

Appendix IV
Environmental Assessment



J24.00171.HK.01

**S.16 Planning Application for Proposed Temporary
Concrete Batching Plant with Ancillary Facilities for a
Period of 5 Years at Lots 573 RP and 1710 in D.D. 114,
Shek Kong, Yuen Long
Environmental Assessment**

Prepared for:
Join Bright Warehousing Limited
24 January 2025



S.16 Planning Application for Proposed Temporary Concrete Batching Plant with Ancillary Facilities for a Period of 5 Years at Lots 573 RP and 1710 in D.D. 114, Shek Kong, Yuen Long Environmental Assessment

Prepared for
Join Bright Warehousing Limited

For and on behalf of
EnviroSolutions & Consulting

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CONTENTS

1	Introduction	1-1
1.1	Project Background	1-1
1.2	Site Description	1-1
1.3	Objective	1-1
2	AIR QUALITY	2-1
2.1	Environmental Legislation and Standards	2-1
2.2	Construction Phase Impact	2-3
2.3	Operation Phase Impact	2-5
2.4	Cumulative Air Quality Impact Assessment for Operation Phase	2-8
2.5	Air Dispersion Model	2-8
2.6	Vehicular Emissions from Open Roads	2-9
2.7	Industrial Emissions	2-9
2.8	Particle Size Distribution	2-10
2.9	Ozone Limiting Method for Short-term Cumulative NO ₂ Assessment	2-10
2.10	Jenkin Method for Long-term Cumulative NO ₂ Assessment	2-11
2.11	Assessment Results	2-11
2.12	Conclusion	2-15
3	NOISE	3-1
3.1	Environmental Legislation and Standards	3-1
3.2	Noise Impact of Construction Phase	3-3
3.3	Noise Impact of Operation Phase	3-5
3.4	Noise Impact from Industrial Noise	3-8
3.5	Noise Impact from Off-Site Traffic Noise	3-10
3.6	Conclusion	3-11
4	WATER QUALITY	4-1
4.1	Environmental Legislation, Standards and Guidelines	4-1
4.2	Identification of Water Control Zone ("WCZ") and Water Sensitive Receiver ("WSR")	4-2
4.3	Review of Water Quality Impact	4-2
4.4	Mitigation Measures	4-3
4.5	Conclusion	4-6
5	WASTE MANAGEMENT	5-1
5.1	Environmental Legislation and Standards	5-1
5.2	Review of Waste Management Impacts	5-1
5.3	Mitigation Measures	5-7
5.4	Conclusion	5-11
6	LAND CONTAMINATION	6-1

6.1	Environmental Legislation and Standards	6-1
6.2	Assessment Methodology	6-1
6.3	Site Appraisal.....	6-1
6.4	Conclusion	6-2
	Methodology and Assumptions for Calculation of Vehicular Emission Source.....	1

APPENDICES

Appendix A	Calculation and Summary of Emission Rates
Appendix B	Landuse Characteristics Parameters for AERMET
Appendix C	EMFAC-HK Model Input
Appendix D	Cumulative Results comparing to Updated Pollutants of Proposed AQOs
Appendix E	Background Noise Monitoring Data
Appendix F	Noise Meter Calibration Certificates
Appendix G	Result of Industrial Noise Impact Assessment
Appendix H	Traffic Forecasts for Year 2031
Appendix I	Result of Traffic Noise Impact Assessment
Appendix J	Calculation of Sewage Generation
Appendix K	Historical Aerial Photographs
Appendix L	Site Walkover Checklist and Site Photos
Appendix M	Correspondence with EPD and FSD

FIGURES

Figure 1-1	Site Location and its Environs	1-2
Figure 1-2	Site Layout Plan	1-3
Figure 2-1	Locations of Emission Points of the Plant	2-16
Figure 2-2	Locations of ASRs	2-17
Figure 3-1	Locations of Representative NSRs and Background Noise Measurement.....	3-12
Figure 3-2	Locations of Proposed Noise Sources	3-13
Figure 4-1	Representative WSRs within 500m Study Area of the Site.....	4-7

TABLES

Table 2-1	Hong Kong Air Quality Objectives	2-1
Table 2-2	Concentration Limit for Cement works – Concrete Batching Plant	2-2
Table 2-3	Summary of Identified Emission Points within CBP during Operation	2-6
Table 2-4	Emission Control Measures for EPs	2-6
Table 2-5	Representative ASRs	2-8
Table 2-6	Particle Size Distribution for Different Emission Types	2-10
Table 2-7	Predicted FSP and RSP Concentrations at Representative ASRs (2024 AQOs)	2-12
Table 2-8	Predicted NO ₂ Concentrations at Representative ASRs (2024 AQOs)	2-13
Table 3-1	Construction Noise Criteria for Non-Restricted Hours	3-1
Table 3-2	Acceptable Noise Levels for Fixed Noise Source.....	3-2
Table 3-3	HKPSG Standards for Road Traffic Noise Standards	3-2
Table 3-4	Representative NSRs.....	3-5
Table 3-5	Noise Criteria of Noise from Fixed Sources of Identified Representative NSRs	3-6

Table 3-6	Predicted Fixed Noise Impact Level at Identified Representative NSRs During Operation Phase	3-9
Table 3-7	Proposed Operation Phase Noise Mitigation Measures	3-10
Table 3-8	Predicted Traffic Noise Impact Level at Identified Representative NSRs During Operation Phase	3-10
Table 4-1	Identified Water Sensitive Receivers	4-2
Table 5-1	Estimated Amount of Different Types of Wastes to be Generated During Construction Phase	5-6
Table 6-1	Historical Land Uses of the Project Site	6-2
Table D-21	Predicted FSP and RSP Concentrations at Representative ASRs (2025 AQOs)	1
Table D-32	Predicted NO ₂ Concentrations at Representative ASRs (2025 AQOs)	2

1 Introduction

1.1 Project Background

- 1.1.1 Land resumption will be carried out to facilitate the development of Hung Shui Kiu/ Ha Tsuen New Development Area. The existing Concrete Batching Plant ("CBP") in Hung Shui Kiu will be affected by the land resumption, thus, Join Bright Warehousing Limited ("the Client") has identified a site location at Lots 573 RP and 1710 in D.D. 114, Shek Kong ("the Site") for the existing CBP relocation ("the Proposed Development"). Upgrading works on Chun Yiu Road is also proposed to facilitate the operation of CBP.
- 1.1.2 The Site is currently zoned as "Industrial (Group D)" ("I(D)") on the Approved Shek Kong Outline Zoning Plan ("OZP") No. S/YL-SK/9. 'Concrete Batching Plant' is a Column 2 use within the "I(D)" zone on the OZP. A planning application is required to submit and obtain permission from Town Planning Board under Section 16 of the Town Planning Ordinance.
- 1.1.3 According to Item K.5, Part I, Schedule 2 of the Environmental Impact Assessment Ordinance, "a cement works or concrete batching plant with a total silo capacity of more than 10 000 tonnes in which cement is handled and manufactured" is a Designated Project (DP). The total silo capacity of the proposed CBP will not be more than 5,000 tonnes, hence, it is not considered as DP.
- 1.1.4 EnviroSolutions & Consulting Limited ("ESC") was employed by Join Bright Warehousing Limited to carry out an Environmental Assessment ("EA") to support the abovementioned application.

1.2 Site Description

- 1.2.1 The site is currently used for storage and maintenance of construction vehicles and machinery. The site surroundings in general are open storage, scrapyard and car repairing workshops. **Figure 1-1** and **Figure 1-2** show the location and tentative layout of the site.

1.3 Objective

- 1.3.1 The objectives of this EA Report are to:
- Assess the potential environmental impacts arising from the operation of the Proposed Development, in terms of air quality, noise, water quality and waste management.
 - Propose measures for compliance with the List of Guidance Notes on Best Practicable Means (BPM) for Specified Processes for Cement Works (Concrete Batch Plant).
 - Recommend further appropriate measures to mitigate any impacts if necessary.

Figure 1-1 Site Location and its Environs

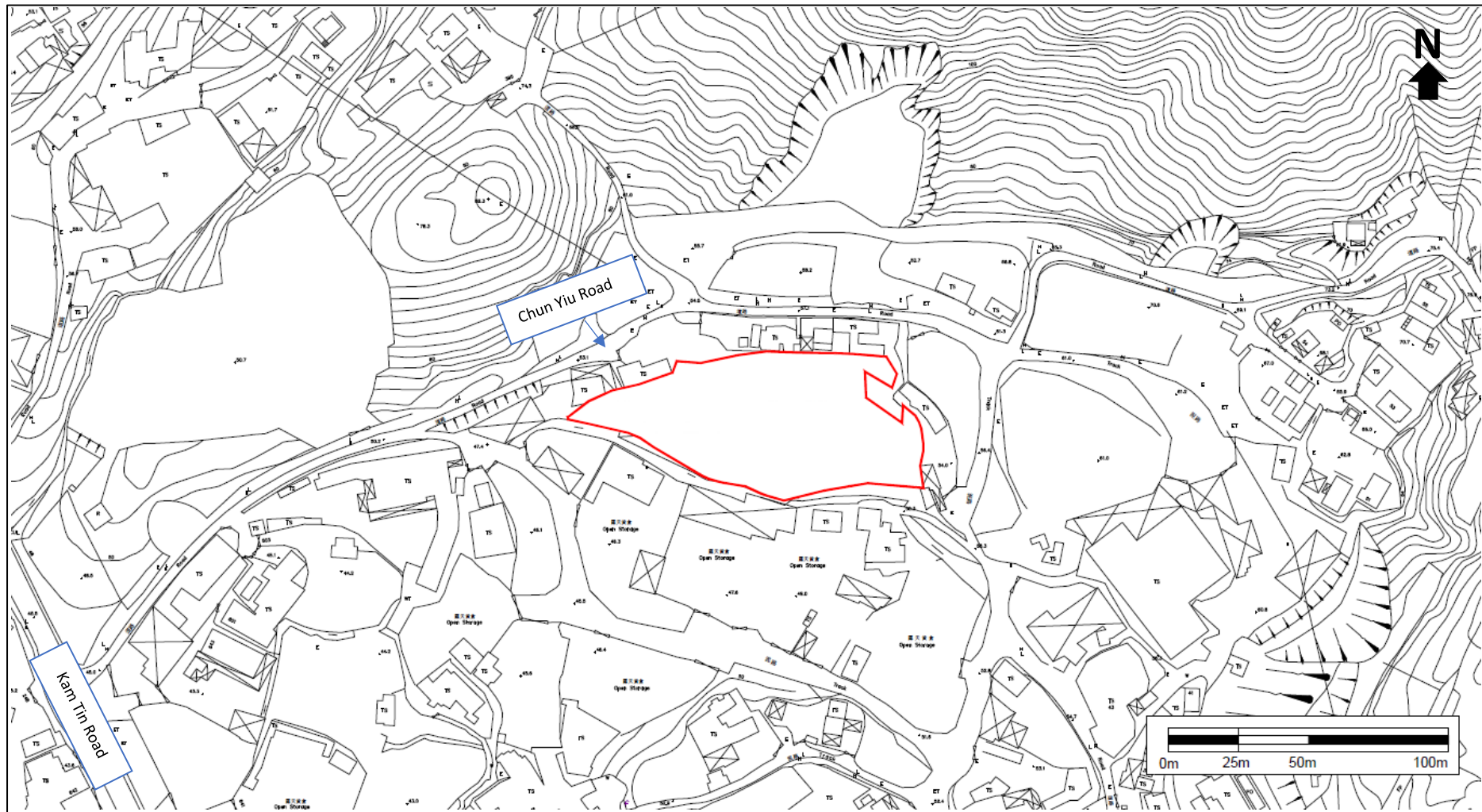
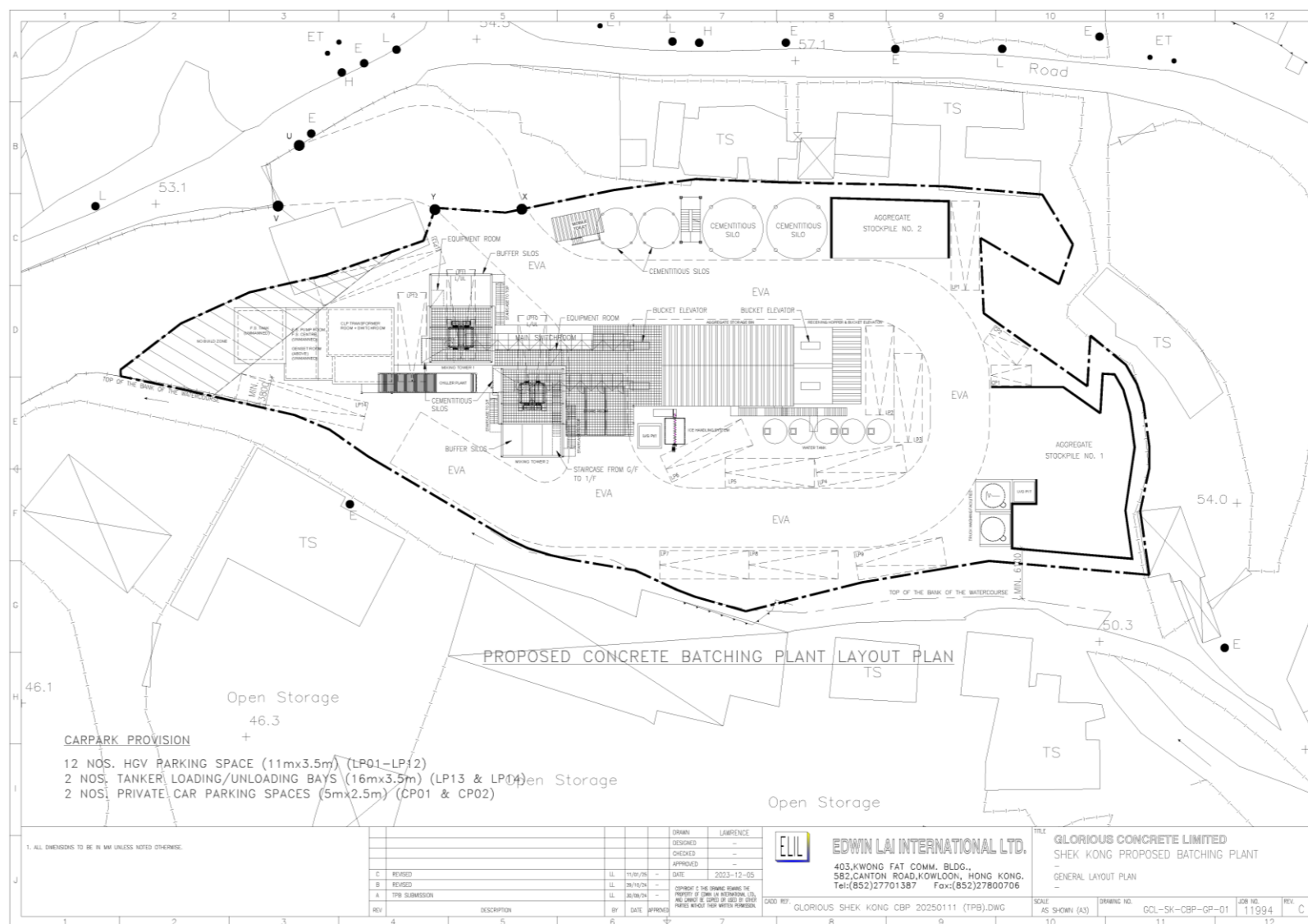


Figure 1-2 Site Layout Plan



2 AIR QUALITY

2.1 Environmental Legislation and Standards

Air Quality Objectives

- 2.1.1 The Air Quality Objectives (“AQOs”) established under the *Air Pollution Control Ordinance* (“APCO”) (Cap. 311) are given in **Table 2-1** Table 2-1.

Table 2-1 Hong Kong Air Quality Objectives

POLLUTANT	AVERAGING TIME	CONCENTRATION LIMIT [Note 1] ($\mu\text{g}/\text{m}^3$)	NUMBER OF EXCEEDANCES ALLOWED
Sulphur Dioxide (SO_2)	10-minute	500	3
	24-hour	50	3
Respirable Suspended Particulates (“RSP” or “ PM_{10} ”) [Note 2]	24-hour	100	9
	Annual	50	Not applicable
Fine Suspended Particulates (“FSP” or “ $\text{PM}_{2.5}$ ”) [Note 3]	24-hour	50	35
	Annual	25	Not applicable
Nitrogen Dioxide (NO_2)	1-hour	200	18
	Annual	40	Not applicable
Ozone	8-hour	160	9
Carbon Monoxide	1-hour	30,000	0
	8-hour	10,000	0
Lead	Annual	0.5	Not applicable

Notes:

1. All measurements of the concentration of gaseous air pollutants, i.e. SO_2 , NO_2 , O_3 and CO, are to be adjusted to a reference temperature of 293 Kelvin and a reference pressure of 101.325 kilopascal.
2. RSP means suspended particles in air with a nominal aerodynamic diameter of $10\mu\text{m}$ or less.
3. FSP means suspended particles in air with a nominal aerodynamic diameter of $2.5\mu\text{m}$ or less.

Air Pollution Control (Construction Dust) Regulation

- 2.1.2 Enacted under Section 43 of the APCO, the *Air Pollution Control (Construction Dust) Regulation* defines notifiable and regulatory works to ensure effective dust abatement measures have been properly implemented to reduce dust emissions for a number of construction activities.
- 2.1.3 The Regulation requires that advance notice is given to EPD for any notifiable work^[Ref.#1] and the contractor shall ensure that the notifiable and regulatory works are carried out in

¹ Notifiable works include site formation, reclamation, demolition of a building, work carried out in any part of a tunnel that is within 100m of any exit to the open air, construction of the foundation of a building, construction of the superstructure of a building and road construction work.

accordance with the Schedule of the Regulation, which also includes dust control and suppression measures.

Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation

- 2.1.4 This Regulation takes effect on June 2015 and required Non-road Mobile Machinery (“NRMM”), except those exempted, to comply with the prescribed emission standards. From 1 September 2015, all regulated machines sold or leased for use in Hong Kong must be approved or exempted with a proper label in a prescribed format issued by EPD. Starting from 1 December 2015, only approved or exempted NRMMs with a proper label are allowed to be used in specified activities and locations including construction sites, container terminals and back up facilities, restricted areas of the airport, designated waste disposal facilities and specified processes.

Air Pollution Control (Fuel Restriction) Regulation

- 2.1.5 The regulation imposes legal control on the type of fuels allowed for use and their sulphur contents in commercial and industrial processes. Gaseous fuel, conventional solid fuel with a sulphur content not exceeding 1% by weight or liquid fuel with a sulphur content not exceeding 0.005% by weight and a viscosity not more than 6 centistokes at 40°C, such as Ultra Low Sulphur Diesel (“ULSD”) are permitted to be used in commercial and industrial processes.

Guidance Notes on Best Practicable Means (“BPM”) for SPs

- 2.1.6 A number of GN have been published for SPs which “A Guidance Note on the Technical, Management and Monitoring Requirements for Specified Process – Cement Works (Concrete Batch Plant) BPM 3/2(16)” (“the BPM”) dated February 2016 is relevant to the Proposed CBP. With reference to Annex 1 of the BPM, the emissions from non-fugitive fixed emission points of the Proposed CBP shall not exceed the concentration limited in **Table 2-2** Table 2-2.

Table 2-2 Concentration Limit for Cement works – Concrete Batching Plant

AIR POLLUTANT	CONCENTRATION LIMIT
Particulate matter	10 mg/m ³ (design standard) ^[Note 1]

Notes:

- For the emission points of existing premises with a designed concentration limit of 50 mg/m³, the licence holder shall, upon licence renewal, submit an improvement plan to meet the limit of 10 mg/m³ (design standard). The concentration limit of 10 mg/m³ (design standard) shall be met by 1 January 2018 for all plants.

Supporting Documents for SP Licence

- 2.1.7 The Proposed CBP will have total silo capacity exceeding 50 tonnes. Therefore, it is classified as cement works in respect of a Specified Process (“SP”) requiring an application of a SP Licence under Section 14 of APCO.

2.2 Construction Phase Impact

- 2.2.1 Fugitive dust is the major impact that will be generated during construction activities, such as excavation, stockpiling, earth moving, transferring or handling of dusty materials.
- 2.2.2 There is no construction programme at this stage of the project but the duration of construction of the plant is estimated to be about 12 months and assumed to be started at 2025.
- 2.2.3 Based on desktop review, no major concurrent project within in 500m assessment area is anticipated. As advised by the Applicant, the site is already formed. Therefore, construction works including site formation/excavation and use of construction plants such as dump trucks, excavators, etc. will be minimal. With the implementation of dust control measures stipulated in the *Air Pollution Control (Construction Dust) Regulation*, dust generation can be controlled and significant fugitive dust impact is therefore not anticipated. More detailed descriptions for control measures are provided below.
- 2.2.4 Since the Site is fully paved with concrete, no site formation works is required during the construction phase. Excavation works are minimal. About 6 tonnes per day of inert construction and demolition (C&D) materials and less than 1 tonne of non-inert C&D materials will be excavated. Since the works area is limited for construction works, it is anticipated that no more than 20 numbers of construction plant would be in operation during each construction activity.
- 2.2.5 There is about 1 dump truck per day estimated for transportation of excavated material from site formation works. dump truck loaded with excavated material would be covered entirely before leaving the Project Site to ensure that dusty material would not leak from the dump truck according to the APCO requirement. In case temporary stockpiling of small amount of dusty material is required, the stockpile will be covered by tarpaulin sheets or placed in an area sheltered on the top and the 3 sides. The mitigation measures described in as below would also be implemented during the construction phase to minimise impacts on air quality on nearby ASRs.

Emission Control Measures

- 2.2.6 To avoid adverse air quality impact on the air sensitive uses nearby, good practice and control measures to be implemented during the construction phase are as follows:
- 2.2.7 Provide hard paving on open area, regular watering to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather.
- 2.2.8 The working area of any excavation or earth moving operation shall be sprayed with water immediately before, during and immediately after the operation so as to maintain the entire surface wet.
- 2.2.9 Frequent watering for particularly dusty areas and areas close to ASRs.
- 2.2.10 Any stockpile of dusty materials shall be either covered entirely by impervious sheeting, placed in an area sheltered on the top and three sides, or sprayed with water so as to maintain the entire surface wet.

- 2.2.11 Where possible, dusty materials shall be sprayed with water immediately prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet.
- 2.2.12 The working area for the uprooting of trees, shrubs, or vegetation or for the removal of boulders, poles, pillars or temporary or permanent structures shall be sprayed with water immediately before, during and immediately after the operation so as to maintain the entire surface wet.
- 2.2.13 All demolished items (including trees, shrubs, vegetation, boulders, poles, pillars, structures, debris, rubbish and other items arising from the site clearance) that may dislodge dust particles shall be covered entirely by impervious sheeting or placed in an area sheltered on the top and three sides within a day of demolition.
- 2.2.14 Tarpaulin covering of all dusty vehicles loads transported to, from and between site locations.
- 2.2.15 Vehicle washing facilities including a high-pressure water jet shall be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point shall be paved with concrete, bituminous materials or hardcore.
- 2.2.16 Provision of not less than 2.4m high hoarding from ground level along site boundary where adjoins a road, streets or other accessible to the public except for a site entrance or exit.
- 2.2.17 Spray water on the surface of façade grinding work as far as practicable.
- 2.2.18 Equip vacuum cleaner on grinder for façade grinding work as far as practicable.
- 2.2.19 Main haul road shall be sprayed with water so as to maintain the entire surface wet. Imposition of speed controls for vehicles on site haul roads and confine haulage and delivery vehicles to designated roadways inside the site.
- 2.2.20 A portion of any road leading only to a construction site that is within 30m of a discernible or designated vehicle entrance or exit shall be kept clear of dusty materials.
- 2.2.21 Where possible, routing of vehicles and positioning of construction plant should be at the maximum possible distance from the ASRs.
- 2.2.22 Every stock of more than 20 bags of cement or dry Pulverised Fuel Ash (“PFA”) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and three sides.
- 2.2.23 Emission from Non-Road Mobile Machinery (“NRMM”) is governed under the *Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation*, as mentioned in **Paragraph 2.1.4**. Each NRMM to be used in construction site shall be obtained with valid label in a prescribed format issued by EPD. The Contractor should avoid the use of exempted NRMM and electric NRMMs shall be adopted as far as practicable. Power supply for the on-site machinery shall be provided as far as practicable.
- 2.2.24 The *Air Pollution Control (Fuel Restriction) Regulations*, in particular not using restricted liquid fuel shall be fully complied with to minimise any aerial emissions.

2.2.25 In addition, the EPD's *Recommended Pollution Control Clause ("RPCC") for Construction Contract* in COP should be incorporated in the relevant works contract. The RPCC are generally good engineering practice to minimize inconvenience and environmental nuisance to nearby residents and other sensitive receivers. The general requirements are summarised below:

- The Contractor shall observe and comply with the APCO and its subsidiary regulations, particularly the Air Pollution Control (Open Burning) Regulation and Air Pollution Control (Construction Dust) Regulation and Air Pollution Control (Smoke) Regulation.
- The Contractor shall undertake at all times to prevent dust nuisance and smoke as a result of his activities.
- The Contractor shall ensure that there will be adequate water supply / storage for dust suppression.
- The Contractor shall devise, arrange methods of working and carrying out the works in such a manner as to minimise dust impacts on the surrounding environment, and shall provide experienced personnel with suitable training to ensure that these methods are implemented.
- For better smoke control, the Contractor shall not use diesel hammer for percussive piling.
- Before commencement of any work, the Engineer may require the methods of working, plant, equipment and air pollution control system to be used on the site to be made available for inspection and approval to ensure that they are suitable for the project.

2.2.26 No site formation will be carried out for the proposed CBP. Besides, the components/ structures of the proposed CBP will be prefabricated. Considering limited construction scale and dust release, EM&A shall not be necessary.

2.3 Operation Phase Impact

Identification of Air Pollution Sources

2.3.1 The works and equipment of the proposed CBP for concrete production will be driven by the mains electricity supply. Therefore, particulate matters, i.e., Respirable Suspended Particulates ("RSP" or "PM₁₀") and Fine Suspended Particulates ("FSP" or "PM_{2.5}") will be the major air pollution concerns during the operation of the CBP. Particulate Matters ("PM") including RSP and FSP are the major pollutants that will be generated during the operating activities of the CBP including transferring and handling of dusty materials, fugitive dust emissions from vehicle movements and dust emissions from Dust Collectors ("DCs"), as well as vehicular emissions from open road networks within the 500m Study Area. On the other hand, Nitrogen Dioxide ("NO₂") will be emitted from tailpipe emissions during the vehicle travelling within the CBP and also from open road networks within 500m Study Area. The indicative Emission Points ("EPs") within the Site as listed in **Table 2-3** and illustrated on **Figure 2-1** will be the major sources of RSP, FSP and NO₂ during the operation of the CBP.

Table 2-3 *Summary of Identified Emission Points within CBP during Operation*

EMISSION POINTS	DESCRIPTION	POLLUTANT	TYPE	OPERATION HOURS
EP1-EP14	Dust Collectors (DCs) for silos/enclosed hoppers	RSP, FSP	Ducted	07:00 to 23:00
EP15 and EP16	Aggregate Stockpile	RSP, FSP	Fugitive	07:00 to 23:00
EP17 and EP18	Unloading of aggregate into aggregate receiving hopper	RSP, FSP	Fugitive	07:00 to 23:00
EP19	Pave Roads	RSP, FSP, NO ₂	Fugitive	07:00 to 23:00

Note: The operation hours in this table are indicative and the actual operation hours may be changed subject to the detailed design stage in the future.

Emission Control Measures

2.3.2 Since no diesel generator is needed during the operation of the CBP, there will be no emissions associated with combustion of Ultra-Low Sulphur Diesel ("ULSD"). The major potential emission sources during concrete production rate are fugitive dust emissions generated from loading, unloading, handling, transferring and storing activities. The major potential emission sources during concrete production rate are fugitive dust emissions generated from loading, unloading, handling, transferring and storing activities.

2.3.3 The following mitigation measures summarised in **Table 2-4** will be implemented at each EP.

Table 2-4 *Emission Control Measures for EPs*

EP	DESCRIPTIONS	MITIGATION MEASURES
EP1-EP14	Dust Collectors (DCs)	- Dust collectors shall be installed at the silos and silos shall be equipped with high level alarms to warn of over filling. Seating of pressure relief valves of all silos shall be checked at least once a week. Dust accumulated shall be properly handled. - During unloading of cement/PFA/GGBS/silica fume from tankers to the relevant silos via the pneumatic system, dust-laden air will be vented to the dust collector, in order to abate the dust emissions and comply with the BPM3/2(16) limit. 3-side with top shall be enclosed and the front opening

EP	DESCRIPTIONS	MITIGATION MEASURES
		side of the Mixer Tower (EP13&EP14) shall be covered with flexible curtain. • The weight hopper shall be fully enclosed
EP15 and EP16	Aggregate Stockpile	• The aggregate stockpile areas with aggregate of sizes of >5mm, 10mm and 20mm will be enclosed on 3-sides with rigid wall sufficiently higher than the top of the stockpile to prevent whipping. Water sprayings shall be provided regularly to suppress dust emissions. • Stockpile areas with aggregates of size ≤5mm should be covered on top, enclosed on 3-sides. Flexible curtain shall be installed in the opening and water sprayings are provided regularly in the stockpile areas and also at the openings to suppress dust emissions.
EP17 and EP18	Unloading of aggregate into aggregate receiving hopper	• The receiving hopper shall be enclosed on top and 3 sides, plastic curtain shall be installed at the front. In no case shall these hoppers be used for material storage. Water spraying device shall be operated during the unloading of aggregate/crushed fines/sand.
EP19	Paved Roads	• All haul roads within the Site shall be paved and adequately wetted. • Vehicle cleaning facilities should be provided at the exit of the Site to wash off any dust/mud on the vehicles, including the wheels, prior to leaving the Site.

Identification of Air Sensitive Receivers

- 2.3.4 Representatives Air Sensitive Receivers (“ASR”) located in the vicinity of the Site have been identified. Some of the structures which were vacant/abandoned houses identified during the site visit are not considered as ASRs.

- 2.3.5 In total, 14 representative ASRs have been identified within the 500m Study Area from the boundary of the CBP. **Table 2-5** Table 2-5 summarises the 14 ASRs and **Figure 2-2** Figure 2- indicates their location.

Table 2-5 Representative ASRs

ID	DESCRIPTION	STOREY	RECEPTOR HEIGHTS ABOVE GROUND LEVEL (mAG)	DISTANCE FROM THE CBP (m)	PATH GRID
ASR 1	Village House 1	2	1.5, 4.5	80	(33,46)
ASR 2	Auto Repair Shop	2	1.5, 4.5	20	(33,46)
ASR 3	Auto Repair Shop	2	1.5, 4.5	70	(33,46)
ASR 4	Warehouse	3	1.5, 4.5, 7.5	140	(33,46)
ASR 5	Warehouse	3	1.5, 4.5, 7.5	90	(33,46)
ASR 6	Corporate Office	2	1.5, 4.5	125	(33,46)
ASR 7	Village House 2	2	1.5, 4.5	130	(33,46)
ASR 8	Village House 3	1	1.5	170	(33,46)
ASR 9	Auto Repair Shop	2	1.5, 4.5	35	(33,46)
ASR 10	Village House 4	2	1.5, 4.5	215	(33,46)
ASR 11	Construction equipment rental	2	1.5, 4.5	200	(33,46)
ASR 12	Tire Shop	2	1.5, 4.5	205	(33,46)
ASR 13	Village House 5	3	1.5, 4.5, 7.5	320	(33,46)
ASR 14	Food Manufacturer Office	2	1.5, 4.5	180	(33,46)

- 2.3.6 According to Paragraph 3.3.10 of Chapter 9 Environment of HKPSG, at least 100 m buffer distance from the dusty uses including CBP should be required for the nearby air-sensitive uses. Among the 14 identified ASR, the distance of ASR1, ASR2, ASR3, ASR5, ASR9 is less than 100m from the CBP. Therefore, an assessment of cumulative air quality impact from the operation of CBP is conducted and provided in **Section 2.4**.

2.4 Cumulative Air Quality Impact Assessment for Operation Phase

Background Air Quality

- 2.4.1 According to “Guidelines on Assessing the ‘TOTAL’ Air Quality Impacts”, PATH pollutant concentrations as from EPD’s Smart Air Modelling Platform (“SAMP”) are used as background concentrations of the assessment.
- 2.4.2 The assessment area of 500m from the Plant covered PATH grids (32,46), (33,45) and (33,46). Year 2025 as downloaded from PATH v3.0 is adopted as the assessment year for predicted cumulative impact comparing against the prevailing AQOs.

Air Dispersion Model

- 2.4.3 A Gaussian dispersion model AERMOD was used to estimate pollutant concentrations at ASRs. The model was originally developed by the United States Environmental Protection

Agency (“USEPA”) and is adopted for evaluating industrial chimney releases (point sources), area and volume sources as well as line sources (i.e. vehicle emission for open roads).

- 2.4.4 AERMET is a meteorological pre-processor developed by USEPA and is used for organising meteorological data into a format suitable for use by AERMOD. Site specific MET data has been downloaded from the Smart Air Modelling Platform (“SAMP”). Details are shown in **Appendix B** Appendix B.
- 2.4.5 The output from MET data consists of two parts; a file with extension “.sfc” is the surface air data; and a file with extension “.pfl” is the upper air data. Data including wind speed, wind direction and temperature in the surface air data from the output file in “.sfc” format were replaced by the original WRF data.

Vehicular Emissions from Open Roads

- 2.4.6 The predicted 24-hour traffic flow and vehicle compositions at the identified roads within the assessment area was provided by the traffic consultant for the assessment of the potential air quality impact from the open roads. Two years of traffic data, Year 2026 (the commencing year of the proposed CBP) and Year 2031 (five years after the commencing year, 2026 as five years valid period of SP licence) is provided by the project traffic consultant.
- 2.4.7 NO₂, RSP and FSP are the key pollutants for vehicular emissions from open roads. Latest EMFAC-HK model as provided in the SAMP with “Zero Emission Vehicle Scenario” has been used to estimate the vehicular emission rates for NO, NO₂, RSP and FSP to include the consideration of Zero Emission Vehicle (“ZEV”) assumptions. The detailed input parameters for the EMFAC-HK model input are summarised in **Appendix C** Appendix C.
- 2.4.8 There is an identified bus terminus within the 500m study area, Sheung Tsuen Bus terminus. According to desktop study and site survey, no bus was observed to stop and switch off engine to stay at the terminus. Broad-bush approach was assumed in the assessment.
- 2.4.9 Traffic flows at Year 2031 and the emission Year of Year 2026, the commencing year was adopted for conservative approach. For the estimation of long-term air quality impact of pollutants (annual average), the daily profile of averaged temperature and relative humidity data in each hour for each month (i.e., 24 hours data in each month and for 12 months) as derived from the EMFAC-HK model in the SAMP were adopted for the model input. For short-term air quality impact of pollutants (hourly or daily average), the daily profile of minimum temperature and relative humidity data in each hour for each month were adopted.

Industrial Emissions

- 2.4.10 The surrounding of the Site is mainly open storage and scrap car services. There is no other industrial emission identified within 500m assessment area. According to the “*Guidelines on Assessing the ‘TOTAL’ Air Quality Impacts*”, there is no major industrial emission source within 4km is identified
- 2.4.11 The emission rates of the Plant have been summarised in **Appendix A**.

Particle Size Distribution

- 2.4.12 Particle size distributions are different for different types of emissions. Individual particle size distributions for each emission type have therefore been assumed as listed in Table 2-6, below, in order to better reflect actual emissions conditions.
- 2.4.13 No particle size distribution was adopted for EP1 to EP14 (i.e. those relating to loading of cementitious materials with DCs installed) due to either the emission not being particulate (e.g. fuel combustion, etc.) or the emission sources not being fugitive.

Table 2-6 Particle Size Distribution for Different Emission Types

TYPE OF EMISSION ACTIVITY	PARTICLE SIZE DISTRIBUTION			REFERENCE	APPLIED TO EMISSION SOURCES
Aggregate unloading	Mean Particle Size (μm)	RSP %age	FSP %age	Category 3 “Mechanically Generated Aggregate, Unprocessed Ores”, Page B.2-13, Appendix B.2 Generalized Particle Size Distributions, AP-42, USEPA (Version 1/95)	EP15, EP16, EP17 and EP18
	0.50	8%	27%		
	1.50	14%	47%		
	2.25	8%	27%		
	2.75	6%			
	3.50	14%			
	4.50	10%			
	5.50	8%			
	8.00	33%			
		100%	100%		
Area sources for truck movements such as Paved Road	Mean Particle Size (μm)	RSP %age	FSP %age	Table 13.2.1-1 and page 13.2.1-12 of Section 13.2.1.3 of AP-42, USEPA	EP19
	1.25	24.2%	100%		
	6.25	75.8%			
		100%	100%		

Ozone Limiting Method for Short-term Cumulative NO₂ Assessment

- 2.4.14 Ozone Limiting Method (“OLM”) has been adopted for conversion of NO from vehicle-related source and NO_x from industrial emission sources to NO₂ based on the predicted O₃ level from PATH model as extracted from the SAMP for the short-term cumulative NO₂ assessment.
- 2.4.15 The initial NO₂/NO_x ratios for industrial emission has been assumed as 10% according to “Technical support document (TSD) for NO₂-related AERMOD modifications” as published by USEPA. The predicted initial NO concentrations from open roads and 90% of the predicted NO_x concentrations from industrial emissions was firstly added together on an hour-to-hour basis and OLM was applied subsequently. The NO₂/NO_x conversion has been calculated based on the equation below:

$$[NO_2]_{predicted} = [NO_2]_{veh} + 0.1 \times [NO_x]_{ind} + \text{Min}\{([NO]_{veh} + 0.9 \times [NO_x]_{ind}) \text{ or } \left(\frac{46}{48} \times [O_3]_{PATH}\right)\}$$

Where,

[NO₂]predicted = predicted NO₂ concentration

[NO₂]veh = predicted initial NO₂ concentration from vehicular emissions

[NO_x]ind = initial NO_x concentration from industrial sources

[NO]veh = predicted initial NO concentration from vehicular emissions

Min = minimum of the two values in (brackets)

[O₃]PATH = representative O₃ PATH concentration

Jenkin Method for Long-term Cumulative NO₂ Assessment

- 2.4.16 Jenkin method was adopted for the conversion of cumulative annual average NO_x to NO₂ by using the empirical relationship in observed annual mean of NO_x and NO₂ concentrations with reference to the “*Guidance on Choice of Models and Model Parameters*”. The empirical relationship is derived from the annual mean observed data by relevant EPD’s Air Quality Monitoring Stations (“AQMS”) including North (the closest station), the nearest roadside station (Mong Kok) and derived by the SAMP. The resulting curve was adopted for the cumulative annual average NO_x to NO₂ conversion and the NO_x-to-NO₂ conversion equation using Jenkin method is presented in **Appendix C** Appendix C.

2.5 Assessment Results

- 2.5.1 The cumulative air quality impact due to vehicular emissions, the Plant operation and background concentrations were evaluated and compared to the prevailing AQOs as described in **Section 2.1**. The results are summarised in **Table 2-7**Table 2-7Table 2-7 and **Table 2-8**Table 2-8. Comparison of new parameters of proposed 2025 AQOs are presented in **Appendix D**Appendix D for reference.

Table 2-7 Predicted FSP and RSP Concentrations at Representative ASRs (2024 AQOs)

ASR ID	DESCRIPTION	PATH GRID	HEIGHT		RSP, $\mu\text{g}/\text{m}^3$		FSP, $\mu\text{g}/\text{m}^3$	
			(mPD)	(mAG)	10 th HIGHEST DAILY AVERAGE	ANNUAL AVERAGE	36 th HIGHEST DAILY AVERAGE	ANNUAL AVERAGE
ASR1	Village House 1	(33,46)	53.1	1.5	56.5	21.0	29.6	13.2
ASR1	Village House 1	(33,46)	56.1	4.5	56.5	21.0	29.6	13.1
ASR2	Auto Repair Shop 1	(33,46)	51.8	1.5	56.6	21.3	29.6	13.3
ASR2	Auto Repair Shop 1	(33,46)	54.8	4.5	56.5	21.3	29.6	13.2
ASR3	Auto Repair Shop 2	(33,46)	54.3	1.5	56.5	21.0	29.5	13.1
ASR3	Auto Repair Shop 2	(33,46)	57.3	4.5	56.4	20.9	29.5	13.1
ASR4	Warehouse 1	(33,46)	53.1	1.5	56.4	20.9	29.5	13.1
ASR4	Warehouse 1	(33,46)	56.1	4.5	56.4	20.9	29.5	13.1
ASR4	Warehouse 1	(33,46)	59.1	7.5	56.4	20.9	29.5	13.1
ASR5	Warehouse 2	(33,46)	56.2	1.5	56.4	20.9	29.5	13.1
ASR5	Warehouse 2	(33,46)	59.2	4.5	56.4	20.9	29.5	13.1
ASR5	Warehouse 2	(33,46)	62.2	7.5	56.4	20.9	29.5	13.1
ASR6	Corporate Office	(33,46)	62.7	1.5	56.4	20.9	29.5	13.1
ASR6	Corporate Office	(33,46)	65.7	4.5	56.4	20.9	29.5	13.1
ASR7	Village House 2	(33,46)	68.5	1.5	56.4	20.9	29.5	13.1
ASR7	Village House 2	(33,46)	71.5	4.5	56.4	20.9	29.5	13.1
ASR8	Village House 3	(33,46)	83.4	1.5	56.4	20.9	29.5	13.1
ASR9	Auto Repair Shop 3	(33,46)	58.6	1.5	57.9	23.2	29.6	13.8
ASR9	Auto Repair Shop 3	(33,46)	61.6	4.5	57.1	22.2	29.6	13.7
ASR10	Village House 4	(33,46)	47	1.5	57.3	21.5	30.2	13.6
ASR10	Village House 4	(33,46)	50	4.5	57.2	21.4	30.0	13.6
ASR11	Construction equipment rental	(33,46)	44.6	1.5	56.6	21.2	29.6	13.3

ASR ID	DESCRIPTION	PATH GRID	HEIGHT		RSP, $\mu\text{g}/\text{m}^3$		FSP, $\mu\text{g}/\text{m}^3$	
			(mPD)	(mAG)	10 th HIGHEST DAILY AVERAGE	ANNUAL AVERAGE	36 th HIGHEST DAILY AVERAGE	ANNUAL AVERAGE
ASR11	Construction equipment rental	(33,46)	47.6	4.5	56.6	21.1	29.6	13.3
ASR12	Tire Shop	(33,46)	46.2	1.5	56.4	20.9	29.5	13.1
ASR12	Tire Shop	(33,46)	49.2	4.5	56.4	20.9	29.5	13.1
ASR13	Village House 5	(33,46)	43.8	1.5	56.6	21.0	29.5	13.2
ASR13	Village House 5	(33,46)	46.8	4.5	56.6	21.0	29.5	13.2
ASR13	Village House 5	(33,46)	49.8	7.5	56.6	21.0	29.5	13.2
ASR14	Food Manufacturer Office	(33,46)	59.5	1.5	56.6	21.0	29.6	13.2
ASR14	Food Manufacturer Office	(33,46)	62.5	4.5	56.5	21.0	29.6	13.2
Prevailing AQOs					100	50	50	25

Table 2-8 Predicted NO_2 Concentrations at Representative ASRs (2024 AQOs)

ASR ID	DESCRIPTION	PATH GRID	HEIGHT, (mPD)	HEIGHT (mAG)	NO_2 , $\mu\text{g}/\text{m}^3$	
					19 th HIGHEST HOURLY AVERAGE	ANNUAL AVERAGE
ASR1	Village House 1	(33,46)	53.1	1.5	55.3	11.2
ASR1	Village House 1	(33,46)	56.1	4.5	54.2	10.9
ASR2	Auto Repair Shop 1	(33,46)	51.8	1.5	58.1	10.8
ASR2	Auto Repair Shop 1	(33,46)	54.8	4.5	56.0	10.8
ASR3	Auto Repair Shop 2	(33,46)	54.3	1.5	53.3	10.9
ASR3	Auto Repair Shop 2	(33,46)	57.3	4.5	52.7	10.6
ASR4	Warehouse 1	(33,46)	53.1	1.5	53.1	10.4
ASR4	Warehouse 1	(33,46)	56.1	4.5	53.1	10.4
ASR4	Warehouse 1	(33,46)	59.1	7.5	52.4	10.4
ASR5	Warehouse 2	(33,46)	56.2	1.5	51.9	10.3
ASR5	Warehouse 2	(33,46)	59.2	4.5	51.9	10.3

ASR ID	DESCRIPTION	PATH GRID	HEIGHT, (mPD)	HEIGHT (mAG)	NO ₂ , µg/m ³	
					19 th HIGHEST HOURLY AVERAGE	ANNUAL AVERAGE
ASR5	Warehouse 2	(33,46)	62.2	7.5	50.4	10.3
ASR6	Corporate Office	(33,46)	62.7	1.5	49.4	10.2
ASR6	Corporate Office	(33,46)	65.7	4.5	49.4	10.2
ASR7	Village House 2	(33,46)	68.5	1.5	49.0	10.2
ASR7	Village House 2	(33,46)	71.5	4.5	49.0	10.1
ASR8	Village House 3	(33,46)	83.4	1.5	49.0	10.1
ASR9	Auto Repair Shop 3	(33,46)	58.6	1.5	64.5	11.9
ASR9	Auto Repair Shop 3	(33,46)	61.6	4.5	59.9	11.4
ASR10	Village House 4	(33,46)	47	1.5	168.3	27.1
ASR10	Village House 4	(33,46)	50	4.5	156.4	24.4
ASR11	Construction equipment rental	(33,46)	44.6	1.5	98.6	15.0
ASR 11	Construction equipment rental	(33,46)	47.6	4.5	93.4	14.3
ASR 12	Tire Shop	(33,46)	46.2	1.5	59.0	10.9
ASR 12	Tire Shop	(33,46)	49.2	4.5	59.1	10.9
ASR 13	Village House 5	(33,46)	43.8	1.5	102.5	15.3
ASR 13	Village House 5	(33,46)	46.8	4.5	100.9	14.9
ASR 13	Village House 5	(33,46)	49.8	7.5	85.6	13.9
ASR 14	Food Manufacturer Office	(33,46)	59.5	1.5	65.1	11.5
ASR 14	Food Manufacturer Office	(33,46)	62.5	4.5	62.6	11.4
Prevailing AQOs					200	40

- 2.5.2 No exceedance of the pollutant concentrations of prevailing AQOs and proposed 2025 AQOs at representative ASRs is predicted.

2.6 Conclusion

- 2.6.1 With the implementation of the recommended mitigation measures and good site practice, adverse air quality impact during the construction phase is not anticipated.
- 2.6.2 For the operation phase, with implementation of mitigation measures and predicted assessment results, the operation of the Proposed CBP will not pose any unacceptable air quality impact.
- 2.6.3 Overall, no adverse air quality impacts are anticipated during the construction and operation phases of the Proposed CBP.

