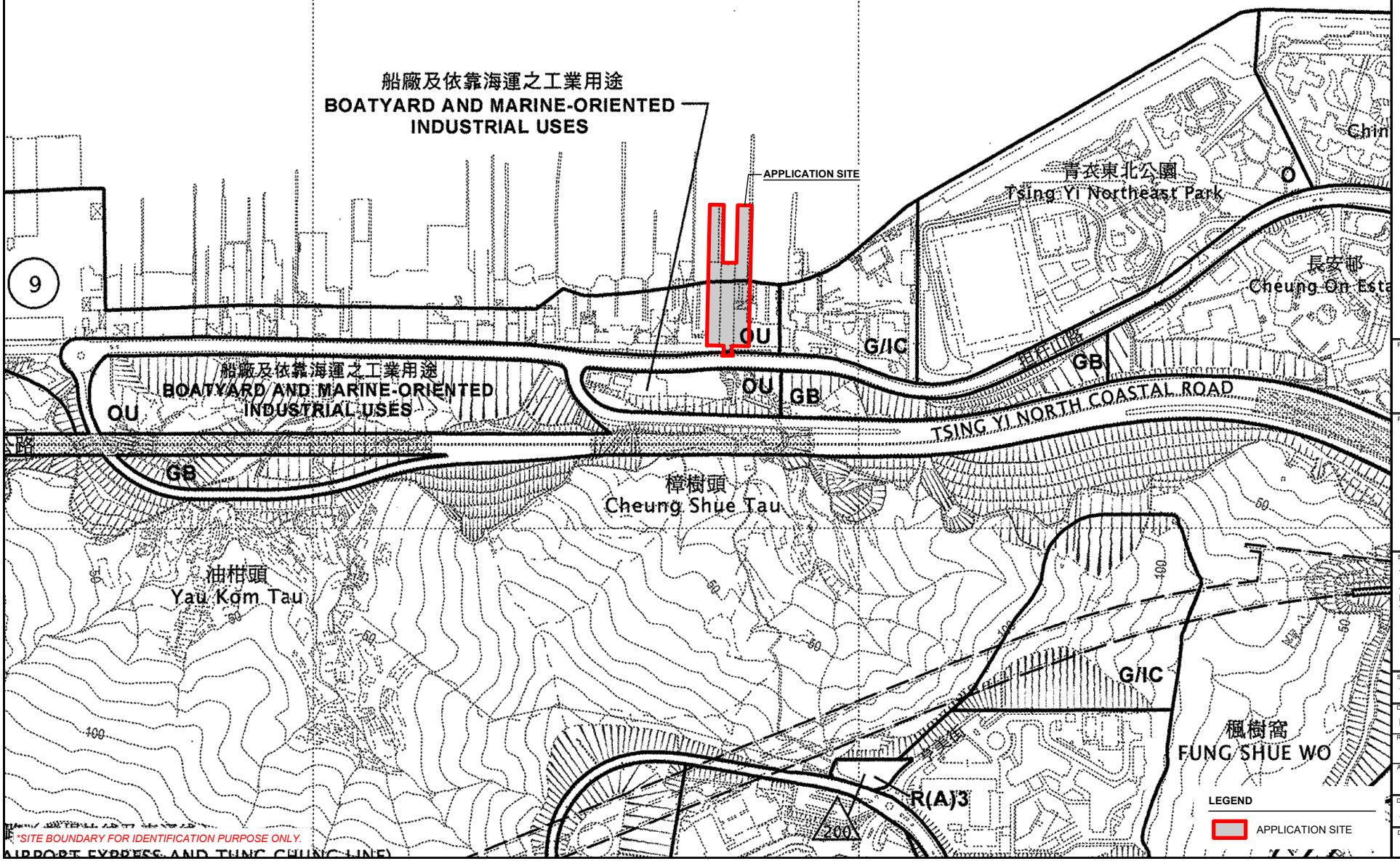
Anna Chung
Executive Director
Environment

Encl. Site Location Plan

ZONING OF THE APPLICATION SITE

APPLICATION SITE AREA	: 4,335 m² (ABOUT)
OUTLINE ZONING PLAN	: APPROVED TSING YI OZP
PLAN NO.	: S/TY/32
ZONING OF THE SITE	: "OTHER SPECIFIED USES" ANNOTATED "BOATYARD AND MARINE-ORIENTED INDUSTRIAL USES" : 2,213 m² (ABOUT)
	AND AREA SHOWN AS 'ROAD' : 29 m² (ABOUT)

ONLY PORTION OF THE SITE (ABOUT 2,242 m², 52%) FALL WITHIN THE ABOVE OZP COVERAGE, WHILE THE REMAINING AREA (ABOUT 2,093 m², 48%) FALLS OUTSIDE OZP PLANNING SCHEME BOUNDARY.



NORTH
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LEGEND

APPLICATION SITE

PLANNING CONSULTANT

PROJECT

SITE LOCATION

TSING YI TOWN LOTS 14 AND 15 AND ADJOINING, GOVERNMENT LAND, TAM KON SHAN ROAD, TSING YI, NEW TERRITORIES

SCALE

1 : 5000 @ A4

DRAWN BY	DATE
MN	19.11.2024
REVISED BY	DATE
APPROVED BY	DATE

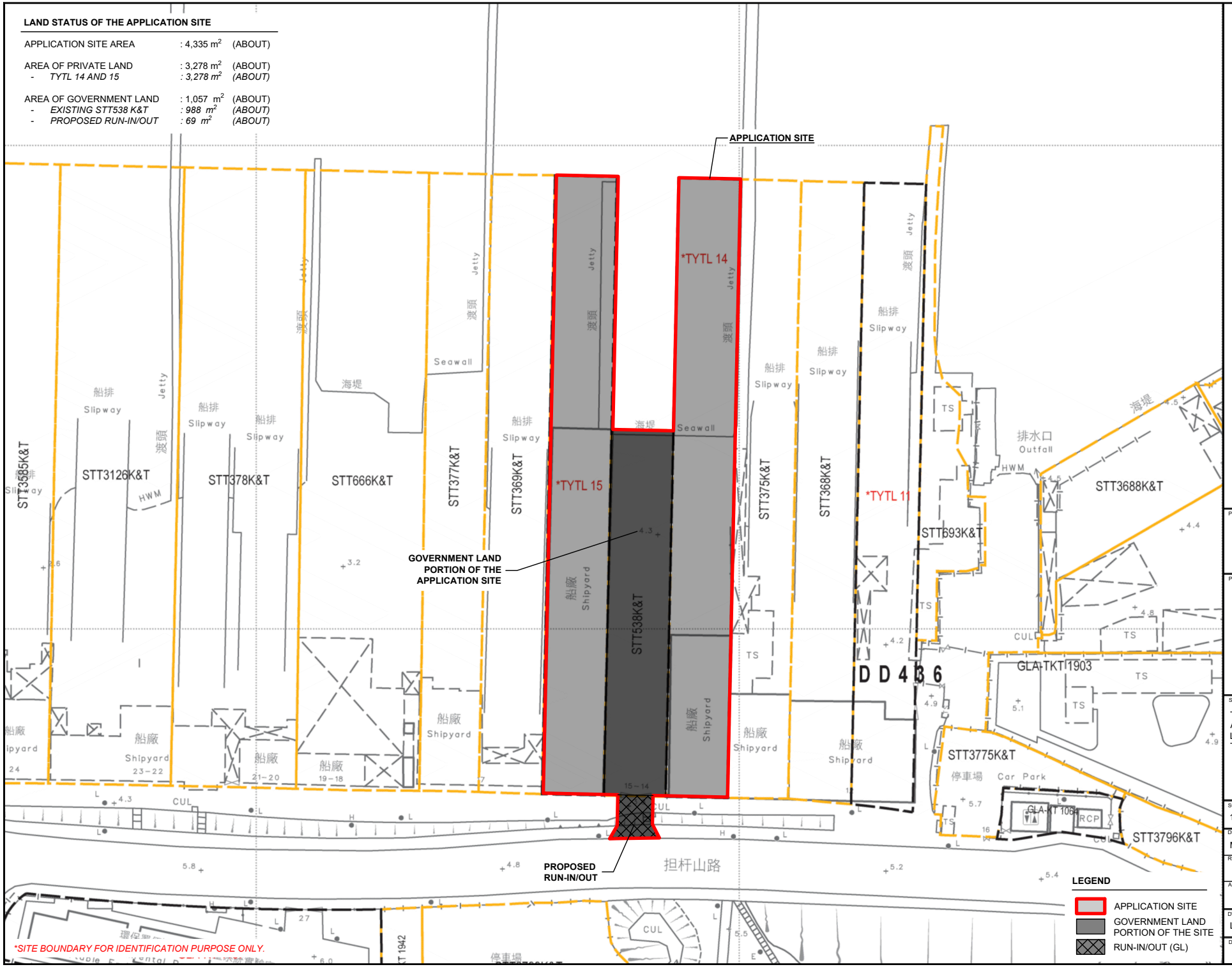
DWG. TITLE

ZONING PLAN

DWG NO. | VER.