Figure 2-1 Locations of Emission Points of the Plant

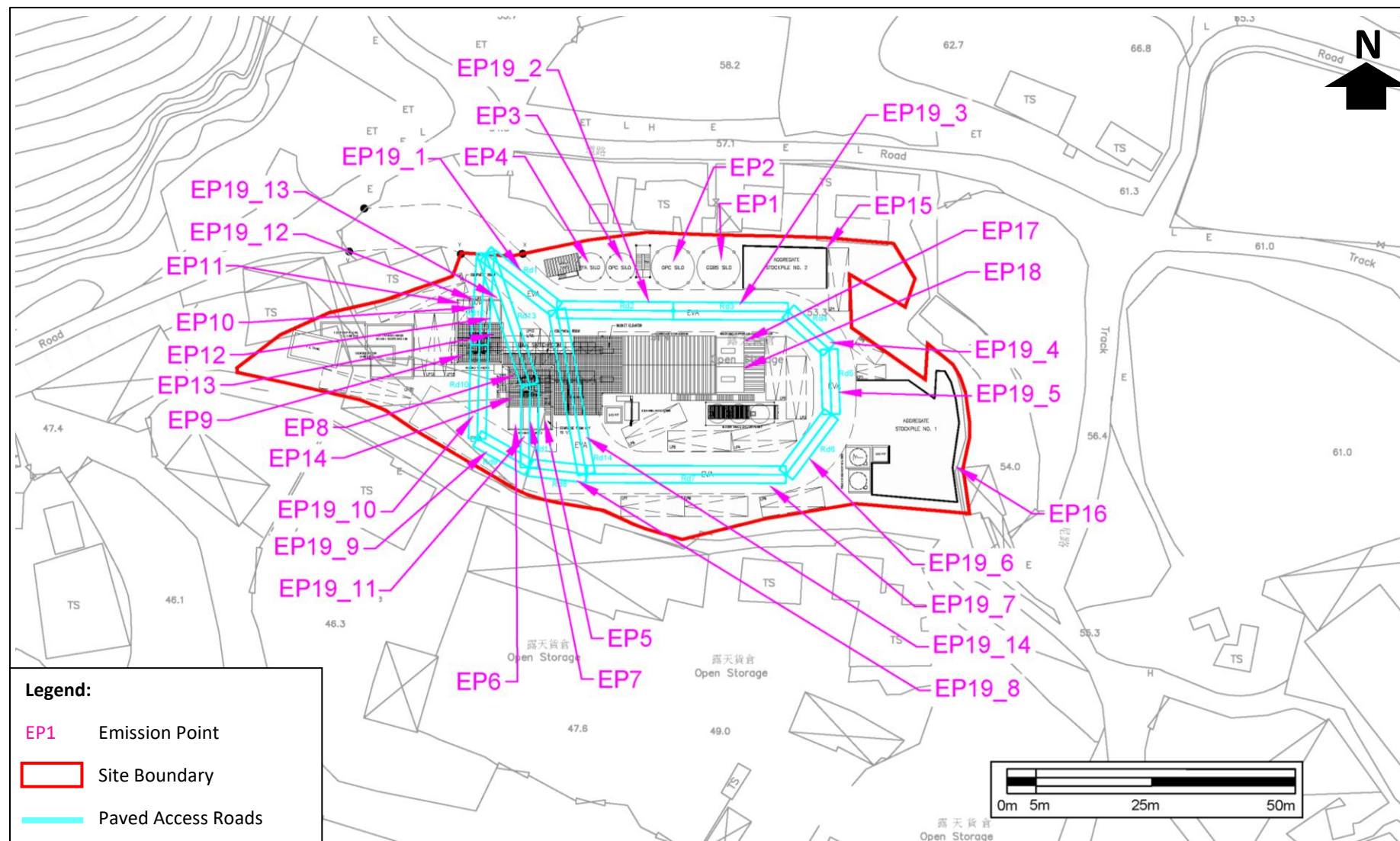
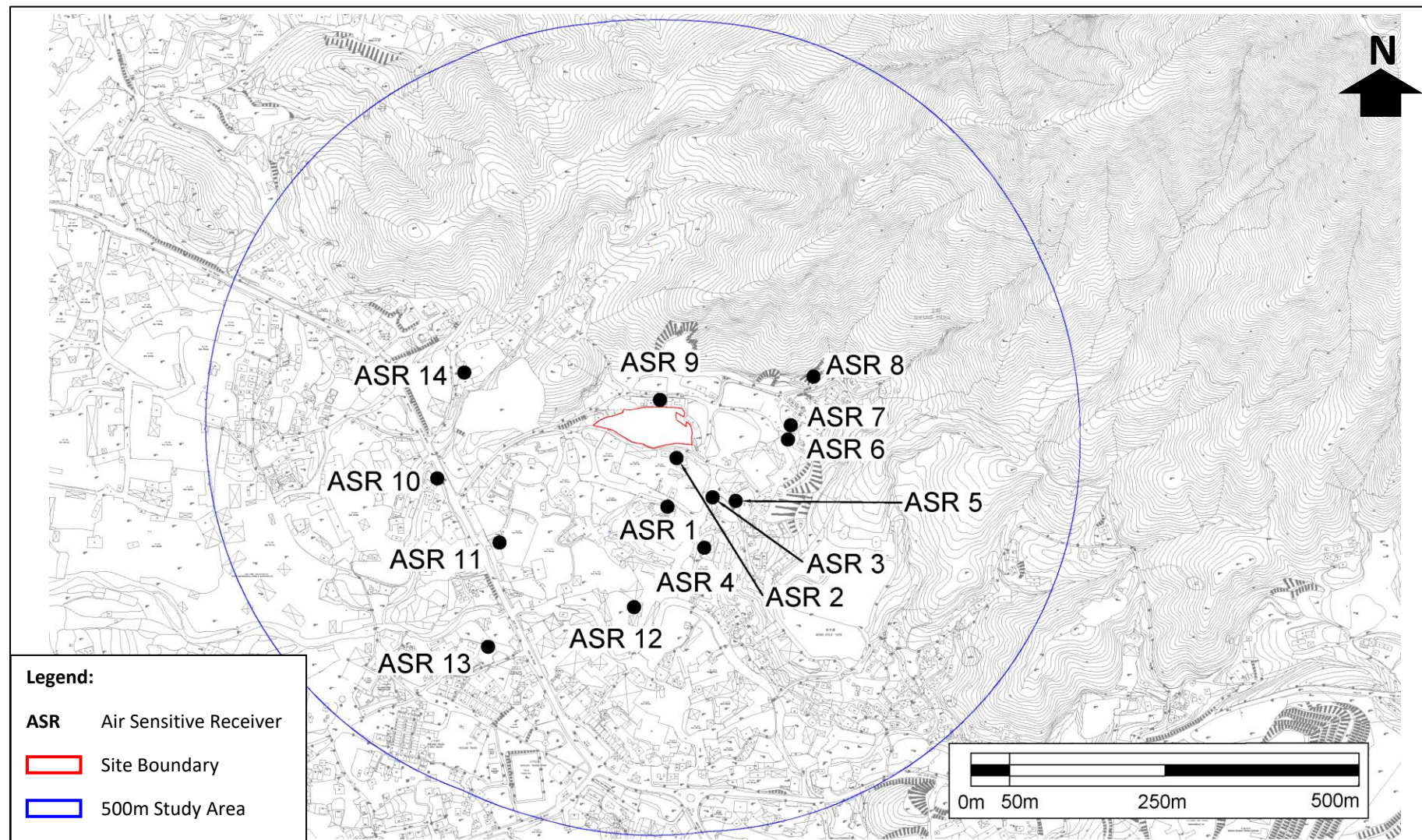


Figure 2-2 Locations of ASRs



3 NOISE

3.1 Environmental Legislation and Standards

Noise Control Ordinance (“NCO”, Cap. 400)

3.1.1 The principal legislation controlling environmental noise impact is the *Noise Control Ordinance* (“NCO”). The NCO enables regulations and Technical Memoranda (“TMs”) to be enacted, which introduces detailed control criteria, measurement procedures and other technical matters. The TMs of NCO include:

- TM on Noise from Percussive Piling (“PP-TM”)
- TM on Noise from Construction Work other than Percussive Piling (“GW-TM”)
- TM on Noise from Construction Work in Designated Area (“DA-TM”)
- TM for the Assessment of Noise from Places Other Than Domestic Premises, Public Places or Construction Sites (“IND-TM”)

3.1.2 The Site falls within a Designated Area (“DA”) in accordance with EPD’s Plan No. EPD/AN/NT-01 for Yuen Long, Tin Shui Wai, Mai Po, Shek Kong and Kwu Tung. Therefore, DA-TM is applicable.

3.1.3 In addition, the following requirements are given under the NCO:

- Hand-held breakers having a mass of above 10kg and any air compressor capable of supplying compressed air at 500kPa or above must be fitted with Noise Emission Label issued under the *Noise Control (Hand Held Percussive Breakers) Regulation and Noise Control (Air Compressors) Regulation* of NCO.
- Construction Noise Permit (“CNP”) must be applied by the Contractor from EPD for any percussive piling at any time or any other construction activities conducted within restricted hours (for all days 7pm to 7am the next day and at all times on Public Holidays or Sundays) as defined in NCO.

3.1.4 For noise arising from construction activities (other than percussive piling) during normal working hours (7am to 7pm from Monday to Saturday, not including general holidays), the noise criteria as shown in **Table 3-1** and control measures for construction noise impact during normal working hours can be referred to *Professional Persons Environmental Consultative Committee Practice Note PN 1/24 Minimizing Noise from Construction Activities* (“ProPECC PN1/24”).

Table 3-1 Construction Noise Criteria for Non-Restricted Hours

NOISE SENSITIVE USE	L_{eq} (30min) NOISE CRITERIA BETWEEN 0700 AND 1900 ON ANY DAY NOT BEING A SUNDAY OR GENERAL HOLIDAY
All domestic premises Temporary housing accommodation Hostels Convalescences homes Homes for the aged	75 dB(A)

NOISE SENSITIVE USE	L_{eq} (30min) NOISE CRITERIA BETWEEN 0700 AND 1900 ON ANY DAY NOT BEING A SUNDAY OR GENERAL HOLIDAY
Places of public worship Courts of law Hospitals and medical clinics	70 dB(A)
Educational institutions (including kindergartens and nurseries)	70 dB(A) (or 65 dB(A) during examination)

- 3.1.5 For fixed plant noise during operation phase, the requirements of IND-TM shall be complied with. Table 2 of IND-TM stipulates the day, evening and night time Acceptable Noise Levels (“ANLs”) for Noise Sensitive Receivers (“NSRs”) according to the corresponding Area Sensitive Rating (“ASR”), which is determined by Influencing Factors (“IFs”) in accordance with the IND-TM. These are summarised in **Table 3-2**.

Table 3-2 Acceptable Noise Levels for Fixed Noise Source

TIME PERIOD	ANL, dB(A)		
	ASR “A”	ASR “B”	ASR “C”
Day (0700 to 1900 hours)	60	65	70
Evening (1900 to 2300 hours)			
Night (2300 to 0700 hours)	50	55	60

Hong Kong Planning Standards & Guidelines (“HKPSG”)

- 3.1.6 The noise criteria for planned fixed source shall follow the requirements of Table 4.1 of Chapter 9 of HKPSG:
- 5 dB(A) below the appropriate ANLs shown in Table 2 of IND-TM, and
 - The prevailing background noise levels
- 3.1.7 As recommended in Table 4.1 of Chapter 9 Environment of HKPSG, standards for road traffic noise in terms of $L_{10(1-hr)}$ for the following uses relying on opened windows for ventilation are shown in **Table 3-3**.

Table 3-3 HKPSG Standards for Road Traffic Noise Standards

USES	NOISE STANDARDS $L_{10(1-Hr)}$, dB(A)
All domestic premises including temporary housing accommodation	70
Hotels and hostels	70
Offices	70
Educational institutions including kindergartens, child care centres and all others where unaided voice communication is required	65
Places of public worship and courts of law	55
Hospitals, clinics, convalescences and residential care homes for the elderly, - diagnostic rooms, - wards	55

3.2 Noise Impact of Construction Phase

- 3.2.1 Sources of noise during construction and demolition will be arising from various construction and demolition activities, particularly with the use of Powered Mechanical Equipment (“PME”). The construction and demolition works will be carried out during non-restricted hours, i.e. daytime between 07:00 and 19:00 of any day not being Sunday or general holiday. As such, construction noise will be generated during non-restricted hours only.
- 3.2.2 Given the mitigation measures described in **Paragraph 3.2.3** would be implemented as far as practicable, the noise generated from the construction of the Project is not anticipated to pose any unacceptable noise impacts on the NSRs nearby.

Mitigation Measures

- 3.2.3 Construction should be carried out during non-restricted hours as far as practicable. The mitigation measures recommended in ProPECC PN 1/24 should be implemented where applicable. In addition, the following measures and on-site practices are recommended in order to minimise the potential construction noise impacts as far as practicable:
- The Contractor shall devise, arrange methods of working and carry out the Works in such a manner so as to minimise noise impacts on the surrounding environment, and shall provide experienced personnel with suitable training to ensure that these methods are implemented
 - Quality Powered Mechanical Equipment (QPME) and quieter construction methods should be adopted as far as practicable
 - Use of Non-percussive pile driving methods such as hydraulic press-in method, vibration or jacking method for installing or extracting sheet piles as far as practicable
 - Use of Non-percussive equipment such as hydraulic crusher, sawing, coring machines etc. for demolition and concrete breaking work
 - Close all hoods, cover panels and inspection hatches of powered mechanical plant such as generators, air compressors etc. during operation
 - Provide noise dampening materials inside and outside refuse chutes during building construction
 - Fit mufflers or silencers, and dampening layer with steel collars to hand-held pneumatic breakers
 - Use of non-explosive chemical expansion agents instead of explosive chemicals or expansive compounds
 - Use of prefabricated structure / sections to replace in-situ construction to reduce the amount of mechanical equipment used on site
 - Use of self-compacting concrete (without the aid of a vibrator e.g. poker for compaction) for in-situ concreting
 - Noisy equipment and noisy activities should be located as far away from the NSRs as far as practicable
 - Provide an acoustic screen or enclosure shield the public or NSR from the noisy activities

- 3.2.4 If PME is required for any construction work during restricted hours, a CNP shall be applied for as specified in the NCO. The GW-TM can be referred to for the noise criteria and assessment procedures for obtaining a CNP.
- 3.2.5 In addition, the EPD's Recommended Pollution Control Clauses ("RPCC") for Construction Contracts should be incorporated in the relevant works contract. The RPCC are generally good engineering practices to minimize inconvenience and environmental nuisance to nearby residents and other sensitive receivers. The general requirements as summarised as follows:
- The Contractor shall observe and comply with the NCO and its subsidiary regulation.
 - The Contractor shall ensure that all plant and equipment to be used on the Site are properly maintained in good operating condition and noisy construction activities shall be effectively sound-reduced by means of silencers, mufflers, acoustic linings and shields, acoustic sheds or screen or other means, to avoid disturbance to nearby noise sensitive receivers.
 - For carrying out any construction work other than percussive piling during the time period from 0700 to 1900 hours on any day not being a general holiday (including Sundays), the Contractor shall comply with the following requirements.
 - The noise level measured at 1m from most affected external façade of the nearby noise sensitive receivers from the construction works alone during any 30-minute period shall not exceed an equivalent sound level ("Leq") of 75dB(A).
 - Should the limits stated in the above be exceeded, the construction shall stop and shall not recommence until appropriate measures acceptable to the Engineer that are necessary for compliance have been implemented.
 - The Contractor shall adopt, where necessary and practicable, the use of quieter construction equipment and/or methods when carrying out the construction works, including demolition works, foundation works, site formation works, road opening works during restricted hours.
 - Before commencement of any work, the Engineer may require the methods of working, plant equipment and sound-reducing measures to be used on the Site to be made available for trial demonstration inspection and approval to ensure that they are suitable for the project.
 - The Contractor shall devise, arrange methods of working and carry out the Works in such a manner so as to minimise noise impacts on the surrounding environment, and shall provide experienced personnel with suitable training to ensure that these methods are implemented.
 - The Contractor shall, when necessary, apply for a construction noise permit in accordance with the Noise Control (General) Regulations prior to the commencement of the relevant part(s) of the works, display the permit as required and provide a copy to the Engineer.
 - Measures that are to be taken to protect adjacent noise sensitive receivers, if necessary, shall include, but not be limited to, adequate noise barriers. The barriers shall be of substantial construction and designed to reduce transmission of noise. The location and details of the barriers shall be submitted to the Engineer for approval before works commence adjacent to NSRs.

- 3.2.6 With the implementation of the aforementioned mitigation measures, adverse construction noise impact is not anticipated.

3.3 Noise Impact of Operation Phase

Identification of Noise Sensitive Receivers

- 3.3.1 For the on-site operation noise (i.e. industrial noise), the first layer Noise Sensitive Receivers (“NSRs”) within 300m from the site boundary were identified. All identified NSRs are existing NSRs and no planned NSR has been identified within the assessment area. NSRs located within industrial zone, so it is considered as ASR “C”. The representative NSRs are summarised in **Table 3-4** below and shown in **Figure 3-1**.

Table 3-4 Representative NSRs

NSR NO.	DESCRIPTION	NO. OF STOREYS	DISTANCE FROM THE SITE, m	ASR
IN1	Village House 1, unknown	1	84	C
IN2	Village House 2, unknown	2	143	C
IN3	Village House 3, unknown	1	169	C
IN4	Village House, 25B Kam Tin Road	1	214	C

- 3.3.2 The ASR and ANLs adopted in this EA report are used for assessment purpose only, they should not bind the Noise Control Authority’s decision in determining the noise criteria based on the legislation and practices being in force, and contemporary conditions/situations of adjoining land uses.

Prevailing Background Noise

- 3.3.3 Background noise monitoring at the sensitive façade where is representative to the identified NSRs is the most preferable location. The Site is mainly surrounded by private lots (i.e. located between the Site and the identified NSRs). However, the landowner/occupants refused to allow for background noise measurement. As such, background noise monitoring locations near the representative NSRs were adopted. The location of the background noise monitoring locations is shown in **Figure 3-1**.
- 3.3.4 Locations BN1, BN2 and BN3 have been selected to conduct the background noise monitoring throughout the entire proposed operation hours (i.e. 0700 to 1900) during the weekday under free-field condition. BN1 is located at the roadside of a village access road to the northwest of IN2 and southwest of IN3. The major noise affecting BN1 is the village access road and the open-air parking area which is considered to be comparable to that at IN2 and IN3. BN2 is located at the roadside of an access road to the south of IN1. The major noise source of BN2 is the access road, which has similar environs to that of IN1. BN3 is located at the roadside of Kam Tin Road to the southeast of IN4, which is near the entrance of IN4.
- 3.3.5 A set of minimum $L_{90(1\text{hour})}$ has been adopted as prevailing background noise level. The monitoring data is presented in **Appendix E**.
- 3.3.6 With reference to the Technical Memorandum (“TM”) issued under the *Noise Control Ordinance* (“NCO”), sound level meters in compliance with the International

Electrotechnical Commission Publications 651: 1979 (Type 1) and 804: 1985 specifications were used for carrying out the noise monitoring. Immediately prior to and following each noise measurement, the accuracy of the sound level meter was checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements were considered acceptable and valid as the calibration level from before and after the noise measurement agrees to within 1.0dB.

- 3.3.7 Noise measurements were made in accordance with standard acoustical principles and practices in relation to weather conditions. Calibration certificates of the noise monitoring equipment used are provided in **Appendix F**.

Noise Criteria

- 3.3.8 As discussed in **paragraph 3.3.1**, the ASR of all identified NSRs is “C”. The noise criteria for the planned fixed noise source were determined with reference to ANL-5 and the measured background noise level, as shown in **Table 3-5**.

Table 3-5 Noise Criteria of Noise from Fixed Sources of Identified Representative NSRs

NSR NO.	DESCRIPTION	TIME PERIOD	MEASURED BACKGROUND NOISE LEVEL $L_{90(1\text{ HOUR})}$, dB(A)	ANL - 5, dB(A)	NOISE CRITERIA, dB(A)
IN1	Village House 1, unknown	Day	46	65	46
IN2	Village House 2, unknown		48	65	48
IN3	Village House 3, unknown		48	65	48
IN4	Village House, 25B Kam Tin Road		52	65	52

Note: The background noise level was measured at free-field condition. Thus, a façade correction of +3 dB(A) was applied.

Potential Noise Impacts

- 3.3.9 The plant will be in operation between 0700 and 2300 per day. Due to site constraints, unloading of aggregates/cement/PFA/GGBS/admixture will not be carried out at the same time with the process of concrete mixing and collection. As such, the major fixed noise sources listed below have been considered under two scenarios in daytime (i.e. 0700 – 1900) and evening (i.e. 1900 – 2300). The proposed noise sources were shown in **Figure 3-2**.

Day time Operation

Scenario 1 – Concrete mixing and collection:

- Concrete Mixer (electric) (2 nos./30 mins; % on time: 100.0%)
- Filter Fan (Mixing unit) – Blower (2 nos./30 mins; % on time: 100.0%)

- Concrete Truck (Concrete Collection) (10 nos./30 mins; % on time: 10%)
- Conveyor / Screw Conveyors (3 nos./30 mins; % on time: 100.0%)
- Water / Admixture Pump (1 no./30 mins; % on time: 100.0%)
- Pump (Silo) (4 no./30 mins; % on time: 100.0%)

Scenario 2 – Unloading of aggregates/cement/PFA/GGBS/admixture:

- Conveyor / Screw Conveyors (3 nos./30 mins; % on time: 100.0%)
- Water / Admixture Pump (1 no./30 mins; % on time: 100.0%)
- Pump (mounted on unloading tank) (4 nos./30 mins; % on time: 100.0%)
- Filter Fan (Silo) – Blower (4 nos./30 mins; % on time: 100.0%)
- Aggregate Truck (7 nos./30 mins)
- Cement/PFA/GGBS/Admixture Tanker (2 nos./30 mins)

Evening Operation

Scenario 1 – Concrete mixing and collection:

- Concrete Mixer (electric) (1 nos./30 mins; % on time: 100.0%)
- Filter Fan (Mixing unit) – Blower (1 nos./30 mins; % on time: 100.0%)
- Concrete Truck (Concrete Collection) (2 nos./30 mins; % on time: 10%)
- Conveyor / Screw Conveyors (3 nos./30 mins; % on time: 100.0%)
- Water / Admixture Pump (1 no./30 mins; % on time: 100.0%)
- Pump (Silo) (2 no./30 mins; % on time: 100.0%)

Scenario 2 – Unloading of aggregates/cement/PFA/GGBS/admixture:

- Conveyor / Screw Conveyors (3 nos./30 mins; % on time: 100.0%)
- Water / Admixture Pump (1 no./30 mins; % on time: 100.0%)
- Pump (mounted on unloading tank) (2 nos./30 mins; % on time: 100.0%)
- Filter Fan (Silo) – Blower (2 nos./30 mins; % on time: 100.0%)
- Aggregate Truck (5 nos./30 mins)
- Cement/PFA/GGBS/Admixture Tanker (1 nos./30 mins)

- 3.3.10 The lists of equipment, utilisation rate and number of items detailed in **Appendix G** have been confirmed by the Applicant and it is considered to be practicable for business-as-usual operation of CBP. Loader will be used only if emergency case to transport aggregate from storage area to hopper. Vehicle washing facility will be applied on site during operation, however, the operation time of this facility is rather short each time (i.e. approximately 1 minutes for each vehicle) and its function is not continuous. Aggregate will be stored in aggregate storage areas, which is served as an emergency use. No action will be taken on the aggregates storage except whenever there are insufficient aggregates provided for concrete production. As a result, insignificant noise will be generated due to the occasionally use of the aggregate storage. In conclusion, noise impacts that may be

generated from aggregate storage, vehicle washing and parking are considered insignificant and negligible.

- 3.3.11 The number of concrete lorry mixers was assumed based on the normal operation practice limitation, that approximate 3 minutes were needed for filling up 1 concrete lorry mixer with newly produced concrete, it takes about 6 minutes for the whole process, including the travel in and out of the site. Thus, the 5 concrete lorry mixers per mixer per 30 minutes per production line as the maximum allowed traffic flow were assumed based on the previous experiences of CBP operator under realistic condition. As mentioned in **Section 0** above, the maximum of 10 concrete lorry mixers per mixer per hour for the maximum concrete production rate of 100m³ per hour is practical in terms of business operation in the daytime which has been confirmed by the Applicant. Moreover, there will be no queuing of trucks due to the Proposed Development as reported in the Traffic Impact Assessment (“TIA”) Report attached to the Planning Statement for this Planning Application.

3.4 Noise Impact from Industrial Noise

Assessment Methodology

- 3.4.1 Although the proposed CBP is an industrial use and the noise impact therefore references IND-TM, the characteristics of concrete batching, involving concrete lorry mixer and concrete mixer, are also similar to construction activities. Therefore, the noise impact is proposed to be estimated in accordance with the guidelines given in GW-TM. As such, all items of PME, except truck movement, have been considered at the proposed positions. While due to the long travelling distance of conveyor/ screw conveyor, as a conservative approach, the closest distance between conveyor/ screw conveyor and each NSRs has been adopted and assessed based on the following standard acoustic formula:

$$SPL = SWL - DC + FC$$

where:

SPL – Sound Pressure Level at receiver, dB(A)

SWL – Sound Power Level of PME, dB(A)

DC – Distance Correction, dB(A) ($DC = 20 \times \log_{10}(D) + 8$)

D – Horizontal distance between NSR and notional source, m

FC – Façade Correction of +3 dB(A)

- 3.4.2 Sound Power Levels (SWLs) of PME are obtained from Table 3 of GW-TM and from Sound Power Levels of Other Commonly Used PME available on EPD’s website. Reference is also made to the British Standard 5228 Code of Practice for Noise and Vibration Control on Construction and Open Site – Part 1: Noise amended in February 2014 (BS 5228-1:2009+A1:2014). The “Aggregates Truck” to be adopted during the operation stage is lorry, which will be used to transport raw materials to the Site. Its weight is between 5.5 tonne and 38 tonnes, thus, the sound power level of 105dB(A) with reference to EPD’s “Sound power levels of other commonly used PME” was adopted in the calculation.
- 3.4.3 There will be no tonal noise/ impulsive noise occurring within the CBP and there will be no intermittent noise because of no piling, concrete breaking or similar process. As such, no corrections for tonality, impulsiveness and intermittency are considered to be required.

- 3.4.4 With regard to the screening effect, a 10 dB(A) reduction was adopted for NSRs without direct line-of-sight to the PME whereas a 5 dB(A) reduction was adopted for NSRs without direct line-of-sight only to the “noisy” part of the PME. For IN1, there is a more than 3m height solid wall surround the existing open storage area which located in between the IN1 (1 storey) and the proposed site. For IN4, there are several existing structures higher than 3m located between IN4 and the proposed site. Therefore, there is no direct line of sight between IN1, IN4 and the entire site.
- 3.4.5 During the operation of the CBP, Cement/ PFA/ GGBS/ Admixture tanker and aggregate truck will not enter the Site at the same time with concrete truck during the day time and evening.

Assessment Results

- 3.4.6 The predicted noise impact results are summarised in **Table 3-6** and detailed in **Appendix G**. The assessment results of industrial noise ranged from 39 dB(A) to 46 dB(A) at both scenarios during daytime and evening operation.

Table 3-6 Predicted Fixed Noise Impact Level at Identified Representative NSRs During Operation Phase

NSR NO.	DESCRIPTION	TIME PERIOD	NOISE CRITERIA (DAY/EVENING)	PREDICTED NOISE LEVEL IN $L_{eq}(30min)$, dB(A) (DAY/EVENING)	EXCEEDANCE
SCENARIO 1					
IN1	Village House 1, unknown	Day/Evening	46/40	46/40	No
IN2	Village House 2, unknown		48/47	45/39	No
IN3	Village House 3, unknown		48/47	45/39	No
IN4	Village House, 25B Kam Tin Road		52/49	39/34	No
SCENARIO 2					
IN1	Village House 1, unknown	Day/Evening	46/40	42/40	No
IN2	Village House 2, unknown		48/47	40/40	No
IN3	Village House 3, unknown		48/47	40/39	No
IN4	Village House, 25B Kam Tin Road		52/49	39/36	No

Mitigation Measures

- 3.4.7 The design of the proposed CBP should ensure that the potential industrial noise impacts at the NSRs shall comply with the relevant criteria. Measures as summarised in **Table 3-7**

will be taken into account in the plant design to avoid noisy activities during the operation of the CBP. As such, unacceptable industrial noise impact is not anticipated.

Table 3-7 Proposed Operation Phase Noise Mitigation Measures

NOISE SOURCE	PROPOSED MITIGATION MEASURES
Concrete mixer (electric)	Enclosure (minimum surface density of 10kg/m ²)
Conveyor / Screw Conveyors	Enclosure (minimum surface density of 10kg/m ²) Semi-enclosure (minimum surface density of 10kg/m ²)
Water / Admixture Pump	Semi-enclosure (minimum surface density of 10kg/m ²)
Pump (silo)	Enclosure (minimum surface density of 10kg/m ²)
Filter Fan (mixing unit) - blower	Enclosure (minimum surface density of 10kg/m ²)
Filter Fan (silo) - blower	Semi-enclosure (minimum surface density of 10kg/m ²)
Pump (mounted on unloading tank)	Enclosure (minimum surface density of 10kg/m ²)
Truck (Concrete Collection)	Enclosure (minimum surface density of 10kg/m ²), with acoustic curtain installed at the entrance/exit

3.5 Noise Impact from Off-Site Traffic Noise

Assessment Methodology

- 3.5.1 Upgrading works for Chun Yiu Road has been proposed for the operation of CBP. In addition, the operation of CBP would lead to an increase in traffic flow, which would potentially affect the existing representative NSRs in the vicinity of the Site.
- 3.5.2 The traffic noise impact assessment will be carried out in two scenarios, “Before” and “After” in order to compare the traffic noise level at the representative NSRs due to the additional traffic flow. As the proposed CBP is expected to operate in 2026 for a period of 5 years, traffic data in Year 2031 has been adopted in the assessment as the worst case scenario. Traffic forecasts provided by the Project Traffic Consultant were adopted to assess the off-site traffic noise impact. Detailed peak hour traffic forecasts for the assessment year of 2031 is provided in **Appendix H**.
- 3.5.3 Given that PM peak hour traffic flow would represent a more severe traffic condition than AM peak hour traffic flow, “Before” scenario has been compared with the “After” scenario under PM peak hour traffic flow to evaluate the traffic noise impact on the existing representative NSRs.

Assessment Results

- 3.5.4 The HKPSG assessment criteria for domestic premises is 70 dB(A). Besides, contribution of less than 1.0 dB(A) is considered insignificant in accordance with the *Road Traffic Noise Impact Assessment under the Environmental Impact Assessment Ordinance* (“GN 12/2023”). The predicted road traffic noise levels at each existing representative NSR under “Before” and “After” scenarios are summarised in **Table 3-89** and shown in **Appendix I**.

Table 3-89 Predicted Traffic Noise Impact Level at Identified Representative NSRs During Operation Phase

NSR NO.	DESCRIPTION	NOISE CRITERION	PREDICTED NOISE LEVEL IN L10(1hr), dB(A)		EXCEEDANCE	PROJECT CONTRIBUTION, dB(A)
			BEFORE	AFTER		
IN1	Village House 1, unknown	70	67.8	67.9	No	0.1
IN2	Village House 2, unknown		54.1 – 54.2	54.4 – 54.5	No	0.3
IN3	Village House 3, unknown		52.6	53.2	No	0.6
IN4	Village House, 25B Kam Tin Road		68.7	69.5	No	0.8

3.5.5 Results show that the additional traffic flow generated from the operation of the proposed CBP would not cause significant contribution (i.e. more than 1.0 dB(A)) to the traffic noise level at the representative NSRs. No noise exceedances are expected at all representative NSRs. As such, adverse traffic noise impact arising from the operation of the proposed CBP is not anticipated.

3.6 Conclusion

3.6.1 During the construction phase of the Proposed Development, with the implementation of the noise mitigation measures recommended in **Paragraph 3.2.3**, no adverse noise impact is anticipated.

3.6.2 Fixed plant noise is the major potential noise source during the operational phase. Quantitative assessment for the fixed plant noise sources were conducted. The predicted noise level during operation ranges from 39 dB(A) to 46 dB(A) at both Scenarios 1 and 2, which indicated that all the noise levels at NSRs would comply with the relevant noise criteria.

3.6.3 Traffic noise impact assessment has been carried out to identify the contribution arising from the additional traffic flow generated during the operation phase. Results show that no noise exceedances are expected at the representative NSRs and the additional traffic flow would not cause significant contribution to the traffic noise level. No adverse traffic noise impact is anticipated at the existing NSRs.

3.6.4 Overall, therefore, there will be no adverse noise impact during the construction and operation phases of the Proposed CBP.

Figure 3-1 Locations of Representative NSRs and Background Noise Measurement

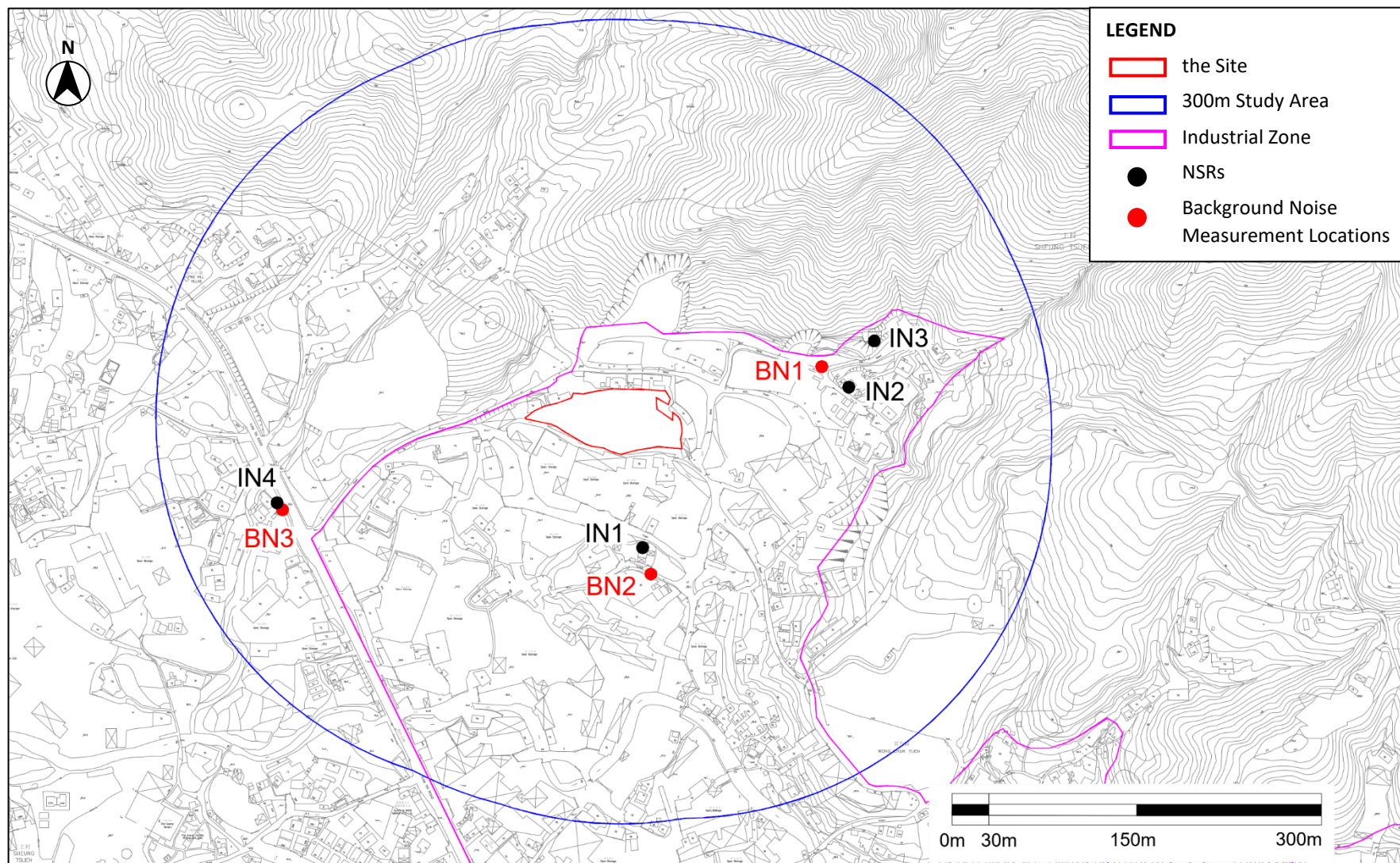
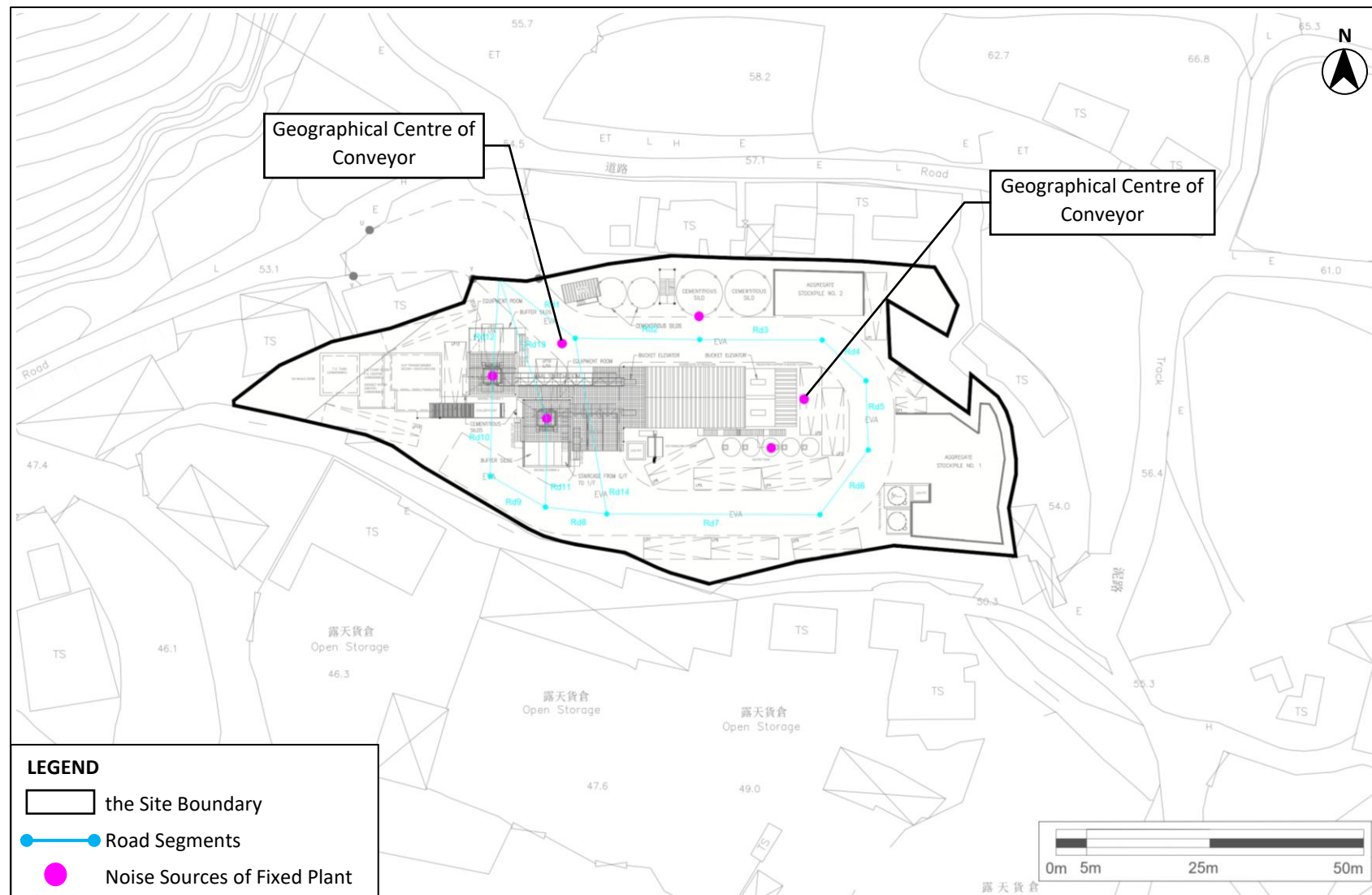


Figure 3-2 Locations of Proposed Noise Sources



4 WATER QUALITY

4.1 Environmental Legislation, Standards and Guidelines

Water Pollution Control Ordinance (Cap. 358)

- 4.1.1 The Technical Memorandum – Standards for Effluent Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters (“WPCO-TM”) is issued under Section 21 of the Water Pollution Control Ordinance (“WPCO”). All discharges into government sewerage systems, marine and inland waters are required to comply with the standards stipulated in the WPCO-TM.

Construction Site Drainage, ProPECC PN2/23

- 4.1.2 With reference to *Professional Persons Environmental Consultative Committee (“ProPECC”) Practice Note Construction Site Drainage (“ProPECC PN2/23”)*, various guidelines for the handling and disposal of construction site discharges are included. The guidelines include the use of sediment traps, wheel washing facilities for vehicles leaving the Site, adequate maintenance of drainage systems to prevent flooding, overflow, sewage collection and treatment, and comprehensive waste management (collection, handling, transportation, and disposal) procedures.

Drainage Plans subject to Comment by the Environmental Protection Department, ProPECC PN1/23

- 4.1.3 With reference to ProPECC Practice Note Drainage Plan subject to Comment by the Environmental Protection Department – Building (Standards of Sanitary Fitments, Plumbing, Drainage Works and Latrines) Regulations (“ProPECC PN1/23”), various guidelines for the pollution control for discharge to storm drains and foul sewers, such as the use of grease trap for wastewater from the restaurant kitchen, the use of silt removal facilities for open surface channel led to stormwater drains, etc., are included. The guidelines also include the requirements for submission of drainage plans.

Protection of Natural Streams/Rivers from Adverse Impacts Arising from Construction Works, ETWB TCW No. 5/2005

- 4.1.4 Various procedures, guidelines and precautionary mitigation measures were circulated in *Protection of Natural Streams/Rivers from Adverse Impacts Arising from Construction Works (“ETWB TCW No. 5/2005”)* to reinforce existing measures for protection of natural streams/rivers from construction works.

Hong Kong Planning Standards and Guidelines (“HKPSG”)

- 4.1.5 HKPSG provides various water quality management guidelines for potentially polluting uses such as effluent-producing industries, sewage collection and disposal, as well as some guidelines to minimise water quality impacts on sensitive uses.

4.2 Identification of Water Control Zone (“WCZ”) and Water Sensitive Receiver (“WSR”)

- 4.2.1 The Site is situated in Deep Bay WCZ. With reference to Annex 14 of the *Technical Memorandum on Environmental Impact Assessment Process* (“EIAO-TM”), several inland water courses within 500m study area were identified as potential WSRs through desktop study and using topographic map of GeoInfo Map. The identified WSRs are listed in **Table 4-1** and shown in **Figure 4-1**. Potential water quality impacts during construction and operation phase are discussed below.

Table 4-1 Identified Water Sensitive Receivers

WSR ID	DESCRIPTION	TYPE	STATUS (ACTIVE/INACTIVE)	DISTANCE FROM THE SITE, m
W1	Watercourses to the south of the Site	Modified watercourse	Active	5
W2	Watercourse to the south of the Site	Modified watercourse	Active	200
W3	Watercourses to the east of the Site	Natural watercourse	Active	270
W4	Watercourse to the east of the Site	Modified watercourse	Active	140
W5	Watercourses to the east of the Site	Natural watercourse	Active	200
W6	Watercourses to the north of the Site	Natural watercourse	Active	160
W7	Watercourses to the north of the Site	Natural watercourse	Active	330
W8	Watercourses to the north of the Site	Natural watercourse	Active	360
W9	Watercourse to the west of the Site	Modified watercourse	Active	150

4.3 Review of Water Quality Impact

Construction Phase

- 4.3.1 Muddy runoff from the Site may be generated during construction phase, especially during the rainy season.
- 4.3.2 Wash water from vehicles and equipment; silt from any on-site stockpiles of soil, cement and grouting materials; and spillage of fuels, oil and lubricants from construction/reinstatement vehicles and plant may generate water quality impacts. If these pollution sources are not properly controlled, it would lead to increased amounts of suspended solids, grease and oil, pH, Biochemical Oxygen Demand (“BOD”), etc. in the water system.
- 4.3.3 There is also the issue of sewage generated by construction workers on-site.
- 4.3.4 Most of the WSRs identified within 500m of the study area are located at an elevation higher than that of the Proposed Development, except the streams to the south of the Site. However, wastewater from construction of the Proposed CBP will be properly handled before discharge. Therefore, with implementation of the recommended mitigation

measures and good practices listed below, adverse water quality impacts from Proposed Development on the WSRs are not anticipated.

Operation Phase

- 4.3.5 Water sprinklers and wheel washing facilities will be installed for dust suppression. The water sprinklers and wheel washing facilities will be a major source of surface runoff as the entire site will be paved. The plant management should avoid excessive wetting of the ground to minimise generation of surface runoff. All the surface runoff will be collected by the peripheral drainage system and diverted to sedimentation tank or silt removal prior to on-site reuse.
- 4.3.6 Another major source of sewage/wastewater during operation phase would be sewage and grey water from toilets used by on-site staff. There will be around 12 no. of on-site staff and 100 no. of visitors/drivers during the daily operation of the Proposed CBP. The estimated ADWF from the Proposed Development is calculated to be 3.67 m³/day.
- 4.3.7 Sewage arising from the Proposed Development would be temporarily stored in sewage holding tanks and then tankered away for off-site disposal in a Sewage Treatment Facility. As advised by the Applicant, two (2) sewage holding tanks with the capacity of 3m³ each will be provided on-site. With the total capacity of 3.67m³, the proposed sewage holding tanks is sufficient to cater the sewage generation. The details of sewage holding tanks will be further reviewed in the detailed design. Detailed sewage generation calculations have been provided in **Appendix J**.
- 4.3.8 As mentioned in **Paragraph 4.3.4**, most of the identified WSRs are located at a higher elevation than the Site, except the streams to the south of the Site. Nonetheless, with implementation of the recommended mitigation measures and good site practices in **Section 4.4**, adverse water quality impacts on the WSRs from the operation of the Proposed CBP are not anticipated.

4.4 Mitigation Measures

Construction Phase

- 4.4.1 During construction phase, adequate capacity and number of portable toilets with adequate frequency for offsite disposal to be supplied, maintained and emptied by a licensed collector should be provided for construction workers.
- 4.4.2 The construction contractor shall follow good site practice and be responsible for providing, implementing and maintaining the mitigation measures as specified in ProPECC PN 2/23 for construction site drainage. The key requirements are as follows:
- Surface run-off from construction sites should be discharged into storm drains via adequately designed sand/silt removal facilities such as sand traps, silt traps and sediment basins. Temporary construction drainage or earth bunds or sand bag barriers should be provided on site to properly direct storm water to such silt removal facilities. Perimeter channels at site boundaries should be provided where necessary to intercept storm run-off from outside the Site so that it will not wash across the Site. Catchpits and perimeter channels should be construction in advance of site formation works and earthworks.

- Silt removal facilities, channels and manholes should be maintained and the deposited silt and grit should be removed regularly, at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times.
- Construction works should be programmed to minimise soil excavation works in rainy reasons (generally from April to September). If soil excavation works could not be avoided in these months or at any time of year when rainstorms are likely, for the purpose of preventing soil erosion, temporarily exposed slope surfaces should be covered (e.g. by tarpaulin), and temporary access roads should be protected by crushed stone or gravel, as excavation proceeds. Intercepting channels should be provided (e.g. along the crest) to prevent storm runoff from washing across exposed soil surfaces. Arrangements should always be in place to ensure that adequate surface protection measures can be safely carried out well before the arrival of a rainstorm.
- Earthworks final surfaces should be well compacted and the subsequent permanent works or surface protection works should be carried out immediately after the final surfaces are formed to prevent erosion caused by rainstorms. Appropriate drainage like intercepting channels should be provided when necessary.
- Measures should be taken to minimise the ingress of rainwater into trenches. If excavation of trenches in wet seasons is necessary, they should be dug and backfilled in short sections. Rainwater pumped out from trenches should be discharged into storm drains via silt removal facilities.
- Open stockpiles of construction materials (e.g. aggregates, sand and fill material) on sites should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.
- Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers. Discharge of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system.
- All vehicles and plant should be cleaned before they leave a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. A wheel washing bay should be provided at every site exit if practicable and wash-water should have sand and silt settled out or removed before discharging into storm water drains. The section of construction road between the wheel washing bay and the public road should be paved to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.

4.4.3 In addition, the EPD's RPCC for Construction Contract should be incorporated in the relevant works contract. The RPCC are generally good engineering practice to minimise inconvenience and environmental nuisance to nearby residents and other sensitive receivers. The general requirements are summarised below:

- The Contractor shall observe and comply with WPCO and its subsidiary regulation.
- The Contractor shall carry out the Works in such a manner as to minimise adverse impacts on the water quality during execution of the works. In particular the Contractor shall arrange his method of working to minimise the effects on the water quality within and outside the Site, on the transport routes and at the loading, dredging and dumping areas.