LAND STATUS OF THE APPLICATION SITE

APPLICATION SITE AREA	: 4,335 m^2	(ABOUT)
AREA OF PRIVATE LAND	: 3,278 m^2	(ABOUT)
- *TYTL 14 AND 15*	: *3,278 m^2*	*(ABOUT)*
AREA OF GOVERNMENT LAND	: 1,057 m^2	(ABOUT)
- *EXISTING STT538 K&T*	: *988 m^2*	*(ABOUT)*
- *PROPOSED RUN-IN/OUT*	: *69 m^2*	*(ABOUT)*



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LEGEND

- APPLICATION SITE
- GOVERNMENT LAND PORTION OF THE SITE
- RUN-IN/OUT (GL)

PLANNING CONSULTANT

PROJECT

SITE LOCATION

TSING YI TOWN LOTS 14 AND 15 AND ADJOINING, GOVERNMENT LAND, TAM KON SHAN ROAD, TSING YI, NEW TERRITORIES

SCALE: 1 : 1000 @ A4

DRAWN BY	DATE
MN	19.11.2024
REVISED BY	DATE
APPROVED BY	DATE

DWG. TITLE: LAND STATUS

DWG NO. | VER.



AERIAL PHOTO OF THE APPLICATION SITE

APPLICATION SITE AREA : 4,335 m^2 (ABOUT)

AERIAL PHOTO NO. : E211645C
DATE OF AERIAL PHOTO : 20.11.2023
SOURCE OF AERIAL PHOTO : LANDS DEPARTMENT

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LEGEND

APPLICATION SITE

*SITE BOUNDARY FOR IDENTIFICATION PURPOSE ONLY.

PLANNING CONSULTANT

PROJECT

SITE LOCATION

TSING YI TOWN LOTS 14 AND 15 AND ADJOINING, GOVERNMENT LAND, TAM KON SHAN ROAD, TSING YI, NEW TERRITORIES

SCALE
1 : 5000 @ A4

DRAWN BY	DATE
MN	19.11.2024
CHECKED BY	DATE
APPROVED BY	DATE

DWG. TITLE
AERIAL PHOTO OF THE SITE

DWG NO. | VER.

本署檔號
OUR REF: EP/RW/0000484730
來函檔號
YOUR REF: 60739290/AYMC202412122
電　話
TEL. NO.: 2417 6067
圖文傳真
FAX NO.: 2411 3073
網　址
HOMEPAGE: http://www.epd.gov.hk

Environmental Protection Department
Environmental Compliance Division
Regional Office (West)

8/F., Tsuen Wan Government Offices,
38 Sai Lau Kok Road,
Tsuen Wan, N.T.

環境保護署
環保法規管理科
區域辦事處(西)

荃灣西樓角路38號
荃灣政府合署八樓

20 December 2024

By Post and Fax (3922 9797)

AECOM Asia Co. Ltd.
12/F, Grand Central Plaza, Tower 2,
138 Shatin Rural Committee Road,
Shatin, New Territories
(Attn: Ms. Anna CHUNG)

Dear Ms. CHUNG,

Re. Land Contamination Assessment for Tsing Yi Town Lots 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi

Request for Information of Chemical Waste Producer and Chemical Spillage Accident

I refer your above letter dated 12 December 2024 and the project layout plan. This Regional Office (West) has no record of reported cases of spillage/ leakage of chemicals at the application site as indicated in the project layout plan. You may need to check with other relevant parties/ government departments for such information as appropriate.

As for the records of Chemical Waste Producers (CWPs), you may contact Mr. K.H. LO at 2835 1357 for making an appointment to view the records of CWPs at the Territory Control Office.

Should you have any queries, please contact the undersigned.

Yours faithfully,

(Heidi H.Y. CHEUNG)
for Director of Environmental Protection

AECOM
12/F, Grand Central Plaza, Tower 2,
138 Shatin Rural Committee Road,
Shatin, Hong Kong
香港新界沙田鄉事會路 138 號
新城市中央廣場第 2 座 12 樓
www.aecom.com

+852 3922 9000 tel
+852 3922 9797 fax

Your Ref:
Our Ref: 60739290/AYMC202412121

By Post and Fax (F: 2739 5879)

Fire Services Department
Corporate Strategy Command Management Group
9/F, Fire Services HQ Building,
1 Hong Chong Road, Tsim Sha Tsui East,
Kowloon.

12 December 2024

Dear Sir/Madam,

Land Contamination Assessment for Tsing Yi Town Lots 14 and 15 and Adjoining Government Land, Tam Kon Shan Road, Tsing Yi

Request for Information about Dangerous Goods Store and Incidents Records

AECOM Asia Co. Ltd has been commissioned by Supreme Enterprise Limited as the Consultant to undertake land contamination assessment for the captioned project. The concerned site is indicated in the figure enclosed.