- The Contractor shall follow the practices, and be responsible for the design, construction, operation and maintenance of all the mitigation measures as specified in the ProPECC PN 2/23 “Construction Site Drainage” issued by the Director of Environmental Protection. The design of the mitigation measures shall be submitted by the Contractor to the Engineer for approval.
- The Contractor shall not discharge directly or indirectly or cause or permit or suffer to be discharged into any public sewer, stormwater drain, channel, stream-course or sea any trade effluent or foul or contaminated water or cooling or hot water without the prior written consent of the Engineer in consultation with the Director of Environmental Protection and Director of Water Supplies, who may as a condition of granting his consent require to the Contractor to provide, operate and maintain at the Contractor’s own expense to the satisfaction of the Engineer suitable works for the treatment and disposal of such trade effluent or foul or contaminated or cooling or hot water. The design of such treatment works shall be submitted to the Engineer for approval not less than one month before commencement of the relevant works.
- If any office, site canteen or site toilet facilities is/are erected, foul water effluent shall be directed to a foul sewer or to a sewage treatment and disposal facilities either directly or indirectly by means of pumping or other means approved by the Engineer.

4.4.4 All site discharges should be treated as necessary in accordance with the terms and conditions of the Discharge License.

4.4.5 With the implementation of the mitigation measures and good site practices, no adverse water quality impact during construction phase is anticipated.

Operation Phase

4.4.6 Wheel washing facilities will be provided at the site entrance. All vehicles will be cleaned properly before leaving the Site. Wastewater generated from the wheel washing facilities will also be collected and diverted to sedimentation tank for silt removal before being reused on-site.

4.4.7 Wastewater generated from the surface runoff due to the use of water sprinkler and wheel washing facilities will be first diverted to a sump pit for collection. After that, the wastewater will be diverted to a sedimentation tank for sedimentation and the slurry generated will be dewatered to produce cement cake. The cement cake arising from the treatment process is inert materials and will be reused in the Public Fill Reception Facilities. The design of the sedimentation tank, including the capacity, treatment methodology, etc., will be provided to EPD for approval during detailed design stage in accordance with *ProPECC PN1/23*.

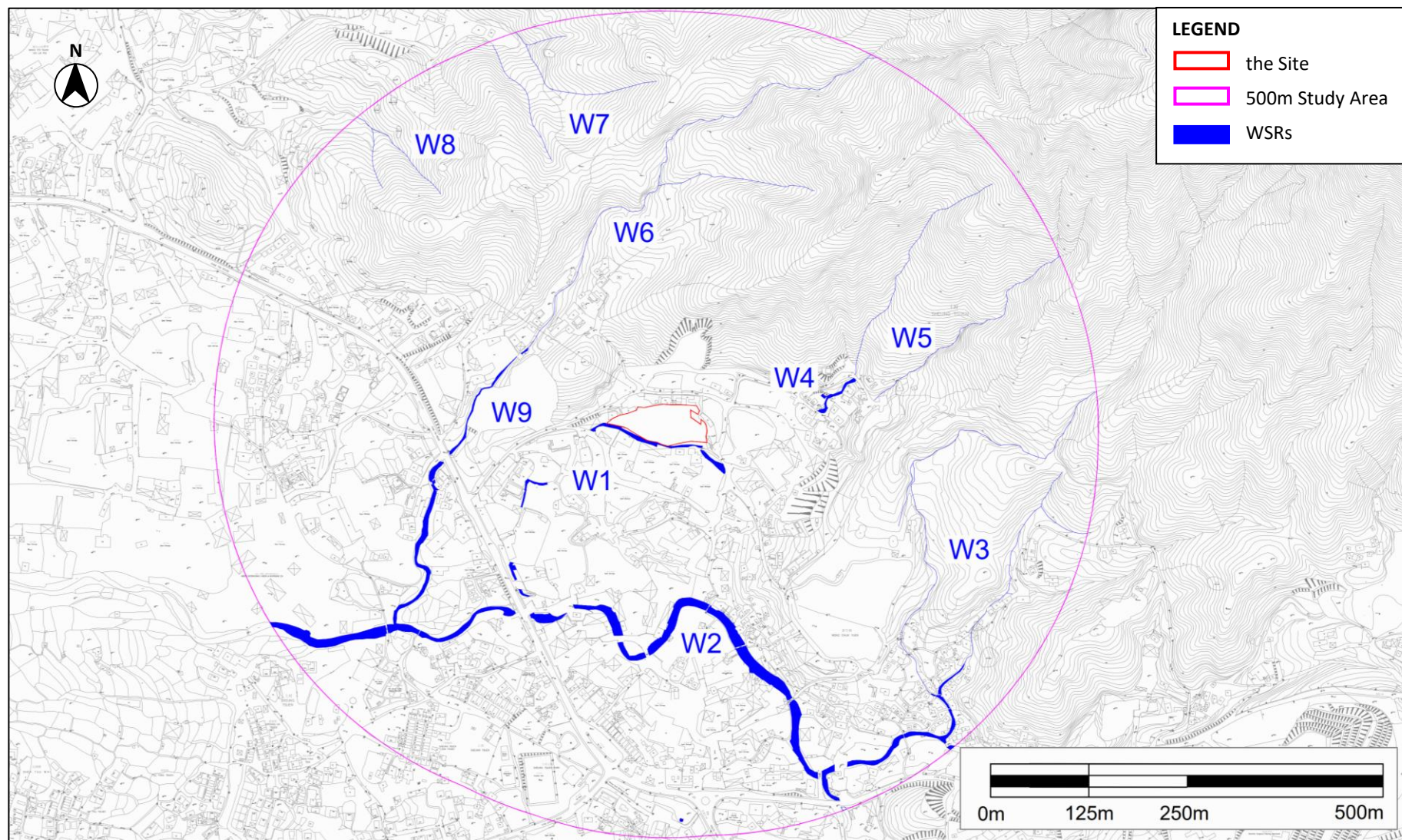
4.4.8 Sewage from toilets will be temporarily stored in wastewater holding tanks and tankered away for off-site disposal at a Sewage Treatment Facility. As discussed in **Paragraph 4.3.7**, sufficient capacity and number of wastewater storage tanks for temporarily storing and tankering away for off-site disposal will be provided.

4.4.9 Hence, with provision of adequate number and capacity of sedimentation tank and mobile toilets, no adverse water quality impact during operation phase of the Proposed CBP is anticipated.

4.5 Conclusion

- 4.5.1 During construction phase, portable toilets will be supplied for construction workers. With the implementation of the mitigation measures and good site practices mentioned in **Paragraph 4.4.2** and **4.4.3**, adverse water quality impacts from construction phase are not anticipated.
- 4.5.2 The Contractor shall apply for a Discharge License under the WPCO. All site discharges shall be treated in accordance with the terms and conditions of the Discharge License.
- 4.5.3 During operation phase, no adverse water quality impact is anticipated from wastewater/sewage from employees. Portable toilets will be available for site staff. Sewage generated from toilets will be temporarily stored in sewage holding tanks and tankered away for off-site disposal at a Sewage Treatment Facility. Besides, the wastewater generated from water sprinklers and wheel washing facilities will be collected and diverted to sedimentation tank for silt removal. The treated effluent will be reused onsite.
- 4.5.4 Overall, no adverse water quality impacts are anticipated during the construction or operation phase of the Proposed CBP.

Figure 4-1 Representative WSRs within 500m Study Area of the Site



5 WASTE MANAGEMENT

5.1 Environmental Legislation and Standards

Waste Management

5.1.1 The key environmental legislation and standards applicable to waste management in Hong Kong are as follows:

- Waste Disposal Ordinance (Cap. 354) (“WDO”)
- Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354C)
- Waste Disposal (Charges for Disposal of Chemical Waste) Regulation (Cap. 354J)
- Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 354N)
- Land (Miscellaneous Provisions) Ordinance (Cap. 28)
- Public Health and Municipal Services Ordinance (Cap.132BK) – Public Cleansing and Prevention of Nuisances Regulation
- Environmental, Transport and Works Bureau (“ETWB”) Technical Circular (Works) No. 19/2005, Environmental Management on Construction Sites
- ETWB Technical Circular (Works) No. 22/2003A, Additional Measures to improve Site Cleanliness and Control Mosquito Breeding on Construction Sites
- Development Bureau (“DevB”) Technical Circular (Works) No. 6/2010, Trip Ticket System for Disposal of Construction & Demolition Materials
- Civil Engineering and Development Department (“CEDD”) Technical Circulars (CEDD TC No. 11/2019), Management of Construction and Demolition Materials
- Building Department Practice Note for Authorised Persons, Registered Structural Engineers and Registered Geotechnical Engineers Waste Minimisation – Construction and Demolition Waste (“ADV-19”)
- Building Department Practice Note for Authorised Persons, Registered Structural Engineers and Registered Geotechnical Engineers Waste Minimisation – Provision of Fitments and Fittings in New Buildings (“APP-114”)
- Building Department Practice Note for Registered Contractors (“PNRC 17”), Control of Environmental Nuisance from Construction Sites
- CEDD Project Administration Handbook for Civil Engineering Works (“PAH”)
- EPD Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes
- EPD Recommended Pollution Control Clauses (“RPCC”) for Construction Contracts

5.2 Review of Waste Management Impacts

Construction Phase

5.2.1 The key potential waste sources during the construction phase are:

- Inert Construction and Demolition (“C&D”) materials (e.g. waste concrete, surplus soil, waste asphalt etc.)

- Non-inert C&D Materials (e.g. wood and plastics)
- Chemical wastes such as waste battery and waste lubricating oil from vehicles/plant maintenance
- General refuse generated by site workers

Inert C&D Materials

- 5.2.2 Inert C&D materials are those which do not decompose, such as debris, rubble, earth and concrete, and which are suitable for land reclamation and site formation.
- 5.2.3 As the existing structures within the Site are mainly containers and temporary structures, no building demolition works is required for the Project. Besides, since the Site is fully paved with concrete, no site formation works is required during the construction phase. Therefore, no significant amount of inert C&D materials is anticipated during site preparation stage. The major source of inert C&D materials during construction phase will be the construction of the superstructure for the Proposed Development.
- 5.2.4 In accordance with Section 3.2 of A Guide for Managing and Minimizing Building and Demolition Waste published by the Hong Kong Polytechnic University in May 2001 (“the Guide”), it provides a “waste index” for building waste generation in Hong Kong based on the Gross Floor Area (“GFA”) of three different building types as follows:
- Private Housing Projects 0.250m³/m² GFA
 - Government Housing Projects 0.174m³/m² GFA
 - Commercial Office Projects 0.200m³/m² GFA
- 5.2.5 For estimating of building waste generated from the Proposed CBP, the “waste index” for Commercial Office are adopted. However, as noted above, in addition to inert C&D materials, this “waste index” also include non-inert C&D materials, such as timber formwork, packaging waste and other wastes, and the Guide does not identify what proportion of building waste is inert C&D materials and what proportion is non-inert C&D materials.
- 5.2.6 With reference to Plate 2.12 of EPD’s *Monitoring of Solid Waste in Hong Kong – Waste Statistics for 2022*, in 2022 92% of construction wastes was either reused on-site or sent to the public fill reception facilities, implying that such construction wastes should be inert C&D materials. The proportion of inert C&D materials in the “waste index” can therefore be estimated by applying the Hong Kong-wide proportion of inert C&D materials in construction waste, i.e. 92%, to the “waste index” as follows:

$$\begin{aligned}\text{Waste Index}_{\text{Inert C\&D materials (Commercial Office Projects)}} &= 0.92 \times 0.200\text{m}^3/\text{m}^2 \text{ GFA} \\ &= 0.184\text{m}^3/\text{m}^2 \text{ GFA}\end{aligned}$$

- 5.2.7 As the Proposed CBP are mainly comprised of steel structures, assuming the GFA of the Proposed CBP is the same as the site area, i.e. 4,411m², the proportion of inert C&D materials of building waste from the Proposed Development can therefore be estimated as follows:

$$\text{Building Waste} = \text{Waste Index}_{\text{Inert C\&D materials (Commercial Office Projects)}} \times \text{GFA}$$

$$= 0.184 \times 4,411$$

$$= 812\text{m}^3$$

- 5.2.8 Assuming the density of inert C&D materials is 1.8 tonnes/m³, approx. 1,461 tonnes of building wastes would be generated by the Proposed Development.
- 5.2.9 Assuming the construction period to be one year with six working days a week and four weeks a month, the daily inert C&D material generation rate will be approx. 5.1 tonnes/day (i.e. 1,461 tonnes/ (6 x 4 x 12) days).
- 5.2.10 Inert C&D materials should be reused on-site as far as practicable and efforts should be made to optimise cut and fill requirements during the detailed design. Good site practice and mitigation measures should be implemented, as recommended in **Section 5.3**. The remaining materials should be sent to public fill reception facilities, Fill Bank at Tuen Mun Area 38 and Fill Bank at Tseung Kwan O Area 137.
- 5.2.11 The majority of inert C&D materials generated from construction will be building waste. Since deep excavation and backfilling works is not needed for the Proposed Development, not much of the inert C&D materials will be re-used on site. Hence, the 5.1 tonnes/day inert C&D material will be delivered to public fill reception facilities. The reuse of inert C&D materials in public filling reception facilities would be agreed with relevant authorities before delivery.
- 5.2.12 With the implementation of the recommended good site practice and mitigation measures, no adverse waste impact from the handling, transportation or disposal of inert C&D materials during construction of the Proposed CBP is anticipated.

Non-Inert C&D Materials

- 5.2.13 Non-inert C&D materials (or C&D waste) are those which can decompose such as bamboo, timber, vegetation, packaging waste and other organic material, and which are therefore unsuitable for land reclamation.
- 5.2.14 The major source of non-inert C&D material during construction will be the non-inert C&D material component of building waste including timber formwork, packaging waste generated by demolition of existing building and construction of the Proposed CBP.
- 5.2.15 The building waste in the “waste index” provided in the Guide also includes non-inert C&D materials. Since Plate 2.12 of Waste Statistics for 2022 shows that in 2022, 8% of C&D waste was disposed of at landfills. The proportion of non-inert C&D materials (or C&D waste) in the “waste index” can be estimated by applying the Hong Kong-wide proportion of non-inert C&D materials (or C&D waste) in construction waste, i.e. 8%, to the “waste index” as follows:

$$\begin{aligned}\text{Waste Index}_{\text{Non-Inert C\&D materials (Commercial Office Projects)}} &= 0.08 \times 0.200\text{m}^3/\text{m}^2 \text{ GFA} \\ &= 0.016\text{m}^3/\text{m}^2 \text{ GFA}\end{aligned}$$

- 5.2.16 Given the total GFA of the Proposed Development is approx. 4,411m², the non-inert C&D materials (or C&D waste) components in building waste can therefore be estimated as follows:

$$\begin{aligned}\text{Building Waste} &= \text{Waste Index}_{\text{Non-Inert C\&D materials (Commercial Office Projects)}} \times \text{GFA} \\ &= 0.016 \times 4,411 \\ &= 71\text{m}^3\end{aligned}$$

- 5.2.17 Assuming the density of non-inert C&D materials is 1.0 tonnes/m³, approx. 71 tonnes of building waste would be generated by the Proposed Development. Assuming the construction period to be one year with six working days a week and four weeks a month, the daily non-inert C&D material generation rate will be approx. 0.2 tonnes/day (i.e. 71 tonnes/ (6 x 4 x 12) days).
- 5.2.18 Non-inert C&D materials generated during construction should be sorted on-site. Recyclable materials, such as metal, paper product, timber and plastic, should be collected by local recyclers for recycling. All non-inert C&D materials should be recycled as far as possible and landfill disposal should be adopted as the last resort. The nearest disposal facility is North East New Territories Landfill ("NENT") Landfill. Disposal of C&D wastes of landfills would be agreed with relevant authorities.
- 5.2.19 It is expected that no more than 10% of the generated non-inert building waste can be recycled or reused. This means that the expected amount of non-inert C&D waste to be reused or recycled on-site is around 7 tonnes at most.
- 5.2.20 If 10% of non-inert C&D materials can be reused/recycled on-site, the surplus non-inert C&D materials mainly comprising building waste will be approx. 64 tonnes in total. Assuming the construction period to be one year with six working days a week and four weeks a month, the total daily non-inert C&D materials for disposal of at NENT Landfill would be approx. 0.2 tonnes/day (i.e. 64 tonnes/ (6 x 4 x 12) days).
- 5.2.21 Considering the above estimation, with the implementation of the recommended good site practice and mitigation measures, no adverse waste impact from the handling, transportation or disposal of non-inert C&D materials (or C&D waste) during construction of the Proposed CBP is anticipated.

General Refuse

- 5.2.22 General refuse from workers is similar to domestic waste and includes packaging and organic material.
- 5.2.23 The number of workers will depend on the contractor and the construction methods employed. According to the Applicant's experience, the number of construction workers for the Proposed Development should be no more than 20 per day.
- 5.2.24 According to Plate 2.7 of Waste Statistics for 2022, the per capita domestic waste disposal rate in 2022 was 0.93 kg/person/day, although the per worker generation rate of general

refuse will likely be less than this. For a conservative approach, the per capita domestic waste disposal rate in 2022 has been adopted for general refuse generation by construction workers. Since every worker is expected to generate general refuse, the total general refuse generated by construction workers is estimated as follows:

$$\begin{aligned}\text{General Refuse/Day} &= \text{No. of workers/day} \times \text{per capita generation rate} \\ &= 20 \text{ workers} \times 0.93 \text{ kg/workers/day} \\ &= 18.6 \text{ kg/day}\end{aligned}$$

$$\begin{aligned}\text{Total General Refuse} &= \text{General Refuse/Day} \times \text{Construction Duration} \\ &= 18.6 \text{ kg/day} \times 6 \text{ days/week} \times 4 \text{ weeks/month} \times 12 \text{ months} \\ &= 5,357 \text{ kg or 5 tonnes}\end{aligned}$$

- 5.2.25 General refuse generated during construction should be sorted on-site. Recyclable materials, such as metal, paper product and plastics should be collected by local recyclers for recycling. All general refuse should be recycled as far as possible and landfill disposal should only be adopted as the last resort.
- 5.2.26 According to Plate 3.2 of Waste Statistics for 2022, in 2022 the recovery rate of domestic waste is approx. 20%. It is therefore assumed that 20% of general refuse, i.e., approx. 1,071kg of general refuse, would be reused and recycled by the recyclers. The surplus general refuse of 4,286 kg or 14.9kg/day (i.e. 18.6kg x 80%) in average would be sent to landfills.
- 5.2.27 Given the above, no adverse waste impact from the handling, transportation or disposal of general refuse from workforce during construction of the Proposed CBP is anticipated.

Chemical Waste

- 5.2.28 No hazardous materials or hazardous wastes are expected to be generated during the construction phase. Only limited amount of chemical waste which is expected to be less than 1 tonne of chemical waste including waste batteries, lubricating oil and waste paints may be generated throughout the entire construction phase given the small scale of the works. Other chemical wastes include waste lamp will be generated and the amount will be insignificant.
- 5.2.29 The Contractor shall register as a Chemical Waste Producer under the WDO. All chemical waste shall be stored at a properly designed chemical waste storage area located within the construction site in accordance with EPD's *Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes*. A licensed collector shall be employed to handle and dispose of all chemical wastes, e.g. at the Chemical Waste Treatment Centre ("CWTC") at Tsing Yi, or other facility approved by EPD.
- 5.2.30 Given the above, no adverse waste impact from the handling, transportation or disposal of chemical waste during the construction of the Proposed CBP is anticipated.

Summary

5.2.31 The type and estimated quantities of different types of wastes generated during the construction phase are summarised in **Table 5-1**.

Table 5-1 Estimated Amount of Different Types of Wastes to be Generated During Construction Phase

WASTE TYPE	ESTIMATED QUANTITY (TONNES)	KEY SOURCES OF WASTE GENERATION	TREATMENT
INERT C&D MATERIAL			
Building Waste	1,461	Superstructure Construction	1. On-site reuse/recycle 2. Off-site reuse/recycle 3. Delivery to public fill reception facilities
NON-INERT C&D MATERIAL			
Building Waste	71	Superstructure Construction	1. On-site sorting for reuse/recycle 2. Disposal of at landfill
OTHERS			
General Refuse	5	Construction staff	1. On-site sorting for reuse/recycle 2. Disposal of at landfill
Chemical Waste	<1	Waste batteries, lubricating oil and waste paints, etc.	All to be collected by the licensed chemical waste collector and treated in the CWTC.

Operation Phase

- 5.2.32 During the operation phase, the major type of waste generated will be cementitious cake. As advised by the Applicant, about 20m³ cementitious cake would be generated from daily operation of the Proposed CBP. Besides, municipal Solid Waste ("MSW") from onsite staff and truck drivers as well as chemical waste from the maintenance of the plant equipment will be generated during operation phase.
- 5.2.33 According to Plate 2.7 of Waste Statistic for 2022, the most recent per municipal solid waste disposal rate is 1.51kg/person/day. The estimated total staff of the Proposed Development would be around 12. With six working days per week, the annual MSW generation during the operation phase is expected to be around 5.2 tonnes (i.e. 1.51 kg x 12 x (6 x 4 x 12) days).
- 5.2.34 Plate 3.2 of Waste Statistics for 2022 shows that in 2022, the recovery rate of municipal solid waste is 32%. It is therefore estimated that 32% of commercial waste (i.e. 1.7 tonnes/year) could be reused and recycled by the recyclers. The surplus MSW of 3.5 tonnes/year would be disposed of at the North West New Territories Transfer Station.
- 5.2.35 Since MSW will be collected on a regular basis by registered waste collectors and will be disposed of at a landfill managed by EPD, no adverse waste impacts from handling, transportation or disposal are anticipated. Nevertheless, to minimize MSW generation mitigation measures proposed in **Section 5.3** should be implemented.

- 5.2.36 During the operation phase, it is expected that less than 1 tonne of chemical waste would be generated from the daily operation and maintenance activities of the Proposed CBP. A licensed collector shall be employed to handle and dispose of the chemical wastes, if any.
- 5.2.37 Cementitious cake, the major type of waste, will be also generated from the sedimentation tank for recycling the wastewater from runoff and wheel washing facilities. The cementitious cake is inert materials and will be therefore reused at Public Fill Reception Facilities.
- 5.2.38 With the implementation of the mitigation measures, there should be no adverse waste impact from the handling, transportation or disposal of domestic waste during the operation of the Proposed CBP.

5.3 Mitigation Measures

Construction Phase

- 5.3.1 Waste management shall be controlled through contractual requirements as well as through statutory requirements.
- 5.3.2 A Waste Management Plan (“WMP”) should be developed by the contractor and submitted to the Project Engineer/Architect for approval in accordance with ADV-19 before the commencement of any construction works. The objectives of the WMP will be to identify any potential environmental impacts from the generation of waste at the Site; to recommend appropriate waste handling, collection, sorting, disposal and recycling measures in accordance with requirements of the current regulations; and to categorise and permit segregation of C&D materials where practicable (i.e. inert material/non-inert material) for disposal considerations i.e. public fill/landfill.
- 5.3.3 The contractors should adopt good housekeeping practices with reference to the WMP such as waste segregation prior to disposal. Besides the provision of stockpiling and segregating areas at site, effective collection of site wastes is required to prevent waste materials being blown around by wind, flushed or leached into nearby waters, or creating odour nuisance pest and vermin problems. Waste storage areas should be well maintained and cleaned regularly.
- 5.3.4 A trip-ticket system should be established in accordance with DevB TC(W) No. 6/2010 and the *Waste Disposal (Charges for Disposal of Construction Waste) Regulation* to monitor the disposal of public fill and solid wastes at public filling facilities and landfills, and to control fly-tipping. A trip-ticket system should be included as one of the contractual requirements for the contractor to strictly implement. Dump trucks with mechanical cover shall be used to minimise windblown litter and dust during transportation of waste.
- 5.3.5 Whenever there are excess recyclable construction materials, including bricks, plastics and metals, reuse and recycling should be carried out as far as practicable to minimise the amount of waste disposal. Other inert materials such as concrete, asphalt, etc. should be delivered to public fill. Non-inert and non-recyclable wastes should be disposed at designated landfill site.
- 5.3.6 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 construction contractor to remove general refuse from the Site, separately from C&D materials. Preferably an

enclosed and covered area should be provided to reduce the occurrence of “wind-blown” materials.

- 5.3.7 Food waste generated during construction and operation would be separated from other waste and recycled as far as practicable, in order to minimise unpleasant odour and potential environmental hygiene issues.
- 5.3.8 For chemical waste, the Contractor should follow the ‘trip-ticket’ system of which the arrangement of production, collection and disposal in accordance with the *Waste Disposal (Chemical Waste) (General) Regulation*.
- 5.3.9 The mitigation measures for construction phase are recommended based on the waste management hierarchy principles. Recommendations of good site practices, waste reduction measures as well as the waste transportation, storage and collection are described as follows:

Good Site Practice

- 5.3.10 Adverse impact from waste management implications is not expected, provided that good site practices are strictly implemented. The following good site practices are recommended throughout the construction phase:
- Nomination of an approved personnel, such as a site manager, to be responsible for the implementation of good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the Site
 - Training of site personnel in site cleanliness, appropriate waste management procedures and concepts of waste reduction, reuse and recycling
 - Provision of sufficient waste disposal points and regular collection for disposal
 - Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers
 - Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors
 - A Waste Management Plan (WMP) should be prepared by the contractor and submitted to the Engineer for approval

Waste Reduction Measures

- 5.3.11 Amount of waste generation can be significant reduced through good management and control. Waste reduction is best achieved at the planning and design phase, as well as by ensuring the implementation of good site practices. The following recommendations are proposed to achieve reduction:
- Segregate and store different types of waste in different containers, skip or stockpiles to enhance reuse or recycling of materials and their proper disposal
 - Proper storage and site practices to minimise the potential for damage and contamination of construction materials
 - plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste

- sort out demolition debris and excavated materials from demolition works to recover reusable/recyclable portions (i.e. soil, broken concrete, metal etc.)
- provide training to workers on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling

5.3.12 In addition to the above measures, specific mitigation measures are recommended for the specific waste types so as to minimise environmental impacts during handling, transportation and disposal of waste.

Storage, Collection and Transportation of Waste

5.3.13 Storage of waste on site may induce adverse environmental implications if not properly managed. The following recommendation should be implemented to minimise the impacts:

- Waste such as soil should be handled and stored well to ensure secure containment
- Stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away
- Different locations should be designated to stockpile each material to enhance reuse

5.3.14 The collection and transportation of waste from works area to respective disposal sites may also induce adverse environmental impacts if not properly managed. The following recommendation should be implemented to minimise the impacts:

- Remove waste in timely manner
- Employ trucks and vessels with cover or enclosed containers for waste transportation
- Obtain relevant waste disposal permits from the appropriate authorities; including Chemical Waste Permits / licenses under the Waste Disposal Ordinance (Cap 354), Water Pollution Control Ordinance (Cap 358), Public Dumping Licence under the Land (Miscellaneous Provisions) Ordinance (Cap 28), Effluent Discharge Licence under the Water Pollution Control Ordinance
- Disposal of waste should be done at licensed waste disposal facilities

5.3.15 In addition, the EPD's RPCC for Construction Contract should be incorporated in the relevant works contract. The RPCC are generally good engineering practice to minimise inconvenience and environmental nuisance to nearby residents and other sensitive receivers. The general requirements are as follows:

- The Contractor shall observe and comply with the WDO and its subsidiary.
- The Contractor shall submit to the Engineer for approval a waste management plan with appropriate mitigation measures including allocation of an area for waste segregation and shall ensure that the day-to-day site operations comply with the approved waste management plan.
- The Contractor shall minimise the generation of waste from his work. Avoidance and minimisation of waste generation can be achieved through changing or improving design and practices, careful planning and good site management.

- The Contractor shall ensure that different types of wastes are segregated on-site and stored in different containers, skips or stockpiles to facilitate reuse / recycling of waste and, as the last resort, disposal at different outlets as appropriate.
- The reuse and recycling of waste shall be practised as far as possible. The recycled materials shall include paper / cardboard, timber and metal etc.
- The Contractor shall ensure that C&D materials are sorted into public fill (inert portion) and non-inert C&D materials (non-inert portion). The public fill which comprises soil, rock, concrete, brick, cement plaster/mortar, inert building debris, aggregates and asphalt shall be reused such as earth filling, reclamation, site formation works, etc. as far as practicable, and delivered to public fill reception facility as the last resort. The non-inert C&D materials which comprises metal, timber, paper, glass, etc. shall be reused and recycled as far as practicable, and, as the last resort, disposal of at landfills.
- The Contractor shall record the amount of waste generated, recycled and disposed of (including the disposal sites).
- The Contractor shall use a trip ticket system for the delivery of C&D materials to any designated public filling facility and/or landfill.
- Training shall be provided for workers about the concepts of site cleanliness and appropriate waste management procedure, including waste reduction, reuse and recycling.
- The Contractor shall not permit sewage and untreated effluent containing sand, cement, silt or any other suspended or dissolved material to flow from the Site onto any adjoining land, or allow any solid waste including refuse which is not part of the final product from waste processing plants to be deposited anywhere within the Site and the adjoining land. He shall arrange removal of such matter from the Site in a proper manner to the satisfaction of the Engineer in consultation with the EPD.
- The Contractor shall observe and comply with the Waste Disposal (Chemical Waste) (General) Regulation.
- The Contractor shall apply for registration as chemical waste producer under the *Waste Disposal (Chemical Waste) (General) Regulation* when chemical waste is produced. All chemical waste shall be properly stored, labelled, packaged and collected in accordance with the Regulation.
- Fly-tipping or disposal of C&D materials at locations other than the designated locations shall be prohibited. In order to review the trip-ticket record as mentioned in **Paragraph 5.3.4** above, the following measures may be considered when necessary:
 - All dump trucks engaged on-site for delivery of inert and non-inert C&D material from the site to the designated disposal locations, including PFRFs, landfills etc., should be equipped with GPS or equivalent system for tracking and monitoring of their travel routings and parking locations by the Contractor to prohibit illegal dumping and landfilling of materials.
 - The data collected by GPS or equivalent system should be recorded properly for checking and analysis the travel routing and parking locations of dump truck engaged on-site.

Operation Phase

- 5.3.16 The operator shall encourage reuse and recycling of commercial wastes in line with government policy. The waste management hierarchy shall be adopted by the building management to manage commercial wastes in a suitable manner. The waste management hierarchy is a concept which shows the desirability of various waste management methods and comprises the following in order of preference:
- Avoidance
 - Minimisation
 - Recycling/reuse
- 5.3.17 MSW such as general refuse, food waste, food packaging, paper, can, plastic bottles, etc., which shall be collected and stored in appropriate waste receptacles with a secure lid to minimize the potential adverse impact due to wind blowing away garbage and to improve hygiene. Recyclable and non-recyclable waste shall be regularly collected by waste collectors and taken off-site for recycling or disposal, respectively.
- 5.3.18 For the cementitious cake, the Contractor should temporarily store the cementitious cake onsite in a waste hopper with impervious sheeting covering before transferred to Public Fill Reception Facilities for reuse.
- 5.3.19 For chemical waste, the Contractor should follow the 'trip-ticket' system of which the arrangement of production, collection and disposal in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.

5.4 Conclusion

- 5.4.1 With the development of WMP and to implement the good site practices recommended therein, the waste generation during construction phase can be greatly reduced. Provided that good site practices as recommended in **Section 5.3** will be followed, there should be no adverse impacts related to the management, handling and transportation of waste during construction phase.
- 5.4.2 During the operation phase, the major type of waste generated will be general waste from onsite staff and truck drivers, and cementitious cake. General waste will be collected on a regular basis by registered waste collectors and will be disposed of at a landfill managed by EPD, while cementitious cake will be reused at Public Fill Reception Facilities. Hence, no adverse waste impacts from handling, transportation, or disposal are anticipated during operation phase.
- 5.4.3 With the implementation of the recommended mitigation measures, adverse waste management impact during the construction and operation phases of the Proposed CBP is not anticipated.

6 LAND CONTAMINATION

6.1 Environmental Legislation and Standards

6.1.1 The following legislation, standards and guidelines were taken reference to for conducting the land contamination assessment:

- EPD Guidance Note for Contaminated Land Assessment and Remediation.
- EPD Practice Guide for Investigation and Remediation of Contaminated Land.
- Guidance Manual for Use of Risk-Based Remediation Goals for Contaminated Land Management.

6.2 Assessment Methodology

6.2.1 Land contamination assessment would be conducted according to EPD's Practice Guide. Typically, as a part of a complete land contamination assessment, a site appraisal would be conducted to determine whether there is any potential for land contamination in the Site.

6.2.2 In the case that potential land contamination issues are identified, a complete land contamination assessment with the following steps should be undertaken:

1. Design a site investigation ("SI") strategy and prepare a Contamination Assessment Plan ("CAP") for EPD's approval
2. Upon EPD's approval of the CAP, conduct SI according to the approved CAP
3. Upon completion of SI, interpret the results and prepare a Contamination Assessment Report ("CAR") for EPD's approval
4. Plan and design remediation strategy and prepare a Remediation Assessment Plan ("RAP") for EPD's approval
5. Carry out remediation works according to the approved RAP
6. Prepare a Remediation Report ("RR") for EPD's endorsement

6.3 Site Appraisal

Review of Historical Use

6.3.1 Aerial photographs records provided in **Appendix K** show that the Site was a piece of agricultural land with some vegetation and a temporary structure for storage in 1963. In Year 1973, The Site was occupied by several temporary structures with some vegetation and bare ground. No significant change on the land use was observed until 2013. In Year 2013, the Site was used as an open storage for vehicles and vehicle parts. In 2023, the Site was used as open storage for construction materials and plants. The historical land uses of the Site based on the aerial photographic records are summarised in **Table 6-1**.

Table 6-1 Historical Land Uses of the Project Site

PHOTO ID	HISTORICAL LAND USES
1963_1963-8394	Majority of the Site was occupied by agricultural land and natural vegetation. A temporary structure with storage use was present. No stressed vegetation was observed.
1973_07328	The Site was occupied by several temporary structures with some vegetation and bare ground. No stressed vegetation was observed.
1982_42976	No major changes were observed
1993_CN05931	No major changes were observed
2003_CW52218	No major changes were observed
2013_CS43741	The site was used as an open storage for abandoned vehicles and vehicle parts.
2023_E188907C	The site was used as open storage for construction materials and plants.

- 6.3.2 A site visit was conducted on 10 January 2023, based on site observations, the site should be used for open storage for construction materials and plants. The ground was paved with concrete and no crack or oil stain was observed. Therefore, there is no potential for land contamination. The site walkover checklist and site photos are provided in **Appendix L**.

Dangerous Goods and Incident Records

- 6.3.3 EPD Regional Office (North) – Yuen Long was contacted on 4 July 2020⁴ to review if any record of registered Chemical Waste Producer (“CWP”) or accident spillage / leakage of dangerous or chemical is related to the Site. EPD’s reply is still pending and will be provided once available.
- 6.3.4 Moreover, Fire Services Department (“FSD”) was also contacted to review any current / past licences for storage of Dangerous Goods (“DG”), registration of DG licence, fire incidents, spillage/leakage of DG etc., relating to the Site. According to FSD’s reply dated 30 July 2024, neither records of DG license, fire incidents nor incidents of spillage/ leakage of DG were found in connection with the Site. Therefore, it is considered that no land contamination potential is anticipated related to the Site. The information request letters and replies from EPD and FSD are attached in **Appendix M**.

6.4 Conclusion

- 6.4.1 Based on the preliminary review on the historical aerial photographs site visit and relevant information from EPD and FSD, no existing and previous development with potential land contamination activities on the Site is identified. Hence, no land contamination issue is anticipated.
- 6.4.2 As such, steps 1 to 6 of **Paragraph 6.2.2** are not required. Hence, no adverse impact from the land contamination issue is anticipated and site investigation is considered not necessary.

Appendix A Calculation and Summary of Emission Rates

Summary of emission rates and parameters for emission sources during daytime operation

Emission Points	Descriptions	Coordinates		Elevation (mPD)	Type of Source	Ducted / Fugitive?	Stack/Emission Height (mAG)	Stack/Emission Height (mPD)	Exit Temperature (K)	Exit Temperature (K) (For model input)	Flow Rate (m³/hour)	Exit Velocity (m/s)	Outlet Dimension (m)						RSP Emission Rate (g/s for point source or g/m/s for area source)	FSP Emission Rate (g/s for point source or g/m/s for area source)	NOx Emission Rate (g/s for point source or g/m/s for area source)	Operation Period
		X	Y										Length of X-axis	Length of Y-axis	Input Angle	Length	Width	Calculated Diameter				
EP1	Dust Collector (DC-1) for Cementitious Material Silo	828770.4	832953.2	51.2	Point	D	13.0	64.2	Ambient	0	3,000	25.42	-	-	-	0.25	0.15	0.22	1.08E-03	1.08E-03	--	0700-2300
EP2	Dust Collector (DC-2) for Cementitious Material Silo	828762.4	832953.2	51.2	Point	D	13.0	64.2	Ambient	0	3000	25.42	-	-	-	0.25	0.15	0.22	1.08E-03	1.08E-03	--	0700-2300
EP3	Dust Collector (DC-3) for Cementitious Material Silo	828753.3	832953.2	51.2	Point	D	13.0	64.2	Ambient	0	3,000	25.42	-	-	-	0.25	0.15	0.22	1.08E-03	1.08E-03	--	0700-2300
EP4	Dust Collector (DC-4) for Cementitious Material Silo	828748.1	832953.2	51.2	Point	D	13.0	64.2	Ambient	0	3,000	25.42	-	-	-	0.25	0.15	0.22	1.08E-03	1.08E-03	--	0700-2300
EP5	Dust Collector (DC-5) for Cement/GGBS/PFA Holding Hopper	828740.0	832927.2	51.2	Point	D	13.0	64.2	Ambient	0	1,500	12.71	-	-	-	0.25	0.15	0.22	1.08E-03	1.08E-03	--	0700-2300
EP6	Dust Collector (DC-6) for Cement/GGBS/PFA Holding Hopper	828735.3	832927.2	51.2	Point	D	13.0	64.2	Ambient	0	1,500	12.71	-	-	-	0.25	0.15	0.22	1.08E-03	1.08E-03	--	0700-2300
EP7	Dust Collector (DC-7) for Cement/GGBS/PFA Holding Hopper	828737.8	832927.2	51.2	Point	D	13.0	64.2	Ambient	0	1,500	12.71	-	-	-	0.25	0.15	0.22	1.08E-03	1.08E-03	--	0700-2300
EP8	Dust Collector (DC-8) for Silica Fume Silo	828735.1	832934.8	51.2	Point	D	13.0	64.2	Ambient	0	3,000	25.42	-	-	-	0.25	0.15	0.22	1.08E-03	1.08E-03	--	0700-2300
EP9	Dust Collector (DC-9) for Silica Fume Silo	828726.2	832938.1	51.2	Point	D	13.0	64.2	Ambient	0	3,000	25.42	-	-	-	0.25	0.15	0.22	1.08E-03	1.08E-03	--	0700-2300
EP10	Dust Collector (DC-10) for Cement/GGBS/PFA Holding Hopper	828729.0	832945.6	51.2	Point	D	13.0	64.2	Ambient	0	1,500	1.25	-	-	-	0.491	0.562	0.59	1.08E-03	1.08E-03	--	0700-2300
EP11	Dust Collector (DC-11) for Cement/GGBS/PFA Holding Hopper	828726.3	832945.6	51.2	Point	D	13.0	64.2	Ambient	0	1,500	1.25	-	-	-	0.491	0.562	0.59	1.08E-03	1.08E-03	--	0700-2300
EP12	Dust Collector (DC-12) for Cement/GGBS/PFA Holding Hopper	828731.5	832945.6	51.2	Point	D	13.0	64.2	Ambient	0	1,500	1.25	-	-	-	0.491	0.562	0.59	1.08E-03	1.08E-03	--	0700-2300
EP13	Dust Collector (DC-13) for Mixer	828731.7	832942.3	51.2	Point	D	13.0	64.2	Ambient	0	1,500	1.25	-	-	-	0.491	0.562	0.59	2.24E-04	2.24E-04	--	0700-2300
EP14	Dust Collector (DC-14) for Mixer	828735.1	832930.5	51.2	Point	D	13.0	64.2	Ambient	0	1,500	1.25	-	-	-	0.491	0.562	0.59	2.24E-04	2.24E-04	--	0700-2300
EP15	Aggregate Stockpile 2	828774.6	832957.0	51.2	Area	F	2	53.2	-	-	-	-	14.5	7.4	90.0	-	-	-	8.19E-07	1.24E-07	--	0700-2300
EP16	Aggregate Stockpile 1	828797.0	832913.7	51.2	Area	F	2	53.2	-	-	-	-	22.0	15.0	0.0	-	-	-	1.47E-06	2.22E-07	--	0700-2300
EP17	Unloading of aggregate into aggregate receiving hopper	828774.8	832936.5	51.2	Area	F	3.5	54.7	-	-	-	-	4.5	4.8	0.0	-	-	-	1.11E-04	3.41E-05	--	0700-2300
EP18	Unloading of aggregate into aggregate receiving hopper	828774.8	832931.5	51.2	Area	F	3.5	54.7	-	-	-	-	4.5	4.8	0.0	-	-	-	1.11E-04	3.41E-05	--	0700-2300
EP19_1	Paved Road	828741.4	832944.7	51.2	Area	F	0.5	51.7	-	-	-	-	15.7	3.0	-52.0	-	-	-	5.21E-05	1.26E-05	--	0700-2300
EP19_2	Paved Road	828762.5	832944.1	51.2	Area	F	0.5	51.7	-	-	-	-	20.2	3.0	-89.0	-	-	-	2.39E-05	5.78E-06	--	0700-2300
EP19_3	Paved Road	828782.5	832944.1	51.2	Area	F	0.5	51.7	-	-	-	-	19.9	3.0	-89.0	-	-	-	2.39E-05	5.78E-06	--	0700-2300
EP19_4	Paved Road	828788.5	832937.9	51.2	Area	F	0.5	51.7	-	-	-	-	9.7	3.0	-47.0	-	-	-	2.39E-05	5.78E-06	--	0700-2300
EP19_5	Paved Road	828788.4	832927.6	51.2	Area	F	0.5	51.7	-	-	-	-	11.3	3.0	-2.0	-	-	-	2.39E-05	5.78E-06	--	0700-2300
EP19_6	Paved Road	828780.9	832918.1	51.2	Area	F	0.5	51.7	-	-	-	-	13.1	3.0	37.0	-	-	-	2.39E-05	5.78E-06	--	0700-2300
EP19_7	Paved Road	828782.1	832915.7	51.2	Area	F	0.5	51.7	-	-	-	-	34.6	3.0	-90.0	-	-	-	2.39E-05	5.78E-06	--	0700-2300
EP19_8	Paved Road	828747.3	832915.8	51.2	Area	F	0.5	51.7	-	-	-	-	10.0	3.0	-84.0	-	-	-	6.54E-06	1.58E-06	--	0700-2300
EP19_9	Paved Road	828736.8	832917.1	51.2	Area	F	0.5	51.7	-	-	-	-	10.3	3.0	-61.0	-	-	-	3.27E-06	7.91E-07	--	0700-2300
EP19_10	Paved Road	828727.0	832923.5	51.2	Area	F	0.5	51.7	-	-	-	-	16.3	3.0	1.0	-	-	-	3.27E-06	7.91E-07	--	0700-2300
EP19_11	Paved Road	828736.0	832918.4	51.2	Area	F	0.5	51.7	-	-	-	-	14.4	3.0	1.0	-	-	-	3.27E-06	7.91E-07	--	0700-2300
EP19_12	Paved Road	828727.4	832939.8	51.2	Area	F	0.5	51.7	-	-	-	-	15.9	3.0	4.0	-	-	-	3.27E-06	7.91E-07	--	0700-2300
EP19_13	Paved Road	828736.3	832932.4	51.2	Area	F	0.5	51.7	-	-	-	-	24.0	3.0	-19.0	-	-	-	3.27E-06	7.91E-07	--	0700-2300
EP19_14	Paved Road	828746.0	832917.0	51.2	Area	F	0.5	51.7	-	-	-	-	29.0	3.0	-10.0	-	-	-	5.43E-06	1.31E-06	--	0700-2300

Note: Max emission rate for EP19

Calculation of Dust Emissions from Dust Collectors

Method: USEPA AP-42 Table 11.12-1 of Section 11.12 version 6/06

EP1 to EP4 and EP8 to EP9 Emission from Dust Collectors (DC 1 to DC 4 & DC 8 to DC 9) for Cementitious Materials Silos

Maximum Cementitious Material Loading Rate per Silo	=	60	tonnes/hour	(Note 1)
Capacity of Dust Collector (Flow rate)	=	3,000	m ³ /hour	(Note 2)
	=	1	m ³ /s	
Control Efficiency (η%)	=	99.99	%	(Note 2)
Uncontrolled TSP Emission Factor of Cementitious Materials	=	1.57	kg/Mg	(Note 3)
Uncontrolled RSP Emission Factor of Cementitious Materials	=	0.65	kg/Mg	(Note 4)
Uncontrolled FSP Emission Factor of Cementitious Materials	=	0.65	kg/Mg	(Note 5)
Unmitigated TSP Emission Rate of Each Dust Collector of Cementitious Materials per Silo	=	94.2	kg/hour	
Unmitigated RSP Emission Rate of Each Dust Collector of Cementitious Materials per Silo	=	39	kg/hour	
Unmitigated FSP Emission Rate of Each Dust Collector of Cementitious Materials per Silo	=	39	kg/hour	
Mitigated TSP Emission of Dust Collector	=	0.00942	kg/hour	
	=	9.42	g/hour	
	=	0.0026	g/s	
	=	3.14	mg/m ³	
Mitigated RSP Emission of Dust Collector	=	0.0039	kg/hour	
	=	3.9	g/hour	
	=	0.0011	g/s	
	=	1.30	mg/m ³	
Mitigated FSP Emission of Dust Collector	=	0.0039	kg/hour	
	=	3.9	g/hour	
	=	0.0011	g/s	
	=	1.30	mg/m ³	

EP5 to EP7 and EP10 to EP12 Emissions from Dust Collectors (DC5 to DC7 and DC10 to DC12) for Cement/GGBS/PFA Holding Hoppers

Maximum Cement/GGBS/PFA Consumption Rate	=	60	tonne/hour	(Note 6)
Capacity of Dust Collector (Flow rate)	=	1500	m ³ /hour	(Note 2)
	=	0.4167	m ³ /s	
Control Efficiency (η%)	=	99.99	%	(Note 2)
Uncontrolled TSP Emission Factor of Cement/PFA/GGBS Loading	=	1.57	kg/Mg	(Notes 7, 3)
Uncontrolled RSP Emission Factor of Cement/PFA/GGBS Loading	=	0.65	kg/Mg	(Notes 7, 4)
Uncontrolled FSP Emission Factor of Cement/PFA/GGBS Loading	=	0.65	kg/Mg	(Notes 7, 5)
Unmitigated TSP Emission Rate of Each Dust Collector of Cementitious Materials	=	94.2	kg/hour	
Unmitigated RSP Emission Rate of Each Dust Collector of Cementitious Materials	=	39	kg/hour	
Unmitigated FSP Emission Rate of Each Dust Collector of Cementitious Materials	=	39	kg/hour	
Mitigated TSP Emission of Dust Collector	=	0.00942	kg/hour	
	=	9.42	g/hour	
	=	0.0026	g/s	
	=	6.28	mg/m ³	
Mitigated RSP Emission of Dust Collector	=	0.0039	kg/hour	
	=	3.9	g/hour	
	=	0.0011	g/s	
	=	2.6	mg/m ³	
Mitigated FSP Emission of Dust Collector	=	0.0039	kg/hour	
	=	3.9	g/hour	
	=	0.0011	g/s	
	=	2.6	mg/m ³	

EP13 and EP14 Emissions from Dust Collector (DC 13 and DC 14) for 5m³ Concrete Mixer

Total Concrete Production Rate	=	100	m ³ /hour/leg	
Density	=	2.4	tonne/m ³	
Total Concrete Production Rate	=	240	tonne/hour/leg	
Maximum Cementitious Material Consumption Rate (r1)	=	100	tonne/hour/leg	(Note 8)
	=	0.028	tonne/s/leg	
Maximum Aggregate/Sand Consumption Rate (r2)	=	200	tonne/hour/leg	(Note 8)
	=	0.056	tonne/s/leg	
Uncontrolled TSP Emission Factor of Mixer Loading for Cementitious Material (EF _{TSP1})	=	0.286	kg/Mg	(Note 9)
Uncontrolled TSP Emission Factor of Mixer(Weigh Hopper) Loading for Aggregate/Sand (EF _{TSP2})	=	0.0026	kg/Mg	(Note 9)
Unmitigated Total TSP Emission Rate of (ER _{TSP})	=	0.0081	kg/s/mixer	
Uncontrolled RSP Emission Factor of Mixer Loading for Cementitious Material (EF _{RSP1})	=	0.078	kg/Mg	(Note 9)
Uncontrolled RSP Emission Factor of Mixer(Weigh Hopper) Loading for Aggregate/Sand (EF _{RSP2})	=	0.0013	kg/Mg	(Note 9)
Unmitigated Total RSP Emission Rate of (ER _{RSP})	=	0.0022	kg/s/mixer	
Uncontrolled FSP Emission Factor of Mixer Loading for Cementitious Material (EF _{FSP1})	=	0.078	kg/Mg	(Note 10)
Uncontrolled FSP Emission Factor of Mixer(Weigh Hopper) Loading for Aggregate/Sand (EF _{FSP2})	=	0.0013	kg/Mg	(Note 10)
Unmitigated Total FSP Emission Rate of (ER _{FSP})	=	0.0022	kg/s/mixer	

Mitigated Measures: Dust collector DC 13 and DC 14

Capacity of Dust Collector (Flow rate)	=	1500	m ³ /hour	(Note 2)
	=	0.4167	m ³ /s	
Control Efficiency (η%)	=	99.99	%	(Note 2)
Mitigated TSP Emission Rate of Dust Collector	=	8.09E-07	kg/s	
	=	0.001	g/s	
	=	1.9	mg/m ³	
Mitigated RSP Emission Rate of Dust Collector	=	2.24E-07	kg/s	
	=	2.24E-04	g/s	
	=	0.5	mg/m ³	
Mitigated FSP Emission Rate of Dust Collector	=	2.24E-07	kg/s	
	=	2.24E-04	g/s	
	=	0.5	mg/m ³	

Note:

- The maximum cementitious material (cement, PFA, GGBS and silica fume) loading rate is provided by the Applicant.
- Capacity of Dust Collector is provided by the Applicant as shown Appendix A.
- For TSP (or Total PM), cement unloading rate of 0.36kg/Mg and cement supplement unloading rate of 1.57kg/Mg are mentioned in USEPA AP-42 Table 11.12-1 of Section 11.12 version 6/06. The higher value of 1.57kg/Mg is considered for the worst-case scenario.
- For RSP (or PM₁₀), cement unloading rate of 0.24kg/Mg and cement supplement unloading rate of 0.65kg/Mg are mentioned in USEPA AP-42 Table 11.12-1 of Section 11.12 version 6/06. The higher value of 0.65kg/Mg is considered for the worst-case scenario.
- For FSP (or PM_{2.5}), no data for cementitious material unloading to elevated storage silo is provided in USEPA AP-42. Therefore, the uncontrolled FSP emission factor for cementitious material unloading to silo is assumed to be the same as that of RSP for the worst-case scenario.
- The maximum cement, PFA and GGBS consumption rate is provided by the Applicant.
- Cementitious material is loaded from the relevant silo to pressurised tank and then the relevant holding hopper. Because the cementitious material is conveyed via pneumatic pipe to holding tank, the emission factor of unloading to elevated silo (pneumatic) should be adopted for the worst-case scenario.
- Material consumption rates are different for different concrete products. Therefore, the maximum aggregate and cementitious consumption rates have been adopted for the worst-case scenario.
- The emission factors are referred to USEPA AP-42 Table 11.12-1 of Section 11.12 version 6/06.
- For FSP (or PM_{2.5}), no data for cementitious material and aggregate/sand unloading to mixer/weigh hopper is provided in USEPA AP-42. Therefore, the uncontrolled FSP emission factors for cementitious material and aggregate/sand unloading to mixer/weigh hopper are assumed to be the same as that of RSP for the worst-case scenario.

Environmental Assessment for Concrete Batching Plant Kam Tin

Calculation of Emissions from Aggregate Ground Stockpile

Method: USEPA AP-42, Section 13.2.4.3, version 6/06

Emission Factor	=	$k(0.0016) * \frac{(U/2.2)^{1.3}}{(M/2)^{1.4}}$	kg/Mg	
Wing Speed (U)	=	3.60	m/s	(Note 1)
Moisture Content (M)	=	4.17	%	(Note 2)
k_{RSP}	=	0.35	dimensionless	(Note 3)
k_{FSP}	=	0.053	dimensionless	(Note 3)
RSP Emission Factor	=	3.80E-04	kg/Mg	
FSP Emission Factor	=	5.75E-05	kg/Mg	
Working hour per day	=	24	hour/day	

Stockpiles (EP15)

Approximate Amount of Aggregate Fine/Sand Stored	=	400	tonnes/day	(Note 4)
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Mitigation Measures : Cover on top with three side enclosure + roof + watering

Receiving Area	=	107.3	m ²	
Control Efficiency	=	95	%	(Note 5)
Mitigated RSP Emission Rate	=	0.007595	kg/day	
	=	0.000088	g/s	
	=	8.192E-07	g/m ² /s	
Mitigated FSP Emission Rate	=	0.001150	kg/day	
	=	0.000013	g/s	
	=	1.241E-07	g/m ² /s	

Stockpiles (EP16)

Approximate Amount of Aggregate Fine/Sand Stored	=	1100	tonnes/day	(Note 4)
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Mitigation Measures : Watering

Receiving Area	=	330	m ²	
Control Efficiency	=	90	%	(Note 6)
Mitigated RSP Emission Rate	=	0.041771	kg/day	
	=	0.000483	g/s	
	=	1.465E-06	g/m ² /s	
Mitigated FSP Emission Rate	=	0.006325	kg/day	
	=	0.000073	g/s	
	=	2.218E-07	g/m ² /s	

Noted:

1. The average wind speed is estimated based on the average wind speed for MM5 Grids (33,46) in m/s.
2. The moisture content was assumed to be 4.17% with reference to AP42 Table 11.12-1 Note b - moisture content of sand
3. The particle size multipliers are suggested in USEPA AP-42 Section 13.2.4.3.
4. The approximate amounts of stored sand/aggregate fines and aggregates per day are advised by the Applicant.
5. Reference to the Approved EIA report "Road Works at West Kowloon" in 2009, 95% of dust removal efficiency was adopted for unloading aggregate to receiving hopper with enclosure on three sides and a top cover and equipped with water spraying system.
6. Reference to the DRR of Approved SP Licence Renewal "Lam Tei Quarry CBP", 90% of dust removal efficiency was adopted for unloading aggregate receiving hopper with watering.

Concrete Batching Plant at Kam Tin
Calculation of Emissions from Aggregate Transfer
Method: USEPA AP-42 Table 11.12-1 of Section 11.12 version 6/06

Emissions from unloading of aggregates to aggregate receiving hopper (EP17)

Maximum aggregate loading rate	=	100,000	kg/hr	
		100	tonnes/hour (i.e. Mg/hour)	(Note 1)

Uncontrolled TSP Emission Factor (Aggregate)	=	0.0035	kg/Mg	
Uncontrolled RSP Emission Factor (Aggregate)	=	0.0017	kg/Mg	

Unmitigated Total TSP Emission Rate from EP5	=	0.3500	kg/hr	
Unmitigated Total RSP Emission Rate from EP5	=	0.1700	kg/hr	
Unmitigated Total FSP Emission Rate from EP5	=	0.0525	kg/hr	(Note 2)

Mitigation Measures : With three side enclosure + water spraying

Receiving Area	=	21.36	m ²	(Note 1)
Control Efficiency	=	95	%	(Note 3)

Mitigated TSP Emission Rate	=	0.0175	kg/hr	
	=	0.004861	g/s	
	=	2.28E-04	g/m ² /s	

Mitigated RSP Emission Rate	=	0.0085	kg/hr	
	=	0.002361	g/s	
	=	1.11E-04	g/m ² /s	

Mitigated FSP Emission Rate	=	0.00263	kg/hr	
	=	7.29E-04	g/s	
	=	3.41E-05	g/m ² /s	

Emissions from unloading of aggregates to aggregate receiving hopper (EP18)

Maximum aggregate loading rate	=	100,000	kg/hr	
		100	tonnes/hour (i.e. Mg/hour)	(Note 1)

Uncontrolled TSP Emission Factor (Aggregate)	=	0.0035	kg/Mg	
Uncontrolled RSP Emission Factor (Aggregate)	=	0.0017	kg/Mg	

Unmitigated Total TSP Emission Rate from EP5	=	0.3500	kg/hr	
Unmitigated Total RSP Emission Rate from EP5	=	0.1700	kg/hr	
Unmitigated Total FSP Emission Rate from EP5	=	0.0525	kg/hr	(Note 2)

Mitigation Measures : With three side enclosure + water spraying

Receiving Area	=	21.36	m ²	(Note 1)
Control Efficiency	=	95	%	(Note 3)

Mitigated TSP Emission Rate	=	0.0175	kg/hr	
	=	0.004861	g/s	
	=	2.28E-04	g/m ² /s	

Mitigated RSP Emission Rate	=	0.0085	kg/hr	
	=	0.002361	g/s	
	=	1.11E-04	g/m ² /s	

Mitigated FSP Emission Rate	=	0.00263	kg/hr	
	=	7.29E-04	g/s	
	=	3.41E-05	g/m ² /s	

Note

1. Information as provided by the Applicant.
2. FSP emission concentration is assumed to be 15% of TSP in accordance with Page B.2-13, Appendix B2 of AP-42 .
3. Reference to the Approved EIA report "Road Works at West Kowloon" in 2009, 95% of dust removal efficiency was adopted for unloading aggregate to receiving hopper enclosure on three sides and a top cover and equipped with water spraying system.
4. Since the aggregate unloading from barge and truck will not operate at the same time, so as the worst case scenario, the higher pollutant emission rate will be adopted in the assessment (i.e. unloading from barge)

Environmental Assessment for Concrete Batching Plant at Kam Tin

Traffic Density of the CBP

Segment ID	Coordinates		Road Length	0700 - 0900			
	X	Y		Concrete Truck	Aggregate Truck	Cementitious Tanker	Total
EP19_1	828741.4	832944.7	15.7	20	4		24
EP19_2	828762.5	832944.1	20.2	20	2		22
EP19_3	828782.5	832944.1	19.9	20	2		22
EP19_4	828788.5	832937.9	9.7	20	2		22
EP19_5	828788.4	832927.6	11.3	20	2		22
EP19_6	828780.9	832918.1	13.1	20	2		22
EP19_7	828782.1	832915.7	34.6	20	2		22
EP19_8	828747.3	832915.8	10	20			20
EP19_9	828736.8	832917.1	10.3	10			10
EP19_10	828727	832923.5	16.3	10			10
EP19_11	828736	832918.4	14.4	10			10
EP19_12	828727.4	832939.8	15.9	10			10
EP19_13	828736.3	832932.4	24	10			10
EP19_14	828746	832917	29	0	2		2

RSP Emission Factors of the Paved Road

Segment ID	Coordinates		Road Length	RSP Emission Factor (g/s/m ²)			
	X	Y		Concrete Truck	Aggregate Truck	Cementitious Tanker	Total
EP19_1	828741.4	832944.7	15.7	1.83E-05	3.66E-06	0.00E+00	2.20E-05
EP19_2	828762.5	832944.1	20.2	1.24E-05	1.24E-06	0.00E+00	1.37E-05
EP19_3	828782.5	832944.1	19.9	1.24E-05	1.24E-06	0.00E+00	1.37E-05
EP19_4	828788.5	832937.9	9.7	1.24E-05	1.24E-06	0.00E+00	1.37E-05
EP19_5	828788.4	832927.6	11.3	1.24E-05	1.24E-06	0.00E+00	1.37E-05
EP19_6	828780.9	832918.1	13.1	1.24E-05	1.24E-06	0.00E+00	1.37E-05
EP19_7	828782.1	832915.7	34.6	1.24E-05	1.24E-06	0.00E+00	1.37E-05
EP19_8	828747.3	832915.8	10	6.54E-06			6.54E-06
EP19_9	828736.8	832917.1	10.3	3.27E-06			3.27E-06
EP19_10	828727	832923.5	16.3	3.27E-06			3.27E-06
EP19_11	828736	832918.4	14.4	3.27E-06			3.27E-06
EP19_12	828727.4	832939.8	15.9	3.27E-06			3.27E-06
EP19_13	828736.3	832932.4	24	3.27E-06			3.27E-06
EP19_14	828746	832917	29		5.88E-07	0.00E+00	5.88E-07

FSP Emission Factors of the Paved Road

Segment ID	Coordinates		Road Length	FSP Emission Factor (g/s/m ²)			
	X	Y		Concrete Truck	Aggregate Truck	Cementitious Tanker	Total
EP19_1	828741.4	832944.7	15.7	4.43E-06	8.86E-07	0.00E+00	5.31E-06
EP19_2	828762.5	832944.1	20.2	3.00E-06	3.00E-07	0.00E+00	3.31E-06
EP19_3	828782.5	832944.1	19.9	3.00E-06	3.00E-07	0.00E+00	3.31E-06
EP19_4	828788.5	832937.9	9.7	3.00E-06	3.00E-07	0.00E+00	3.31E-06
EP19_5	828788.4	832927.6	11.3	3.00E-06	3.00E-07	0.00E+00	3.31E-06
EP19_6	828780.9	832918.1	13.1	3.00E-06	3.00E-07	0.00E+00	3.31E-06
EP19_7	828782.1	832915.7	34.6	3.00E-06	3.00E-07	0.00E+00	3.31E-06
EP19_8	828747.3	832915.8	10	1.58E-06			1.58E-06
EP19_9	828736.8	832917.1	10.3	7.91E-07			7.91E-07
EP19_10	828727	832923.5	16.3	7.91E-07			7.91E-07
EP19_11	828736	832918.4	14.4	7.91E-07			7.91E-07
EP19_12	828727.4	832939.8	15.9	7.91E-07			7.91E-07
EP19_13	828736.3	832932.4	24	7.91E-07			7.91E-07
EP19_14	828746	832917	29		1.42E-07	0.00E+00	1.42E-07

Calculation of Dust Suppression Efficiency for Paved Road
Method: USEPA, Control of Open Fugitive Dust Sources

Percentage of Dust Suppression by Watering is derived from the equation:
 $C = 100 - (0.8pdt / i)$

Where:

C	=	average control efficiency, percent
P	=	potential average hourly daytime evaporation rate, mm/h
d	=	average hourly daytime traffic rate
i	=	application intensity, L/m ²
t	=	time between applications, h (t =1 for apply water per hour)

P	=	0.0049 x evaporation for annual condition	(Note 1)
Evaporation for annual condition	=	1204.1 mm	(Note 2)
	=	47.40542 inch	(Note 3)
P	=	0.2323 mm/h	
i	=	1.5 L/m ²	
t	=	1 h	(t=1 for apply watering every hour)

Road Segments	average hourly daytime traffic rate (d)	Average control efficiency (%)
EP19_1	56	93.1
EP19_2	38	95.3
EP19_3	38	95.3
EP19_4	38	95.3
EP19_5	38	95.3
EP19_6	38	95.3
EP19_7	38	95.3
EP19_8	20	97.5
EP19_9	10	98.8
EP19_10	10	98.8
EP19_11	10	98.8
EP19_12	10	98.8
EP19_13	10	98.8
EP19_14	18	97.8

SP Licence Application for Concrete Batching Plant at TKO 137 Area
Calculation of Emissions from Paved Roads (0700 to 0900)
Method: USEPA AP-42, Section 13.2.1.3, version 1/2011

$$\text{Particulate Emission Factor (g/VKT), E} = k (sL)^{0.91} (W)^{1.02}$$

where

k = particle size multiplier
sL = road surface silt loading
W = average weight of the vehicles traveling the road

From Concrete Trucks

Mitigation measures: water spraying and wheel washing

Average Loaded Weight of Truck	=	30	tons	
Average Unladen Weight of Trucks	=	15	tons	
Average Weight of Truck	=	22.5	tons	
k	=	3.23	g/VKT (for TSP)	(Note 1)
	=	0.62	g/VKT (for RSP)	
	=	0.15	g/VKT (for FSP)	
sL = road surface silt loading	=	12	g/m ²	(Note 2)

EP19_1

Control Efficiency	=	93.1	%	(Note 3)
Trucks Travelling Frequency	=	20	veh/hr	(Note 4)
Road Length	=	15.7	m	
Area of paved road travelled	=	47.1	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	9.8829	g/VKT	
	=	9.88E-03	g/veh/m	
	=	1.98E-01	g/m/hr	
	=	5.49E-05	g/m/s	
	=	8.62E-04	g/s	
	=	<u>1.83E-05</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.4645	g/VKT	
FSP Emission Factor (controlled) of paved road	=	2.3910	g/VKT	
	=	2.39E-03	g/veh/m	
	=	4.78E-02	g/m/hr	
	=	1.33E-05	g/m/s	
	=	2.09E-04	g/s	
	=	<u>4.43E-06</u>	g/s/m ²	

EP19_2

Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	20	veh/hr	(Note 4)
Road Length	=	20.2	m	
Area of paved road travelled	=	60.6	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	6.7062	g/VKT	
	=	6.71E-03	g/veh/m	
	=	1.34E-01	g/m/hr	
	=	3.73E-05	g/m/s	
	=	7.53E-04	g/s	
	=	<u>1.242E-05</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.465	g/VKT	
FSP Emission Factor (controlled) of paved road	=	1.6225	g/VKT	
	=	1.62E-03	g/veh/m	
	=	3.24E-02	g/m/hr	
	=	9.01E-06	g/m/s	
	=	1.82E-04	g/s	
	=	<u>3.00E-06</u>	g/s/m ²	

EP19_3

Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	20	veh/hr	(Note 4)
Road Length	=	19.9	m	
Area of paved road travelled	=	59.7	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	6.7062	g/VKT	
	=	6.71E-03	g/veh/m	
	=	1.34E-01	g/m/hr	
	=	3.73E-05	g/m/s	
	=	7.41E-04	g/s	
	=	<u>1.242E-05</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.465	g/VKT	
FSP Emission Factor (controlled) of paved road	=	1.6225	g/VKT	
	=	1.62E-03	g/veh/m	
	=	3.24E-02	g/m/hr	
	=	9.01E-06	g/m/s	
	=	1.79E-04	g/s	
	=	<u>3.00E-06</u>	g/s/m ²	

EP19_4

Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	20	veh/hr	(Note 4)
Road Length	=	9.7	m	
Area of paved road travelled	=	29.1	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	6.7062	g/VKT	
	=	6.71E-03	g/veh/m	

	=	1.34E-01	g/m/hr	
	=	3.73E-05	g/m/s	
	=	3.61E-04	g/s	
	=	<u>1.242E-05</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.465	g/VKT	
FSP Emission Factor (controlled) of paved road	=	1.6225	g/VKT	
	=	1.62E-03	g/veh/m	
	=	3.24E-02	g/m/hr	
	=	9.01E-06	g/m/s	
	=	8.74E-05	g/s	
	=	<u>3.00E-06</u>	g/s/m ²	
EP19_5				
Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	20	veh/hr	(Note 4)
Road Length	=	11.3	m	
Area of paved road travelled	=	33.9	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	6.7062	g/VKT	
	=	6.71E-03	g/veh/m	
	=	1.34E-01	g/m/hr	
	=	3.73E-05	g/m/s	
	=	4.21E-04	g/s	
	=	<u>1.242E-05</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.465	g/VKT	
FSP Emission Factor (controlled) of paved road	=	1.6225	g/VKT	
	=	1.62E-03	g/veh/m	
	=	3.24E-02	g/m/hr	
	=	9.01E-06	g/m/s	
	=	1.02E-04	g/s	
	=	<u>3.00E-06</u>	g/s/m ²	
EP19_6				
Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	20	veh/hr	(Note 4)
Road Length	=	13.1	m	
Area of paved road travelled	=	39.3	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	6.7062	g/VKT	
	=	6.71E-03	g/veh/m	
	=	1.34E-01	g/m/hr	
	=	3.73E-05	g/m/s	
	=	4.88E-04	g/s	
	=	<u>1.242E-05</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.465	g/VKT	
FSP Emission Factor (controlled) of paved road	=	1.6225	g/VKT	
	=	1.62E-03	g/veh/m	
	=	3.24E-02	g/m/hr	
	=	9.01E-06	g/m/s	
	=	1.18E-04	g/s	
	=	<u>3.00E-06</u>	g/s/m ²	
EP19_7				
Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	20	veh/hr	(Note 4)
Road Length	=	34.6	m	
Area of paved road travelled	=	103.8	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	6.7062	g/VKT	
	=	6.71E-03	g/veh/m	
	=	1.34E-01	g/m/hr	
	=	3.73E-05	g/m/s	
	=	1.29E-03	g/s	
	=	<u>1.242E-05</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.465	g/VKT	
FSP Emission Factor (controlled) of paved road	=	1.6225	g/VKT	
	=	1.62E-03	g/veh/m	
	=	3.24E-02	g/m/hr	
	=	9.01E-06	g/m/s	
	=	3.12E-04	g/s	
	=	<u>3.00E-06</u>	g/s/m ²	
EP19_8				
Control Efficiency	=	97.5	%	(Note 3)
Trucks Travelling Frequency	=	20	veh/hr	(Note 4)
Road Length	=	10.0	m	
Area of paved road travelled	=	30.0	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	3.5296	g/VKT	
	=	3.53E-03	g/veh/m	
	=	7.06E-02	g/m/hr	
	=	1.96E-05	g/m/s	
	=	1.96E-04	g/s	
	=	<u>6.536E-06</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.465	g/VKT	
FSP Emission Factor (controlled) of paved road	=	0.8539	g/VKT	

= 8.54E-04 g/veh/m
 = 1.71E-02 g/m/hr
 = 4.74E-06 g/m/s
 = 4.74E-05 g/s
 = 1.58E-06 g/s/m²

EP19_9

Control Efficiency	=	98.8	%	(Note 3)
Trucks Travelling Frequency	=	10	veh/hr	(Note 4)
Road Length	=	10.3	m	
Area of paved road travelled	=	30.9	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	3.5296	g/VKT	
	=	3.53E-03	g/veh/m	
	=	3.53E-02	g/m/hr	
	=	9.80E-06	g/m/s	
	=	1.01E-04	g/s	
	=	<u>3.268E-06</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.465	g/VKT	
FSP Emission Factor (controlled) of paved road	=	0.8539	g/VKT	
	=	8.54E-04	g/veh/m	
	=	8.54E-03	g/m/hr	
	=	2.37E-06	g/m/s	
	=	2.44E-05	g/s	
	=	<u>7.91E-07</u>	g/s/m ²	

EP19_10

Control Efficiency	=	98.8	%	(Note 3)
Trucks Travelling Frequency	=	10	veh/hr	(Note 4)
Road Length	=	16.3	m	
Area of paved road travelled	=	48.9	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	3.5296	g/VKT	
	=	3.53E-03	g/veh/m	
	=	3.53E-02	g/m/hr	
	=	9.80E-06	g/m/s	
	=	1.60E-04	g/s	
	=	<u>3.268E-06</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.465	g/VKT	
FSP Emission Factor (controlled) of paved road	=	0.8539	g/VKT	
	=	8.54E-04	g/veh/m	
	=	8.54E-03	g/m/hr	
	=	2.37E-06	g/m/s	
	=	3.87E-05	g/s	
	=	<u>7.91E-07</u>	g/s/m ²	

EP19_11

Control Efficiency	=	98.8	%	(Note 3)
Trucks Travelling Frequency	=	10	veh/hr	(Note 4)
Road Length	=	14.4	m	
Area of paved road travelled	=	43.2	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	3.5296	g/VKT	
	=	3.53E-03	g/veh/m	
	=	3.53E-02	g/m/hr	
	=	9.80E-06	g/m/s	
	=	1.41E-04	g/s	
	=	<u>3.268E-06</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.465	g/VKT	
FSP Emission Factor (controlled) of paved road	=	0.8539	g/VKT	
	=	8.54E-04	g/veh/m	
	=	8.54E-03	g/m/hr	
	=	2.37E-06	g/m/s	
	=	3.42E-05	g/s	
	=	<u>7.91E-07</u>	g/s/m ²	

EP19_12

Control Efficiency	=	98.8	%	(Note 3)
Trucks Travelling Frequency	=	10	veh/hr	(Note 4)
Road Length	=	15.9	m	
Area of paved road travelled	=	47.7	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	3.5296	g/VKT	
	=	3.53E-03	g/veh/m	
	=	3.53E-02	g/m/hr	
	=	9.80E-06	g/m/s	
	=	1.56E-04	g/s	
	=	<u>3.268E-06</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.465	g/VKT	
FSP Emission Factor (controlled) of paved road	=	0.8539	g/VKT	
	=	8.54E-04	g/veh/m	
	=	8.54E-03	g/m/hr	
	=	2.37E-06	g/m/s	
	=	3.77E-05	g/s	
	=	<u>7.91E-07</u>	g/s/m ²	

EP19_13

EP19_14	Control Efficiency	=	98.8	%	(Note 3)
	Trucks Travelling Frequency	=	10	veh/hr	(Note 4)
	Road Length	=	24.0	m	
	Area of paved road travelled	=	72.0	m ²	
	RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
	RSP Emission Factor (controlled) of paved road	=	3.5296	g/VKT	
		=	3.53E-03	g/veh/m	
		=	3.53E-02	g/m/hr	
		=	9.80E-06	g/m/s	
		=	2.35E-04	g/s	
		=	<u>3.268E-06</u>	g/s/m ²	
	FSP Emission Factor (uncontrolled) of paved road	=	34.465	g/VKT	
	FSP Emission Factor (controlled) of paved road	=	0.8539	g/VKT	
		=	8.54E-04	g/veh/m	
		=	8.54E-03	g/m/hr	
		=	2.37E-06	g/m/s	
		=	5.69E-05	g/s	
		=	<u>7.91E-07</u>	g/s/m ²	
	Control Efficiency	=	97.8	%	(Note 3)
	Trucks Travelling Frequency	=	0	veh/hr	(Note 4)
	Road Length	=	29.0	m	
	Area of paved road travelled	=	87.0	m ²	
	RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
	RSP Emission Factor (controlled) of paved road	=	3.5296	g/VKT	
		=	3.53E-03	g/veh/m	
		=	0.00E+00	g/m/hr	
		=	0.00E+00	g/m/s	
		=	0.00E+00	g/s	
		=	<u>0.000E+00</u>	g/s/m ²	
	FSP Emission Factor (uncontrolled) of paved road	=	34.465	g/VKT	
	FSP Emission Factor (controlled) of paved road	=	0.8539	g/VKT	
		=	8.54E-04	g/veh/m	
		=	0.00E+00	g/m/hr	
		=	0.00E+00	g/m/s	
		=	0.00E+00	g/s	
		=	<u>0.00E+00</u>	g/s/m ²	
From Aggregate Truck					
<i>Mitigation measures: water spraying and wheel washing</i>					
	Average Loaded Weight of Concrete Lorry Mixer	=	30	tons	
	Average Weight of Concrete Lorry Mixer	=	15	tons	
	Average Unladen Weight of Concrete Lorry Mixer	=	22.5	tons	
	k	=	3.23	g/VKT (for TSP)	(Note 1)
		=	0.62	g/VKT (for RSP)	
		=	0.15	g/VKT (for FSP)	
	sL = road surface silt loading	=	12	g/m ²	(Note 2)
EP19_1	Control Efficiency	=	93.1	%	(Note 3)
	Trucks Travelling Frequency	=	4	veh/hr	(Note 4)
	Road Length	=	15.7	m	
	Area of paved road travelled	=	47.1	m ²	
	RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
	RSP Emission Factor (controlled) of paved road	=	9.8829	g/VKT	
		=	9.88E-03	g/veh/m	
		=	3.95E-02	g/m/hr	
		=	1.10E-05	g/m/s	
		=	1.72E-04	g/s	
		=	<u>3.66E-06</u>	g/s/m ²	
	FSP Emission Factor (uncontrolled) of paved road	=	34.4645	g/VKT	
	FSP Emission Factor (controlled) of paved road	=	2.3910	g/VKT	
		=	2.39E-03	g/veh/m	
		=	9.56E-03	g/m/hr	
		=	2.66E-06	g/m/s	
		=	4.17E-05	g/s	
		=	<u>8.86E-07</u>	g/s/m ²	
EP19_2	Control Efficiency	=	95.3	%	(Note 3)
	Trucks Travelling Frequency	=	2	veh/hr	(Note 4)
	Road Length	=	20.2	m	
	Area of paved road travelled	=	60.6	m ²	
	RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
	RSP Emission Factor (controlled) of paved road	=	6.7062	g/VKT	
		=	6.71E-03	g/veh/m	
		=	1.34E-02	g/m/hr	
		=	3.73E-06	g/m/s	
		=	7.53E-05	g/s	
		=	<u>1.24E-06</u>	g/s/m ²	
	FSP Emission Factor (uncontrolled) of paved road	=	34.4645	g/VKT	
	FSP Emission Factor (controlled) of paved road	=	1.6225	g/VKT	
		=	1.62E-03	g/veh/m	
		=	3.24E-03	g/m/hr	
		=	9.01E-07	g/m/s	
		=	1.82E-05	g/s	
		=	<u>3.00E-07</u>	g/s/m ²	

EP19_3

Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	2	veh/hr	(Note 4)
Road Length	=	19.9	m	
Area of paved road travelled	=	59.7	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	6.7062	g/VKT	
	=	6.71E-03	g/veh/m	
	=	1.34E-02	g/m/hr	
	=	3.73E-06	g/m/s	
	=	7.41E-05	g/s	
	=	<u>1.24E-06</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.4645	g/VKT	
FSP Emission Factor (controlled) of paved road	=	1.6225	g/VKT	
	=	1.62E-03	g/veh/m	
	=	3.24E-03	g/m/hr	
	=	9.01E-07	g/m/s	
	=	1.79E-05	g/s	
	=	<u>3.00E-07</u>	g/s/m ²	

EP19_4

Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	2	veh/hr	(Note 4)
Road Length	=	9.7	m	
Area of paved road travelled	=	29.1	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	6.7062	g/VKT	
	=	6.71E-03	g/veh/m	
	=	1.34E-02	g/m/hr	
	=	3.73E-06	g/m/s	
	=	3.61E-05	g/s	
	=	<u>1.24E-06</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.4645	g/VKT	
FSP Emission Factor (controlled) of paved road	=	1.6225	g/VKT	
	=	1.62E-03	g/veh/m	
	=	3.24E-03	g/m/hr	
	=	9.01E-07	g/m/s	
	=	8.74E-06	g/s	
	=	<u>3.00E-07</u>	g/s/m ²	

EP19_5

Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	2	veh/hr	(Note 4)
Road Length	=	11.3	m	
Area of paved road travelled	=	33.9	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	6.7062	g/VKT	
	=	6.71E-03	g/veh/m	
	=	1.34E-02	g/m/hr	
	=	3.73E-06	g/m/s	
	=	4.21E-05	g/s	
	=	<u>1.24E-06</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.4645	g/VKT	
FSP Emission Factor (controlled) of paved road	=	1.6225	g/VKT	
	=	1.62E-03	g/veh/m	
	=	3.24E-03	g/m/hr	
	=	9.01E-07	g/m/s	
	=	1.02E-05	g/s	
	=	<u>3.00E-07</u>	g/s/m ²	

EP19_6

Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	2	veh/hr	(Note 4)
Road Length	=	13.1	m	
Area of paved road travelled	=	39.3	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	6.7062	g/VKT	
	=	6.71E-03	g/veh/m	
	=	1.34E-02	g/m/hr	
	=	3.73E-06	g/m/s	
	=	4.88E-05	g/s	
	=	<u>1.24E-06</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.4645	g/VKT	
FSP Emission Factor (controlled) of paved road	=	1.6225	g/VKT	
	=	1.62E-03	g/veh/m	
	=	3.24E-03	g/m/hr	
	=	9.01E-07	g/m/s	
	=	1.18E-05	g/s	
	=	<u>3.00E-07</u>	g/s/m ²	

EP19_7

Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	2	veh/hr	(Note 4)
Road Length	=	34.6	m	
Area of paved road travelled	=	103.8	m ²	

RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	6.7062	g/VKT	
	=	6.71E-03	g/veh/m	
	=	1.34E-02	g/m/hr	
	=	3.73E-06	g/m/s	
	=	1.29E-04	g/s	
	=	<u>1.24E-06</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.4645	g/VKT	
FSP Emission Factor (controlled) of paved road	=	1.6225	g/VKT	
	=	1.62E-03	g/veh/m	
	=	3.24E-03	g/m/hr	
	=	9.01E-07	g/m/s	
	=	3.12E-05	g/s	
	=	<u>3.00E-07</u>	g/s/m ²	

EP19_14

Control Efficiency	=	97.8	%	(Note 3)
Trucks Travelling Frequency	=	2	veh/hr	(Note 4)
Road Length	=	29.0	m	
Area of paved road travelled	=	87.0	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	3.1766	g/VKT	
	=	3.18E-03	g/veh/m	
	=	6.35E-03	g/m/hr	
	=	1.76E-06	g/m/s	
	=	5.12E-05	g/s	
	=	<u>5.88E-07</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.4645	g/VKT	
FSP Emission Factor (controlled) of paved road	=	0.7685	g/VKT	
	=	7.69E-04	g/veh/m	
	=	1.54E-03	g/m/hr	
	=	4.27E-07	g/m/s	
	=	1.24E-05	g/s	
	=	<u>1.42E-07</u>	g/s/m ²	

From Cementitious Tanker

Mitigation measures: water spraying and wheel washing

Average Loaded Weight of Truck	=	38	tons	
Average Unladen Weight of Trucks	=	12	tons	
Average Weight of Trucks	=	25		
k	=	3.23	g/VKT (for TSP)	(Note 1)
	=	0.62	g/VKT (for RSP)	
	=	0.15	g/VKT (for FSP)	
sL = road surface silt loading	=	12	g/m2	(Note 2)

EP19_1

Control Efficiency	=	93.1	%	(Note 3)
Trucks Travelling Frequency	=	0	veh/hr	(Note 4)
Road Length	=	15.7	m	
Area of paved road travelled	=	47.1	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	158.6154	g/VKT	
RSP Emission Factor (controlled) of paved road	=	11.0041	g/VKT	
	=	1.10E-02	g/veh/m	
	=	0.00E+00	g/m/hr	
	=	0.00E+00	g/m/s	
	=	0.00E+00	g/s	
	=	<u>0.00E+00</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	38.3747	g/VKT	
FSP Emission Factor (controlled) of paved road	=	2.6623	g/VKT	
	=	2.66E-03	g/veh/m	
	=	0.00E+00	g/m/hr	
	=	0.00E+00	g/m/s	
	=	0.00E+00	g/s	
	=	<u>0.00E+00</u>	g/s/m ²	

EP19_2

Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	0	veh/hr	(Note 4)
Road Length	=	20.2	m	
Area of paved road travelled	=	60.6	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	158.6154	g/VKT	
RSP Emission Factor (controlled) of paved road	=	7.4671	g/VKT	
	=	7.47E-03	g/veh/m	
	=	0.00E+00	g/m/hr	
	=	0.00E+00	g/m/s	
	=	0.00E+00	g/s	
	=	<u>0.00E+00</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	38.3747	g/VKT	
FSP Emission Factor (controlled) of paved road	=	1.8066	g/VKT	
	=	1.81E-03	g/veh/m	
	=	0.00E+00	g/m/hr	
	=	0.00E+00	g/m/s	
	=	0.00E+00	g/s	
	=	<u>0.00E+00</u>	g/s/m ²	

EP19_3

Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	0	veh/hr	(Note 4)

Road Length	=	19.9	m
Area of paved road travelled	=	59.7	m ²
RSP Emission Factor (uncontrolled) of paved road	=	158.6154	g/VKT
RSP Emission Factor (controlled) of paved road	=	7.4671	g/VKT
	=	7.47E-03	g/veh/m
	=	0.00E+00	g/m/hr
	=	0.00E+00	g/m/s
	=	0.00E+00	g/s
	=	<u>0.00E+00</u>	g/s/m ²
FSP Emission Factor (uncontrolled) of paved road	=	38.3747	g/VKT
FSP Emission Factor (controlled) of paved road	=	1.8066	g/VKT
	=	1.81E-03	g/veh/m
	=	0.00E+00	g/m/hr
	=	0.00E+00	g/m/s
	=	0.00E+00	g/s
	=	<u>0.00E+00</u>	g/s/m ²

EP19_4

Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	0	veh/hr	(Note 4)
Road Length	=	9.7	m	
Area of paved road travelled	=	29.1	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	158.6154	g/VKT	
RSP Emission Factor (controlled) of paved road	=	7.4671	g/VKT	
	=	7.47E-03	g/veh/m	
	=	0.00E+00	g/m/hr	
	=	0.00E+00	g/m/s	
	=	0.00E+00	g/s	
	=	<u>0.00E+00</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	38.3747	g/VKT	
FSP Emission Factor (controlled) of paved road	=	1.8066	g/VKT	
	=	1.81E-03	g/veh/m	
	=	0.00E+00	g/m/hr	
	=	0.00E+00	g/m/s	
	=	0.00E+00	g/s	
	=	<u>0.00E+00</u>	g/s/m ²	

EP19_5

Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	0	veh/hr	(Note 4)
Road Length	=	11.3	m	
Area of paved road travelled	=	33.9	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	158.6154	g/VKT	
RSP Emission Factor (controlled) of paved road	=	7.4671	g/VKT	
	=	7.47E-03	g/veh/m	
	=	0.00E+00	g/m/hr	
	=	0.00E+00	g/m/s	
	=	0.00E+00	g/s	
	=	<u>0.00E+00</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	38.3747	g/VKT	
FSP Emission Factor (controlled) of paved road	=	1.8066	g/VKT	
	=	1.81E-03	g/veh/m	
	=	0.00E+00	g/m/hr	
	=	0.00E+00	g/m/s	
	=	0.00E+00	g/s	
	=	<u>0.00E+00</u>	g/s/m ²	

EP19_6

Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	0	veh/hr	(Note 4)
Road Length	=	13.1	m	
Area of paved road travelled	=	39.3	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	158.6154	g/VKT	
RSP Emission Factor (controlled) of paved road	=	7.4671	g/VKT	
	=	7.47E-03	g/veh/m	
	=	0.00E+00	g/m/hr	
	=	0.00E+00	g/m/s	
	=	0.00E+00	g/s	
	=	<u>0.00E+00</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	38.3747	g/VKT	
FSP Emission Factor (controlled) of paved road	=	1.8066	g/VKT	
	=	1.81E-03	g/veh/m	
	=	0.00E+00	g/m/hr	
	=	0.00E+00	g/m/s	
	=	0.00E+00	g/s	
	=	<u>0.00E+00</u>	g/s/m ²	

EP19_7

Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	0	veh/hr	(Note 4)
Road Length	=	34.6	m	
Area of paved road travelled	=	103.8	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	158.6154	g/VKT	
RSP Emission Factor (controlled) of paved road	=	7.4671	g/VKT	
	=	7.47E-03	g/veh/m	
	=	0.00E+00	g/m/hr	

	=	0.00E+00	g/m/s
	=	0.00E+00	g/s
	=	<u>0.00E+00</u>	g/s/m ²
FSP Emission Factor (uncontrolled) of paved road	=	38.3747	g/VKT
FSP Emission Factor (controlled) of paved road	=	1.8066	g/VKT
	=	1.81E-03	g/veh/m
	=	0.00E+00	g/m/hr
	=	0.00E+00	g/m/s
	=	0.00E+00	g/s
	=	<u>0.00E+00</u>	g/s/m ²

EP19_14

Control Efficiency	=	97.8	%	(Note 3)
Trucks Travelling Frequency	=	0	veh/hr	(Note 4)
Road Length	=	29.0	m	
Area of paved road travelled	=	87.0	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	158.6154	g/VKT	
RSP Emission Factor (controlled) of paved road	=	3.5370	g/VKT	
	=	3.54E-03	g/veh/m	
	=	0.00E+00	g/m/hr	
	=	0.00E+00	g/m/s	
	=	0.00E+00	g/s	
	=	<u>0.00E+00</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	38.3747	g/VKT	
FSP Emission Factor (controlled) of paved road	=	0.8557	g/VKT	
	=	8.56E-04	g/veh/m	
	=	0.00E+00	g/m/hr	
	=	0.00E+00	g/m/s	
	=	0.00E+00	g/s	
	=	<u>0.00E+00</u>	g/s/m ²	

Note:

1. Particle size multiplier is referred to Table 13.2-1-1, Section 13.2.1 of USEPA AP42 (ver 1/11) for RSP (PM10) and FSP (PM2.5).
2. Road surfacing silt loading is referred to Table 13.2.1-3 of USEPA AP42 (ver 1/11) for concrete batching.
3. Percentage of dust mitigation efficiency is calculated with reference to Cowherd et al., "Control of Open Fugitive Dust Sources, EPA-450/3-88-008, U.S. Environmental Protection Agency, Research Triangle
4. The vehicle numbers within the site is advised by the applicant.