As a part of the land contamination assessment and following the *Practice Guide for Investigation and Remediation of Contaminated Land* issued by EPD, we have to collect historical information regarding the past and present activities of the site. In order to facilitate our assessment, we would like to request for the following information regarding the captioned concerned site:

1. Records of current and past (as early as the records are available) registration of Dangerous Goods storage (with type of dangerous goods, storage method, quantity, licence no., date of issue and storage location) within the concerned site;
2. Any records of reported accidents of spillage/leakage of dangerous goods stored within the concerned site; and
3. Any records of fire incidents within the concerned site.

Please feel free to contact our Ms. Chloe Ng at 3856 5662 / chloe.ng@aecom.com or Mr. Alex Fan at 3856 5244 / alex.fan@aecom.com should you have any queries.

Thank you very much for your kind assistance.

Yours faithfully,
AECOM Asia Co. Ltd.

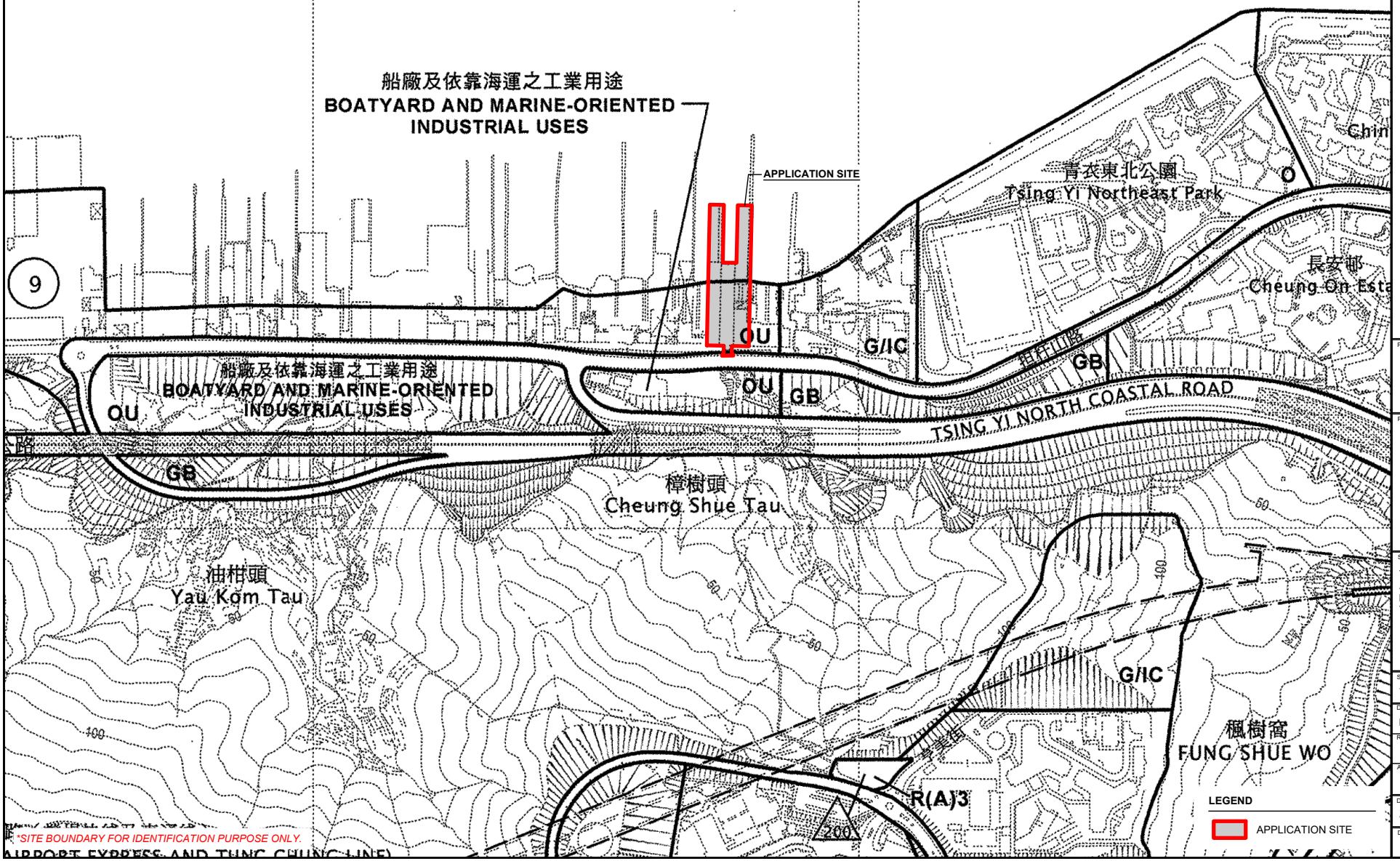
Anna Chung
Executive Director
Environment