SP Licence Application for Concrete Batching Plant at TKO 137 Area
Calculation of Emissions from Paved Roads (0900 to 1900)
Method: USEPA AP-42, Section 13.2.1.3, version 1/2011

$$\text{Particulate Emission Factor (g/VKT), E} = k (sL)^{0.91} (W)^{1.02}$$

where

k = particle size multiplier
sL = road surface silt loading
W = average weight of the vehicles traveling the road

From Concrete Trucks

Mitigation measures: water spraying and wheel washing

Average Loaded Weight of Truck	=	30	tons	
Average Unladen Weight of Trucks	=	15	tons	
Average Weight of Truck	=	22.5	tons	
k	=	3.23	g/VKT (for TSP)	(Note 1)
	=	0.62	g/VKT (for RSP)	
	=	0.15	g/VKT (for FSP)	
sL = road surface silt loading	=	12	g/m ²	(Note 2)

EP19_1

Control Efficiency	=	93.1	%	(Note 3)
Trucks Travelling Frequency	=	20	veh/hr	(Note 4)
Road Length	=	15.7	m	
Area of paved road travelled	=	47.1	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	9.8829	g/VKT	
	=	9.88E-03	g/veh/m	
	=	1.98E-01	g/m/hr	
	=	5.49E-05	g/m/s	
	=	8.62E-04	g/s	
	=	<u>1.83E-05</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.4645	g/VKT	
FSP Emission Factor (controlled) of paved road	=	2.3910	g/VKT	
	=	2.39E-03	g/veh/m	
	=	4.78E-02	g/m/hr	
	=	1.33E-05	g/m/s	
	=	2.09E-04	g/s	
	=	<u>4.43E-06</u>	g/s/m ²	

EP19_2

Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	20	veh/hr	(Note 4)
Road Length	=	20.2	m	
Area of paved road travelled	=	60.6	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	6.7062	g/VKT	
	=	6.71E-03	g/veh/m	
	=	1.34E-01	g/m/hr	
	=	3.73E-05	g/m/s	
	=	7.53E-04	g/s	
	=	<u>1.242E-05</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.465	g/VKT	
FSP Emission Factor (controlled) of paved road	=	1.6225	g/VKT	
	=	1.62E-03	g/veh/m	
	=	3.24E-02	g/m/hr	
	=	9.01E-06	g/m/s	
	=	1.82E-04	g/s	
	=	<u>3.00E-06</u>	g/s/m ²	

EP19_3

Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	20	veh/hr	(Note 4)
Road Length	=	19.9	m	
Area of paved road travelled	=	59.7	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	6.7062	g/VKT	
	=	6.71E-03	g/veh/m	
	=	1.34E-01	g/m/hr	
	=	3.73E-05	g/m/s	
	=	7.41E-04	g/s	
	=	<u>1.242E-05</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.465	g/VKT	
FSP Emission Factor (controlled) of paved road	=	1.6225	g/VKT	
	=	1.62E-03	g/veh/m	
	=	3.24E-02	g/m/hr	
	=	9.01E-06	g/m/s	
	=	1.79E-04	g/s	
	=	<u>3.00E-06</u>	g/s/m ²	

EP19_4

Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	20	veh/hr	(Note 4)
Road Length	=	9.7	m	
Area of paved road travelled	=	29.1	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	6.7062	g/VKT	
	=	6.71E-03	g/veh/m	

	=	1.34E-01	g/m/hr	
	=	3.73E-05	g/m/s	
	=	3.61E-04	g/s	
	=	<u>1.242E-05</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.465	g/VKT	
FSP Emission Factor (controlled) of paved road	=	1.6225	g/VKT	
	=	1.62E-03	g/veh/m	
	=	3.24E-02	g/m/hr	
	=	9.01E-06	g/m/s	
	=	8.74E-05	g/s	
	=	<u>3.00E-06</u>	g/s/m ²	
EP19_5				
Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	20	veh/hr	(Note 4)
Road Length	=	11.3	m	
Area of paved road travelled	=	33.9	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	6.7062	g/VKT	
	=	6.71E-03	g/veh/m	
	=	1.34E-01	g/m/hr	
	=	3.73E-05	g/m/s	
	=	4.21E-04	g/s	
	=	<u>1.242E-05</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.465	g/VKT	
FSP Emission Factor (controlled) of paved road	=	1.6225	g/VKT	
	=	1.62E-03	g/veh/m	
	=	3.24E-02	g/m/hr	
	=	9.01E-06	g/m/s	
	=	1.02E-04	g/s	
	=	<u>3.00E-06</u>	g/s/m ²	
EP19_6				
Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	20	veh/hr	(Note 4)
Road Length	=	13.1	m	
Area of paved road travelled	=	39.3	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	6.7062	g/VKT	
	=	6.71E-03	g/veh/m	
	=	1.34E-01	g/m/hr	
	=	3.73E-05	g/m/s	
	=	4.88E-04	g/s	
	=	<u>1.242E-05</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.465	g/VKT	
FSP Emission Factor (controlled) of paved road	=	1.6225	g/VKT	
	=	1.62E-03	g/veh/m	
	=	3.24E-02	g/m/hr	
	=	9.01E-06	g/m/s	
	=	1.18E-04	g/s	
	=	<u>3.00E-06</u>	g/s/m ²	
EP19_7				
Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	20	veh/hr	(Note 4)
Road Length	=	34.6	m	
Area of paved road travelled	=	103.8	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	6.7062	g/VKT	
	=	6.71E-03	g/veh/m	
	=	1.34E-01	g/m/hr	
	=	3.73E-05	g/m/s	
	=	1.29E-03	g/s	
	=	<u>1.242E-05</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.465	g/VKT	
FSP Emission Factor (controlled) of paved road	=	1.6225	g/VKT	
	=	1.62E-03	g/veh/m	
	=	3.24E-02	g/m/hr	
	=	9.01E-06	g/m/s	
	=	3.12E-04	g/s	
	=	<u>3.00E-06</u>	g/s/m ²	
EP19_8				
Control Efficiency	=	97.5	%	(Note 3)
Trucks Travelling Frequency	=	20	veh/hr	(Note 4)
Road Length	=	10.0	m	
Area of paved road travelled	=	30.0	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	3.5296	g/VKT	
	=	3.53E-03	g/veh/m	
	=	7.06E-02	g/m/hr	
	=	1.96E-05	g/m/s	
	=	1.96E-04	g/s	
	=	<u>6.536E-06</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.465	g/VKT	
FSP Emission Factor (controlled) of paved road	=	0.8539	g/VKT	

= 8.54E-04 g/veh/m
 = 1.71E-02 g/m/hr
 = 4.74E-06 g/m/s
 = 4.74E-05 g/s
 = 1.58E-06 g/s/m²

EP19_9

Control Efficiency	=	98.8	%	(Note 3)
Trucks Travelling Frequency	=	10	veh/hr	(Note 4)
Road Length	=	10.3	m	
Area of paved road travelled	=	30.9	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	3.5296	g/VKT	
	=	3.53E-03	g/veh/m	
	=	3.53E-02	g/m/hr	
	=	9.80E-06	g/m/s	
	=	1.01E-04	g/s	
	=	<u>3.268E-06</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.465	g/VKT	
FSP Emission Factor (controlled) of paved road	=	0.8539	g/VKT	
	=	8.54E-04	g/veh/m	
	=	8.54E-03	g/m/hr	
	=	2.37E-06	g/m/s	
	=	2.44E-05	g/s	
	=	<u>7.91E-07</u>	g/s/m ²	

EP19_10

Control Efficiency	=	98.8	%	(Note 3)
Trucks Travelling Frequency	=	10	veh/hr	(Note 4)
Road Length	=	16.3	m	
Area of paved road travelled	=	48.9	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	3.5296	g/VKT	
	=	3.53E-03	g/veh/m	
	=	3.53E-02	g/m/hr	
	=	9.80E-06	g/m/s	
	=	1.60E-04	g/s	
	=	<u>3.268E-06</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.465	g/VKT	
FSP Emission Factor (controlled) of paved road	=	0.8539	g/VKT	
	=	8.54E-04	g/veh/m	
	=	8.54E-03	g/m/hr	
	=	2.37E-06	g/m/s	
	=	3.87E-05	g/s	
	=	<u>7.91E-07</u>	g/s/m ²	

EP19_11

Control Efficiency	=	98.8	%	(Note 3)
Trucks Travelling Frequency	=	10	veh/hr	(Note 4)
Road Length	=	14.4	m	
Area of paved road travelled	=	43.2	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	3.5296	g/VKT	
	=	3.53E-03	g/veh/m	
	=	3.53E-02	g/m/hr	
	=	9.80E-06	g/m/s	
	=	1.41E-04	g/s	
	=	<u>3.268E-06</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.465	g/VKT	
FSP Emission Factor (controlled) of paved road	=	0.8539	g/VKT	
	=	8.54E-04	g/veh/m	
	=	8.54E-03	g/m/hr	
	=	2.37E-06	g/m/s	
	=	3.42E-05	g/s	
	=	<u>7.91E-07</u>	g/s/m ²	

EP19_12

Control Efficiency	=	98.8	%	(Note 3)
Trucks Travelling Frequency	=	10	veh/hr	(Note 4)
Road Length	=	15.9	m	
Area of paved road travelled	=	47.7	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	3.5296	g/VKT	
	=	3.53E-03	g/veh/m	
	=	3.53E-02	g/m/hr	
	=	9.80E-06	g/m/s	
	=	1.56E-04	g/s	
	=	<u>3.268E-06</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.465	g/VKT	
FSP Emission Factor (controlled) of paved road	=	0.8539	g/VKT	
	=	8.54E-04	g/veh/m	
	=	8.54E-03	g/m/hr	
	=	2.37E-06	g/m/s	
	=	3.77E-05	g/s	
	=	<u>7.91E-07</u>	g/s/m ²	

EP19_13

EP19_14	Control Efficiency	=	98.8	%	(Note 3)
	Trucks Travelling Frequency	=	10	veh/hr	(Note 4)
	Road Length	=	24.0	m	
	Area of paved road travelled	=	72.0	m ²	
	RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
	RSP Emission Factor (controlled) of paved road	=	3.5296	g/VKT	
		=	3.53E-03	g/veh/m	
		=	3.53E-02	g/m/hr	
		=	9.80E-06	g/m/s	
		=	2.35E-04	g/s	
		=	<u>3.268E-06</u>	g/s/m ²	
	FSP Emission Factor (uncontrolled) of paved road	=	34.465	g/VKT	
	FSP Emission Factor (controlled) of paved road	=	0.8539	g/VKT	
		=	8.54E-04	g/veh/m	
		=	8.54E-03	g/m/hr	
		=	2.37E-06	g/m/s	
		=	5.69E-05	g/s	
		=	<u>7.91E-07</u>	g/s/m ²	
	Control Efficiency	=	97.8	%	(Note 3)
	Trucks Travelling Frequency	=	0	veh/hr	(Note 4)
	Road Length	=	29.0	m	
	Area of paved road travelled	=	87.0	m ²	
	RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
	RSP Emission Factor (controlled) of paved road	=	3.5296	g/VKT	
		=	3.53E-03	g/veh/m	
		=	0.00E+00	g/m/hr	
		=	0.00E+00	g/m/s	
		=	0.00E+00	g/s	
		=	<u>0.000E+00</u>	g/s/m ²	
	FSP Emission Factor (uncontrolled) of paved road	=	34.465	g/VKT	
	FSP Emission Factor (controlled) of paved road	=	0.8539	g/VKT	
		=	8.54E-04	g/veh/m	
		=	0.00E+00	g/m/hr	
		=	0.00E+00	g/m/s	
		=	0.00E+00	g/s	
		=	<u>0.00E+00</u>	g/s/m ²	
From Aggregate Truck					
<i>Mitigation measures: water spraying and wheel washing</i>					
	Average Loaded Weight of Concrete Lorry Mixer	=	30	tons	
	Average Weight of Concrete Lorry Mixer	=	15	tons	
	Average Unladen Weight of Concrete Lorry Mixer	=	22.5	tons	
	k	=	3.23	g/VKT (for TSP)	(Note 1)
		=	0.62	g/VKT (for RSP)	
		=	0.15	g/VKT (for FSP)	
	sL = road surface silt loading	=	12	g/m ²	(Note 2)
EP19_1	Control Efficiency	=	93.1	%	(Note 3)
	Trucks Travelling Frequency	=	28	veh/hr	(Note 4)
	Road Length	=	15.7	m	
	Area of paved road travelled	=	47.1	m ²	
	RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
	RSP Emission Factor (controlled) of paved road	=	9.8829	g/VKT	
		=	9.88E-03	g/veh/m	
		=	2.77E-01	g/m/hr	
		=	7.69E-05	g/m/s	
		=	1.21E-03	g/s	
		=	<u>2.56E-05</u>	g/s/m ²	
	FSP Emission Factor (uncontrolled) of paved road	=	34.4645	g/VKT	
	FSP Emission Factor (controlled) of paved road	=	2.3910	g/VKT	
		=	2.39E-03	g/veh/m	
		=	6.69E-02	g/m/hr	
		=	1.86E-05	g/m/s	
		=	2.92E-04	g/s	
		=	<u>6.20E-06</u>	g/s/m ²	
EP19_2	Control Efficiency	=	95.3	%	(Note 3)
	Trucks Travelling Frequency	=	14	veh/hr	(Note 4)
	Road Length	=	20.2	m	
	Area of paved road travelled	=	60.6	m ²	
	RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
	RSP Emission Factor (controlled) of paved road	=	6.7062	g/VKT	
		=	6.71E-03	g/veh/m	
		=	9.39E-02	g/m/hr	
		=	2.61E-05	g/m/s	
		=	5.27E-04	g/s	
		=	<u>8.69E-06</u>	g/s/m ²	
	FSP Emission Factor (uncontrolled) of paved road	=	34.4645	g/VKT	
	FSP Emission Factor (controlled) of paved road	=	1.6225	g/VKT	
		=	1.62E-03	g/veh/m	
		=	2.27E-02	g/m/hr	
		=	6.31E-06	g/m/s	
		=	1.27E-04	g/s	
		=	<u>2.10E-06</u>	g/s/m ²	

EP19_3

Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	14	veh/hr	(Note 4)
Road Length	=	19.9	m	
Area of paved road travelled	=	59.7	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	6.7062	g/VKT	
	=	6.71E-03	g/veh/m	
	=	9.39E-02	g/m/hr	
	=	2.61E-05	g/m/s	
	=	5.19E-04	g/s	
	=	<u>8.69E-06</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.4645	g/VKT	
FSP Emission Factor (controlled) of paved road	=	1.6225	g/VKT	
	=	1.62E-03	g/veh/m	
	=	2.27E-02	g/m/hr	
	=	6.31E-06	g/m/s	
	=	1.26E-04	g/s	
	=	<u>2.10E-06</u>	g/s/m ²	

EP19_4

Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	14	veh/hr	(Note 4)
Road Length	=	9.7	m	
Area of paved road travelled	=	29.1	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	6.7062	g/VKT	
	=	6.71E-03	g/veh/m	
	=	9.39E-02	g/m/hr	
	=	2.61E-05	g/m/s	
	=	2.53E-04	g/s	
	=	<u>8.69E-06</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.4645	g/VKT	
FSP Emission Factor (controlled) of paved road	=	1.6225	g/VKT	
	=	1.62E-03	g/veh/m	
	=	2.27E-02	g/m/hr	
	=	6.31E-06	g/m/s	
	=	6.12E-05	g/s	
	=	<u>2.10E-06</u>	g/s/m ²	

EP19_5

Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	14	veh/hr	(Note 4)
Road Length	=	11.3	m	
Area of paved road travelled	=	33.9	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	6.7062	g/VKT	
	=	6.71E-03	g/veh/m	
	=	9.39E-02	g/m/hr	
	=	2.61E-05	g/m/s	
	=	2.95E-04	g/s	
	=	<u>8.69E-06</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.4645	g/VKT	
FSP Emission Factor (controlled) of paved road	=	1.6225	g/VKT	
	=	1.62E-03	g/veh/m	
	=	2.27E-02	g/m/hr	
	=	6.31E-06	g/m/s	
	=	7.13E-05	g/s	
	=	<u>2.10E-06</u>	g/s/m ²	

EP19_6

Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	14	veh/hr	(Note 4)
Road Length	=	13.1	m	
Area of paved road travelled	=	39.3	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	6.7062	g/VKT	
	=	6.71E-03	g/veh/m	
	=	9.39E-02	g/m/hr	
	=	2.61E-05	g/m/s	
	=	3.42E-04	g/s	
	=	<u>8.69E-06</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.4645	g/VKT	
FSP Emission Factor (controlled) of paved road	=	1.6225	g/VKT	
	=	1.62E-03	g/veh/m	
	=	2.27E-02	g/m/hr	
	=	6.31E-06	g/m/s	
	=	8.27E-05	g/s	
	=	<u>2.10E-06</u>	g/s/m ²	

EP19_7

Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	14	veh/hr	(Note 4)
Road Length	=	34.6	m	
Area of paved road travelled	=	103.8	m ²	

RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	6.7062	g/VKT	
	=	6.71E-03	g/veh/m	
	=	9.39E-02	g/m/hr	
	=	2.61E-05	g/m/s	
	=	9.02E-04	g/s	
	=	<u>8.69E-06</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.4645	g/VKT	
FSP Emission Factor (controlled) of paved road	=	1.6225	g/VKT	
	=	1.62E-03	g/veh/m	
	=	2.27E-02	g/m/hr	
	=	6.31E-06	g/m/s	
	=	2.18E-04	g/s	
	=	<u>2.10E-06</u>	g/s/m ²	

EP19_14

Control Efficiency	=	97.8	%	(Note 3)
Trucks Travelling Frequency	=	14	veh/hr	(Note 4)
Road Length	=	29.0	m	
Area of paved road travelled	=	87.0	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	3.1766	g/VKT	
	=	3.18E-03	g/veh/m	
	=	4.45E-02	g/m/hr	
	=	1.24E-05	g/m/s	
	=	3.58E-04	g/s	
	=	<u>4.12E-06</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.4645	g/VKT	
FSP Emission Factor (controlled) of paved road	=	0.7685	g/VKT	
	=	7.69E-04	g/veh/m	
	=	1.08E-02	g/m/hr	
	=	2.99E-06	g/m/s	
	=	8.67E-05	g/s	
	=	<u>9.96E-07</u>	g/s/m ²	

From Cementitious Tanker

Mitigation measures: water spraying and wheel washing

Average Loaded Weight of Truck	=	38	tons	
Average Unladen Weight of Trucks	=	12	tons	
Average Weight of Trucks	=	25		
k	=	3.23	g/VKT (for TSP)	(Note 1)
	=	0.62	g/VKT (for RSP)	
	=	0.15	g/VKT (for FSP)	
sL = road surface silt loading	=	12	g/m2	(Note 2)

EP19_1

Control Efficiency	=	93.1	%	(Note 3)
Trucks Travelling Frequency	=	8	veh/hr	(Note 4)
Road Length	=	15.7	m	
Area of paved road travelled	=	47.1	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	158.6154	g/VKT	
RSP Emission Factor (controlled) of paved road	=	11.0041	g/VKT	
	=	1.10E-02	g/veh/m	
	=	8.80E-02	g/m/hr	
	=	2.45E-05	g/m/s	
	=	3.84E-04	g/s	
	=	<u>8.15E-06</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	38.3747	g/VKT	
FSP Emission Factor (controlled) of paved road	=	2.6623	g/VKT	
	=	2.66E-03	g/veh/m	
	=	2.13E-02	g/m/hr	
	=	5.92E-06	g/m/s	
	=	9.29E-05	g/s	
	=	<u>1.97E-06</u>	g/s/m ²	

EP19_2

Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	4	veh/hr	(Note 4)
Road Length	=	20.2	m	
Area of paved road travelled	=	60.6	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	158.6154	g/VKT	
RSP Emission Factor (controlled) of paved road	=	7.4671	g/VKT	
	=	7.47E-03	g/veh/m	
	=	2.99E-02	g/m/hr	
	=	8.30E-06	g/m/s	
	=	1.68E-04	g/s	
	=	<u>2.77E-06</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	38.3747	g/VKT	
FSP Emission Factor (controlled) of paved road	=	1.8066	g/VKT	
	=	1.81E-03	g/veh/m	
	=	7.23E-03	g/m/hr	
	=	2.01E-06	g/m/s	
	=	4.05E-05	g/s	
	=	<u>6.69E-07</u>	g/s/m ²	

EP19_3

Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	4	veh/hr	(Note 4)

Road Length	=	19.9	m
Area of paved road travelled	=	59.7	m ²
RSP Emission Factor (uncontrolled) of paved road	=	158.6154	g/VKT
RSP Emission Factor (controlled) of paved road	=	7.4671	g/VKT
	=	7.47E-03	g/veh/m
	=	2.99E-02	g/m/hr
	=	8.30E-06	g/m/s
	=	1.65E-04	g/s
	=	<u>2.77E-06</u>	g/s/m ²
FSP Emission Factor (uncontrolled) of paved road	=	38.3747	g/VKT
FSP Emission Factor (controlled) of paved road	=	1.8066	g/VKT
	=	1.81E-03	g/veh/m
	=	7.23E-03	g/m/hr
	=	2.01E-06	g/m/s
	=	3.99E-05	g/s
	=	<u>6.69E-07</u>	g/s/m ²

EP19_4

Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	4	veh/hr	(Note 4)
Road Length	=	9.7	m	
Area of paved road travelled	=	29.1	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	158.6154	g/VKT	
RSP Emission Factor (controlled) of paved road	=	7.4671	g/VKT	
	=	7.47E-03	g/veh/m	
	=	2.99E-02	g/m/hr	
	=	8.30E-06	g/m/s	
	=	8.05E-05	g/s	
	=	<u>2.77E-06</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	38.3747	g/VKT	
FSP Emission Factor (controlled) of paved road	=	1.8066	g/VKT	
	=	1.81E-03	g/veh/m	
	=	7.23E-03	g/m/hr	
	=	2.01E-06	g/m/s	
	=	1.95E-05	g/s	
	=	<u>6.69E-07</u>	g/s/m ²	

EP19_5

Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	4	veh/hr	(Note 4)
Road Length	=	11.3	m	
Area of paved road travelled	=	33.9	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	158.6154	g/VKT	
RSP Emission Factor (controlled) of paved road	=	7.4671	g/VKT	
	=	7.47E-03	g/veh/m	
	=	2.99E-02	g/m/hr	
	=	8.30E-06	g/m/s	
	=	9.38E-05	g/s	
	=	<u>2.77E-06</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	38.3747	g/VKT	
FSP Emission Factor (controlled) of paved road	=	1.8066	g/VKT	
	=	1.81E-03	g/veh/m	
	=	7.23E-03	g/m/hr	
	=	2.01E-06	g/m/s	
	=	2.27E-05	g/s	
	=	<u>6.69E-07</u>	g/s/m ²	

EP19_6

Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	4	veh/hr	(Note 4)
Road Length	=	13.1	m	
Area of paved road travelled	=	39.3	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	158.6154	g/VKT	
RSP Emission Factor (controlled) of paved road	=	7.4671	g/VKT	
	=	7.47E-03	g/veh/m	
	=	2.99E-02	g/m/hr	
	=	8.30E-06	g/m/s	
	=	1.09E-04	g/s	
	=	<u>2.77E-06</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	38.3747	g/VKT	
FSP Emission Factor (controlled) of paved road	=	1.8066	g/VKT	
	=	1.81E-03	g/veh/m	
	=	7.23E-03	g/m/hr	
	=	2.01E-06	g/m/s	
	=	2.63E-05	g/s	
	=	<u>6.69E-07</u>	g/s/m ²	

EP19_7

Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	4	veh/hr	(Note 4)
Road Length	=	34.6	m	
Area of paved road travelled	=	103.8	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	158.6154	g/VKT	
RSP Emission Factor (controlled) of paved road	=	7.4671	g/VKT	
	=	7.47E-03	g/veh/m	
	=	2.99E-02	g/m/hr	

	=	8.30E-06	g/m/s
	=	2.87E-04	g/s
	=	<u>2.77E-06</u>	g/s/m ²
FSP Emission Factor (uncontrolled) of paved road	=	38.3747	g/VKT
FSP Emission Factor (controlled) of paved road	=	1.8066	g/VKT
	=	1.81E-03	g/veh/m
	=	7.23E-03	g/m/hr
	=	2.01E-06	g/m/s
	=	6.95E-05	g/s
	=	<u>6.69E-07</u>	g/s/m ²

EP19_14

Control Efficiency	=	97.8	%	(Note 3)
Trucks Travelling Frequency	=	4	veh/hr	(Note 4)
Road Length	=	29.0	m	
Area of paved road travelled	=	87.0	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	158.6154	g/VKT	
RSP Emission Factor (controlled) of paved road	=	3.5370	g/VKT	
	=	3.54E-03	g/veh/m	
	=	1.41E-02	g/m/hr	
	=	3.93E-06	g/m/s	
	=	1.14E-04	g/s	
	=	<u>1.31E-06</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	38.3747	g/VKT	
FSP Emission Factor (controlled) of paved road	=	0.8557	g/VKT	
	=	8.56E-04	g/veh/m	
	=	3.42E-03	g/m/hr	
	=	9.51E-07	g/m/s	
	=	2.76E-05	g/s	
	=	<u>3.17E-07</u>	g/s/m ²	

Note:

1. Particle size multiplier is referred to Table 13.2-1-1, Section 13.2.1 of USEPA AP42 (ver 1/11) for RSP (PM10) and FSP (PM2.5).
2. Road surfacing silt loading is referred to Table 13.2.1-3 of USEPA AP42 (ver 1/11) for concrete batching.
3. Percentage of dust mitigation efficiency is calculated with reference to Cowherd et al., "Control of Open Fugitive Dust Sources, EPA-450/3-88-008, U.S. Environmental Protection Agency, Research Triangle
4. The vehicle numbers within the site is advised by the applicant.

SP Licence Application for Concrete Batching Plant at TKO 137 Area
Calculation of Emissions from Paved Roads (1900 to 2300)
Method: USEPA AP-42, Section 13.2.1.3, version 1/2011

$$\text{Particulate Emission Factor (g/VKT), E} = k (sL)^{0.91} (W)^{1.02}$$

where

k = particle size multiplier
sL = road surface silt loading
W = average weight of the vehicles traveling the road

From Concrete Trucks

Mitigation measures: water spraying and wheel washing

Average Loaded Weight of Truck	=	30	tons	
Average Unladen Weight of Trucks	=	15	tons	
Average Weight of Truck	=	22.5	tons	
k	=	3.23	g/VKT (for TSP)	(Note 1)
	=	0.62	g/VKT (for RSP)	
	=	0.15	g/VKT (for FSP)	
sL = road surface silt loading	=	12	g/m ²	(Note 2)

EP19_1

Control Efficiency	=	93.1	%	(Note 3)
Trucks Travelling Frequency	=	6	veh/hr	(Note 4)
Road Length	=	15.7	m	
Area of paved road travelled	=	47.1	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	9.8829	g/VKT	
	=	9.88E-03	g/veh/m	
	=	5.93E-02	g/m/hr	
	=	1.65E-05	g/m/s	
	=	2.59E-04	g/s	
	=	<u>5.49E-06</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.4645	g/VKT	
FSP Emission Factor (controlled) of paved road	=	2.3910	g/VKT	
	=	2.39E-03	g/veh/m	
	=	1.43E-02	g/m/hr	
	=	3.99E-06	g/m/s	
	=	6.26E-05	g/s	
	=	<u>1.33E-06</u>	g/s/m ²	

EP19_2

Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	6	veh/hr	(Note 4)
Road Length	=	20.2	m	
Area of paved road travelled	=	60.6	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	6.7062	g/VKT	
	=	6.71E-03	g/veh/m	
	=	4.02E-02	g/m/hr	
	=	1.12E-05	g/m/s	
	=	2.26E-04	g/s	
	=	<u>3.726E-06</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.465	g/VKT	
FSP Emission Factor (controlled) of paved road	=	1.6225	g/VKT	
	=	1.62E-03	g/veh/m	
	=	9.73E-03	g/m/hr	
	=	2.70E-06	g/m/s	
	=	5.46E-05	g/s	
	=	<u>9.01E-07</u>	g/s/m ²	

EP19_3

Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	6	veh/hr	(Note 4)
Road Length	=	19.9	m	
Area of paved road travelled	=	59.7	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	6.7062	g/VKT	
	=	6.71E-03	g/veh/m	
	=	4.02E-02	g/m/hr	
	=	1.12E-05	g/m/s	
	=	2.22E-04	g/s	
	=	<u>3.726E-06</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.465	g/VKT	
FSP Emission Factor (controlled) of paved road	=	1.6225	g/VKT	
	=	1.62E-03	g/veh/m	
	=	9.73E-03	g/m/hr	
	=	2.70E-06	g/m/s	
	=	5.38E-05	g/s	
	=	<u>9.01E-07</u>	g/s/m ²	

EP19_4

Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	6	veh/hr	(Note 4)
Road Length	=	9.7	m	
Area of paved road travelled	=	29.1	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	6.7062	g/VKT	
	=	6.71E-03	g/veh/m	

	=	4.02E-02	g/m/hr	
	=	1.12E-05	g/m/s	
	=	1.08E-04	g/s	
	=	<u>3.726E-06</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.465	g/VKT	
FSP Emission Factor (controlled) of paved road	=	1.6225	g/VKT	
	=	1.62E-03	g/veh/m	
	=	9.73E-03	g/m/hr	
	=	2.70E-06	g/m/s	
	=	2.62E-05	g/s	
	=	<u>9.01E-07</u>	g/s/m ²	
EP19_5				
Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	6	veh/hr	(Note 4)
Road Length	=	11.3	m	
Area of paved road travelled	=	33.9	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	6.7062	g/VKT	
	=	6.71E-03	g/veh/m	
	=	4.02E-02	g/m/hr	
	=	1.12E-05	g/m/s	
	=	1.26E-04	g/s	
	=	<u>3.726E-06</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.465	g/VKT	
FSP Emission Factor (controlled) of paved road	=	1.6225	g/VKT	
	=	1.62E-03	g/veh/m	
	=	9.73E-03	g/m/hr	
	=	2.70E-06	g/m/s	
	=	3.06E-05	g/s	
	=	<u>9.01E-07</u>	g/s/m ²	
EP19_6				
Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	6	veh/hr	(Note 4)
Road Length	=	13.1	m	
Area of paved road travelled	=	39.3	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	6.7062	g/VKT	
	=	6.71E-03	g/veh/m	
	=	4.02E-02	g/m/hr	
	=	1.12E-05	g/m/s	
	=	1.46E-04	g/s	
	=	<u>3.726E-06</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.465	g/VKT	
FSP Emission Factor (controlled) of paved road	=	1.6225	g/VKT	
	=	1.62E-03	g/veh/m	
	=	9.73E-03	g/m/hr	
	=	2.70E-06	g/m/s	
	=	3.54E-05	g/s	
	=	<u>9.01E-07</u>	g/s/m ²	
EP19_7				
Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	6	veh/hr	(Note 4)
Road Length	=	34.6	m	
Area of paved road travelled	=	103.8	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	6.7062	g/VKT	
	=	6.71E-03	g/veh/m	
	=	4.02E-02	g/m/hr	
	=	1.12E-05	g/m/s	
	=	3.87E-04	g/s	
	=	<u>3.726E-06</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.465	g/VKT	
FSP Emission Factor (controlled) of paved road	=	1.6225	g/VKT	
	=	1.62E-03	g/veh/m	
	=	9.73E-03	g/m/hr	
	=	2.70E-06	g/m/s	
	=	9.36E-05	g/s	
	=	<u>9.01E-07</u>	g/s/m ²	
EP19_8				
Control Efficiency	=	97.5	%	(Note 3)
Trucks Travelling Frequency	=	6	veh/hr	(Note 4)
Road Length	=	10.0	m	
Area of paved road travelled	=	30.0	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	3.5296	g/VKT	
	=	3.53E-03	g/veh/m	
	=	2.12E-02	g/m/hr	
	=	5.88E-06	g/m/s	
	=	5.88E-05	g/s	
	=	<u>1.961E-06</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.465	g/VKT	
FSP Emission Factor (controlled) of paved road	=	0.8539	g/VKT	

= 8.54E-04 g/veh/m
 = 5.12E-03 g/m/hr
 = 1.42E-06 g/m/s
 = 1.42E-05 g/s
 = 4.74E-07 g/s/m²

EP19_9

Control Efficiency	=	98.8	%	(Note 3)
Trucks Travelling Frequency	=	3	veh/hr	(Note 4)
Road Length	=	10.3	m	
Area of paved road travelled	=	30.9	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	3.5296	g/VKT	
	=	3.53E-03	g/veh/m	
	=	1.06E-02	g/m/hr	
	=	2.94E-06	g/m/s	
	=	3.03E-05	g/s	
	=	<u>9.804E-07</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.465	g/VKT	
FSP Emission Factor (controlled) of paved road	=	0.8539	g/VKT	
	=	8.54E-04	g/veh/m	
	=	2.56E-03	g/m/hr	
	=	7.12E-07	g/m/s	
	=	7.33E-06	g/s	
	=	<u>2.37E-07</u>	g/s/m ²	

EP19_10

Control Efficiency	=	98.8	%	(Note 3)
Trucks Travelling Frequency	=	3	veh/hr	(Note 4)
Road Length	=	16.3	m	
Area of paved road travelled	=	48.9	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	3.5296	g/VKT	
	=	3.53E-03	g/veh/m	
	=	1.06E-02	g/m/hr	
	=	2.94E-06	g/m/s	
	=	4.79E-05	g/s	
	=	<u>9.804E-07</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.465	g/VKT	
FSP Emission Factor (controlled) of paved road	=	0.8539	g/VKT	
	=	8.54E-04	g/veh/m	
	=	2.56E-03	g/m/hr	
	=	7.12E-07	g/m/s	
	=	1.16E-05	g/s	
	=	<u>2.37E-07</u>	g/s/m ²	

EP19_11

Control Efficiency	=	98.8	%	(Note 3)
Trucks Travelling Frequency	=	3	veh/hr	(Note 4)
Road Length	=	14.4	m	
Area of paved road travelled	=	43.2	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	3.5296	g/VKT	
	=	3.53E-03	g/veh/m	
	=	1.06E-02	g/m/hr	
	=	2.94E-06	g/m/s	
	=	4.24E-05	g/s	
	=	<u>9.804E-07</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.465	g/VKT	
FSP Emission Factor (controlled) of paved road	=	0.8539	g/VKT	
	=	8.54E-04	g/veh/m	
	=	2.56E-03	g/m/hr	
	=	7.12E-07	g/m/s	
	=	1.02E-05	g/s	
	=	<u>2.37E-07</u>	g/s/m ²	

EP19_12

Control Efficiency	=	98.8	%	(Note 3)
Trucks Travelling Frequency	=	3	veh/hr	(Note 4)
Road Length	=	15.9	m	
Area of paved road travelled	=	47.7	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	3.5296	g/VKT	
	=	3.53E-03	g/veh/m	
	=	1.06E-02	g/m/hr	
	=	2.94E-06	g/m/s	
	=	4.68E-05	g/s	
	=	<u>9.804E-07</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.465	g/VKT	
FSP Emission Factor (controlled) of paved road	=	0.8539	g/VKT	
	=	8.54E-04	g/veh/m	
	=	2.56E-03	g/m/hr	
	=	7.12E-07	g/m/s	
	=	1.13E-05	g/s	
	=	<u>2.37E-07</u>	g/s/m ²	

EP19_13

EP19_14	Control Efficiency	=	98.8	%	(Note 3)
	Trucks Travelling Frequency	=	3	veh/hr	(Note 4)
	Road Length	=	24.0	m	
	Area of paved road travelled	=	72.0	m ²	
	RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
	RSP Emission Factor (controlled) of paved road	=	3.5296	g/VKT	
		=	3.53E-03	g/veh/m	
		=	1.06E-02	g/m/hr	
		=	2.94E-06	g/m/s	
		=	7.06E-05	g/s	
		=	<u>9.804E-07</u>	g/s/m ²	
	FSP Emission Factor (uncontrolled) of paved road	=	34.465	g/VKT	
	FSP Emission Factor (controlled) of paved road	=	0.8539	g/VKT	
		=	8.54E-04	g/veh/m	
		=	2.56E-03	g/m/hr	
		=	7.12E-07	g/m/s	
		=	1.71E-05	g/s	
		=	<u>2.37E-07</u>	g/s/m ²	
	Control Efficiency	=	97.8	%	(Note 3)
	Trucks Travelling Frequency	=	0	veh/hr	(Note 4)
	Road Length	=	29.0	m	
	Area of paved road travelled	=	87.0	m ²	
	RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
	RSP Emission Factor (controlled) of paved road	=	3.5296	g/VKT	
		=	3.53E-03	g/veh/m	
		=	0.00E+00	g/m/hr	
		=	0.00E+00	g/m/s	
		=	0.00E+00	g/s	
		=	<u>0.000E+00</u>	g/s/m ²	
	FSP Emission Factor (uncontrolled) of paved road	=	34.465	g/VKT	
	FSP Emission Factor (controlled) of paved road	=	0.8539	g/VKT	
		=	8.54E-04	g/veh/m	
		=	0.00E+00	g/m/hr	
		=	0.00E+00	g/m/s	
		=	0.00E+00	g/s	
		=	<u>0.00E+00</u>	g/s/m ²	
From Aggregate Truck					
<i>Mitigation measures: water spraying and wheel washing</i>					
	Average Loaded Weight of Concrete Lorry Mixer	=	30	tons	
	Average Weight of Concrete Lorry Mixer	=	15	tons	
	Average Unladen Weight of Concrete Lorry Mixer	=	22.5	tons	
	k	=	3.23	g/VKT (for TSP)	(Note 1)
		=	0.62	g/VKT (for RSP)	
		=	0.15	g/VKT (for FSP)	
	sL = road surface silt loading	=	12	g/m ²	(Note 2)
EP19_1	Control Efficiency	=	93.1	%	(Note 3)
	Trucks Travelling Frequency	=	40	veh/hr	(Note 4)
	Road Length	=	15.7	m	
	Area of paved road travelled	=	47.1	m ²	
	RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
	RSP Emission Factor (controlled) of paved road	=	9.8829	g/VKT	
		=	9.88E-03	g/veh/m	
		=	3.95E-01	g/m/hr	
		=	1.10E-04	g/m/s	
		=	1.72E-03	g/s	
		=	<u>3.66E-05</u>	g/s/m ²	
	FSP Emission Factor (uncontrolled) of paved road	=	34.4645	g/VKT	
	FSP Emission Factor (controlled) of paved road	=	2.3910	g/VKT	
		=	2.39E-03	g/veh/m	
		=	9.56E-02	g/m/hr	
		=	2.66E-05	g/m/s	
		=	4.17E-04	g/s	
		=	<u>8.86E-06</u>	g/s/m ²	
EP19_2	Control Efficiency	=	95.3	%	(Note 3)
	Trucks Travelling Frequency	=	20	veh/hr	(Note 4)
	Road Length	=	20.2	m	
	Area of paved road travelled	=	60.6	m ²	
	RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
	RSP Emission Factor (controlled) of paved road	=	6.7062	g/VKT	
		=	6.71E-03	g/veh/m	
		=	1.34E-01	g/m/hr	
		=	3.73E-05	g/m/s	
		=	7.53E-04	g/s	
		=	<u>1.24E-05</u>	g/s/m ²	
	FSP Emission Factor (uncontrolled) of paved road	=	34.4645	g/VKT	
	FSP Emission Factor (controlled) of paved road	=	1.6225	g/VKT	
		=	1.62E-03	g/veh/m	
		=	3.24E-02	g/m/hr	
		=	9.01E-06	g/m/s	
		=	1.82E-04	g/s	
		=	<u>3.00E-06</u>	g/s/m ²	

EP19_3

Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	20	veh/hr	(Note 4)
Road Length	=	19.9	m	
Area of paved road travelled	=	59.7	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	6.7062	g/VKT	
	=	6.71E-03	g/veh/m	
	=	1.34E-01	g/m/hr	
	=	3.73E-05	g/m/s	
	=	7.41E-04	g/s	
	=	<u>1.24E-05</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.4645	g/VKT	
FSP Emission Factor (controlled) of paved road	=	1.6225	g/VKT	
	=	1.62E-03	g/veh/m	
	=	3.24E-02	g/m/hr	
	=	9.01E-06	g/m/s	
	=	1.79E-04	g/s	
	=	<u>3.00E-06</u>	g/s/m ²	

EP19_4

Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	20	veh/hr	(Note 4)
Road Length	=	9.7	m	
Area of paved road travelled	=	29.1	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	6.7062	g/VKT	
	=	6.71E-03	g/veh/m	
	=	1.34E-01	g/m/hr	
	=	3.73E-05	g/m/s	
	=	3.61E-04	g/s	
	=	<u>1.24E-05</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.4645	g/VKT	
FSP Emission Factor (controlled) of paved road	=	1.6225	g/VKT	
	=	1.62E-03	g/veh/m	
	=	3.24E-02	g/m/hr	
	=	9.01E-06	g/m/s	
	=	8.74E-05	g/s	
	=	<u>3.00E-06</u>	g/s/m ²	

EP19_5

Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	20	veh/hr	(Note 4)
Road Length	=	11.3	m	
Area of paved road travelled	=	33.9	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	6.7062	g/VKT	
	=	6.71E-03	g/veh/m	
	=	1.34E-01	g/m/hr	
	=	3.73E-05	g/m/s	
	=	4.21E-04	g/s	
	=	<u>1.24E-05</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.4645	g/VKT	
FSP Emission Factor (controlled) of paved road	=	1.6225	g/VKT	
	=	1.62E-03	g/veh/m	
	=	3.24E-02	g/m/hr	
	=	9.01E-06	g/m/s	
	=	1.02E-04	g/s	
	=	<u>3.00E-06</u>	g/s/m ²	

EP19_6

Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	20	veh/hr	(Note 4)
Road Length	=	13.1	m	
Area of paved road travelled	=	39.3	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	6.7062	g/VKT	
	=	6.71E-03	g/veh/m	
	=	1.34E-01	g/m/hr	
	=	3.73E-05	g/m/s	
	=	4.88E-04	g/s	
	=	<u>1.24E-05</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.4645	g/VKT	
FSP Emission Factor (controlled) of paved road	=	1.6225	g/VKT	
	=	1.62E-03	g/veh/m	
	=	3.24E-02	g/m/hr	
	=	9.01E-06	g/m/s	
	=	1.18E-04	g/s	
	=	<u>3.00E-06</u>	g/s/m ²	

EP19_7

Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	20	veh/hr	(Note 4)
Road Length	=	34.6	m	
Area of paved road travelled	=	103.8	m ²	

RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	6.7062	g/VKT	
	=	6.71E-03	g/veh/m	
	=	1.34E-01	g/m/hr	
	=	3.73E-05	g/m/s	
	=	1.29E-03	g/s	
	=	<u>1.24E-05</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.4645	g/VKT	
FSP Emission Factor (controlled) of paved road	=	1.6225	g/VKT	
	=	1.62E-03	g/veh/m	
	=	3.24E-02	g/m/hr	
	=	9.01E-06	g/m/s	
	=	3.12E-04	g/s	
	=	<u>3.00E-06</u>	g/s/m ²	

EP19_14

Control Efficiency	=	97.8	%	(Note 3)
Trucks Travelling Frequency	=	20	veh/hr	(Note 4)
Road Length	=	29.0	m	
Area of paved road travelled	=	87.0	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	142.4534	g/VKT	
RSP Emission Factor (controlled) of paved road	=	3.1766	g/VKT	
	=	3.18E-03	g/veh/m	
	=	6.35E-02	g/m/hr	
	=	1.76E-05	g/m/s	
	=	5.12E-04	g/s	
	=	<u>5.88E-06</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	34.4645	g/VKT	
FSP Emission Factor (controlled) of paved road	=	0.7685	g/VKT	
	=	7.69E-04	g/veh/m	
	=	1.54E-02	g/m/hr	
	=	4.27E-06	g/m/s	
	=	1.24E-04	g/s	
	=	<u>1.42E-06</u>	g/s/m ²	

From Cementitious Tanker

Mitigation measures: water spraying and wheel washing

Average Loaded Weight of Truck	=	38	tons	
Average Unladen Weight of Trucks	=	12	tons	
Average Weight of Trucks	=	25		
k	=	3.23	g/VKT (for TSP)	(Note 1)
	=	0.62	g/VKT (for RSP)	
	=	0.15	g/VKT (for FSP)	
sL = road surface silt loading	=	12	g/m2	(Note 2)

EP19_1

Control Efficiency	=	93.1	%	(Note 3)
Trucks Travelling Frequency	=	8	veh/hr	(Note 4)
Road Length	=	15.7	m	
Area of paved road travelled	=	47.1	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	158.6154	g/VKT	
RSP Emission Factor (controlled) of paved road	=	11.0041	g/VKT	
	=	1.10E-02	g/veh/m	
	=	8.80E-02	g/m/hr	
	=	2.45E-05	g/m/s	
	=	3.84E-04	g/s	
	=	<u>8.15E-06</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	38.3747	g/VKT	
FSP Emission Factor (controlled) of paved road	=	2.6623	g/VKT	
	=	2.66E-03	g/veh/m	
	=	2.13E-02	g/m/hr	
	=	5.92E-06	g/m/s	
	=	9.29E-05	g/s	
	=	<u>1.97E-06</u>	g/s/m ²	

EP19_2

Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	4	veh/hr	(Note 4)
Road Length	=	20.2	m	
Area of paved road travelled	=	60.6	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	158.6154	g/VKT	
RSP Emission Factor (controlled) of paved road	=	7.4671	g/VKT	
	=	7.47E-03	g/veh/m	
	=	2.99E-02	g/m/hr	
	=	8.30E-06	g/m/s	
	=	1.68E-04	g/s	
	=	<u>2.77E-06</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	38.3747	g/VKT	
FSP Emission Factor (controlled) of paved road	=	1.8066	g/VKT	
	=	1.81E-03	g/veh/m	
	=	7.23E-03	g/m/hr	
	=	2.01E-06	g/m/s	
	=	4.05E-05	g/s	
	=	<u>6.69E-07</u>	g/s/m ²	

EP19_3

Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	4	veh/hr	(Note 4)

Road Length	=	19.9	m
Area of paved road travelled	=	59.7	m ²
RSP Emission Factor (uncontrolled) of paved road	=	158.6154	g/VKT
RSP Emission Factor (controlled) of paved road	=	7.4671	g/VKT
	=	7.47E-03	g/veh/m
	=	2.99E-02	g/m/hr
	=	8.30E-06	g/m/s
	=	1.65E-04	g/s
	=	<u>2.77E-06</u>	g/s/m ²
FSP Emission Factor (uncontrolled) of paved road	=	38.3747	g/VKT
FSP Emission Factor (controlled) of paved road	=	1.8066	g/VKT
	=	1.81E-03	g/veh/m
	=	7.23E-03	g/m/hr
	=	2.01E-06	g/m/s
	=	3.99E-05	g/s
	=	<u>6.69E-07</u>	g/s/m ²

EP19_4

Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	4	veh/hr	(Note 4)
Road Length	=	9.7	m	
Area of paved road travelled	=	29.1	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	158.6154	g/VKT	
RSP Emission Factor (controlled) of paved road	=	7.4671	g/VKT	
	=	7.47E-03	g/veh/m	
	=	2.99E-02	g/m/hr	
	=	8.30E-06	g/m/s	
	=	8.05E-05	g/s	
	=	<u>2.77E-06</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	38.3747	g/VKT	
FSP Emission Factor (controlled) of paved road	=	1.8066	g/VKT	
	=	1.81E-03	g/veh/m	
	=	7.23E-03	g/m/hr	
	=	2.01E-06	g/m/s	
	=	1.95E-05	g/s	
	=	<u>6.69E-07</u>	g/s/m ²	

EP19_5

Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	4	veh/hr	(Note 4)
Road Length	=	11.3	m	
Area of paved road travelled	=	33.9	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	158.6154	g/VKT	
RSP Emission Factor (controlled) of paved road	=	7.4671	g/VKT	
	=	7.47E-03	g/veh/m	
	=	2.99E-02	g/m/hr	
	=	8.30E-06	g/m/s	
	=	9.38E-05	g/s	
	=	<u>2.77E-06</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	38.3747	g/VKT	
FSP Emission Factor (controlled) of paved road	=	1.8066	g/VKT	
	=	1.81E-03	g/veh/m	
	=	7.23E-03	g/m/hr	
	=	2.01E-06	g/m/s	
	=	2.27E-05	g/s	
	=	<u>6.69E-07</u>	g/s/m ²	

EP19_6

Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	4	veh/hr	(Note 4)
Road Length	=	13.1	m	
Area of paved road travelled	=	39.3	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	158.6154	g/VKT	
RSP Emission Factor (controlled) of paved road	=	7.4671	g/VKT	
	=	7.47E-03	g/veh/m	
	=	2.99E-02	g/m/hr	
	=	8.30E-06	g/m/s	
	=	1.09E-04	g/s	
	=	<u>2.77E-06</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	38.3747	g/VKT	
FSP Emission Factor (controlled) of paved road	=	1.8066	g/VKT	
	=	1.81E-03	g/veh/m	
	=	7.23E-03	g/m/hr	
	=	2.01E-06	g/m/s	
	=	2.63E-05	g/s	
	=	<u>6.69E-07</u>	g/s/m ²	

EP19_7

Control Efficiency	=	95.3	%	(Note 3)
Trucks Travelling Frequency	=	4	veh/hr	(Note 4)
Road Length	=	34.6	m	
Area of paved road travelled	=	103.8	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	158.6154	g/VKT	
RSP Emission Factor (controlled) of paved road	=	7.4671	g/VKT	
	=	7.47E-03	g/veh/m	
	=	2.99E-02	g/m/hr	

	=	8.30E-06	g/m/s
	=	2.87E-04	g/s
	=	<u>2.77E-06</u>	g/s/m ²
FSP Emission Factor (uncontrolled) of paved road	=	38.3747	g/VKT
FSP Emission Factor (controlled) of paved road	=	1.8066	g/VKT
	=	1.81E-03	g/veh/m
	=	7.23E-03	g/m/hr
	=	2.01E-06	g/m/s
	=	6.95E-05	g/s
	=	<u>6.69E-07</u>	g/s/m ²

EP19_14

Control Efficiency	=	97.8	%	(Note 3)
Trucks Travelling Frequency	=	4	veh/hr	(Note 4)
Road Length	=	29.0	m	
Area of paved road travelled	=	87.0	m ²	
RSP Emission Factor (uncontrolled) of paved road	=	158.6154	g/VKT	
RSP Emission Factor (controlled) of paved road	=	3.5370	g/VKT	
	=	3.54E-03	g/veh/m	
	=	1.41E-02	g/m/hr	
	=	3.93E-06	g/m/s	
	=	1.14E-04	g/s	
	=	<u>1.31E-06</u>	g/s/m ²	
FSP Emission Factor (uncontrolled) of paved road	=	38.3747	g/VKT	
FSP Emission Factor (controlled) of paved road	=	0.8557	g/VKT	
	=	8.56E-04	g/veh/m	
	=	3.42E-03	g/m/hr	
	=	9.51E-07	g/m/s	
	=	2.76E-05	g/s	
	=	<u>3.17E-07</u>	g/s/m ²	

Note:

1. Particle size multiplier is referred to Table 13.2-1-1, Section 13.2.1 of USEPA AP42 (ver 1/11) for RSP (PM10) and FSP (PM2.5).
2. Road surfacing silt loading is referred to Table 13.2.1-3 of USEPA AP42 (ver 1/11) for concrete batching.
3. Percentage of dust mitigation efficiency is calculated with reference to Cowherd et al., "Control of Open Fugitive Dust Sources, EPA-450/3-88-008, U.S. Environmental Protection Agency, Research Triangle
4. The vehicle numbers within the site is advised by the applicant.