Encl. Site Location Plan

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PLAN NO.	: S/TY/32
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	AND AREA SHOWN AS 'ROAD' : 29 m² (ABOUT)

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NORTH
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LEGEND

APPLICATION SITE

PLANNING CONSULTANT

PROJECT

SITE LOCATION

TSING YI TOWN LOTS 14 AND 15 AND ADJOINING, GOVERNMENT LAND, TAM KON SHAN ROAD, TSING YI, NEW TERRITORIES

SCALE

1 : 5000 @ A4

DRAWN BY	DATE
MN	19.11.2024
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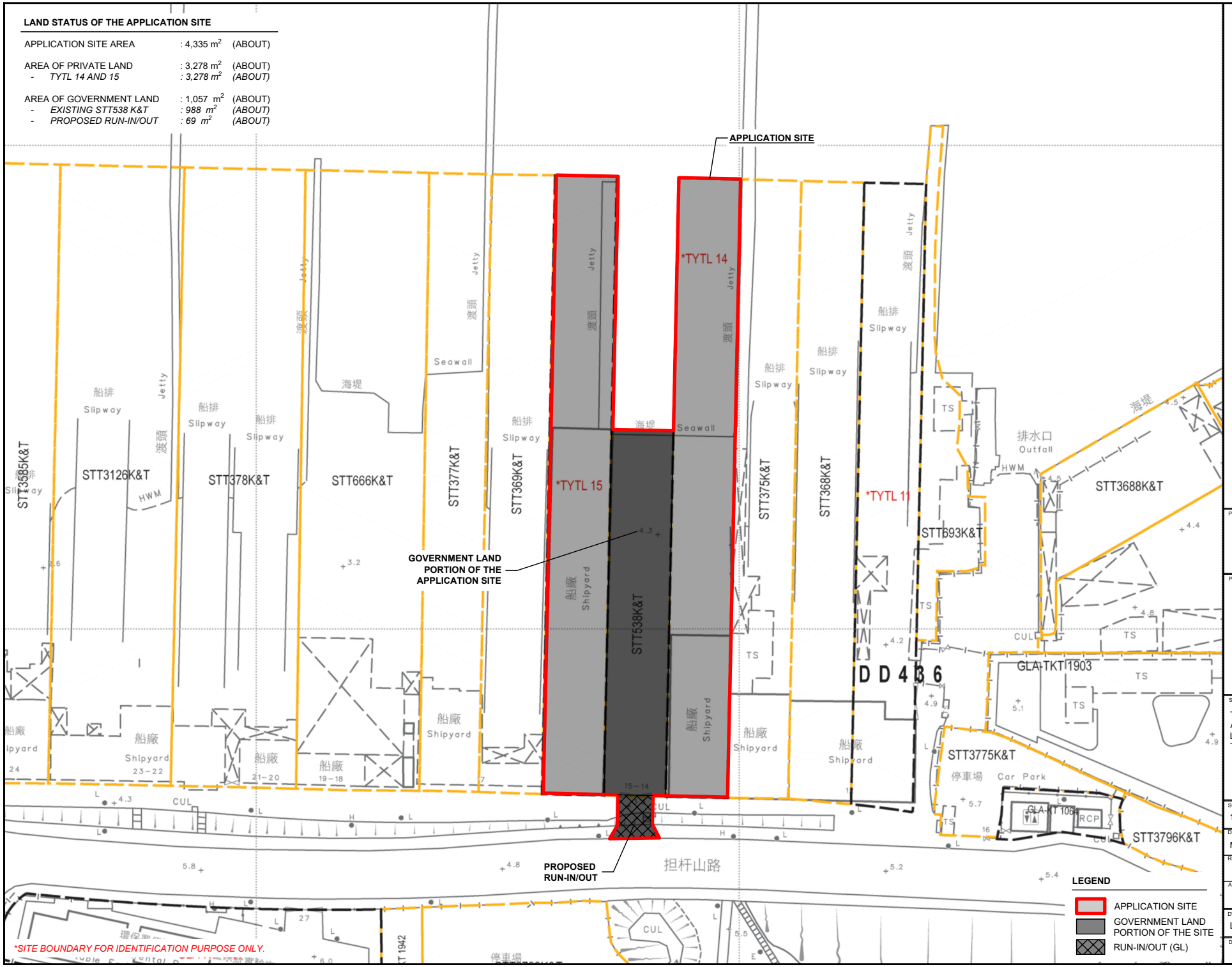
DWG. TITLE

ZONING PLAN

DWG NO. | VER.

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- *TYTL 14 AND 15*	: *3,278 m^2*	*(ABOUT)*
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- *PROPOSED RUN-IN/OUT*	: *69 m^2*	*(ABOUT)*



NORTH
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LEGEND

- APPLICATION SITE
- GOVERNMENT LAND PORTION OF THE SITE
- RUN-IN/OUT (GL)

PLANNING CONSULTANT

PROJECT

SITE LOCATION

TSING YI TOWN LOTS 14 AND 15 AND ADJOINING, GOVERNMENT LAND, TAM KON SHAN ROAD, TSING YI, NEW TERRITORIES

SCALE: 1 : 1000 @ A4

DRAWN BY	DATE
MN	19.11.2024
REVISED BY	DATE
APPROVED BY	DATE

DWG. TITLE: LAND STATUS

DWG NO. | VER.



AERIAL PHOTO OF THE APPLICATION SITE

APPLICATION SITE AREA : 4,335 m^2 (ABOUT)

AERIAL PHOTO NO. : E211645C
DATE OF AERIAL PHOTO : 20.11.2023
SOURCE OF AERIAL PHOTO : LANDS DEPARTMENT

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APPLICATION SITE

*SITE BOUNDARY FOR IDENTIFICATION PURPOSE ONLY.

PLANNING CONSULTANT

PROJECT

SITE LOCATION

TSING YI TOWN LOTS 14 AND 15 AND ADJOINING, GOVERNMENT LAND, TAM KON SHAN ROAD, TSING YI, NEW TERRITORIES

SCALE
1 : 5000 @ A4

DRAWN BY	DATE
MN	19.11.2024
CHECKED BY	DATE
APPROVED BY	DATE

DWG. TITLE
AERIAL PHOTO OF THE SITE

DWG NO. | VER.

消 防 處
香港九龍尖沙咀東部康莊道 1 號
消防總部大廈

FIRE SERVICES DEPARTMENT
FIRE SERVICES HEADQUARTERS BUILDING,
No.1 Hong Chong Road,
Tsim Sha Tsui East, Kowloon,
Hong Kong.

本處檔號 **OUR REF.** : (167) in FSD GR 6-5/4 R Pt. 56
來函檔號 **YOUR REF.** : 60739290/AYMC202412121
電子郵件 **E-mail** : hkfsdenq@hkfsd.gov.hk
圖文傳真 **FAX NO.** : 2988 1196
電　　話 **TEL NO.** : 2733 7896

16 January 2024

AECOM Asia Co. Ltd
12/F, Grand Central Plaza, Tower 2,
138 Shatin Rural Committee Road,
Shatin, Hong Kong.
(Attn: Ms. Anna CHUNG, Executive Director)

Dear Ms. CHUNG,

Land Contamination Assessment for
Tsing Yi Town Lots 14 and 15 and Adjoining
Government Land, Tam Kon Shan Road, Tsing Yi
Request for Information of Dangerous Goods & Incident Records

I refer to your letter of 12.12.2024 regarding the captioned request and reply below in response to your questions:-

Please be advised that neither records of dangerous goods license, fire incidents nor incidents of spillage / leakage of dangerous goods were found in connection with the given conditions of your request at the subject location.

If you have further questions, please feel free to contact the undersigned.

Yours sincerely,

(AU Ting-hin)
for Director of Fire Services

APPENDIX 7.4

Risk-Based Remediation Goals (RBRGs) for Soil and Soil Saturation Limit and for Groundwater and Solubility Limit