EP19_1

End Hr	Factor
1:00	0
2:00	0
3:00	0
4:00	0
5:00	0
6:00	0
7:00	0
8:00	4.22E-01
9:00	4.22E-01
10:00	1.00E+00
11:00	1.00E+00
12:00	1.00E+00
13:00	1.00E+00
14:00	1.00E+00
15:00	1.00E+00
16:00	1.00E+00
17:00	1.00E+00
18:00	1.00E+00
19:00	1.00E+00
20:00	9.65E-01
21:00	9.65E-01
22:00	9.65E-01
23:00	9.65E-01
0:00	0

EP19_2 to 7

End Hr	Factor
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2:00	0
3:00	0
4:00	0
5:00	0
6:00	0
7:00	0
8:00	5.72E-01
9:00	5.72E-01
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11:00	1.00E+00
12:00	1.00E+00
13:00	1.00E+00
14:00	1.00E+00
15:00	1.00E+00
16:00	1.00E+00
17:00	1.00E+00
18:00	1.00E+00
19:00	1.00E+00
20:00	7.92E-01
21:00	7.92E-01
22:00	7.92E-01
23:00	7.92E-01
0:00	0

EP19_8 to 13

End Hr	Factor
1:00	0
2:00	0
3:00	0
4:00	0
5:00	0
6:00	0
7:00	0
8:00	1.00E+00
9:00	1.00E+00
10:00	1.00E+00
11:00	1.00E+00
12:00	1.00E+00
13:00	1.00E+00
14:00	1.00E+00
15:00	1.00E+00
16:00	1.00E+00
17:00	1.00E+00
18:00	1.00E+00
19:00	1.00E+00
20:00	3.00E-01
21:00	3.00E-01
22:00	3.00E-01
23:00	3.00E-01
0:00	0

EP19_14

End Hr	Factor
1:00	0
2:00	0
3:00	0
4:00	0
5:00	0
6:00	0
7:00	0
8:00	1.08E-01
9:00	1.08E-01
10:00	1.00E+00
11:00	1.00E+00
12:00	1.00E+00
13:00	1.00E+00
14:00	1.00E+00
15:00	1.00E+00
16:00	1.00E+00
17:00	1.00E+00
18:00	1.00E+00
19:00	1.00E+00
20:00	1.33E+00
21:00	1.33E+00
22:00	1.33E+00
23:00	1.33E+00
0:00	0

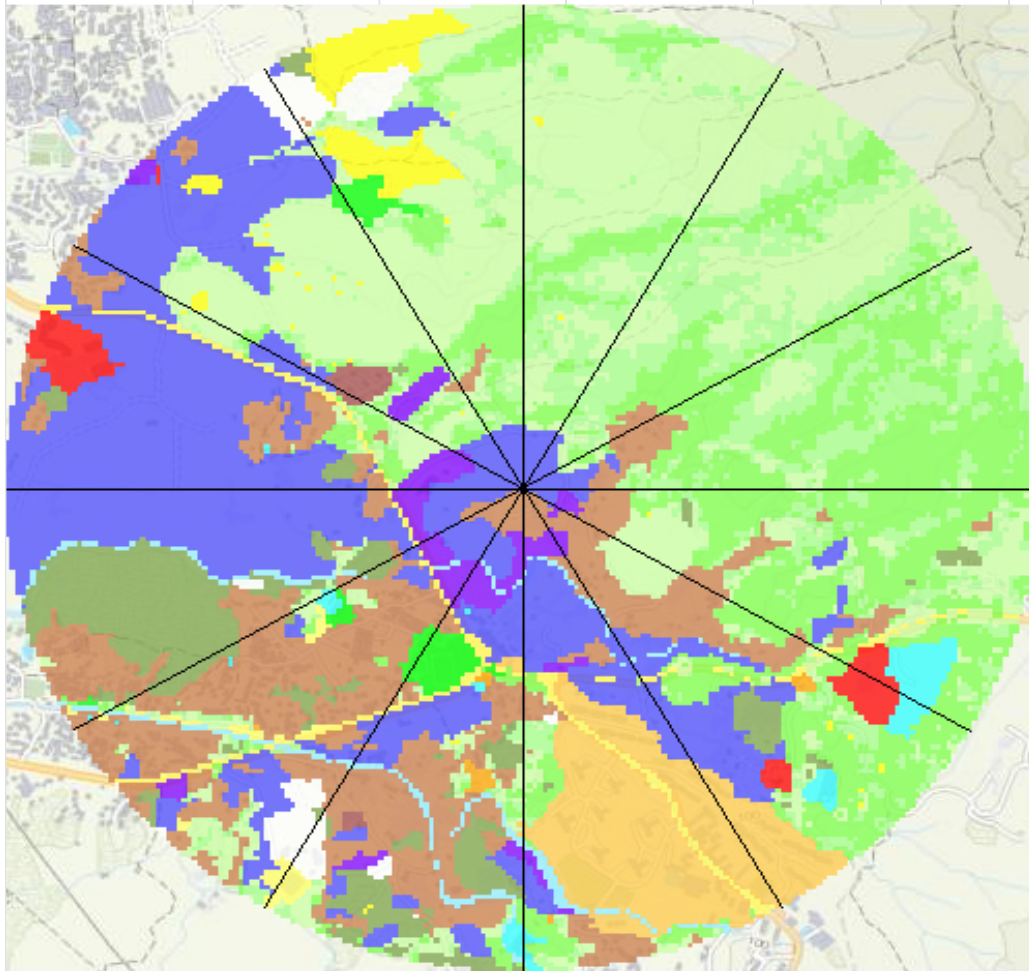
Appendix B Landuse Characteristics Parameters for AERMET

For Roughness (33, 46)

Code	Hong Kong Planning Department Classification	Roughness	Albedo	Bowen Ratio
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				

Angle	Group	Inverse-dist	Roughness
0	0 - 30	5.176452751	0.180888
30	30 - 60	5.31768931	0.243078
60	60 - 90	5.176452751	0.512926
90	90 - 120	5.176452751	0.423659
120	120 - 150	5.31768931	0.395184
150	150 - 180	5.176452751	0.310706
180	180 - 210	5.176452751	0.298283
210	210 - 240	5.31768931	0.347882
240	240 - 270	5.176452751	0.374540
270	270 - 300	5.176452751	0.539075
300	300 - 330	5.31768931	0.285071
330	330 - 360	5.176452751	0.241476

Center: X=828755, Y=832855, Z=49.0; Met Year=2019;

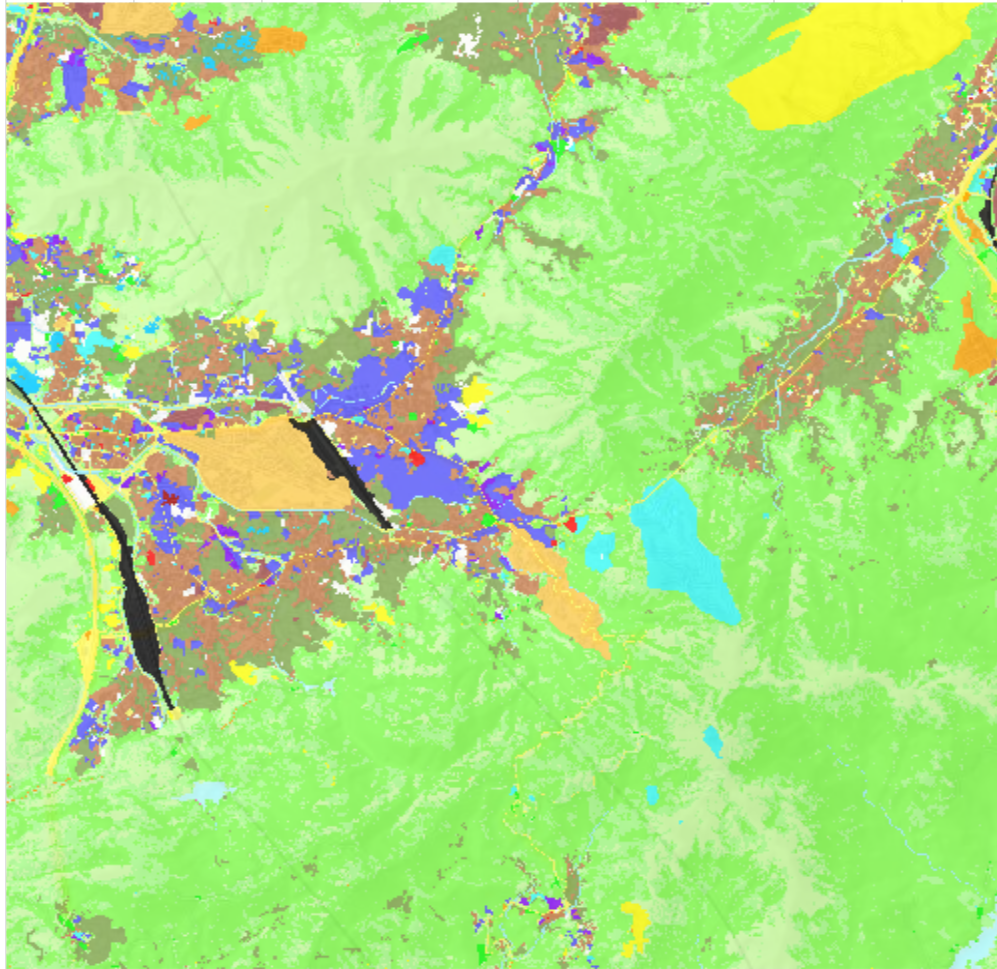


Land Utilization in Hong Kong 2022

For albedo and Brown Ratio (33,46)

Code	Hong Kong Planning Department Classification	Roughness	Albedo	Bowen Ratio	Grid Count	Percent	Albedo x Pe	b ⁴ n/Sn
1	Private Residential	1	0.18	1.5	4187	0.42%	0.00075366	1.001699124
2	Public Residential	1	0.18	1.5	154	0.02%	0.00002772	1.000062444
3	Rural Settlement	0.375	0.165	0.9	66392	6.64%	0.01095468	0.993029313
11	Commercial/Business and Office	1	0.18	1.5	772	0.08%	0.00013896	1.000313068
21	Industrial Land	0.7	0.18	1.5	3297	0.33%	0.00059346	1.001337712
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	30393	3.04%	0.00547074	1.012399546
31	Government, Institutional and Community Facilities	0.7	0.18	1.5	12931	1.29%	0.00232758	1.005256838
32	Open Space and Recreation	0.04	0.15	1	2944	0.29%	0.0004416	1
41	Roads and Transport Facilities	0.7	0.18	1.5	15497	1.55%	0.00278946	1.006303275
42	Railways	0.7	0.18	1.5	6506	0.65%	0.00117108	1.002641438
43	Airport	0.07	0.18	1.5	0	0.00%	0	1
44	Port Facilities	0.7	0.18	1.5	0	0.00%	0	1
51	Cemeteries/Funeral Facilities	0.7	0.18	1.5	24861	2.49%	0.00447498	1.010131245
52	Utilities	0.7	0.18	1.5	4589	0.46%	0.00082602	1.001862412
53	Vacant Land/Construction in Progress	0.2	0.18	1	8747	0.87%	0.00157446	1
54	Others	0.2	0.18	1	18651	1.87%	0.00335718	1
61	Agricultural Land	0.1575	0.18	0.55	84997	8.50%	0.01529946	0.950455105
62	Fish Ponds/Gei Wais	0.001	0.1	0.1	2140	0.21%	0.0000214	0.995084588
71	Woodland	1.05	0.1625	0.75	393599	39.36%	0.063959838	0.89294403
72	Shrubland	0.3	0.18	1.25	152396	15.24%	0.02743128	1.034591005
73	Grassland	0.065	0.185	0.8	158439	15.84%	0.029311215	0.965263034
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	0	0.00%	0	1
91	Reservoirs	0.001	0.1	0.1	2275	0.23%	0.0002275	0.994775315
92	Streams and Nullahs	0.001	0.1	0.1	6207	0.62%	0.0006207	0.985809502
99	SZ Residential *	1	0.18	1.5	0	0.00%	0	1
0	Open Sea *	0.001	0.1	0.1	0	0.00%	0	1
			0.171969	0.856381	1000000			
	* Non-PlanD Land Utilization categories							

Center: X=828755, Y=832855, Z=49.0; Met Year=2019;



Land Utilization in Hong Kong 2022

Appendix C EMFAC-HK Model Input

Methodology and Assumptions for Calculation of Vehicular Emission Source

Model Year

Two years of traffic data were provided by the traffic consultant. The 24-hourly vehicle flows for the modelling are shown in **Appendix G-1**.

- 2026 (the commencing year of the proposed CBP)
- 2031 (5 years valid period of SP licence)

Model

EMFAC-HK as built in EPD's Smart Air Modelling Platform ("SAMP") was used to estimate the composite emission factors. "Zero Emission Vehicle" ("ZEV") Scenario was selected in SAMP.

Vehicle Speed

Vehicle speed on each road link at each hour was provided by the traffic consultant as summarized in **Appendix C-1**. All the vehicle classes on the same road link were assumed to have the same travelling speed.

Trips

Start emissions of vehicles were assumed for all the assessed road links as conservative approach.

Composite Emission Factors

The composite emission factors for the assessed roads as estimated through the SAMP are shown in **Appendix C-2**. Based on the PATH meteorological data of temperature and relative humidity for the relevant grids of the assessed roads, three types of composite emission factors were estimated, annual hour minimum, monthly hour minimum and monthly hour average.

For long-term air quality impact, monthly hour average composite emission factors were adopted. For short-term air quality, monthly hour minimum composite emission factors were used.

Jenkin Method

Jenkin method was adopted for the conversion of cumulative NO_x to NO₂ by using the functional form of annual mean of NO₂-to-NO_x with reference to the Review of Methods for NO to NO₂ Conversion in plumes at short range for the long-term cumulative NO₂ assessment. The mentioned functional form is presented as equation below.

$$[NO_2] = \frac{\left([NO_x] + [OX] + \frac{J}{k}\right) - \sqrt{\left([NO_x] + [OX] + \frac{J}{k}\right)^2 - 4[NO_x][OX]}}{2}$$

Where [NO₂] is the NO₂ concentration

[NO_x] is the NO_x concentration

[OX] is the sum of NO₂ concentration and O₃ concentration (i.e. [OX] = [NO₂] + [O₃])

J is the photolysis rate of NO₂

k is the rate constant for reaction between NO and O₃

The derivation of cumulative annual average NO_x to NO₂ conversion equation using Jenkin Method for this assessment by SAMP are shown in **Appendix C-3**.

Appendix C-1 Traffic Flows

Figure C-1

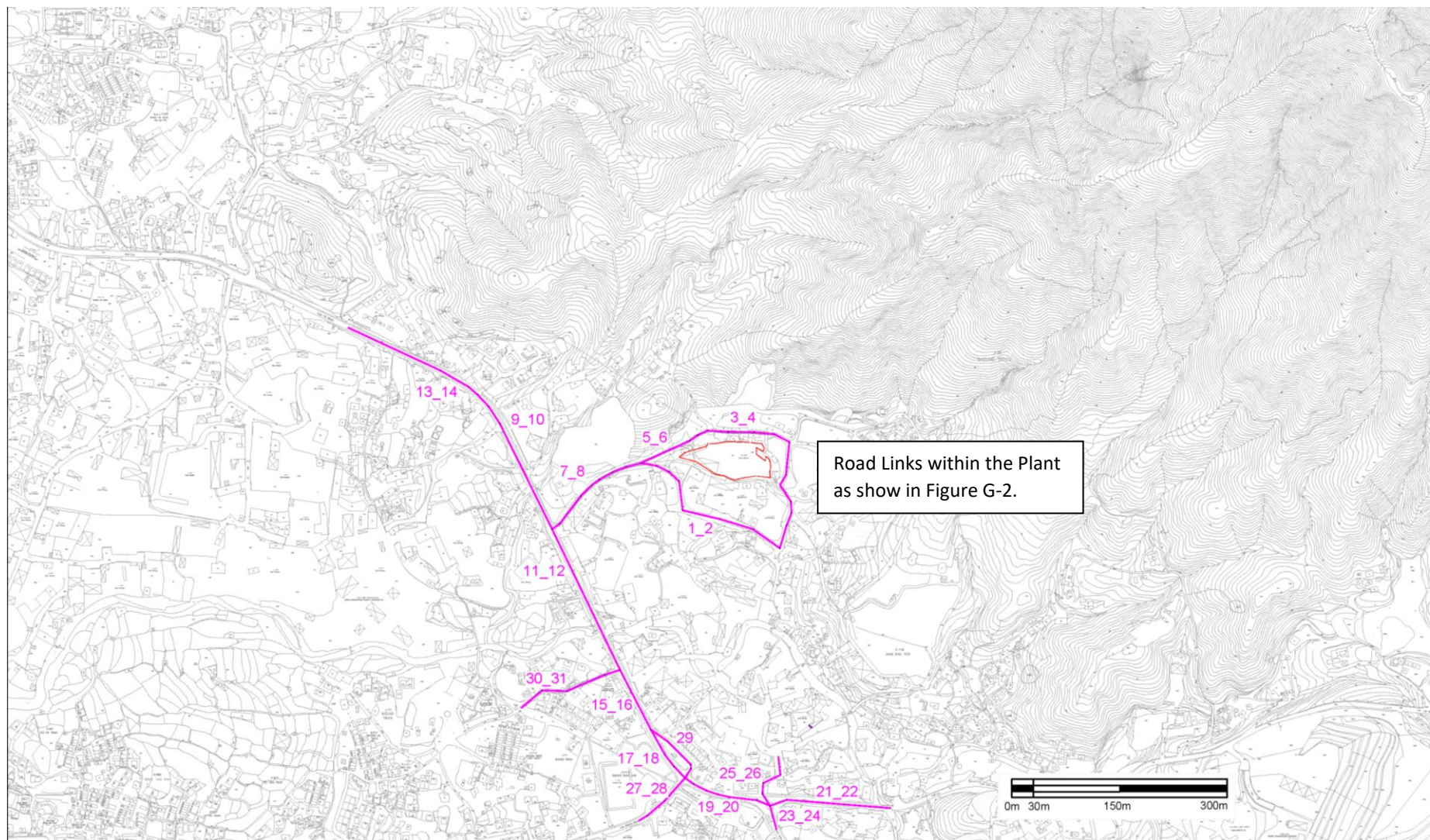
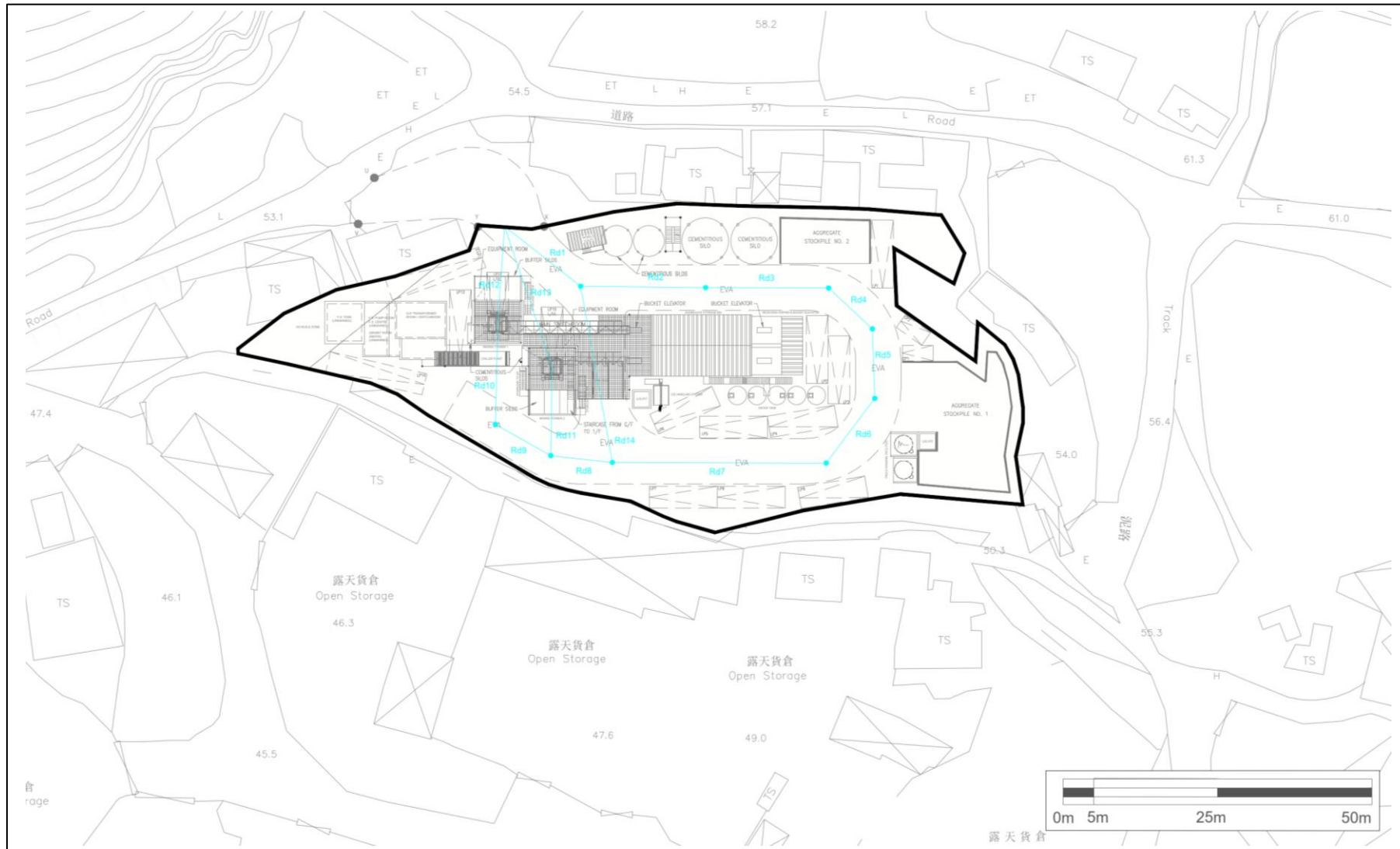


Figure C-2



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-franchise d Bus<=6.4 t	12 - Non-franchise d Bus 6.4-15t	13 - Non-franchise d Bus 15-24t	14 - Franchise d Bus Single Deck	15 - Franchise d Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchise d Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDd	MC	HGV9	NFB9	
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	0000-0100	10	100.00%	0.00%	0.00%	0.00%	0.00%	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%	
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	0100-0200	5	100.00%	0.00%	0.00%	0.00%	0.00%	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%	
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	0200-0300	5	100.00%	0.00%	0.00%	0.00%	0.00%	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%	
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	0300-0400	5	0.00%	0.00%	0.00%	0.00%	100.00%	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%	
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	0400-0500	5	50.00%	0.00%	0.00%	0.00%	0.00%	50.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	0500-0600	10	100.00%	0.00%	0.00%	0.00%	0.00%	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%	
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	0600-0700	10	73.35%	0.00%	0.00%	0.00%	0.00%	26.65%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	0700-0800	25	65.86%	0.00%	0.00%	9.90%	15.36%	0.00%	4.44%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.44%	0.00%	100.00%
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	0800-0900	25	60.02%	0.00%	0.00%	8.98%	23.00%	0.00%	4.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.00%	0.00%	100.00%	
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	0900-1000	25	58.16%	0.00%	0.00%	9.46%	24.38%	0.00%	4.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.00%	0.00%	100.00%	
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	1000-1100	25	55.96%	0.00%	0.00%	9.90%	25.26%	0.00%	4.44%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.44%	0.00%	100.00%	
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	1100-1200	25	48.70%	0.00%	0.00%	9.46%	33.84%	0.00%	4.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.00%	0.00%	100.00%	
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	1200-1300	55	26.04%	0.00%	0.00%	20.35%	37.62%	0.00%	7.59%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	8.40%	0.00%	100.00%	
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	1300-1400	60	25.00%	0.00%	0.00%	19.65%	33.95%	0.00%	10.70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.70%	0.00%	100.00%	
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	1400-1500	60	27.70%	0.00%	0.00%	18.25%	35.50%	0.00%	9.60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	8.95%	0.00%	100.00%	
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	1500-1600	60	27.70%	0.00%	0.00%	22.00%	35.45%	0.00%	7.70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.15%	0.00%	100.00%	
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	1600-1700	55	30.65%	0.00%	0.00%	18.29%	36.83%	0.00%	4.14%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.09%	0.00%	100.00%	
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	1700-1800	55	35.99%	0.00%	0.00%	24.05%	27.93%	0.00%	3.95%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	8.07%	0.00%	100.00%	
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	1800-1900	45	50.00%	0.00%	0.00%	19.28%	23.44%	0.00%	2.22%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.06%	0.00%	100.00%	
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	1900-2000	40	60.55%	0.00%	0.00%	15.55%	18.60%	0.00%	2.80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.50%	0.00%	100.00%	
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	2000-2100	25	59.38%	0.00%	0.00%	25.26%	9.90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.46%	0.00%	100.00%	
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	2100-2200	20	53.55%	0.00%	0.00%	22.15%	24.30%	0.00%	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%
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	2200-2300	15	53.33%	0.00%	0.00%	28.87%	17.80%	0.00%	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%
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	2300-0000	15	53.33%	0.00%	0.00%	17.80%	28.87%	0.00%	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%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	0000-0100	10	80.00%	10.00%	0.00%	0.00%	10.00%	0.00%	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%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	0100-0200	10	75.00%	25.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	0200-0300	5	50.00%	0.00%	0.00%	0.00%	50.00%	0.00%	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%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	0300-0400	5	0.00%	50.00%	0.00%	0.00%	50.00%	0.00%	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%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	0400-0500	5	50.00%	0.00%	0.00%	0.00%	50.00%	0.00%	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%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	0500-0600	10	83.35%	0.00%	0.00%	0.00%	16.65%	0.00%	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%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	0600-0700	15	83.33%	8.33%	0.00%	0.00%	8.33%	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%	100.00%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	0700-0800	30	80.00%	3.33%	0.00%	6.67%	10.00%	0.00%	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%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	0800-0900	35	72.79%	3.43%	0.00%	6.79%	17.00%	0.00%	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%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	0900-1000	30	73.33%	3.33%	0.00%	6.67%	16.67%	0.00%	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%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	1000-1100	25	66.32%	4.24%	0.00%	8.40%	21.04%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	1100-1200	25	60.00%	4.00%	0.00%	8.00%	28.00%	0.00%	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%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	1200-1300	55	28.92%	0.00%	0.00%	16.67%	38.50%	0.00%	7.95%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.95%	0.00%	100.00%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	1300-1400	60	25.57%	0.00%	0.00%	16.47%	36.37%	0.00%	10.80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.80%	0.00%	100.00%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	1400-1500	55	31.10%	0.00%	0.00%	15.71%	34.48%	0.00%	9.35%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	9.35%	0.00%	100.00%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	1500-1600	55	30.26%	0.00%	0.00%	19.00%	35.72%	0.00%	7.51%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.51%	0.00%	100.00%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	1600-1700	55	32.56%	0.00%	0.00%	16.28%	36.77%	0.00%	4.14%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.25%	0.00%	100.00%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	1700-1800	50	37.52%	0.00%	0.00%	20.92%	29.14%	0.00%	4.14%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	8.28%	0.00%	100.00%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	1800-1900	45	52.60%	0.00%	0.00%	16.81%	23.64%	0.00%	2.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.61%	0.00%	100.00%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	1900-2000	45	63.10%	0.00%	0.00%	13.10%	18.47%	0.00%	2.67%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.67%	0.00%	100.00%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	2000-2100	20	63.35%	0.00%	0.00%	21.10%	10.55%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.00%	0.00%	100.00%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	2100-2200	20	59.05%	0.00%	0.00%	18.05%	22.90%	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%	100.00%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	2200-2300	15	53.33%	0.00%	0.00%	17.80%	28.87%	0.00%	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%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	2300-0000	15	53.33%	0.00%	0.00%	17.80%	28.87%	0.00%	0.00%	0.00%	0.00%										

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)	Mode of Transport																		Total
								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 Vehicles 15-54t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchise d Bus<=6.4 t	12 - Non-franchise d Bus 6.4-15t	13 - Non-franchise d Bus 15-24t	14 - Franchise d Bus Single Deck	15 - Franchise d Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchise d Bus >24t	
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Chun Yiu Road	RD_7_8	RR	30	26.0	Y	0200-0300	10	83.35%	0.00%	0.00%	0.00%	16.65%	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%	
Chun Yiu Road	RD_7_8	RR	30	26.0	Y	0300-0400	5	25.00%	25.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	
Chun Yiu Road	RD_7_8	RR	30	26.0	Y	0400-0500	10	83.35%	0.00%	0.00%	0.00%	16.65%	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%	
Chun Yiu Road	RD_7_8	RR	30	26.0	Y	0500-0600	10	87.50%	0.00%	0.00%	0.00%	12.50%	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%	
Chun Yiu Road	RD_7_8	RR	30	26.0	Y	0600-0700	25	76.22%	4.26%	0.00%	4.26%	15.26%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	
Chun Yiu Road	RD_7_8	RR	30	26.0	Y	0700-0800	95	38.43%	1.10%	0.00%	3.29%	6.54%	0.00%	1.09%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	49.54%	0.00%	100.00%		
Chun Yiu Road	RD_7_8	RR	30	26.0	Y	0800-0900	100	35.08%	1.08%	0.00%	4.28%	10.70%	0.00%	1.04%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	47.82%	0.00%	100.00%		
Chun Yiu Road	RD_7_8	RR	30	26.0	Y	0900-1000	130	25.07%	0.81%	0.00%	3.23%	8.13%	0.00%	0.80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	61.96%	0.00%	100.00%			
Chun Yiu Road	RD_7_8	RR	30	26.0	Y	1000-1100	125	23.72%	0.78%	0.00%	3.24%	8.17%	0.00%	0.84%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	63.25%	0.00%	100.00%			
Chun Yiu Road	RD_7_8	RR	30	26.0	Y	1100-1200	125	21.87%	0.78%	0.00%	3.24%	10.52%	0.00%	0.84%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	62.75%	0.00%	100.00%			
Chun Yiu Road	RD_7_8	RR	30	26.0	Y	1200-1300	180	15.36%	0.00%	0.00%	10.80%	21.61%	0.00%	4.56%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	47.68%	0.00%	100.00%			
Chun Yiu Road	RD_7_8	RR	30	26.0	Y	1300-1400	190	15.83%	0.00%	0.00%	10.60%	20.66%	0.00%	6.38%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	46.52%	0.00%	100.00%			
Chun Yiu Road	RD_7_8	RR	30	26.0	Y	1400-1500	190	16.83%	0.00%	0.00%	10.30%	20.13%	0.00%	5.45%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	47.29%	0.00%	100.00%			
Chun Yiu Road	RD_7_8	RR	30	26.0	Y	1500-1600	185	17.06%	0.00%	0.00%	11.00%	20.85%	0.00%	4.41%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	46.68%	0.00%	100.00%			
Chun Yiu Road	RD_7_8	RR	30	26.0	Y	1600-1700	180	18.86%	0.00%	0.00%	9.71%	20.00%	0.00%	2.28%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	49.16%	0.00%	100.00%			
Chun Yiu Road	RD_7_8	RR	30	26.0	Y	1700-1800	180	21.65%	0.00%	0.00%	12.46%	15.86%	0.00%	2.29%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	47.74%	0.00%	100.00%			
Chun Yiu Road	RD_7_8	RR	30	26.0	Y	1800-1900	170	27.59%	0.00%	0.00%	9.21%	12.92%	0.00%	1.25%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	49.04%	0.00%	100.00%			
Chun Yiu Road	RD_7_8	RR	30	26.0	Y	1900-2000	145	35.52%	0.00%	0.00%	7.96%	10.13%	0.00%	1.45%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	44.93%	0.00%	100.00%			
Chun Yiu Road	RD_7_8	RR	30	26.0	Y	2000-2100	105	25.71%	0.00%	0.00%	8.93%	3.94%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	61.41%	0.00%	100.00%			
Chun Yiu Road	RD_7_8	RR	30	26.0	Y	2100-2200	100	21.05%	0.00%	0.00%	7.35%	7.35%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	64.25%	0.00%	100.00%			
Chun Yiu Road	RD_7_8	RR	30	26.0	Y	2200-2300	85	14.47%	0.00%	0.00%	6.06%	6.06%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	73.41%	0.00%	100.00%			
Chun Yiu Road	RD_7_8	RR	30	26.0	Y	2300-0000	20	56.70%	0.00%	0.00%	14.92%	28.38%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%		
Kam Tin Road	RD_09_10	RR	50	40.0	Y	0000-0100	10	75.00%	11.40%	0.00%	4.90%	5.45%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.20%	2.75%	0.00%	0.00%	100.00%		
Kam Tin Road	RD_09_10	RR	50	40.0	Y	0100-0200	110	64.40%	9.15%	0.00%	12.15%	17.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.90%	1.90%	0.00%	0.00%	100.00%		
Kam Tin Road	RD_09_10	RR	50	40.0	Y	0200-0300	95	68.49%	14.56%	0.00%	6.74%	9.05%	1.16%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%		
Kam Tin Road	RD_09_10	RR	50	40.0	Y	0300-0400	75	53.54%	19.61%	0.00%	9.83%	15.59%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.44%	0.00%	0.00%	100.00%		
Kam Tin Road	RD_09_10	RR	50	40.0	Y	0400-0500	95	59.64%	13.81%	0.00%	13.81%	10.64%	1.05%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.05%	0.00%	0.00%	100.00%		
Kam Tin Road	RD_09_10	RR	50	40.0	Y	0500-0600	165	59.40%	6.13%	0.00%	7.96%	4.91%	3.71%	1.25%	3.65%	0.00%	0.00%	0.63%	6.13%	1.25%	1.87%	1.25%	1.88%	0.00%	100.00%	
Kam Tin Road	RD_09_10	RR	50	37.7	Y	0600-0700	410	68.94%	5.17%	0.00%	6.71%	3.73%	1.49%	0.50%	2.69%	0.00%	0.00%	0.24%	0.00%	0.50%	0.76%	1.50%	5.72%	1.50%	0.00%	100.00%
Kam Tin Road	RD_09_10	RR	50	32.1	Y	0700-0800	940	62.93%	3.16%	0.00%	10.17%	3.73%	0.84%	0.75%	1.40%	0.00%	0.00%	0.00%	3.21%	0.40%	0.75%	0.85%	5.37%	6.45%	0.00%	100.00%
Kam Tin Road	RD_09_10	RR	50	32.3	Y	0800-0900	925	61.13%	2.90%	0.00%	12.92%	6.47%	0.94%	1.10%	1.65%	0.00%	0.00%	0.30%	0.50%	0.20%	0.50%	0.65%	4.03%	6.70%	0.00%	100.00%
Kam Tin Road	RD_09_10	RR	50	32.2	Y	0900-1000	950	56.62%	3.96%	0.00%	14.22%	6.41%	1.54%	1.50%	1.40%	0.00%	0.00%	0.20%	1.10%	0.20%	0.20%	0.85%	1.64%	10.14%	0.00%	100.00%
Kam Tin Road	RD_09_10	RR	50	32.8	Y	1000-1100	875	56.97%	4.11%	0.00%	13.17%	7.22%	1.69%	1.26%	1.50%	0.00%	0.00%	0.10%	0.00%	0.22%	0.60%	0.70%	1.49%	11.00%	0.00%	100.00%
Kam Tin Road	RD_09_10	RR	50	33.1	Y	1100-1200	850	53.77%	3.20%	0.00%	14.46%	9.22%	1.39%	1.20%	1.05%	0.00%	0.00%	0.35%	0.00%	0.00%	0.50%	0.70%	2.09%	12.05%	0.00%	100.00%
Kam Tin Road	RD_09_10	RR	50	32.0	Y	1200-1300	950	32.51%	5.46%	0.00%	17.85%	14.45%	5.72%	1.90%	0.95%	0.00%	0.00%	0.10%	0.40%	0.30%	0.50%	5.02%	2.77%	17.08%	0.00%	100.00%
Kam Tin Road	RD_09_10	RR	50	30.5	Y	1300-1400	1095	31.26%	5.26%	0.00%	16.37%	12.75%	8.28%	2.20%	0.80%	0.00%	0.00%	0.00%	0.20%	0.40%	0.45%	0.45%	2.41%	19.56%	0.00%	100.00%
Kam Tin Road	RD_09_10	RR	50	30.8	Y	1400-1500	1060	33.01%	4.71%	0.00%	15.88%	12.60%	8.67%	1.70%	1.05%	0.00%	0.00%	0.20%	0.40%	0.30%	0.50%	2.46%	18.50%	0.00%	100.00%	
Kam Tin Road	RD_09_10	RR	50	31.2	Y	1500-1600	1030	33.71%	4.21%	0.00%	17.95%	13.35%	7.71%	1.55%	0.90%	0.00%	0.00%	0.10%	0.40%	0.30%	0.50%	2.37%	16.94%	0.00%	100.00%	
Kam Tin Road	RD_09_10	RR	50	31.2	Y	1600-1700	1030	36.37%	4.26%	0.00%	15.04%	12.15%	6.31%	0.60%	0.95%	0.00%	0.00%	0.00%	0.20%	0.50%	0.50%	4.48%	18.62%	0.00%	100.00%	
Kam Tin Road	RD_09_10	RR	50	30.3	Y	1700-1800	1115	37.39%	4.06%	0.00%	17.21%	8.74%	7.87%	0.55%	1.26%	0.00%	0.00%	0.00%	0.35%	0.25%	0.45%	4.56%	19.92%	14.94%	0.00%	100.00%
Kam Tin Road	RD_09_10	RR	50	31.8	Y	1800-1900	970	50.21%	4.67%	0.00%	13.45%	7.63%	3.40%	0.20%	1.57%	0.00%	0.00%	0.00%	0.11%	0.20%	0.31%	0.51%	5.16%	12.60%	0.00%	100.00%
Kam Tin Road	RD_09_10	RR	50	32.7	Y	1900-2000	885	60.54%	3.61%	0.00%	11.14%	5.69%	2.16%	0.45%	1.36%	0.00%	0.00%	0.00%	0.11%	0.20%	0.31%	0.55%	4.56%	9.32%	0.00%	100.00%
Kam Tin Road	RD_09_10	RR	50	36.0	Y	2000-2100	570	51.61%	7.23%	0.00%	13.30%	2.49%	1.42%	0.35%	1.77%	0.00%	0.00%	0.00%	0.00%	0.00%	0.56%	0.75%	5.16%	15.37%	0.00%	100.00%
Kam Tin Road	RD_09_10	RR	50	37.1	Y	2100-2200	470	48.05%	6.48%	0.00%	13.59%	5.39%	1.71%	0.00%	1.51%	0.00%	0.00%	0.00%	0.45%	1.27%	0.85%	5.61%	15.10%	0.00%	100.00%	
Kam Tin Road	RD_09_10	RR	50	38.3	Y	2200-2300	350	41.43%	10.43%	0.00%	12.70%	4.58%	5.48%	0.80%	0.00%	0.55%	0.00%	0.00%	0.00%	0.86%	1.41%	3.19%	19.36%	0.00%	100.00%	
Kam Tin Road	RD_09_10	RR	50	39.1	Y	2300-0000	280	52.74%	15.48%	0.00%	10.10%	7.56%	3.97%	0.00%	0.00%	0.00%	0.00%	0.39%	0.74%	2.15%	1.08%	5.05%	0.74%	0.00%	100.00%	
Kam Tin Road	RD_11_12	RR	50	40.0	Y	0000-0100	185	73.25%	11.49%	0.00%	4.91%	5.47%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.15%	2.73%	0.00%	0.00%	100.00%	
Kam Tin Road	RD_11_12	RR	50	40.0	Y	0100-0200	110	64.10%	15.10%	0.00%	12.25%	4.75%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.90%	1.90%	0.00%	0.00%	100.00%	
Kam Tin Road	RD_11_12	RR	50	40.0	Y	0200-0300	90	68.15%	13.65%	0.00%	6.80%	10.25%	1.15%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	
Kam Tin Road	RD_11_12	RR	50	40.0	Y	0300-0400	75	52.84%	19.33%	0.00%	9.64%	16.75%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.44%	0.00%	0.00%	100.00%
Kam Tin Road																										

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 Vehicles1 5-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchise d Bus<=6.4 t	12 - Non-franchise d Bus 6.4-15t	13 - Non-franchise d Bus 15-24t	14 - Franchise d Bus Single Deck	15 - Franchise d Bus Double Deck	16 - Motorcycl es	17 - Heavy Goods Vehicles> 24t	18 - Non-franchise d Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDDB	MC	HGV9	NFB9	
Kam Tin Road	RD_13_14	RR	50	40.0	Y	0400-0500	95	59.64%	13.81%	0.00%	13.81%	10.64%	1.05%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.05%	0.00%	0.00%	100.00%
Kam Tin Road	RD_13_14	RR	50	40.0	Y	0500-0600	165	59.40%	6.13%	0.00%	7.96%	4.91%	3.71%	1.25%	3.65%	0.00%	0.00%	0.63%	6.13%	1.25%	1.87%	1.25%	1.88%	0.00%	0.00%	100.00%
Kam Tin Road	RD_13_14	RR	50	37.7	Y	0600-0700	410	68.94%	5.71%	0.00%	6.71%	3.73%	1.49%	0.50%	2.69%	0.00%	0.00%	0.24%	0.00%	0.50%	0.76%	1.50%	5.72%	1.50%	0.00%	100.00%
Kam Tin Road	RD_13_14	RR	50	32.1	Y	0700-0800	940	62.93%	3.16%	0.00%	10.17%	3.73%	0.84%	0.75%	1.40%	0.00%	0.00%	0.00%	3.21%	0.40%	0.75%	0.85%	5.37%	6.45%	0.00%	100.00%
Kam Tin Road	RD_13_14	RR	50	32.3	Y	0800-0900	925	61.13%	2.90%	0.00%	12.92%	6.47%	0.94%	1.10%	1.65%	0.00%	0.00%	0.30%	0.50%	0.20%	0.50%	0.65%	4.03%	6.70%	0.00%	100.00%
Kam Tin Road	RD_13_14	RR	50	32.2	Y	0900-1000	930	56.62%	3.96%	0.00%	14.22%	6.41%	1.54%	1.50%	1.40%	0.00%	0.00%	0.20%	1.10%	0.20%	0.20%	0.85%	1.64%	10.14%	0.00%	100.00%
Kam Tin Road	RD_13_14	RR	50	32.8	Y	1000-1100	875	56.97%	4.11%	0.00%	13.17%	7.22%	1.69%	1.26%	1.50%	0.00%	0.00%	0.10%	0.00%	0.20%	0.60%	0.70%	1.49%	11.00%	0.00%	100.00%
Kam Tin Road	RD_13_14	RR	50	33.1	Y	1100-1200	850	53.77%	3.20%	0.00%	14.46%	9.22%	1.39%	1.20%	1.05%	0.00%	0.00%	0.35%	0.00%	0.00%	0.50%	0.70%	2.09%	12.05%	0.00%	100.00%
Kam Tin Road	RD_13_14	RR	50	32.0	Y	1200-1300	950	32.51%	5.46%	0.00%	17.85%	14.45%	5.72%	1.90%	0.95%	0.00%	0.00%	0.00%	0.10%	0.40%	0.30%	0.50%	2.77%	17.08%	0.00%	100.00%
Kam Tin Road	RD_13_14	RR	50	30.5	Y	1300-1400	1095	31.26%	5.26%	0.00%	16.37%	12.75%	8.28%	2.20%	0.80%	0.00%	0.00%	0.00%	0.00%	0.20%	0.45%	0.45%	2.41%	19.56%	0.00%	100.00%
Kam Tin Road	RD_13_14	RR	50	30.8	Y	1400-1500	1060	33.01%	4.71%	0.00%	15.88%	12.60%	8.67%	1.70%	1.05%	0.00%	0.00%	0.00%	0.20%	0.40%	0.30%	0.50%	2.46%	18.50%	0.00%	100.00%
Kam Tin Road	RD_13_14	RR	50	31.2	Y	1500-1600	1030	33.71%	4.21%	0.00%	17.95%	13.35%	7.71%	1.55%	0.90%	0.00%	0.00%	0.00%	0.10%	0.40%	0.30%	0.50%	2.37%	16.94%	0.00%	100.00%
Kam Tin Road	RD_13_14	RR	50	31.2	Y	1600-1700	1030	36.37%	4.26%	0.00%	15.04%	12.15%	6.31%	0.60%	0.95%	0.00%	0.00%	0.00%	0.00%	0.20%	0.50%	0.50%	4.48%	18.62%	0.00%	100.00%
Kam Tin Road	RD_13_14	RR	50	30.3	Y	1700-1800	1115	37.39%	4.06%	0.00%	17.21%	8.74%	7.87%	0.55%	1.26%	0.00%	0.00%	0.00%	0.35%	0.25%	0.45%	6.92%	14.94%	0.00%	100.00%	
Kam Tin Road	RD_13_14	RR	50	31.8	Y	1800-1900	970	50.21%	4.67%	0.00%	13.45%	7.63%	3.40%	0.20%	1.57%	0.00%	0.00%	0.00%	0.11%	0.20%	0.31%	0.51%	5.16%	12.60%	0.00%	100.00%
Kam Tin Road	RD_13_14	RR	50	32.7	Y	1900-2000	885	60.54%	3.61%	0.00%	11.14%	5.69%	2.16%	0.45%	1.36%	0.00%	0.00%	0.00%	0.11%	0.20%	0.31%	0.55%	4.56%	9.32%	0.00%	100.00%
Kam Tin Road	RD_13_14	RR	50	36.0	Y	2000-2100	570	51.61%	7.23%	0.00%	13.30%	2.49%	1.42%	0.35%	1.77%	0.00%	0.00%	0.00%	0.00%	0.00%	0.56%	0.75%	5.16%	15.37%	0.00%	100.00%
Kam Tin Road	RD_13_14	RR	50	37.1	Y	2100-2200	470	48.05%	6.48%	0.00%	13.59%	5.39%	1.71%	0.00%	1.51%	0.00%	0.00%	0.00%	0.00%	0.45%	1.27%	0.85%	5.61%	15.10%	0.00%	100.00%
Kam Tin Road	RD_13_14	RR	50	38.3	Y	2200-2300	350	41.43%	10.43%	0.00%	12.70%	4.58%	5.48%	0.00%	0.55%	0.00%	0.00%	0.00%	0.00%	0.00%	0.86%	1.41%	3.19%	19.36%	0.00%	100.00%
Kam Tin Road	RD_13_14	RR	50	39.1	Y	2300-0000	280	52.74%	15.48%	0.00%	10.10%	7.56%	3.97%	0.00%	0.00%	0.00%	0.00%	0.00%	0.39%	0.74%	2.15%	1.08%	5.05%	0.74%	0.00%	100.00%
Kam Tin Road	RD_15_16	RR	50	40.0	Y	0000-0100	185	73.25%	11.49%	0.00%	4.91%	5.47%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.15%	2.73%	0.00%	0.00%	100.00%	
Kam Tin Road	RD_15_16	RR	50	40.0	Y	0100-0200	110	64.10%	15.10%	0.00%	12.25%	4.75%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.90%	1.90%	0.00%	0.00%	100.00%
Kam Tin Road	RD_15_16	RR	50	40.0	Y	0200-0300	90	68.15%	13.65%	0.00%	6.80%	10.25%	1.15%	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%
Kam Tin Road	RD_15_16	RR	50	40.0	Y	0300-0400	75	52.84%	19.33%	0.00%	9.64%	16.75%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.44%	0.00%	0.00%	100.00%
Kam Tin Road	RD_15_16	RR	50	40.0	Y	0400-0500	95	59.74%	12.97%	0.00%	14.13%	10.95%	1.11%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.11%	0.00%	0.00%	100.00%
Kam Tin Road	RD_15_16	RR	50	40.0	Y	0500-0600	170	59.81%	6.20%	0.00%	8.01%	4.35%	3.71%	1.25%	3.69%	0.00%	0.00%	0.61%	6.20%	1.25%	1.83%	1.25%	1.86%	0.00%	0.00%	100.00%
Kam Tin Road	RD_15_16	RR	50	37.7	Y	0600-0700	405	68.48%	5.53%	0.00%	6.72%	4.03%	1.53%	0.50%	2.74%	0.00%	0.00%	0.24%	0.00%	0.50%	0.76%	1.50%	5.74%	1.74%	0.00%	100.00%
Kam Tin Road	RD_15_16	RR	50	32.2	Y	0700-0800	930	62.72%	3.01%	0.00%	10.28%	3.77%	0.84%	0.85%	1.39%	0.00%	0.00%	0.00%	3.22%	0.45%	0.75%	0.85%	5.38%	6.49%	0.00%	100.00%
Kam Tin Road	RD_15_16	RR	50	32.3	Y	0800-0900	920	60.56%	2.86%	0.00%	12.98%	6.56%	0.99%	1.20%	1.65%	0.00%	0.00%	0.35%	0.55%	0.20%	0.55%	0.65%	4.06%	6.84%	0.00%	100.00%
Kam Tin Road	RD_15_16	RR	50	32.7	Y	0900-1000	885	57.04%	2.71%	0.00%	12.63%	6.47%	1.04%	1.25%	1.69%	0.00%	0.00%	0.35%	0.60%	0.20%	0.60%	0.70%	4.02%	10.69%	0.00%	100.00%
Kam Tin Road	RD_15_16	RR	50	32.8	Y	1000-1100	870	56.55%	3.92%	0.00%	13.18%	7.41%	1.73%	1.41%	1.49%	0.00%	0.00%	0.10%	0.00%	0.20%	0.60%	0.70%	1.49%	11.23%	0.00%	100.00%
Kam Tin Road	RD_15_16	RR	50	33.1	Y	1100-1200	845	53.35%	3.11%	0.00%	14.49%	9.35%	1.43%	1.30%	1.05%	0.00%	0.00%	0.35%	0.00%	0.00%	0.50%	0.70%	2.13%	12.24%	0.00%	100.00%
Kam Tin Road	RD_15_16	RR	50	31.9	Y	1200-1300	955	32.49%	5.47%	0.00%	17.92%	14.47%	5.70%	1.90%	0.95%	0.00%	0.00%	0.00%	0.10%	0.40%	0.30%	0.50%	2.72%	17.07%	0.00%	100.00%
Kam Tin Road	RD_15_16	RR	50	30.5	Y	1300-1400	1095	31.26%	5.26%	0.00%	16.40%	12.77%	8.25%	2.20%	0.85%	0.00%	0.00%	0.00%	0.00%	0.20%	0.45%	0.45%	2.36%	19.54%	0.00%	100.00%
Kam Tin Road	RD_15_16	RR	50	30.8	Y	1400-1500	1060	32.96%	4.72%	0.00%	16.06%	12.57%	8.69%	1.70%	1.05%	0.00%	0.00%	0.00%	0.21%	0.40%	0.30%	0.45%	2.47%	18.44%	0.00%	100.00%
Kam Tin Road	RD_15_16	RR	50	31.2	Y	1500-1600	1030	33.80%	4.21%	0.00%	18.11%	13.32%	7.69%	1.55%	0.85%	0.00%	0.00%	0.00%	0.10%	0.40%	0.30%	0.50%	2.32%	16.84%	0.00%	100.00%
Kam Tin Road	RD_15_16	RR	50	31.2	Y	1600-1700	1030	36.15%	4.27%	0.00%	15.21%	12.22%	6.33%	0.60%	0.96%	0.00%	0.00%	0.00%	0.00%	0.20%	0.50%	0.50%	4.50%	18.56%	0.00%	100.00%
Kam Tin Road	RD_15_16	RR	50	32.6	Y	1700-1800	895	58.06%	3.61%	0.00%	11.20%	5.65%	2.16%	0.45%	1.36%	0.00%	0.52%	0.23%	0.11%	0.20%	0.31%	0.55%	4.51%	11.07%	0.00%	100.00%
Kam Tin Road	RD_15_16	RR	50	31.8	Y	1800-1900	970	50.08%	6.66%	0.00%	13.56%	7.65%	3.40%	0.20%	1.51%	0.00%	0.00%	0.00%	0.11%	0.20%	0.31%	0.51%	5.16%	12.65%	0.00%	100.00%
Kam Tin Road	RD_15_16	RR	50	32.7	Y	1900-2000	880	58.37%	3.77%	0.00%	11.77%	5.98%	2.13%	0.44%	1.36%	0.00%	0.58%	0.22%	0.11%	0.24%	0.36%	0.56%	4.77%	9.35%	0.00%	100.00%
Kam Tin Road	RD_15_16	RR	50	36.0	Y	2000-2100	570	51.53%	7.27%	0.00%	13.40%	2.46%	1.42%	0.35%	1.77%	0.00%	0.00%	0.00%	0.00%	0.00%	0.56%	0.75%	5.11%	15.38%	0.00%	100.00%
Kam Tin Road	RD_15_16	RR	50	37.1	Y	2100-2200	465	47.83%	6.48%	0.00%	13.80%	5.60%	1.71%	0.00%	1.51%	0.00%	0.00%	0.00%	0.00%	0.45%	1.28%	0.85%	5.61%	14.89%	0.00%	100.00%
Kam Tin Road	RD_15_16	RR	50	38.3	Y	2200-2300	350	41.46%	10.38%	0.00%	12.70%	4.62%	5.48%	0.00%	0.55%	0.00%	0.00%	0.00%	0.00%	0.00%	0.86%	1.41%	3.19%	19.36%	0.00%	100.00%
Kam Tin Road	RD_15_16	RR	50	39.1	Y	2300-0000	280	52.74%	15.48%	0.00%	10.10%	7.56%	3.97%	0.00%	0.00%	0.00%	0.00%	0.00%	0.39%	0.74%	2.15%	1.08%	5.05%	0.74%	0.00%	100.00%
Kam Tin Road	RD_17_18	RR	50	40.0	Y	0000-0100	180	74.39%	11.38%	0.00%	5.11%	5.15%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.11%	2.86%	0.00%	0.00%	100.00%
Kam Tin Road	RD_17_18	RR	50	40.0	Y	0100-0200	105	65.61%	14.70%	0.00%	11.76%	4.94%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.00%	2.00%	0.00%	0.00%	100.00%
Kam Tin Road	RD_17_18	RR	50	40.0	Y	0200-0300	90	68.65%	13.90%	0.00%	6.95%	9.30%	1.20%	0.00%	0.00%	0.00%	0.00%									