Table 2.1
Risk-Based Remediation Goals (RBRGs) for Soil & Soil Saturation Limit

Chemical	Risk-Based Remediation Goals for Soil				Soil Saturation Limit (C_{sat}) (mg/kg)
	Urban Residential (mg/kg)	Rural Residential (mg/kg)	Industrial (mg/kg)	Public Parks (mg/kg)	
VOCs					
Acetone	9.59E+03	4.26E+03	1.00E+04*	1.00E+04*	***
Benzene	7.04E-01	2.79E-01	9.21E+00	4.22E+01	3.36E+02
Bromodichloromethane	3.17E-01	1.29E-01	2.85E+00	1.34E+01	1.03E+03
2-Butanone	1.00E+04*	1.00E+04*	1.00E+04*	1.00E+04*	***
Chloroform	1.32E-01	5.29E-02	1.54E+00	2.53E+02	1.10E+03
Ethylbenzene	7.09E+02	2.98E+02	8.24E+03	1.00E+04*	1.38E+02
Methyl tert-Butyl Ether	6.88E+00	2.80E+00	7.01E+01	5.05E+02	2.38E+03
Methylene Chloride	1.30E+00	5.29E-01	1.39E+01	1.28E+02	9.21E+02
Styrene	3.22E+03	1.54E+03	1.00E+04*	1.00E+04*	4.97E+02
Tetrachloroethene	1.01E-01	4.44E-02	7.77E-01	1.84E+00	9.71E+01
Toluene	1.44E+03	7.05E+02	1.00E+04*	1.00E+04*	2.35E+02
Trichloroethene	5.23E-01	2.11E-01	5.68E+00	6.94E+01	4.88E+02
Xylenes (Total)	9.50E+01	3.68E+01	1.23E+03	1.00E+04*	1.50E+02
SVOCs					
Acenaphthene	3.51E+03	3.28E+03	1.00E+04*	1.00E+04*	6.02E+01
Acenaphthylene	2.34E+03	1.51E+03	1.00E+04*	1.00E+04*	1.98E+01
Anthracene	1.00E+04*	1.00E+04*	1.00E+04*	1.00E+04*	2.56E+00
Benzo(a)anthracene	1.20E+01	1.14E+01	9.18E+01	3.83E+01	
Benzo(a)pyrene	1.20E+00	1.14E+00	9.18E+00	3.83E+00	
Benzo(b)fluoranthene	9.88E+00	1.01E+01	1.78E+01	2.04E+01	
Benzo(g,h,i)perylene	1.80E+03	1.71E+03	1.00E+04*	5.74E+03	
Benzo(k)fluoranthene	1.20E+02	1.14E+02	9.18E+02	3.83E+02	
bis-(2-Ethylhexyl)phthalate	3.00E+01	2.80E+01	9.18E+01	9.42E+01	
Chrysene	8.71E+02	9.19E+02	1.14E+03	1.54E+03	
Dibenzo(a,h)anthracene	1.20E+00	1.14E+00	9.18E+00	3.83E+00	
Fluoranthene	2.40E+03	2.27E+03	1.00E+04*	7.62E+03	
Fluorene	2.38E+03	2.25E+03	1.00E+04*	7.45E+03	5.47E+01
Hexachlorobenzene	2.43E-01	2.20E-01	5.82E-01	7.13E-01	
Indeno(1,2,3-cd)pyrene	1.20E+01	1.14E+01	9.18E+01	3.83E+01	
Naphthalene	1.82E+02	8.56E+01	4.53E+02	9.14E+02	1.25E+02
Phenanthrene	1.00E+04*	1.00E+04*	1.00E+04*	1.00E+04*	2.80E+01
Phenol	1.00E+04*	1.00E+04*	1.00E+04*	1.00E+04*	7.26E+03
Pyrene	1.80E+03	1.71E+03	1.00E+04*	5.72E+03	
Metals					
Antimony	2.95E+01	2.91E+01	2.61E+02	9.79E+01	
Arsenic	2.21E+01	2.18E+01	1.96E+02	7.35E+01	
Barium	1.00E+04*	1.00E+04*	1.00E+04*	1.00E+04*	
Cadmium	7.38E+01	7.28E+01	6.53E+02	2.45E+02	
Chromium III	1.00E+04*	1.00E+04*	1.00E+04*	1.00E+04*	
Chromium VI	2.21E+02	2.18E+02	1.96E+03	7.35E+02	
Cobalt	1.48E+03	1.46E+03	1.00E+04*	4.90E+03	
Copper	2.95E+03	2.91E+03	1.00E+04*	9.79E+03	
Lead	2.58E+02	2.55E+02	2.29E+03	8.57E+02	
Manganese	1.00E+04*	1.00E+04*	1.00E+04*	1.00E+04*	
Mercury	1.10E+01	6.52E+00	3.84E+01	4.56E+01	
Molybdenum	3.69E+02	3.64E+02	3.26E+03	1.22E+03	
Nickel	1.48E+03	1.46E+03	1.00E+04*	4.90E+03	
Tin	1.00E+04*	1.00E+04*	1.00E+04*	1.00E+04*	
Zinc	1.00E+04*	1.00E+04*	1.00E+04*	1.00E+04*	
Dioxins / PCBs					
Dioxins (I-TEQ)	1.00E-03	1.00E-03	5.00E-03	1.00E-03	
PCBs	2.36E-01	2.26E-01	7.48E-01	7.56E-01	
Petroleum Carbon Ranges					
C6 - C8	1.41E+03	5.45E+02	1.00E+04*	1.00E+04*	1.00E+03
C9 - C16	2.24E+03	1.33E+03	1.00E+04*	1.00E+04*	3.00E+03
C17 - C35	1.00E+04*	1.00E+04*	1.00E+04*	1.00E+04*	5.00E+03
Other Inorganic Compounds					
Cyanide, free	1.48E+03	1.46E+03	1.00E+04*	4.90E+03	
Organometallics					
TBTO	2.21E+01	2.18E+01	1.96E+02	7.35E+01	

Notes:
(1) For Dioxins, the cleanup levels in USEPA Office of Solid Waste and Emergency Response (OSWER) Directive of 1998 have been adopted. The OSWER Directive value of 1 ppb for residential use has been applied to the scenarios of "Urban Residential", "Rural Residential", and "Public Parks", while the low end of the range of values for industrial, 5 ppb, has been applied to the scenario of "Industrial".
(2) Soil saturation limits for petroleum carbon ranges taken from the Canada-Wide Standards for Petroleum Hydrocarbons in Soil, CCME 2000.
(3) * indicates a 'ceiling limit' concentration.
(4) *** indicates that the C_{sat} value exceeds the 'ceiling limit' therefore the RBRG applies.

Table 2.2
Risk-Based Remediation Goals (RBRGs) for Groundwater and Solubility Limit

Chemical	Risk-Based Remediation Goals for Groundwater			Solubility Limit (mg/L)
	Urban Residential (mg/L)	Rural Residential (mg/L)	Industrial (mg/L)	
VOCs				
Acetone	1.00E+04*	1.00E+04*	1.00E+04*	***
Benzene	3.86E+00	1.49E+00	5.40E+01	1.75E+03
Bromodichloromethane	2.22E+00	8.71E-01	2.62E+01	6.74E+03
2-Butanone	1.00E+04*	1.00E+04*	1.00E+04*	***
Chloroform	9.56E-01	3.82E-01	1.13E+01	7.92E+03
Ethylbenzene	1.02E+03	3.91E+02	1.00E+04*	1.69E+02
Methyl tert-Butyl Ether	1.53E+02	6.11E+01	1.81E+03	***
Methylene Chloride	1.90E+01	7.59E+00	2.24E+02	***
Styrene	3.02E+03	1.16E+03	1.00E+04*	3.10E+02
Tetrachloroethene	2.50E-01	9.96E-02	2.95E+00	2.00E+02
Toluene	5.11E+03	1.97E+03	1.00E+04*	5.26E+02
Trichloroethene	1.21E+00	4.81E-01	1.42E+01	1.10E+03
Xylenes (Total)	1.12E+02	4.33E+01	1.57E+03	1.75E+02
SVOCs				
Acenaphthene	1.00E+04*	7.09E+03	1.00E+04*	4.24E+00
Acenaphthylene	1.41E+03	5.42E+02	1.00E+04*	3.93E+00
Anthracene	1.00E+04*	1.00E+04*	1.00E+04*	4.34E-02
Benzo(a)anthracene				
Benzo(a)pyrene				
Benzo(b)fluoranthene	5.39E-01	2.03E-01	7.53E+00	1.50E-03
Benzo(g,h,i)perylene				
Benzo(k)fluoranthene				
bis-(2-Ethylhexyl)phthalate				
Chrysene	5.81E+01	2.19E+01	8.12E+02	1.60E-03
Dibenzo(a,h)anthracene				
Fluoranthene	1.00E+04*	1.00E+04*	1.00E+04*	2.06E-01
Fluorene	1.00E+04*	1.00E+04*	1.00E+04*	1.98E+00
Hexachlorobenzene	5.89E-02	2.34E-02	6.95E-01	6.20E+00
Indeno(1,2,3-cd)pyrene				
Naphthalene	6.17E+01	2.37E+01	8.62E+02	3.10E+01
Phenanthrene	1.00E+04*	1.00E+04*	1.00E+04*	1.00E+00
Phenol				
Pyrene	1.00E+04*	1.00E+04*	1.00E+04*	1.35E-01
Metals				
Antimony				
Arsenic				
Barium				
Cadmium				
Chromium III				
Chromium VI				
Cobalt				
Copper				
Lead				
Manganese				
Mercury	4.86E-01	1.84E-01	6.79E+00	
Molybdenum				
Nickel				
Tin				
Zinc				
Dioxins / PCBs				
Dioxins (I-TEQ)				
PCBs	4.33E-01	1.71E-01	5.11E+00	3.10E-02
Petroleum Carbon Ranges				
C6 - C8	8.22E+01	3.17E+01	1.15E+03	5.23E+00
C9 - C16	7.14E+02	2.76E+02	9.98E+03	2.80E+00
C17 - C35	1.28E+01	4.93E+00	1.78E+02	2.80E+00
Other Inorganic Compounds				
Cyanide, free				
Organometallics				
TBTO				

Notes:
(1) Blank indicates that RBRG could not be calculated because the toxicity or physical/chemical values were unavailable, or the condition of Henry's Law Constant>1.00E-05 was not met for the inhalation pathway.
(2) Water solubilities for Petroleum Carbon Range aliphatic C9-C16 and greater than C16 generally are considered to be effectively zero and therefore the aromatic solubility for C9-C16 is used.
(3) * indicates a 'ceiling limit' concentration.
(4) *** indicates that the solubility limit exceeds the 'ceiling limit' therefore the RBRG applies.