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)	Mode of Transport																		Total	
								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 Vehicles15-54t	08 - Public Light Buses	09 - Private Light Bus<=3.5t	10 - Private Light Bus>3.5t	11 - Non-franchise d Bus<=6.4 t	12 - Non-franchise d Bus 6.4-15t	13 - Non-franchise d Bus 15-24t	14 - Franchise d Bus Single Deck	15 - Franchise d Bus Double Deck	16 - Motorcycl es	17 - Heavy Goods Vehicles>24t	18 - Non-franchise d Bus >24t		
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9		
Kam Tin Road	RD_19_20	RR	50	35.8	Y	0600-0700	585	65.98%	8.11%	0.00%	4.51%	3.29%	1.75%	0.70%	4.15%	0.00%	0.00%	0.49%	0.00%	0.49%	0.49%	4.35%	3.99%	1.69%	0.00%	100.00%	
Kam Tin Road	RD_19_20	RR	50	28.7	Y	0700-0800	1265	64.52%	4.76%	0.00%	7.40%	3.59%	0.95%	1.30%	2.20%	0.00%	0.00%	0.10%	1.90%	0.78%	0.60%	2.45%	4.13%	5.33%	0.00%	100.00%	
Kam Tin Road	RD_19_20	RR	50	28.8	Y	0800-0900	1250	62.40%	4.36%	0.00%	9.30%	6.18%	1.15%	1.75%	2.60%	0.00%	0.00%	0.60%	0.30%	0.44%	0.40%	1.80%	3.04%	5.68%	0.00%	100.00%	
Kam Tin Road	RD_19_20	RR	50	28.7	Y	0900-1000	1260	58.04%	6.05%	0.00%	10.26%	6.13%	1.75%	2.46%	2.10%	0.00%	0.00%	0.30%	0.65%	0.40%	0.20%	2.30%	1.20%	8.23%	0.00%	100.00%	
Kam Tin Road	RD_19_20	RR	50	29.5	Y	1000-1100	1185	58.05%	6.10%	0.00%	9.46%	6.88%	2.05%	2.00%	2.40%	0.00%	0.00%	0.20%	0.00%	0.34%	0.40%	2.10%	1.15%	8.88%	0.00%	100.00%	
Kam Tin Road	RD_19_20	RR	50	30.2	Y	1100-1200	1125	55.93%	4.92%	0.00%	10.51%	8.93%	1.65%	1.85%	1.65%	0.00%	0.00%	0.40%	0.15%	0.35%	1.85%	1.55%	10.18%	0.00%	100.00%		
Kam Tin Road	RD_19_20	RR	50	29.5	Y	1200-1300	1190	39.60%	6.70%	0.00%	12.75%	16.20%	1.45%	1.10%	2.05%	0.00%	0.00%	0.00%	0.15%	0.15%	0.45%	2.00%	2.45%	14.95%	0.00%	100.00%	
Kam Tin Road	RD_19_20	RR	50	27.9	Y	1300-1400	1335	39.35%	6.43%	0.00%	11.97%	14.62%	2.09%	1.38%	1.94%	0.00%	0.00%	0.00%	0.00%	0.05%	0.55%	1.65%	2.20%	17.78%	0.00%	100.00%	
Kam Tin Road	RD_19_20	RR	50	28.3	Y	1400-1500	1305	41.24%	5.74%	0.00%	11.61%	14.31%	2.23%	1.06%	2.40%	0.00%	0.00%	0.00%	0.25%	0.15%	0.35%	1.70%	2.20%	16.77%	0.00%	100.00%	
Kam Tin Road	RD_19_20	RR	50	28.6	Y	1500-1600	1270	42.26%	5.09%	0.00%	13.01%	15.16%	1.97%	0.96%	1.90%	0.00%	0.00%	0.00%	0.10%	0.15%	0.40%	1.70%	2.15%	15.16%	0.00%	100.00%	
Kam Tin Road	RD_19_20	RR	50	28.3	Y	1600-1700	1300	43.99%	5.01%	0.00%	10.69%	13.54%	1.64%	0.40%	2.25%	0.00%	0.00%	0.00%	0.00%	0.10%	0.55%	1.55%	4.00%	16.29%	0.00%	100.00%	
Kam Tin Road	RD_19_20	RR	50	27.4	Y	1700-1800	1390	46.53%	4.91%	0.00%	12.38%	9.79%	1.92%	0.34%	2.81%	0.00%	0.00%	0.00%	0.00%	0.15%	0.20%	1.60%	6.19%	13.18%	0.00%	100.00%	
Kam Tin Road	RD_19_20	RR	50	28.2	Y	1800-1900	1310	57.54%	5.24%	0.00%	8.85%	7.88%	0.75%	0.14%	3.22%	0.00%	0.00%	0.00%	0.05%	0.09%	0.41%	1.49%	4.30%	10.02%	0.00%	100.00%	
Kam Tin Road	RD_19_20	RR	50	28.9	Y	1900-2000	1245	66.80%	3.88%	0.00%	7.08%	5.67%	0.50%	0.23%	2.77%	0.00%	0.00%	0.00%	0.16%	0.09%	0.31%	1.94%	3.64%	6.92%	0.00%	100.00%	
Kam Tin Road	RD_19_20	RR	50	33.8	Y	2000-2100	780	58.05%	8.11%	0.00%	8.58%	2.56%	0.37%	0.14%	3.48%	0.00%	0.00%	0.00%	0.00%	0.00%	0.68%	2.28%	4.08%	11.68%	0.00%	100.00%	
Kam Tin Road	RD_19_20	RR	50	35.4	Y	2100-2200	630	54.62%	7.19%	0.00%	8.92%	5.63%	0.46%	0.00%	2.72%	0.00%	0.00%	0.00%	0.00%	0.14%	1.29%	2.88%	4.64%	11.50%	0.00%	100.00%	
Kam Tin Road	RD_19_20	RR	50	37.2	Y	2200-2300	455	47.60%	12.17%	0.00%	8.87%	4.91%	1.32%	0.00%	1.56%	0.00%	0.00%	0.00%	0.00%	0.00%	1.13%	4.44%	2.67%	15.33%	0.00%	100.00%	
Kam Tin Road	RD_19_20	RR	50	37.8	Y	2300-0000	395	57.01%	16.45%	0.00%	6.43%	7.42%	0.77%	0.00%	0.55%	0.00%	0.00%	0.00%	0.27%	0.27%	1.81%	4.12%	4.12%	2.72%	0.77%	0.00%	100.00%
Lam Kam Road	RD_21_22	RR	50	39.7	Y	0000-0100	195	77.05%	13.54%	0.00%	2.64%	2.09%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.63%	1.05%	0.00%	0.00%	100.00%	
Lam Kam Road	RD_21_22	RR	50	40.0	Y	0100-0200	110	67.91%	18.37%	0.00%	7.33%	2.73%	0.89%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.77%	0.00%	0.00%	0.00%	100.00%	
Lam Kam Road	RD_21_22	RR	50	40.0	Y	0200-0300	95	70.64%	17.38%	0.00%	4.35%	4.34%	3.29%	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%	
Lam Kam Road	RD_21_22	RR	50	40.0	Y	0300-0400	75	57.96%	26.07%	0.00%	7.26%	7.27%	1.44%	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%	
Lam Kam Road	RD_21_22	RR	50	40.0	Y	0400-0500	95	66.71%	16.63%	0.00%	8.92%	4.40%	2.52%	1.09%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	
Lam Kam Road	RD_21_22	RR	50	36.9	Y	0500-0600	160	67.20%	8.36%	0.00%	4.51%	7.09%	1.26%	4.53%	0.00%	0.00%	0.00%	0.00%	0.94%	0.00%	1.95%	1.26%	0.00%	0.00%	0.00%	100.00%	
Lam Kam Road	RD_21_22	RR	50	37.8	Y	0600-0700	420	73.32%	6.77%	0.00%	3.84%	1.72%	2.44%	0.51%	3.40%	0.00%	0.00%	0.00%	0.00%	0.50%	0.00%	2.66%	2.89%	1.94%	0.00%	100.00%	
Lam Kam Road	RD_21_22	RR	50	33.0	Y	0700-0800	855	75.70%	4.24%	0.00%	6.57%	1.80%	1.55%	0.85%	2.01%	0.00%	0.00%	0.00%	0.00%	0.70%	0.00%	1.54%	2.82%	2.22%	0.00%	100.00%	
Lam Kam Road	RD_21_22	RR	50	33.1	Y	0800-0900	845	73.08%	3.92%	0.00%	8.32%	3.08%	1.79%	1.21%	2.26%	0.00%	0.00%	0.00%	0.00%	0.38%	0.00%	1.17%	2.15%	2.65%	0.00%	100.00%	
Lam Kam Road	RD_21_22	RR	50	33.6	Y	0900-1000	795	70.89%	5.19%	0.00%	8.40%	2.88%	2.14%	1.25%	2.25%	0.00%	0.00%	0.00%	0.00%	0.37%	0.00%	1.24%	2.62%	2.77%	0.00%	100.00%	
Lam Kam Road	RD_21_22	RR	50	33.8	Y	1000-1100	780	69.97%	5.62%	0.00%	8.57%	3.43%	3.35%	1.41%	2.17%	0.00%	0.00%	0.00%	0.00%	0.25%	0.00%	1.40%	0.75%	3.09%	0.00%	100.00%	
Lam Kam Road	RD_21_22	RR	50	34.3	Y	1100-1200	730	68.42%	4.54%	0.00%	9.88%	4.68%	2.75%	1.40%	1.52%	0.00%	0.00%	0.00%	0.00%	0.12%	0.00%	1.34%	1.09%	4.27%	0.00%	100.00%	
Lam Kam Road	RD_21_22	RR	50	35.5	Y	1200-1300	615	51.66%	5.57%	0.00%	11.68%	9.87%	3.31%	1.49%	2.33%	0.00%	0.00%	0.00%	0.17%	0.00%	0.00%	2.15%	2.26%	9.51%	0.00%	100.00%	
Lam Kam Road	RD_21_22	RR	50	34.6	Y	1300-1400	705	49.87%	5.27%	0.00%	10.57%	8.66%	4.70%	1.70%	2.29%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.57%	2.14%	13.22%	0.00%	100.00%	
Lam Kam Road	RD_21_22	RR	50	34.7	Y	1400-1500	695	51.77%	4.75%	0.00%	10.13%	8.52%	4.91%	1.29%	2.64%	0.00%	0.00%	0.00%	0.28%	0.00%	0.00%	1.91%	2.06%	11.74%	0.00%	100.00%	
Lam Kam Road	RD_21_22	RR	50	34.9	Y	1500-1600	675	53.48%	4.37%	0.00%	11.54%	9.01%	4.34%	1.20%	2.09%	0.00%	0.00%	0.00%	0.17%	0.00%	0.00%	1.96%	1.94%	9.90%	0.00%	100.00%	
Lam Kam Road	RD_21_22	RR	50	34.7	Y	1600-1700	695	55.41%	4.22%	0.00%	9.31%	7.97%	3.52%	0.44%	2.63%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.61%	3.60%	11.29%	0.00%	100.00%	
Lam Kam Road	RD_21_22	RR	50	34.6	Y	1700-1800	700	76.11%	3.05%	0.00%	5.92%	3.13%	1.01%	0.27%	2.88%	0.00%	0.13%	0.13%	0.17%	0.00%	0.00%	1.91%	3.14%	2.16%	0.00%	100.00%	
Lam Kam Road	RD_21_22	RR	50	34.4	Y	1800-1900	725	68.97%	4.01%	0.00%	7.49%	4.60%	1.67%	0.13%	3.31%	0.00%	0.00%	0.00%	0.11%	0.00%	0.00%	1.50%	3.74%	4.46%	0.00%	100.00%	
Lam Kam Road	RD_21_22	RR	50	34.3	Y	1900-2000	735	69.51%	4.66%	0.00%	8.03%	3.94%	1.62%	0.39%	2.83%	0.00%	0.12%	0.12%	0.12%	0.00%	0.00%	1.73%	4.36%	2.56%	0.00%	100.00%	
Lam Kam Road	RD_21_22	RR	50	37.5	Y	2000-2100	430	70.31%	6.30%	0.00%	7.24%	1.43%	0.71%	0.22%	3.74%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.37%	3.48%	4.20%	0.00%	100.00%	
Lam Kam Road	RD_21_22	RR	50	38.5	Y	2100-2200	330	69.27%	5.80%	0.00%	7.85%	3.33%	0.92%	0.00%	3.36%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.05%	4.56%	1.85%	0.00%	100.00%	
Lam Kam Road	RD_21_22	RR	50	39.5	Y	2200-2300	235	64.01%	10.50%	0.00%	7.90%	3.05%	3.08%	0.00%	1.78%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.79%	2.67%	2.22%	0.00%	100.00%	
Lam Kam Road	RD_21_22	RR	50	39.6	Y	2300-0000	230	66.85%	12.40%	0.00%	5.33%	4.41%	1.76%	0.00%	0.89%	0.00%	0.00%	0.00%	0.45%	0.00%	0.00%	3.97%	3.06%	0.89%	0.00%	100.00%	
Route Twisk	RD_23_24	RR	50	40.0	Y	0000-0100	105	85.64%	5.79%	0.00%	2.86%	2.86%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.86%	0.00%	0.00%	100.00%	
Route Twisk	RD_23_24	RR	50	40.0	Y	0100-0200	55	78.16%	8.08%	0.00%	9.97%	1.89%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.89%	0.00%	0.00%	0.00%	100.00%	
Route Twisk	RD_23_24	RR	50	40.0	Y	0200-0300	50	76.41%	7.14%	0.00%	7.14%	1.74%	0.00%	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%	
Route Twisk	RD_23_24	RR	50	40.0	Y	0300-0400	30	61.17%	15.30%	0.00%	11.77%	11.77%	0.00%	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%	
Route Twisk	RD_23_24	RR	50	40.0	Y	0400-0500	45	73.19%	7.28%	0.00%	12.26%	7.28%	0.00%	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%	
Route Twisk	RD_23_24	RR	50	40.0	Y	0500-0600	80	71.93%	4.03%	0.0																	

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 Vehicles1 5-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchise d Bus<=6.4 t	12 - Non-franchise d Bus 6.4-15t	13 - Non-franchise d Bus 15-24t	14 - Franchise d Bus Single Deck	15 - Franchise d Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchise d Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDd	MC	HGV9	NFB9	
Access Road	RD_25_26	RR	30	26.0	Y	0800-0900	20	55.60%	0.00%	0.00%	33.30%	0.00%	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%	
Access Road	RD_25_26	RR	30	26.0	Y	0900-1000	20	55.60%	0.00%	0.00%	33.30%	0.00%	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%	
Access Road	RD_25_26	RR	30	26.0	Y	1000-1100	20	55.60%	0.00%	0.00%	33.30%	0.00%	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%	
Access Road	RD_25_26	RR	30	26.0	Y	1100-1200	20	55.60%	0.00%	0.00%	33.30%	0.00%	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%	
Access Road	RD_25_26	RR	30	26.0	Y	1200-1300	20	55.60%	0.00%	0.00%	33.30%	0.00%	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%	
Access Road	RD_25_26	RR	30	26.0	Y	1300-1400	20	55.60%	0.00%	0.00%	33.30%	0.00%	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%	
Access Road	RD_25_26	RR	30	26.0	Y	1400-1500	20	55.60%	0.00%	0.00%	33.30%	0.00%	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%	
Access Road	RD_25_26	RR	30	26.0	Y	1500-1600	20	55.60%	0.00%	0.00%	33.30%	0.00%	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%	
Access Road	RD_25_26	RR	30	26.0	Y	1600-1700	20	55.60%	0.00%	0.00%	33.30%	0.00%	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%	
Access Road	RD_25_26	RR	30	26.0	Y	1700-1800	20	55.60%	0.00%	0.00%	33.30%	0.00%	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%	
Access Road	RD_25_26	RR	30	26.0	Y	1800-1900	20	55.60%	0.00%	0.00%	33.30%	0.00%	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%	
Access Road	RD_25_26	RR	30	26.0	Y	1900-2000	10	40.00%	0.00%	0.00%	40.00%	0.00%	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%	
Access Road	RD_25_26	RR	30	26.0	Y	2000-2100	10	40.00%	0.00%	0.00%	40.00%	0.00%	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%	
Access Road	RD_25_26	RR	30	26.0	Y	2100-2200	10	40.00%	0.00%	0.00%	40.00%	0.00%	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%	
Access Road	RD_25_26	RR	30	26.0	Y	2200-2300	10	40.00%	0.00%	0.00%	40.00%	0.00%	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%	
Access Road	RD_25_26	RR	30	26.0	Y	2300-0000	10	40.00%	0.00%	0.00%	40.00%	0.00%	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%	
Kam Sheung Road	RD_27_28	RR	50	40.0	Y	0000-0100	100	55.56%	20.16%	0.00%	6.05%	6.10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.11%	2.04%	0.00%	0.00%	100.00%	
Kam Sheung Road	RD_27_28	RR	50	40.0	Y	0100-0200	65	41.98%	26.44%	0.00%	14.00%	7.05%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.53%	0.00%	0.00%	0.00%	100.00%	
Kam Sheung Road	RD_27_28	RR	50	40.0	Y	0200-0300	50	46.30%	28.15%	0.00%	9.20%	13.95%	2.40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	
Kam Sheung Road	RD_27_28	RR	50	40.0	Y	0300-0400	40	27.75%	38.90%	0.00%	11.15%	22.20%	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%	
Kam Sheung Road	RD_27_28	RR	50	40.0	Y	0400-0500	45	40.00%	24.44%	0.00%	17.78%	13.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.44%	0.00%	0.00%	0.00%	100.00%	
Kam Sheung Road	RD_27_28	RR	50	40.0	Y	0500-0600	85	40.55%	10.82%	0.00%	9.92%	4.89%	4.80%	1.18%	7.29%	0.00%	0.00%	2.35%	7.38%	3.53%	0.00%	7.29%	0.00%	0.00%	100.00%	
Kam Sheung Road	RD_27_28	RR	50	39.7	Y	0600-0700	220	53.96%	10.02%	0.00%	7.78%	4.56%	1.80%	0.45%	5.91%	0.00%	0.00%	0.91%	0.00%	0.91%	0.00%	8.24%	2.73%	2.73%	0.00%	100.00%
Kam Sheung Road	RD_27_28	RR	50	36.9	Y	0700-0800	480	55.10%	5.92%	0.00%	13.08%	5.04%	0.87%	0.87%	3.20%	0.00%	0.00%	0.21%	3.80%	1.28%	0.00%	4.66%	2.98%	2.98%	0.00%	100.00%
Kam Sheung Road	RD_27_28	RR	50	37.0	Y	0800-0900	475	52.65%	5.33%	0.00%	16.30%	8.52%	1.09%	1.09%	3.65%	0.00%	0.00%	1.09%	0.61%	0.65%	0.00%	3.43%	2.16%	3.43%	0.00%	100.00%
Kam Sheung Road	RD_27_28	RR	50	37.2	Y	0900-1000	455	52.23%	5.34%	0.00%	16.21%	8.43%	1.13%	1.13%	3.79%	0.00%	0.00%	1.13%	0.67%	0.69%	0.00%	3.53%	2.20%	3.53%	0.00%	100.00%
Kam Sheung Road	RD_27_28	RR	50	37.4	Y	1000-1100	440	49.66%	7.52%	0.00%	16.90%	9.57%	2.05%	1.13%	3.40%	0.00%	0.00%	0.22%	0.00%	0.48%	0.00%	4.08%	0.93%	4.08%	0.00%	100.00%
Kam Sheung Road	RD_27_28	RR	50	37.5	Y	1100-1200	430	47.34%	5.89%	0.00%	18.68%	12.35%	1.43%	1.17%	2.40%	0.00%	0.00%	0.96%	0.00%	0.26%	0.00%	3.33%	0.93%	5.25%	0.00%	100.00%
Kam Sheung Road	RD_27_28	RR	50	36.8	Y	1200-1300	495	32.09%	8.35%	0.00%	20.92%	15.07%	5.85%	4.46%	2.25%	0.00%	0.00%	0.00%	0.00%	0.00%	3.44%	2.05%	5.53%	0.00%	100.00%	
Kam Sheung Road	RD_27_28	RR	50	36.1	Y	1300-1400	565	31.41%	7.85%	0.00%	19.21%	13.32%	8.37%	5.38%	2.14%	0.00%	0.00%	0.00%	0.00%	0.00%	2.68%	1.98%	7.66%	0.00%	100.00%	
Kam Sheung Road	RD_27_28	RR	50	36.2	Y	1400-1500	550	33.29%	7.20%	0.00%	18.75%	13.20%	9.00%	4.23%	2.58%	0.00%	0.00%	0.00%	0.00%	0.00%	2.93%	1.83%	6.98%	0.00%	100.00%	
Kam Sheung Road	RD_27_28	RR	50	36.4	Y	1500-1600	530	33.73%	6.46%	0.00%	21.39%	13.97%	7.77%	3.77%	2.09%	0.00%	0.00%	0.00%	0.00%	0.00%	3.03%	1.93%	5.85%	0.00%	100.00%	
Kam Sheung Road	RD_27_28	RR	50	36.6	Y	1600-1700	515	37.59%	6.60%	0.00%	18.31%	13.19%	6.65%	1.55%	2.70%	0.00%	0.00%	0.00%	0.00%	0.00%	2.89%	3.49%	7.02%	0.00%	100.00%	
Kam Sheung Road	RD_27_28	RR	50	36.9	Y	1700-1800	480	60.40%	5.25%	0.00%	12.65%	5.70%	2.10%	1.05%	3.40%	0.00%	0.00%	1.05%	0.00%	0.00%	0.00%	3.60%	3.35%	1.45%	0.00%	100.00%
Kam Sheung Road	RD_27_28	RR	50	36.6	Y	1800-1900	510	51.55%	6.95%	0.00%	15.70%	8.00%	3.40%	0.60%	4.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.00%	3.80%	3.00%	0.00%	100.00%	
Kam Sheung Road	RD_27_28	RR	50	37.1	Y	1900-2000	470	58.47%	5.63%	0.00%	13.59%	5.98%	2.20%	1.06%	3.41%	0.00%	0.00%	1.08%	0.00%	0.00%	0.00%	3.64%	3.43%	1.50%	0.00%	100.00%
Kam Sheung Road	RD_27_28	RR	50	38.9	Y	2000-2100	295	52.73%	11.35%	0.00%	15.54%	2.78%	1.37%	0.70%	4.49%	0.00%	0.00%	0.00%	0.00%	0.00%	4.48%	3.78%	2.78%	0.00%	100.00%	
Kam Sheung Road	RD_27_28	RR	50	39.5	Y	2100-2200	235	49.67%	9.96%	0.00%	17.02%	6.04%	1.74%	0.00%	3.89%	0.00%	0.00%	0.00%	0.00%	0.00%	5.62%	4.72%	1.34%	0.00%	100.00%	
Kam Sheung Road	RD_27_28	RR	50	40.0	Y	2200-2300	175	41.23%	17.05%	0.00%	15.89%	4.73%	5.83%	0.00%	1.73%	0.00%	0.00%	0.00%	0.00%	0.00%	8.84%	2.98%	1.73%	0.00%	100.00%	
Kam Sheung Road	RD_27_28	RR	50	40.0	Y	2300-0000	160	45.40%	20.65%	0.00%	11.25%	6.90%	3.80%	0.00%	0.65%	0.00%	0.00%	0.00%	0.00%	0.00%	7.55%	3.15%	0.65%	0.00%	100.00%	
Sheung Tsuen B/T and Car Park	RD_29	RR	30	26.0	Y	0000-0100	10	57.10%	14.30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	28.60%	0.00%	0.00%	0.00%	100.00%	
Sheung Tsuen B/T and Car Park	RD_29	RR	30	26.0	Y	0100-0200	5	50.00%	25.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	25.00%	0.00%	0.00%	0.00%	100.00%	
Sheung Tsuen B/T and Car Park	RD_29	RR	30	26.0	Y	0200-0300	5	100.00%	0.00%	0.00%	0.00%	0.00%	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%	
Sheung Tsuen B/T and Car Park	RD_29	RR	30	26.0	Y	0300-0400	5	50.00%	50.00%	0.00%	0.00%	0.00%	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%	
Sheung Tsuen B/T and Car Park	RD_29	RR	30	26.0	Y	0400-0500	5	100.00%	0.00%	0.00%	0.00%	0.00%	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%	
Sheung Tsuen B/T and Car Park	RD_29	RR	30	26.0	Y	0500-0600	5	50.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	25.00%	25.00%	0.00%	0.00%	0.00%	100.00%	
Sheung Tsuen B/T and Car Park	RD_29	RR	30	26.0	Y	0600-0700	15	53.20%	6.70%	0.00%	6.70%	6.70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	6.70%	20.00%	0.00%	0.00%	0.00%	100.00%	
Sheung Tsuen B/T and Car Park	RD_29	RR	30	26.0	Y	0700-0800	30	63.40%	3.30%	0.00%	6.70%	3.30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.00%	13.30%	0.00%	0.00%	100.00%	
Sheung Tsuen B/T and Car Park	RD_29	RR	30	2																						

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)	Mode of Transport																		Total
								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 Vehicles 15-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchise d Bus<=6.4 t	12 - Non-franchise d Bus 6.4-15t	13 - Non-franchise d Bus 15-24t	14 - Franchise d Bus Single Deck	15 - Franchise d Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchise d Bus >24t	
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Village Access Road	RD_30_31	RR	30	26.0	Y	1000-1100	15	57.80%	0.00%	0.00%	0.00%	42.20%	0.00%	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%
Village Access Road	RD_30_31	RR	30	26.0	Y	1100-1200	20	41.65%	0.00%	0.00%	0.00%	58.35%	0.00%	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%
Village Access Road	RD_30_31	RR	30	26.0	Y	1200-1300	10	40.00%	0.00%	0.00%	0.00%	60.00%	0.00%	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%
Village Access Road	RD_30_31	RR	30	26.0	Y	1300-1400	10	40.00%	0.00%	0.00%	0.00%	60.00%	0.00%	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%
Village Access Road	RD_30_31	RR	30	26.0	Y	1400-1500	10	40.00%	0.00%	0.00%	0.00%	60.00%	0.00%	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%
Village Access Road	RD_30_31	RR	30	26.0	Y	1500-1600	10	40.00%	0.00%	0.00%	0.00%	60.00%	0.00%	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%
Village Access Road	RD_30_31	RR	30	26.0	Y	1600-1700	10	40.00%	0.00%	0.00%	0.00%	60.00%	0.00%	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%
Village Access Road	RD_30_31	RR	30	26.0	Y	1700-1800	10	50.00%	0.00%	0.00%	0.00%	50.00%	0.00%	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%
Village Access Road	RD_30_31	RR	30	26.0	Y	1800-1900	10	75.00%	0.00%	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%	0.00%	0.00%	100.00%
Village Access Road	RD_30_31	RR	30	26.0	Y	1900-2000	10	75.00%	0.00%	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%	0.00%	0.00%	100.00%
Village Access Road	RD_30_31	RR	30	26.0	Y	2000-2100	10	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	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%
Village Access Road	RD_30_31	RR	30	26.0	Y	2100-2200	10	50.00%	0.00%	0.00%	0.00%	50.00%	0.00%	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%
Village Access Road	RD_30_31	RR	30	26.0	Y	2200-2300	10	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	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%
Village Access Road	RD_30_31	RR	30	26.0	Y	2300-0000	10	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	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%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	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%	0.00%	0.00%	0.00%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	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%	0.00%	0.00%	0.00%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	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%	0.00%	0.00%	0.00%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	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%	0.00%	0.00%	0.00%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	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%	0.00%	0.00%	0.00%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	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%	0.00%	0.00%	0.00%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	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%	0.00%	0.00%	0.00%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	0700-0800	68	0.00%	0.00%	0.00%	0.00%	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%	0.00%	100.00%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	0800-0900	68	0.00%	0.00%	0.00%	0.00%	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%	0.00%	100.00%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	0900-1000	68	0.00%	0.00%	0.00%	0.00%	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%	0.00%	100.00%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	1000-1100	68	0.00%	0.00%	0.00%	0.00%	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%	0.00%	100.00%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	1100-1200	68	0.00%	0.00%	0.00%	0.00%	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%	0.00%	100.00%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	1200-1300	68	0.00%	0.00%	0.00%	0.00%	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%	0.00%	100.00%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	1300-1400	68	0.00%	0.00%	0.00%	0.00%	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%	0.00%	100.00%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	1400-1500	68	0.00%	0.00%	0.00%	0.00%	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%	0.00%	100.00%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	1500-1600	68	0.00%	0.00%	0.00%	0.00%	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%	0.00%	100.00%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	1600-1700	68	0.00%	0.00%	0.00%	0.00%	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%	0.00%	100.00%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	1700-1800	68	0.00%	0.00%	0.00%	0.00%	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%	0.00%	100.00%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	1800-1900	68	0.00%	0.00%	0.00%	0.00%	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%	0.00%	100.00%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	1900-2000	68	0.00%	0.00%	0.00%	0.00%	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%	0.00%	100.00%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	2000-2100	68	0.00%	0.00%	0.00%	0.00%	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%	0.00%	100.00%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	2100-2200	68	0.00%	0.00%	0.00%	0.00%	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%	0.00%	100.00%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	2200-2300	68	0.00%	0.00%	0.00%	0.00%	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%	0.00%	100.00%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	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%	0.00%	0.00%	0.00%
Emission Point 19 Paved Road	EP19_8	LD	30	15.0	Y	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%	0.00%	0.00%	0.00%
Emission Point 19 Paved Road	EP19_8	LD	30	15.0	Y	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%	0.00%	0.00%	0.00%
Emission Point 19 Paved Road	EP19_8	LD	30	15.0	Y	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%	0.00%	0.00%	0.00%
Emission Point 19 Paved Road	EP19_8	LD	30	15.0	Y	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%	0.00%	0.00%	0.00%
Emission Point 19 Paved Road	EP19_8	LD	30	15.0	Y	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%	0.00%	0.00%	0.00%
Emission Point 19 Paved Road	EP19_8	LD	30	15.0	Y	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%	0.00%	0.00%	0.00%
Emission Point 19 Paved Road	EP19_8	LD	30	15.0	Y	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%	0.00%	0.00%	0.00%
Emission Point 19 Paved Road	EP19_8	LD	30	15.0	Y	0700-0800	20	0.00%	0.00%	0.00%	0.00%	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%	0.00%	100.00%
Emission Point 19 Paved Road	EP19_8	LD	30	15.0	Y	0800-0900	20	0.00%	0.00%	0.00%	0.00%	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%	0.00%	100.00%
Emission Point 19 Paved Road	EP19_8	LD	30	15.0	Y	0900-1000	2																			

[illegible]

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-franchise d Bus<=6.4 t	12 - Non-franchise d Bus 6.4-15t	13 - Non-franchise d Bus 15-24t	14 - Franchise d Bus Single Deck	15 - Franchise d Bus Double Deck	16 - Motorcycl es	17 - Heavy Goods Vehicles>24t	18 - Non-franchise d Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDd	MC	HGV9	NFB9	
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	0000-0100	10	100.00%	0.00%	0.00%	0.00%	0.00%	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%	
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	0100-0200	10	100.00%	0.00%	0.00%	0.00%	0.00%	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%	
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	0200-0300	5	100.00%	0.00%	0.00%	0.00%	0.00%	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%	
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	0300-0400	5	0.00%	0.00%	0.00%	0.00%	100.00%	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%	
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	0400-0500	5	50.00%	0.00%	0.00%	0.00%	0.00%	50.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	0500-0600	10	100.00%	0.00%	0.00%	0.00%	0.00%	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%	
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	0600-0700	10	77.50%	0.00%	0.00%	0.00%	0.00%	22.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	0700-0800	25	69.00%	0.00%	0.00%	8.98%	14.02%	0.00%	4.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.00%	0.00%	100.00%
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	0800-0900	30	61.85%	0.00%	0.00%	8.40%	20.65%	0.00%	4.55%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.55%	0.00%	100.00%	
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	0900-1000	30	60.60%	0.00%	0.00%	8.70%	21.60%	0.00%	4.55%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.55%	0.00%	100.00%	
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	1000-1100	25	60.02%	0.00%	0.00%	8.98%	23.00%	0.00%	4.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.00%	0.00%	100.00%	
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	1100-1200	30	51.90%	0.00%	0.00%	8.70%	30.30%	0.00%	4.55%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.55%	0.00%	100.00%	
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	1200-1300	55	27.40%	0.00%	0.00%	20.13%	36.80%	0.00%	7.27%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	8.40%	0.00%	100.00%	
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	1300-1400	60	26.30%	0.00%	0.00%	19.20%	33.45%	0.00%	10.70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.35%	0.00%	100.00%	
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	1400-1500	60	29.05%	0.00%	0.00%	18.05%	34.70%	0.00%	9.25%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	8.95%	0.00%	100.00%	
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	1500-1600	60	29.05%	0.00%	0.00%	21.70%	34.70%	0.00%	7.40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.15%	0.00%	100.00%	
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	1600-1700	55	33.33%	0.00%	0.00%	17.58%	35.37%	0.00%	3.95%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	9.76%	0.00%	100.00%	
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	1700-1800	55	37.25%	0.00%	0.00%	23.51%	27.49%	0.00%	3.95%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.80%	0.00%	100.00%	
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	1800-1900	50	52.25%	0.00%	0.00%	18.00%	23.00%	0.00%	2.40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.35%	0.00%	100.00%	
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	1900-2000	45	62.43%	0.00%	0.00%	15.22%	17.32%	0.00%	2.36%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.67%	0.00%	100.00%	
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	2000-2100	25	61.72%	0.00%	0.00%	23.88%	9.42%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.98%	0.00%	100.00%	
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	2100-2200	20	56.25%	0.00%	0.00%	21.25%	22.50%	0.00%	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%
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	2200-2300	15	53.33%	0.00%	0.00%	28.87%	17.80%	0.00%	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%
Chun Yiu Road	RD_1_2	RR	30	26.0	Y	2300-0000	15	53.33%	0.00%	0.00%	17.80%	28.87%	0.00%	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%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	0000-0100	10	80.00%	10.00%	0.00%	0.00%	10.00%	0.00%	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%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	0100-0200	10	66.70%	16.65%	0.00%	0.00%	16.65%	0.00%	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%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	0200-0300	10	75.00%	0.00%	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%	0.00%	0.00%	100.00%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	0300-0400	5	33.40%	33.30%	0.00%	0.00%	33.30%	0.00%	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%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	0400-0500	10	75.00%	0.00%	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%	0.00%	0.00%	100.00%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	0500-0600	10	83.35%	0.00%	0.00%	0.00%	16.65%	0.00%	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%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	0600-0700	15	80.00%	6.67%	0.00%	0.00%	13.33%	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%	100.00%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	0700-0800	35	79.57%	3.43%	0.00%	6.79%	10.21%	0.00%	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%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	0800-0900	35	72.07%	3.07%	0.00%	6.21%	18.64%	0.00%	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%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	0900-1000	35	70.79%	3.21%	0.00%	6.50%	19.50%	0.00%	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%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	1000-1100	35	69.36%	3.43%	0.00%	6.79%	20.43%	0.00%	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%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	1100-1200	35	64.29%	3.21%	0.00%	6.50%	26.00%	0.00%	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%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	1200-1300	55	28.09%	0.00%	0.00%	16.29%	40.60%	0.00%	7.51%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.51%	0.00%	100.00%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	1300-1400	65	26.45%	0.00%	0.00%	14.88%	38.45%	0.00%	10.11%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.11%	0.00%	100.00%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	1400-1500	60	29.20%	0.00%	0.00%	14.67%	38.13%	0.00%	9.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	9.00%	0.00%	100.00%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	1500-1600	60	28.83%	0.00%	0.00%	17.93%	38.43%	0.00%	7.40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.40%	0.00%	100.00%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	1600-1700	55	34.10%	0.00%	0.00%	15.16%	37.63%	0.00%	3.75%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	9.35%	0.00%	100.00%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	1700-1800	55	38.10%	0.00%	0.00%	18.86%	31.07%	0.00%	4.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.95%	0.00%	100.00%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	1800-1900	50	51.94%	0.00%	0.00%	15.10%	26.30%	0.00%	2.22%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.44%	0.00%	100.00%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	1900-2000	45	63.53%	0.00%	0.00%	12.26%	19.43%	0.00%	2.39%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.39%	0.00%	100.00%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	2000-2100	25	62.98%	0.00%	0.00%	18.02%	14.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.98%	0.00%	100.00%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	2100-2200	20	59.05%	0.00%	0.00%	18.05%	22.90%	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%	100.00%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	2200-2300	15	53.33%	0.00%	0.00%	17.80%	28.87%	0.00%	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%
Chun Yiu Road	RD_3_4	RR	30	26.0	Y	2300-0000	15	48.53%	0.00%	0.00%	16.20%	35.27%	0.00%	0.00%	0.00%	0.00										

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 Vehicles1 5-24t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchise d Bus<=6.4 t	12 - Non-franchise d Bus 6.4-15t	13 - Non-franchise d Bus 15-24t	14 - Franchise d Bus Single Deck	15 - Franchise d Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchise d Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Chun Yiu Road	RD_7_8	RR	30	26.0	Y	0200-0300	10	83.35%	0.00%	0.00%	0.00%	16.65%	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%	
Chun Yiu Road	RD_7_8	RR	30	26.0	Y	0300-0400	5	25.00%	25.00%	0.00%	0.00%	50.00%	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%	
Chun Yiu Road	RD_7_8	RR	30	26.0	Y	0400-0500	10	75.00%	0.00%	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%	0.00%	100.00%	
Chun Yiu Road	RD_7_8	RR	30	26.0	Y	0500-0600	10	87.50%	0.00%	0.00%	0.00%	12.50%	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%	
Chun Yiu Road	RD_7_8	RR	30	26.0	Y	0600-0700	25	78.26%	4.02%	0.00%	4.02%	13.70%	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%	
Chun Yiu Road	RD_7_8	RR	30	26.0	Y	0700-0800	95	39.73%	1.10%	0.00%	3.24%	6.48%	0.00%	1.09%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	
Chun Yiu Road	RD_7_8	RR	30	26.0	Y	0800-0900	100	36.14%	1.02%	0.00%	4.16%	11.34%	0.00%	1.04%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	
Chun Yiu Road	RD_7_8	RR	30	26.0	Y	0900-1000	130	25.48%	0.81%	0.00%	3.23%	8.78%	0.00%	0.80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	
Chun Yiu Road	RD_7_8	RR	30	26.0	Y	1000-1100	130	24.67%	0.81%	0.00%	3.23%	9.58%	0.00%	0.80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	
Chun Yiu Road	RD_7_8	RR	30	26.0	Y	1100-1200	130	22.25%	0.81%	0.00%	3.23%	12.00%	0.00%	0.80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	
Chun Yiu Road	RD_7_8	RR	30	26.0	Y	1200-1300	190	15.51%	0.00%	0.00%	11.80%	23.56%	0.00%	4.26%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	
Chun Yiu Road	RD_7_8	RR	30	26.0	Y	1300-1400	205	16.40%	0.00%	0.00%	11.92%	21.89%	0.00%	5.97%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	
Chun Yiu Road	RD_7_8	RR	30	26.0	Y	1400-1500	200	16.94%	0.00%	0.00%	11.29%	22.04%	0.00%	5.15%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	
Chun Yiu Road	RD_7_8	RR	30	26.0	Y	1500-1600	200	16.99%	0.00%	0.00%	12.39%	22.70%	0.00%	4.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	
Chun Yiu Road	RD_7_8	RR	30	26.0	Y	1600-1700	190	19.21%	0.00%	0.00%	10.71%	21.92%	0.00%	2.18%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	
Chun Yiu Road	RD_7_8	RR	30	26.0	Y	1700-1800	190	22.09%	0.00%	0.00%	14.00%	16.67%	0.00%	2.14%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	
Chun Yiu Road	RD_7_8	RR	30	26.0	Y	1800-1900	175	28.26%	0.00%	0.00%	10.00%	13.48%	0.00%	1.15%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	
Chun Yiu Road	RD_7_8	RR	30	26.0	Y	1900-2000	150	36.25%	0.00%	0.00%	8.92%	10.96%	0.00%	1.35%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	
Chun Yiu Road	RD_7_8	RR	30	26.0	Y	2000-2100	110	26.70%	0.00%	0.00%	9.55%	4.75%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.00%	59.00%	0.00%	100.00%	
Chun Yiu Road	RD_7_8	RR	30	26.0	Y	2100-2200	105	21.22%	0.00%	0.00%	8.04%	9.09%	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%	
Chun Yiu Road	RD_7_8	RR	30	26.0	Y	2200-2300	90	15.25%	0.00%	0.00%	7.05%	5.85%	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%	
Chun Yiu Road	RD_7_8	RR	30	26.0	Y	2300-0000	30	56.05%	0.00%	0.00%	16.05%	27.90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	
Kam Tin Road	RD_09_10	RR	50	39.9	Y	0000-0100	200	73.65%	11.65%	0.00%	4.60%	5.55%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.00%	2.55%	0.00%	0.00%	100.00%	
Kam Tin Road	RD_09_10	RR	50	40.0	Y	0100-0200	120	64.10%	15.75%	0.00%	12.25%	4.40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.75%	1.75%	0.00%	100.00%	
Kam Tin Road	RD_09_10	RR	50	40.0	Y	0200-0300	100	67.45%	14.80%	0.00%	7.40%	9.35%	1.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	
Kam Tin Road	RD_09_10	RR	50	40.0	Y	0300-0400	85	50.64%	20.82%	0.00%	10.41%	16.86%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.27%	0.00%	100.00%	
Kam Tin Road	RD_09_10	RR	50	40.0	Y	0400-0500	105	58.94%	13.94%	0.00%	13.94%	11.08%	1.05%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.05%	0.00%	100.00%	
Kam Tin Road	RD_09_10	RR	50	40.0	Y	0500-0600	175	59.77%	6.41%	0.00%	7.61%	4.71%	4.09%	1.71%	3.55%	0.00%	0.00%	0.58%	5.83%	1.15%	1.71%	1.15%	1.73%	0.00%	100.00%	
Kam Tin Road	RD_09_10	RR	50	37.4	Y	0600-0700	440	68.40%	5.92%	0.00%	6.66%	3.68%	1.58%	1.45%	2.99%	0.00%	0.00%	0.24%	0.00%	0.45%	0.70%	1.35%	5.72%	1.85%	100.00%	
Kam Tin Road	RD_09_10	RR	50	31.4	Y	0700-0800	1005	63.17%	3.31%	0.00%	10.22%	3.68%	0.89%	0.80%	1.50%	0.00%	0.00%	0.00%	3.01%	0.40%	0.70%	0.80%	5.52%	6.00%	100.00%	
Kam Tin Road	RD_09_10	RR	50	31.5	Y	0800-0900	995	61.07%	3.06%	0.00%	12.92%	6.47%	0.99%	1.10%	1.75%	0.00%	0.00%	0.30%	0.50%	0.20%	0.50%	0.60%	4.04%	6.50%	100.00%	
Kam Tin Road	RD_09_10	RR	50	31.5	Y	0900-1000	995	56.77%	4.11%	0.00%	14.28%	6.41%	1.63%	1.61%	1.40%	0.00%	0.00%	0.20%	1.01%	0.20%	0.20%	0.80%	1.74%	9.64%	100.00%	
Kam Tin Road	RD_09_10	RR	50	32.2	Y	1000-1100	935	57.13%	4.16%	0.00%	13.17%	7.22%	1.84%	1.31%	1.60%	0.00%	0.00%	0.10%	0.00%	0.20%	0.50%	0.65%	1.64%	10.50%	100.00%	
Kam Tin Road	RD_09_10	RR	50	32.5	Y	1100-1200	905	54.08%	3.31%	0.00%	14.57%	9.21%	1.44%	1.20%	1.10%	0.00%	0.00%	0.30%	0.00%	0.00%	0.40%	0.70%	2.14%	11.55%	100.00%	
Kam Tin Road	RD_09_10	RR	50	31.3	Y	1200-1300	1020	32.51%	5.61%	0.00%	17.94%	14.60%	5.92%	1.75%	0.95%	0.00%	0.00%	0.10%	0.40%	0.30%	0.50%	2.77%	16.64%	0.00%	100.00%	
Kam Tin Road	RD_09_10	RR	50	29.6	Y	1300-1400	1175	31.26%	5.35%	0.00%	16.42%	12.80%	8.48%	2.05%	0.95%	0.00%	0.00%	0.00%	0.00%	0.20%	0.40%	0.40%	2.46%	19.22%	100.00%	
Kam Tin Road	RD_09_10	RR	50	30.1	Y	1400-1500	1135	33.12%	4.86%	0.00%	15.93%	12.60%	9.02%	1.60%	1.05%	0.00%	0.00%	0.00%	0.15%	0.35%	0.25%	0.45%	2.46%	18.15%	100.00%	
Kam Tin Road	RD_09_10	RR	50	30.3	Y	1500-1600	1110	33.82%	4.36%	0.00%	18.04%	13.41%	7.86%	1.45%	0.91%	0.00%	0.00%	0.00%	0.10%	0.40%	0.30%	0.45%	2.36%	16.54%	100.00%	
Kam Tin Road	RD_09_10	RR	50	30.3	Y	1600-1700	1110	36.32%	4.36%	0.00%	15.14%	12.20%	6.52%	0.55%	1.05%	0.00%	0.00%	0.00%	0.00%	0.20%	0.45%	0.45%	4.53%	18.24%	100.00%	
Kam Tin Road	RD_09_10	RR	50	29.4	Y	1700-1800	1200	37.53%	4.16%	0.00%	17.30%	8.65%	8.04%	0.50%	1.30%	0.00%	0.00%	0.00%	0.00%	0.30%	0.25%	0.40%	6.95%	14.61%	100.00%	
Kam Tin Road	RD_09_10	RR	50	31.1	Y	1800-1900	1040	50.22%	4.81%	0.00%	13.49%	7.64%	3.45%	0.20%	1.61%	0.00%	0.00%	0.00%	0.11%	0.20%	0.31%	0.45%	5.30%	12.21%	100.00%	
Kam Tin Road	RD_09_10	RR	50	32.0	Y	1900-2000	950	60.49%	3.71%	0.00%	11.18%	5.74%	2.22%	0.45%	1.51%	0.00%	0.00%	0.00%	0.11%	0.20%	0.31%	0.55%	4.65%	8.88%	100.00%	
Kam Tin Road	RD_09_10	RR	50	35.6	Y	2000-2100	610	51.82%	7.61%	0.00%	13.39%	2.50%	1.48%	0.35%	1.85%	0.00%	0.00%	0.00%	0.00%	0.00%	0.51%	0.65%	5.11%	14.74%	100.00%	
Kam Tin Road	RD_09_10	RR	50	36.8	Y	2100-2200	495	48.35%	6.71%	0.00%	13.74%	5.49%	1.83%	0.00%	1.41%	0.00%	0.00%	0.00%	0.00%	0.40%	1.22%	0.85%	5.87%	14.15%	100.00%	
Kam Tin Road	RD_09_10	RR	50	38.1	Y	2200-2300	370	41.54%	10.56%	0.00%	13.00%	4.60%	5.69%	0.00%	0.00%	0.81%	0.00%	0.00%	0.00%	0.00%	0.81%	1.31%	3.27%	18.41%	100.00%	
Kam Tin Road	RD_09_10	RR	50	38.8	Y	2300-0000	305	52.61%	15.25%	0.00%	10.26%	7.68%	4.02%	0.00%	0.32%	0.00%	0.00%	0.00%	0.32%	0.65%	2.00%	0.97%	4.95%	0.97%	100.00%	
Kam Tin Road	RD_11_12	RR	50	39.9	Y	0000-0100	200	73.72%	11.33%	0.00%	4.67%	5.67%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.05%	2.57%	0.00%	100.00%	
Kam Tin Road	RD_11_12	RR	50	40.0	Y	0100-0200	115	64.26%	15.19%	0.00%	12.51%	4.45%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.80%	1.80%	0.00%	100.00%	
Kam Tin Road	RD_11_12	RR	50	40.0	Y	0200-0300	100	67.40%	14.75%	0.00%	7.35															

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-franchise d Bus<=6.4 t	12 - Non-franchise d Bus 6.4-15t	13 - Non-franchise d Bus 15-24t	14 - Franchise d Bus Single Deck	15 - Franchise d Bus Double Deck	16 - Motorcycl es	17 - Heavy Goods Vehicles>24t	18 - Non-franchise d Bus>24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDDB	MC	HGV9	NFB9	
Kam Tin Road	RD_13_14	RR	50	40.0	Y	0400-0500	105	58.94%	13.94%	0.00%	13.94%	11.08%	1.05%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.05%	0.00%	0.00%	100.00%
Kam Tin Road	RD_13_14	RR	50	40.0	Y	0500-0600	175	59.77%	6.41%	0.00%	7.61%	4.71%	4.09%	1.71%	3.55%	0.00%	0.00%	0.58%	5.83%	1.15%	1.71%	1.15%	1.73%	0.00%	0.00%	100.00%
Kam Tin Road	RD_13_14	RR	50	37.4	Y	0600-0700	440	68.40%	5.92%	0.00%	6.66%	3.68%	1.58%	0.45%	2.99%	0.00%	0.00%	0.24%	0.00%	0.45%	0.70%	1.35%	5.72%	1.85%	0.00%	100.00%
Kam Tin Road	RD_13_14	RR	50	31.4	Y	0700-0800	1005	63.17%	3.31%	0.00%	10.22%	3.68%	0.89%	0.80%	1.50%	0.00%	0.00%	0.00%	3.01%	0.40%	0.70%	0.80%	5.52%	6.00%	0.00%	100.00%
Kam Tin Road	RD_13_14	RR	50	31.5	Y	0800-0900	995	61.07%	3.06%	0.00%	12.92%	6.47%	0.99%	1.10%	1.75%	0.00%	0.00%	0.30%	0.50%	0.20%	0.50%	0.60%	4.04%	6.50%	0.00%	100.00%
Kam Tin Road	RD_13_14	RR	50	31.5	Y	0900-1000	995	56.77%	4.11%	0.00%	14.28%	6.41%	1.63%	1.61%	1.40%	0.00%	0.00%	0.20%	1.01%	0.20%	0.20%	0.80%	1.74%	9.64%	0.00%	100.00%
Kam Tin Road	RD_13_14	RR	50	32.2	Y	1000-1100	935	57.13%	4.16%	0.00%	13.17%	7.22%	1.84%	1.31%	1.60%	0.00%	0.00%	0.10%	0.00%	0.20%	0.50%	0.65%	1.64%	10.50%	0.00%	100.00%
Kam Tin Road	RD_13_14	RR	50	32.5	Y	1100-1200	905	54.08%	3.31%	0.00%	14.57%	9.21%	1.44%	1.20%	1.10%	0.00%	0.00%	0.30%	0.00%	0.00%	0.40%	0.70%	2.14%	11.55%	0.00%	100.00%
Kam Tin Road	RD_13_14	RR	50	31.3	Y	1200-1300	1020	32.51%	5.61%	0.00%	17.94%	14.60%	5.92%	1.75%	0.95%	0.00%	0.00%	0.00%	0.10%	0.40%	0.30%	0.50%	2.77%	16.64%	0.00%	100.00%
Kam Tin Road	RD_13_14	RR	50	29.6	Y	1300-1400	1175	31.26%	5.35%	0.00%	16.42%	12.80%	8.48%	2.05%	0.95%	0.00%	0.00%	0.00%	0.00%	0.20%	0.40%	0.40%	2.46%	19.22%	0.00%	100.00%
Kam Tin Road	RD_13_14	RR	50	30.1	Y	1400-1500	1135	33.12%	4.86%	0.00%	15.93%	12.60%	9.02%	1.60%	1.05%	0.00%	0.00%	0.00%	0.15%	0.35%	0.25%	0.45%	2.46%	18.15%	0.00%	100.00%
Kam Tin Road	RD_13_14	RR	50	30.3	Y	1500-1600	1110	33.82%	4.36%	0.00%	18.04%	13.41%	7.86%	1.45%	0.91%	0.00%	0.00%	0.00%	0.10%	0.40%	0.30%	0.45%	2.36%	16.54%	0.00%	100.00%
Kam Tin Road	RD_13_14	RR	50	30.3	Y	1600-1700	1110	36.32%	4.36%	0.00%	15.14%	12.20%	6.52%	0.55%	1.05%	0.00%	0.00%	0.00%	0.00%	0.20%	0.45%	0.45%	4.53%	18.24%	0.00%	100.00%
Kam Tin Road	RD_13_14	RR	50	29.4	Y	1700-1800	1200	37.53%	4.16%	0.00%	17.30%	8.65%	8.04%	0.50%	1.30%	0.00%	0.00%	0.00%	0.00%	0.30%	0.25%	0.40%	6.95%	14.61%	0.00%	100.00%
Kam Tin Road	RD_13_14	RR	50	31.1	Y	1800-1900	1040	50.22%	4.81%	0.00%	13.49%	7.64%	3.45%	0.20%	1.61%	0.00%	0.00%	0.00%	0.11%	0.20%	0.31%	0.45%	5.30%	12.21%	0.00%	100.00%
Kam Tin Road	RD_13_14	RR	50	32.0	Y	1900-2000	950	60.49%	3.71%	0.00%	11.18%	5.74%	2.22%	0.45%	1.51%	0.00%	0.00%	0.00%	0.11%	0.20%	0.31%	0.55%	4.65%	8.88%	0.00%	100.00%
Kam Tin Road	RD_13_14	RR	50	35.6	Y	2000-2100	610	51.82%	7.61%	0.00%	13.39%	2.50%	1.48%	0.35%	1.85%	0.00%	0.00%	0.00%	0.00%	0.00%	0.51%	0.65%	5.11%	14.74%	0.00%	100.00%
Kam Tin Road	RD_13_14	RR	50	36.8	Y	2100-2200	495	48.35%	6.71%	0.00%	13.74%	5.49%	1.83%	0.00%	1.41%	0.00%	0.00%	0.00%	0.00%	0.40%	1.22%	0.85%	5.87%	14.15%	0.00%	100.00%
Kam Tin Road	RD_13_14	RR	50	38.1	Y	2200-2300	370	41.54%	10.56%	0.00%	13.00%	4.60%	5.69%	0.00%	0.81%	0.00%	0.00%	0.00%	0.00%	0.00%	0.81%	1.31%	3.27%	18.41%	0.00%	100.00%
Kam Tin Road	RD_13_14	RR	50	38.8	Y	2300-0000	305	52.61%	15.25%	0.00%	10.26%	7.68%	4.02%	0.00%	0.32%	0.00%	0.00%	0.00%	0.32%	0.65%	2.00%	0.97%	4.95%	0.97%	0.00%	100.00%
Kam Tin Road	RD_15_16	RR	50	39.9	Y	0000-0100	200	73.72%	11.33%	0.00%	4.67%	5.67%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.05%	2.57%	0.00%	0.00%	100.00%
Kam Tin Road	RD_15_16	RR	50	40.0	Y	0100-0200	115	64.26%	15.19%	0.00%	12.51%	4.45%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.80%	1.80%	0.00%	0.00%	100.00%
Kam Tin Road	RD_15_16	RR	50	40.0	Y	0200-0300	100	67.40%	14.75%	0.00%	7.35%	9.45%	1.05%	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%
Kam Tin Road	RD_15_16	RR	50	40.0	Y	0300-0400	80	52.05%	20.05%	0.00%	10.65%	15.95%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.30%	0.00%	0.00%	100.00%
Kam Tin Road	RD_15_16	RR	50	40.0	Y	0400-0500	100	59.00%	14.00%	0.00%	14.00%	11.00%	1.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.00%	0.00%	0.00%	100.00%
Kam Tin Road	RD_15_16	RR	50	40.0	Y	0500-0600	175	59.49%	5.87%	0.00%	8.21%	4.67%	4.07%	1.79%	3.53%	0.00%	0.00%	0.59%	5.87%	1.19%	1.79%	1.19%	1.74%	0.00%	0.00%	100.00%
Kam Tin Road	RD_15_16	RR	50	37.4	Y	0600-0700	435	68.37%	5.78%	0.00%	6.71%	3.68%	1.62%	0.45%	3.04%	0.00%	0.00%	0.24%	0.00%	0.45%	0.71%	1.35%	5.75%	1.85%	0.00%	100.00%
Kam Tin Road	RD_15_16	RR	50	31.5	Y	0700-0800	1000	62.74%	3.22%	0.00%	10.28%	3.82%	0.94%	0.90%	1.54%	0.00%	0.00%	0.00%	3.02%	0.40%	0.70%	0.80%	5.50%	6.14%	0.00%	100.00%
Kam Tin Road	RD_15_16	RR	50	31.6	Y	0800-0900	985	60.61%	2.91%	0.00%	12.98%	6.61%	1.03%	1.35%	1.74%	0.00%	0.00%	0.30%	0.50%	0.20%	0.50%	0.60%	4.06%	6.59%	0.00%	100.00%
Kam Tin Road	RD_15_16	RR	50	32.0	Y	0900-1000	950	57.44%	2.86%	0.00%	12.73%	6.52%	1.04%	1.35%	1.79%	0.00%	0.00%	0.30%	0.50%	0.20%	0.50%	0.65%	3.92%	10.19%	0.00%	100.00%
Kam Tin Road	RD_15_16	RR	50	32.2	Y	1000-1100	935	56.51%	4.12%	0.00%	13.19%	7.40%	1.82%	1.65%	1.64%	0.00%	0.00%	0.10%	0.00%	0.20%	0.50%	0.65%	1.59%	10.63%	0.00%	100.00%
Kam Tin Road	RD_15_16	RR	50	32.5	Y	1100-1200	905	53.61%	3.22%	0.00%	14.55%	9.39%	1.48%	1.45%	1.10%	0.00%	0.00%	0.34%	0.00%	0.00%	0.45%	0.65%	2.08%	11.68%	0.00%	100.00%
Kam Tin Road	RD_15_16	RR	50	31.3	Y	1200-1300	1020	32.29%	5.61%	0.00%	18.16%	14.33%	5.95%	1.80%	0.96%	0.00%	0.00%	0.00%	0.10%	0.40%	0.30%	0.50%	2.77%	16.82%	0.00%	100.00%
Kam Tin Road	RD_15_16	RR	50	29.6	Y	1300-1400	1175	31.16%	5.36%	0.00%	16.56%	12.68%	8.44%	2.05%	0.95%	0.00%	0.00%	0.00%	0.00%	0.20%	0.45%	0.45%	2.47%	19.23%	0.00%	100.00%
Kam Tin Road	RD_15_16	RR	50	30.1	Y	1400-1500	1135	33.01%	4.86%	0.00%	16.16%	12.43%	8.99%	1.60%	1.06%	0.00%	0.00%	0.00%	0.16%	0.35%	0.25%	0.45%	2.47%	18.23%	0.00%	100.00%
Kam Tin Road	RD_15_16	RR	50	30.4	Y	1500-1600	1105	33.91%	4.36%	0.00%	18.26%	13.12%	7.89%	1.45%	0.90%	0.00%	0.00%	0.00%	0.10%	0.35%	0.25%	0.45%	2.37%	16.59%	0.00%	100.00%
Kam Tin Road	RD_15_16	RR	50	30.4	Y	1600-1700	1105	36.20%	4.36%	0.00%	15.25%	12.08%	6.54%	0.55%	1.10%	0.00%	0.00%	0.00%	0.00%	0.20%	0.45%	0.45%	4.54%	18.29%	0.00%	100.00%
Kam Tin Road	RD_15_16	RR	50	31.9	Y	1700-1800	955	58.37%	3.65%	0.00%	11.24%	5.56%	2.22%	0.45%	1.51%	0.00%	0.52%	0.23%	0.11%	0.20%	0.31%	0.55%	4.60%	10.49%	0.00%	100.00%
Kam Tin Road	RD_15_16	RR	50	31.1	Y	1800-1900	1040	50.13%	4.85%	0.00%	13.60%	7.66%	3.45%	0.20%	1.61%	0.00%	0.00%	0.00%	0.11%	0.20%	0.31%	0.45%	5.26%	12.17%	0.00%	100.00%
Kam Tin Road	RD_15_16	RR	50	32.1	Y	1900-2000	945	58.47%	3.80%	0.00%	11.81%	5.98%	2.23%	0.44%	1.46%	0.00%	0.53%	0.22%	0.11%	0.20%	0.31%	0.56%	4.91%	8.97%	0.00%	100.00%
Kam Tin Road	RD_15_16	RR	50	35.6	Y	2000-2100	610	51.71%	7.56%	0.00%	13.55%	2.50%	1.48%	0.35%	1.85%	0.00%	0.00%	0.00%	0.00%	0.00%	0.51%	0.65%	5.15%	14.70%	0.00%	100.00%
Kam Tin Road	RD_15_16	RR	50	36.7	Y	2100-2200	500	48.33%	6.65%	0.00%	13.74%	5.46%	1.82%	0.00%	1.41%	0.00%	0.00%	0.00%	0.00%	0.40%	1.22%	0.79%	5.83%	14.34%	0.00%	100.00%
Kam Tin Road	RD_15_16	RR	50	38.1	Y	2200-2300	375	41.25%	10.61%	0.00%	13.05%	4.65%	5.72%	0.00%	0.81%	0.00%	0.00%	0.00%	0.00%	0.00%	0.81%	1.36%	3.27%	18.47%	0.00%	100.00%
Kam Tin Road	RD_15_16	RR	50	38.8	Y	2300-0000	305	52.93%	15.35%	0.00%	10.35%	7.40%	4.02%	0.00%	0.32%	0.00%	0.00%	0.00%	0.32%	0.65%	2.04%	0.97%	5.00%	0.65%	0.00%	100.00%
Kam Tin Road	RD_17_18	RR	50	39.9	Y	0000-0100	195	73.88%	11.70%	0.00%	4.82%	5.88%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.08%	2.65%	0.00%	0.00%	100.00%
Kam Tin Road	RD_17_18	RR	50	40.0	Y	0100-0200	115	64.30%	15.53%	0.00%	12.84%	4.60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.89%	1.84%	0.00%	0.00%	100.00%
Kam Tin Road	RD_17_18	RR	50	40.0	Y	0200-0300	95	67.36%	14.19%	0.00%	7.59%	9.77%	1.09%	0.00%	0.00%</											

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)	Mode of Transport																		Total
								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 Vehicles 15-54t	08 - Public Light Buses	09 - Private Light Bus <=3.5t	10 - Private Light Bus >3.5t	11 - Non-franchise d Bus<=6.4 t	12 - Non-franchise d Bus 6.4-15t	13 - Non-franchise d Bus 15-24t	14 - Franchise d Bus Single Deck	15 - Franchise d Bus Double Deck	16 - Motorcycl es	17 - Heavy Goods Vehicles>24t	18 - Non-franchise d Bus >24t	
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Kam Tin Road	RD_19_20	RR	50	35.4	Y	0600-0700	630	65.89%	8.00%	0.00%	4.51%	3.39%	1.65%	0.65%	4.15%	0.00%	0.00%	0.49%	0.00%	0.49%	0.49%	4.51%	3.99%	1.79%	0.00%	100.00%
Kam Tin Road	RD_19_20	RR	50	27.7	Y	0700-0800	1355	64.92%	4.66%	0.00%	7.35%	3.59%	1.05%	1.25%	2.40%	0.00%	0.00%	0.10%	1.80%	0.73%	0.50%	2.45%	4.08%	5.13%	0.00%	100.00%
Kam Tin Road	RD_19_20	RR	50	27.8	Y	0800-0900	1345	62.66%	4.31%	0.00%	9.25%	6.18%	1.15%	1.80%	2.70%	0.00%	0.00%	0.50%	0.30%	0.34%	0.40%	1.90%	2.99%	5.53%	0.00%	100.00%
Kam Tin Road	RD_19_20	RR	50	27.8	Y	0900-1000	1350	58.40%	5.95%	0.00%	10.25%	6.13%	1.80%	2.46%	2.25%	0.00%	0.00%	0.30%	0.60%	0.29%	0.15%	2.30%	1.24%	7.88%	0.00%	100.00%
Kam Tin Road	RD_19_20	RR	50	28.6	Y	1000-1100	1275	58.20%	5.91%	0.00%	9.46%	6.93%	2.20%	2.05%	2.40%	0.00%	0.00%	0.20%	0.00%	0.34%	0.40%	2.20%	1.20%	8.53%	0.00%	100.00%
Kam Tin Road	RD_19_20	RR	50	29.3	Y	1100-1200	1210	56.39%	4.87%	0.00%	10.56%	8.98%	1.65%	1.80%	1.65%	0.00%	0.00%	0.87%	0.40%	0.15%	0.30%	1.90%	1.55%	9.82%	0.00%	100.00%
Kam Tin Road	RD_19_20	RR	50	28.6	Y	1200-1300	1270	39.71%	6.54%	0.00%	12.86%	16.21%	1.56%	1.01%	2.05%	0.00%	0.00%	0.00%	0.15%	0.15%	0.40%	2.05%	2.40%	14.91%	0.00%	100.00%
Kam Tin Road	RD_19_20	RR	50	26.8	Y	1300-1400	1440	39.18%	6.32%	0.00%	11.97%	14.62%	2.30%	1.28%	1.94%	0.00%	0.00%	0.00%	0.00%	0.05%	0.50%	1.65%	2.26%	17.94%	0.00%	100.00%
Kam Tin Road	RD_19_20	RR	50	27.3	Y	1400-1500	1400	41.26%	5.74%	0.00%	11.67%	14.27%	2.43%	1.01%	2.39%	0.00%	0.00%	0.00%	0.20%	0.15%	0.25%	1.70%	2.15%	16.78%	0.00%	100.00%
Kam Tin Road	RD_19_20	RR	50	27.6	Y	1500-1600	1365	42.34%	5.04%	0.00%	13.22%	15.06%	2.12%	0.86%	1.90%	0.00%	0.00%	0.00%	0.05%	0.15%	0.35%	1.75%	2.10%	15.07%	0.00%	100.00%
Kam Tin Road	RD_19_20	RR	50	27.3	Y	1600-1700	1400	44.00%	5.05%	0.00%	10.70%	13.50%	1.70%	0.35%	2.30%	0.00%	0.00%	0.00%	0.00%	0.05%	0.50%	1.60%	3.90%	16.35%	0.00%	100.00%
Kam Tin Road	RD_19_20	RR	50	26.3	Y	1700-1800	1495	46.56%	4.86%	0.00%	12.38%	9.79%	2.13%	0.35%	2.80%	0.00%	0.00%	0.00%	0.00%	0.15%	0.20%	1.60%	6.09%	13.08%	0.00%	100.00%
Kam Tin Road	RD_19_20	RR	50	27.2	Y	1800-1900	1410	57.70%	5.13%	0.00%	8.91%	7.88%	0.85%	0.14%	3.26%	0.00%	0.00%	0.00%	0.05%	0.09%	0.36%	1.59%	4.25%	9.77%	0.00%	100.00%
Kam Tin Road	RD_19_20	RR	50	27.9	Y	1900-2000	1335	67.15%	3.83%	0.00%	7.14%	5.62%	0.51%	0.23%	2.76%	0.00%	0.00%	0.00%	0.16%	0.09%	0.31%	1.94%	3.59%	6.68%	0.00%	100.00%
Kam Tin Road	RD_19_20	RR	50	33.2	Y	2000-2100	835	58.20%	7.92%	0.00%	8.62%	2.52%	0.37%	0.14%	3.62%	0.00%	0.00%	0.00%	0.00%	0.00%	0.62%	2.38%	4.08%	11.52%	0.00%	100.00%
Kam Tin Road	RD_19_20	RR	50	34.9	Y	2100-2200	675	54.78%	7.15%	0.00%	9.09%	5.63%	0.47%	0.00%	2.87%	0.00%	0.00%	0.00%	0.00%	0.14%	1.19%	2.99%	4.79%	10.92%	0.00%	100.00%
Kam Tin Road	RD_19_20	RR	50	36.9	Y	2200-2300	480	48.04%	12.08%	0.00%	9.00%	5.00%	1.45%	0.00%	1.46%	0.00%	0.00%	0.00%	0.00%	0.00%	1.04%	4.58%	2.73%	14.61%	0.00%	100.00%
Kam Tin Road	RD_19_20	RR	50	37.6	Y	2300-0000	420	57.41%	16.29%	0.00%	6.48%	7.42%	0.95%	0.00%	0.45%	0.00%	0.00%	0.00%	0.22%	0.23%	1.70%	4.32%	3.82%	0.72%	0.00%	100.00%
Lam Kam Road	RD_21_22	RR	50	39.6	Y	0000-0100	210	77.05%	13.65%	0.00%	2.44%	1.94%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.92%	0.99%	0.00%	0.00%	100.00%
Lam Kam Road	RD_21_22	RR	50	40.0	Y	0100-0200	120	68.18%	18.15%	0.00%	6.87%	2.61%	0.82%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.38%	0.00%	0.00%	0.00%	100.00%
Lam Kam Road	RD_21_22	RR	50	40.0	Y	0200-0300	105	71.04%	17.56%	0.00%	4.16%	4.16%	3.09%	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%
Lam Kam Road	RD_21_22	RR	50	40.0	Y	0300-0400	75	57.75%	26.77%	0.00%	7.06%	7.03%	1.39%	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%
Lam Kam Road	RD_21_22	RR	50	40.0	Y	0400-0500	105	64.29%	17.34%	0.00%	8.14%	5.10%	2.06%	0.00%	2.06%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.03%	0.00%	0.00%	0.00%	100.00%
Lam Kam Road	RD_21_22	RR	50	36.9	Y	0500-0600	170	65.82%	10.85%	0.00%	8.00%	2.45%	7.18%	1.84%	4.35%	0.00%	0.00%	0.00%	0.00%	0.75%	0.00%	2.40%	1.23%	0.00%	0.00%	100.00%
Lam Kam Road	RD_21_22	RR	50	37.3	Y	0600-0700	445	73.43%	6.96%	0.00%	3.86%	1.55%	2.46%	0.47%	3.39%	0.00%	0.00%	0.00%	0.00%	0.44%	0.00%	2.71%	2.69%	2.02%	0.00%	100.00%
Lam Kam Road	RD_21_22	RR	50	32.3	Y	0700-0800	920	75.52%	4.36%	0.00%	6.55%	1.76%	1.50%	0.86%	2.05%	0.00%	0.00%	0.00%	0.00%	0.64%	0.00%	1.50%	3.06%	2.21%	0.00%	100.00%
Lam Kam Road	RD_21_22	RR	50	32.4	Y	0800-0900	910	72.99%	3.94%	0.00%	8.22%	3.07%	1.86%	1.22%	2.32%	0.00%	0.00%	0.00%	0.00%	0.31%	0.00%	1.20%	2.21%	2.65%	0.00%	100.00%
Lam Kam Road	RD_21_22	RR	50	33.0	Y	0900-1000	855	70.49%	5.03%	0.00%	8.30%	3.03%	2.27%	1.33%	2.36%	0.00%	0.00%	0.00%	0.00%	0.37%	0.00%	1.26%	2.72%	2.83%	0.00%	100.00%
Lam Kam Road	RD_21_22	RR	50	33.1	Y	1000-1100	845	69.54%	5.63%	0.00%	8.57%	3.46%	3.45%	1.44%	2.12%	0.00%	0.00%	0.00%	0.00%	0.25%	0.00%	1.42%	0.99%	3.13%	0.00%	100.00%
Lam Kam Road	RD_21_22	RR	50	33.7	Y	1100-1200	790	68.21%	4.56%	0.00%	9.80%	4.76%	2.82%	1.38%	1.51%	0.00%	0.00%	0.00%	0.00%	0.12%	0.00%	1.24%	1.27%	4.33%	0.00%	100.00%
Lam Kam Road	RD_21_22	RR	50	35.0	Y	1200-1300	665	50.65%	5.71%	0.00%	11.56%	10.18%	3.46%	1.38%	2.43%	0.00%	0.00%	0.00%	0.17%	0.00%	0.00%	2.25%	2.29%	9.91%	0.00%	100.00%
Lam Kam Road	RD_21_22	RR	50	33.9	Y	1300-1400	770	48.82%	5.36%	0.00%	10.70%	8.98%	4.96%	1.57%	2.21%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.67%	2.06%	13.67%	0.00%	100.00%
Lam Kam Road	RD_21_22	RR	50	34.0	Y	1400-1500	760	50.78%	4.76%	0.00%	10.21%	8.86%	5.14%	1.16%	2.65%	0.00%	0.00%	0.00%	0.28%	0.00%	0.00%	1.88%	1.99%	12.30%	0.00%	100.00%
Lam Kam Road	RD_21_22	RR	50	34.3	Y	1500-1600	735	52.41%	4.25%	0.00%	11.67%	9.33%	4.55%	1.12%	2.19%	0.00%	0.00%	0.00%	0.11%	0.00%	0.00%	1.88%	2.04%	10.45%	0.00%	100.00%
Lam Kam Road	RD_21_22	RR	50	34.1	Y	1600-1700	755	54.64%	4.10%	0.00%	9.29%	8.35%	3.58%	0.40%	2.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.71%	3.73%	11.69%	0.00%	100.00%
Lam Kam Road	RD_21_22	RR	50	34.0	Y	1700-1800	760	75.57%	3.03%	0.00%	6.01%	3.32%	1.05%	0.27%	2.94%	0.00%	0.13%	0.13%	0.11%	0.00%	0.00%	2.01%	3.19%	2.24%	0.00%	100.00%
Lam Kam Road	RD_21_22	RR	50	33.7	Y	1800-1900	790	67.89%	4.25%	0.00%	7.62%	4.74%	1.83%	0.13%	3.41%	0.00%	0.00%	0.00%	0.11%	0.00%	0.00%	1.67%	3.78%	4.58%	0.00%	100.00%
Lam Kam Road	RD_21_22	RR	50	33.6	Y	1900-2000	800	69.35%	4.64%	0.00%	7.93%	3.92%	1.62%	0.39%	2.93%	0.00%	0.12%	0.12%	0.12%	0.00%	0.00%	1.93%	4.28%	2.65%	0.00%	100.00%
Lam Kam Road	RD_21_22	RR	50	37.1	Y	2000-2100	470	69.41%	6.46%	0.00%	7.52%	1.50%	0.06%	0.22%	3.90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.35%	3.68%	4.29%	0.00%	100.00%
Lam Kam Road	RD_21_22	RR	50	38.2	Y	2100-2200	360	68.68%	5.88%	0.00%	8.10%	3.61%	0.84%	0.00%	3.08%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.08%	4.50%	2.23%	0.00%	100.00%
Lam Kam Road	RD_21_22	RR	50	39.4	Y	2200-2300	250	63.09%	10.56%	0.00%	8.14%	3.26%	3.21%	0.00%	1.63%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.28%	2.42%	2.42%	0.00%	100.00%
Lam Kam Road	RD_21_22	RR	50	39.4	Y	2300-0000	250	66.09%	12.70%	0.00%	5.32%	4.48%	2.06%	0.00%	0.79%	0.00%	0.00%	0.00%	0.39%	0.00%	0.00%	4.08%	3.30%	0.79%	0.00%	100.00%
Route Twisk	RD_23_24	RR	50	40.0	Y	0000-0100	120	84.95%	6.20%	0.00%	3.55%	2.65%	0.00%	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%
Route Twisk	RD_23_24	RR	50	40.0	Y	0100-0200	60	78.45%	9.05%	0.00%	9.05%	1.73%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.73%	0.00%	0.00%	100.00%
Route Twisk	RD_23_24	RR	50	40.0	Y	0200-0300	50	75.78%	8.75%	0.00%	6.72%	6.72%	2.03%	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%
Route Twisk	RD_23_24	RR	50	40.0	Y	0300-0400	30	62.37%	14.77%	0.00%	11.43%	11.43%	0.00%	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%
Route Twisk	RD_23_24	RR	50	40.0	Y	0400-0500	50	69.97%	9.10%	0.00%	11.20%	7.00%	0.00%	0.00%	2.73%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
Route Twisk	RD_23_24	RR	50	40.0	Y	0500-0600	85	71.05%	3.74%	0.00%	6.14%	1.20%	3.5													

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-franchise d Bus<=6.4 t	12 - Non-franchise d Bus 6.4-15t	13 - Non-franchise d Bus 15-24t	14 - Franchise d Bus Single Deck	15 - Franchise d Bus Double Deck	16 - Motorcycles	17 - Heavy Goods Vehicles>24t	18 - Non-franchise d Bus >24t	Total
								PC	TAXI	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	HGV9	NFB9	
Access Road	RD_25_26	RR	30	26.0	Y	0800-0900	20	60.00%	0.00%	0.00%	30.00%	0.00%	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%	
Access Road	RD_25_26	RR	30	26.0	Y	0900-1000	20	60.00%	0.00%	0.00%	30.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.00%	0.00%	100.00%
Access Road	RD_25_26	RR	30	26.0	Y	1000-1100	20	60.00%	0.00%	0.00%	30.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.00%	0.00%	100.00%
Access Road	RD_25_26	RR	30	26.0	Y	1100-1200	20	60.00%	0.00%	0.00%	30.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.00%	0.00%	100.00%
Access Road	RD_25_26	RR	30	26.0	Y	1200-1300	20	60.00%	0.00%	0.00%	30.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.00%	0.00%	100.00%
Access Road	RD_25_26	RR	30	26.0	Y	1300-1400	20	60.00%	0.00%	0.00%	30.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.00%	0.00%	100.00%
Access Road	RD_25_26	RR	30	26.0	Y	1400-1500	20	60.00%	0.00%	0.00%	30.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.00%	0.00%	100.00%
Access Road	RD_25_26	RR	30	26.0	Y	1500-1600	20	60.00%	0.00%	0.00%	30.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.00%	0.00%	100.00%
Access Road	RD_25_26	RR	30	26.0	Y	1600-1700	20	60.00%	0.00%	0.00%	30.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.00%	0.00%	100.00%
Access Road	RD_25_26	RR	30	26.0	Y	1700-1800	20	60.00%	0.00%	0.00%	30.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.00%	0.00%	100.00%
Access Road	RD_25_26	RR	30	26.0	Y	1800-1900	20	60.00%	0.00%	0.00%	30.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.00%	0.00%	100.00%
Access Road	RD_25_26	RR	30	26.0	Y	1900-2000	10	40.00%	0.00%	0.00%	40.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	20.00%	0.00%	100.00%
Access Road	RD_25_26	RR	30	26.0	Y	2000-2100	10	40.00%	0.00%	0.00%	40.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	20.00%	0.00%	100.00%
Access Road	RD_25_26	RR	30	26.0	Y	2100-2200	10	40.00%	0.00%	0.00%	40.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	20.00%	0.00%	100.00%
Access Road	RD_25_26	RR	30	26.0	Y	2200-2300	10	40.00%	0.00%	0.00%	40.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	20.00%	0.00%	100.00%
Access Road	RD_25_26	RR	30	26.0	Y	2300-0000	10	40.00%	0.00%	0.00%	40.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	20.00%	0.00%	100.00%
Kam Sheung Road	RD_27_28	RR	50	40.0	Y	0000-0100	110	55.24%	20.53%	0.00%	5.63%	5.61%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	11.16%	1.84%	0.00%	0.00%	100.00%	
Kam Sheung Road	RD_27_28	RR	50	40.0	Y	0100-0200	65	41.28%	27.02%	0.00%	15.85%	6.36%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	9.49%	0.00%	0.00%	0.00%	100.00%	
Kam Sheung Road	RD_27_28	RR	50	40.0	Y	0200-0300	50	45.30%	30.90%	0.00%	8.50%	13.05%	2.25%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	
Kam Sheung Road	RD_27_28	RR	50	40.0	Y	0300-0400	40	26.30%	39.40%	0.00%	13.20%	21.10%	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%	
Kam Sheung Road	RD_27_28	RR	50	40.0	Y	0400-0500	55	37.18%	23.93%	0.00%	18.60%	14.80%	0.00%	0.00%	1.82%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.67%	0.00%	0.00%	100.00%	
Kam Sheung Road	RD_27_28	RR	50	40.0	Y	0500-0600	95	40.37%	12.11%	0.00%	8.97%	6.64%	4.38%	1.09%	7.73%	0.00%	0.00%	2.13%	6.71%	3.22%	0.00%	6.64%	0.00%	0.00%	100.00%	
Kam Sheung Road	RD_27_28	RR	50	39.5	Y	0600-0700	240	53.50%	10.30%	0.00%	7.63%	4.27%	1.72%	0.41%	5.95%	0.00%	0.00%	0.87%	0.00%	0.87%	0.00%	8.53%	3.42%	2.53%	0.00%	100.00%
Kam Sheung Road	RD_27_28	RR	50	36.6	Y	0700-0800	510	55.52%	6.12%	0.00%	12.85%	4.73%	0.76%	0.76%	3.33%	0.00%	0.00%	0.21%	3.55%	1.18%	0.00%	4.73%	3.12%	3.12%	0.00%	100.00%
Kam Sheung Road	RD_27_28	RR	50	36.6	Y	0800-0900	515	52.70%	5.49%	0.00%	16.10%	8.27%	0.98%	0.98%	3.74%	0.00%	0.00%	0.98%	0.61%	0.60%	0.00%	3.57%	2.40%	3.57%	0.00%	100.00%
Kam Sheung Road	RD_27_28	RR	50	36.8	Y	0900-1000	490	52.27%	5.57%	0.00%	15.86%	8.23%	1.04%	1.04%	3.89%	0.00%	0.00%	1.04%	0.61%	0.60%	0.00%	3.67%	2.50%	3.67%	0.00%	100.00%
Kam Sheung Road	RD_27_28	RR	50	37.0	Y	1000-1100	475	49.67%	7.82%	0.00%	16.71%	9.32%	1.87%	1.09%	3.60%	0.00%	0.00%	0.22%	0.00%	0.43%	0.00%	4.22%	0.83%	4.22%	0.00%	100.00%
Kam Sheung Road	RD_27_28	RR	50	37.1	Y	1100-1200	465	46.85%	6.12%	0.00%	18.35%	12.25%	1.35%	1.09%	2.42%	0.00%	0.00%	0.87%	0.00%	0.22%	0.00%	3.53%	1.27%	5.69%	0.00%	100.00%
Kam Sheung Road	RD_27_28	RR	50	36.4	Y	1200-1300	535	31.94%	8.25%	0.00%	20.66%	15.08%	5.94%	4.11%	2.45%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.59%	2.09%	5.87%	0.00%	100.00%
Kam Sheung Road	RD_27_28	RR	50	35.6	Y	1300-1400	610	31.25%	7.90%	0.00%	19.10%	13.14%	8.57%	4.98%	2.29%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.78%	1.99%	8.01%	0.00%	100.00%
Kam Sheung Road	RD_27_28	RR	50	35.8	Y	1400-1500	590	33.04%	7.10%	0.00%	18.70%	13.08%	9.19%	3.92%	2.73%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.88%	1.88%	7.46%	0.00%	100.00%
Kam Sheung Road	RD_27_28	RR	50	35.9	Y	1500-1600	580	33.88%	6.45%	0.00%	20.98%	13.92%	7.87%	3.52%	2.24%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.98%	1.93%	6.23%	0.00%	100.00%
Kam Sheung Road	RD_27_28	RR	50	36.1	Y	1600-1700	560	37.20%	6.65%	0.00%	18.10%	13.10%	6.60%	1.45%	2.85%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.85%	3.80%	7.40%	0.00%	100.00%
Kam Sheung Road	RD_27_28	RR	50	36.5	Y	1700-1800	520	60.25%	5.25%	0.00%	12.45%	5.65%	2.15%	1.00%	3.50%	0.00%	0.00%	1.00%	0.00%	0.00%	0.00%	3.70%	3.50%	1.55%	0.00%	100.00%
Kam Sheung Road	RD_27_28	RR	50	36.2	Y	1800-1900	555	51.49%	6.90%	0.00%	15.55%	7.82%	3.47%	0.55%	4.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.90%	4.24%	3.08%	0.00%	100.00%
Kam Sheung Road	RD_27_28	RR	50	36.7	Y	1900-2000	505	58.17%	5.57%	0.00%	13.57%	5.98%	2.16%	1.01%	3.60%	0.00%	0.00%	0.98%	0.00%	0.00%	0.00%	3.79%	3.58%	1.58%	0.00%	100.00%
Kam Sheung Road	RD_27_28	RR	50	38.7	Y	2000-2100	315	52.63%	11.20%	0.00%	15.88%	2.58%	1.27%	0.60%	4.49%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.49%	4.18%	2.87%	0.00%	100.00%
Kam Sheung Road	RD_27_28	RR	50	39.3	Y	2100-2200	255	49.92%	10.05%	0.00%	16.56%	6.04%	1.63%	0.00%	3.64%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.68%	4.83%	1.63%	0.00%	100.00%
Kam Sheung Road	RD_27_28	RR	50	39.9	Y	2200-2300	190	40.99%	16.93%	0.00%	15.29%	5.47%	5.99%	0.00%	2.19%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	8.76%	2.76%	1.62%	0.00%	100.00%
Kam Sheung Road	RD_27_28	RR	50	40.0	Y	2300-0000	180	45.20%	20.95%	0.00%	10.50%	7.00%	4.10%	0.00%	1.20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	6.95%	3.50%	0.60%	0.00%	100.00%
Sheung Tsuen B/T and Car Park	RD_29	RR	30	26.0	Y	0000-0100	10	57.10%	14.30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	28.60%	0.00%	0.00%	100.00%	
Sheung Tsuen B/T and Car Park	RD_29	RR	30	26.0	Y	0100-0200	5	50.00%	25.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	25.00%	0.00%	0.00%	100.00%	
Sheung Tsuen B/T and Car Park	RD_29	RR	30	26.0	Y	0200-0300	5	100.00%	0.00%	0.00%	0.00%	0.00%	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%	
Sheung Tsuen B/T and Car Park	RD_29	RR	30	26.0	Y	0300-0400	5	50.00%	50.00%	0.00%	0.00%	0.00%	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%	
Sheung Tsuen B/T and Car Park	RD_29	RR	30	26.0	Y	0400-0500	5	100.00%	0.00%	0.00%	0.00%	0.00%	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%	
Sheung Tsuen B/T and Car Park	RD_29	RR	30	26.0	Y	0500-0600	5	60.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	20.00%	20.00%	0.00%	0.00%	100.00%	
Sheung Tsuen B/T and Car Park	RD_29	RR	30	26.0	Y	0600-0700	20	56.00%	6.30%	0.00%	6.30%	6.30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	6.30%	18.80%	0.00%	0.00%	100.00%	
Sheung Tsuen B/T and Car Park	RD_29	RR	30	26.0																						

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-franchise d Bus<=6.4t	12 - Non-franchise d Bus 6.4-15t	13 - Non-franchise d Bus 15-24t	14 - Franchise d Bus Single Deck	15 - Franchise d Bus Double Deck	16 - Motorcycl es	17 - Heavy Goods Vehicles>24t	18 - Non-franchise d Bus>24t	Total
								PC	TAXI																		
Village Access Road	RD_30_31	RR	30	26.0	Y	1000-1100	15	57.80%	0.00%	0.00%	0.00%	0.00%	42.20%	0.00%	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%
Village Access Road	RD_30_31	RR	30	26.0	Y	1100-1200	20	41.65%	0.00%	0.00%	0.00%	0.00%	58.35%	0.00%	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%
Village Access Road	RD_30_31	RR	30	26.0	Y	1200-1300	10	40.00%	0.00%	0.00%	0.00%	0.00%	60.00%	0.00%	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%
Village Access Road	RD_30_31	RR	30	26.0	Y	1300-1400	10	40.00%	0.00%	0.00%	0.00%	0.00%	60.00%	0.00%	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%
Village Access Road	RD_30_31	RR	30	26.0	Y	1400-1500	10	40.00%	0.00%	0.00%	0.00%	0.00%	60.00%	0.00%	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%
Village Access Road	RD_30_31	RR	30	26.0	Y	1500-1600	10	40.00%	0.00%	0.00%	0.00%	0.00%	60.00%	0.00%	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%
Village Access Road	RD_30_31	RR	30	26.0	Y	1600-1700	10	40.00%	0.00%	0.00%	0.00%	0.00%	60.00%	0.00%	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%
Village Access Road	RD_30_31	RR	30	26.0	Y	1700-1800	10	50.00%	0.00%	0.00%	0.00%	0.00%	50.00%	0.00%	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%
Village Access Road	RD_30_31	RR	30	26.0	Y	1800-1900	10	75.00%	0.00%	0.00%	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%	0.00%	0.00%	100.00%
Village Access Road	RD_30_31	RR	30	26.0	Y	1900-2000	10	75.00%	0.00%	0.00%	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%	0.00%	0.00%	100.00%
Village Access Road	RD_30_31	RR	30	26.0	Y	2000-2100	10	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	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%
Village Access Road	RD_30_31	RR	30	26.0	Y	2100-2200	10	50.00%	0.00%	0.00%	0.00%	0.00%	50.00%	0.00%	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%
Village Access Road	RD_30_31	RR	30	26.0	Y	2200-2300	10	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	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%
Village Access Road	RD_30_31	RR	30	26.0	Y	2300-0000	10	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	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%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	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%	0.00%	0.00%	0.00%	0.00%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	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%	0.00%	0.00%	0.00%	0.00%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	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%	0.00%	0.00%	0.00%	0.00%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	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%	0.00%	0.00%	0.00%	0.00%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	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%	0.00%	0.00%	0.00%	0.00%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	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%	0.00%	0.00%	0.00%	0.00%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	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%	0.00%	0.00%	0.00%	0.00%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	0700-0800	68	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	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%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	0800-0900	68	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	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%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	0900-1000	68	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	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%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	1000-1100	68	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	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%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	1100-1200	68	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	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%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	1200-1300	68	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	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%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	1300-1400	68	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	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%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	1400-1500	68	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	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%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	1500-1600	68	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	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%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	1600-1700	68	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	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%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	1700-1800	68	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	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%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	1800-1900	68	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	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%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	1900-2000	68	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	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%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	2000-2100	68	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	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%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	2100-2200	68	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	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%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	2200-2300	68	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	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%
Emission Point 19 Paved Road	EP19_1_7	LD	30	15.0	Y	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%	0.00%	0.00%	0.00%	0.00%
Emission Point 19 Paved Road	EP19_8	LD	30	15.0	Y	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%	0.00%	0.00%	0.00%	0.00%
Emission Point 19 Paved Road	EP19_8	LD	30	15.0	Y	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%	0.00%	0.00%	0.00%	0.00%
Emission Point 19 Paved Road	EP19_8	LD	30	15.0	Y	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%	0.00%	0.00%	0.00%	0.00%
Emission Point 19 Paved Road	EP19_8	LD	30	15.0	Y	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%	0.00%	0.00%	0.00%	0.00%
Emission Point 19 Paved Road	EP19_8	LD	30	15.0	Y	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%	0.00%	0.00%	0.00%	0.00%
Emission Point 19 Paved Road	EP19_8	LD	30	15.0	Y	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%	0.00%	0.00%	0.00%	0.00%
Emission Point 19 Paved Road	EP19_8	LD	30	15.0	Y	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%	0.00%	0.00%	0.00%	0.00%
Emission Point 19 Paved Road	EP19_8	LD	30	15.0	Y	0700-0800	20	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0					

[illegible]

Appendix C-2 Composite Emission Factors

Year 2031 Composite EFs

[illegible]

Composite EFs

	Road ID	Hour	PM2.5 Emission										PM10 Emission																				
			AnnualHourly					MonthlyHourlyAverage					AnnualHourly					MonthlyHourlyAverage															
			g/km/h	g/s/m2	tonne/year	g/km/h	g/s/m2	tonne/year	g/km/h	g/s/m2	tonne/year	g/km/h	g/s/m2	tonne/year	g/km/h	g/s/m2	tonne/year	g/km/h	g/s/m2	tonne/year													
Chun Yu Road	RD_7_8	2300-0000	0.1640456	1.428E-07	0.0020833	0.1484599	1.292E-07	0.002563	1.375003	1.197E-07	0.002374	0.573192	5.024E-07	0.0009968	0.5176455	4.505E-07	0.0008938	0.477043	4.151E-07	0.0008237	0.4713648	6.452E-07	0.0021801	0.6145364	5.348E-07	0.0106611	0.0171623	1.494E-08	2.963E-05	0.0189586	1.618E-08	3.211E-07	
Kam Tin Road	RD_9_10	0000-0100	0.0426905	1.976E-07	0.0001282	0.0399218	1.818E-07	0.000454	0.3987688	1.070E-07	0.0005767	1.475514	1.933E-06	0.0001373	0.0003859	1.756E-06	0.0005943	0.5554952	1.648E-06	0.0005799	0.4402419	2.113E-06	0.0001297	0.397372	1.819E-06	0.0001366	0.0069923	4.487E-08	0.0001519	1.06E-07	4.93E-08	6.001E-07	
Kam Tin Road	RD_9_10	0100-0200	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000		
Kam Tin Road	RD_9_10	0200-0300	0.0567319	1.313E-07	0.0004447	0.0512566	1.187E-07	0.0000149	0.0476729	1.104E-07	0.0003737	0.2767085	3.657E-07	0.0021889	0.2365662	5.744E-07	0.0001842	0.2145405	9.957E-07	0.0001633	0.0433043	7.719E-07	0.0026136	0.2621775	6.067E-07	0.0020055	0.0517189	1.694E-08	5.736E-05	0.0070927	1.835E-08	6.201E-07	
Kam Tin Road	RD_9_10	0300-0400	0.0836494	1.646E-07	0.0005573	0.0756631	1.418E-07	0.0005041	0.0699733	1.137E-07	0.0004662	0.3914952	7.703E-07	0.002683	0.3356234	6.604E-07	0.0022361	0.3029138	5.64E-07	0.0020183	0.4715446	9.349E-07	0.0021065	0.3729053	1.737E-07	0.0024845	0.09075	1.91E-08	6.466E-05	0.0105835	2.082E-08	7.051E-07	
Kam Tin Road	RD_9_10	0400-0500	0.0450692	1.2769E-07	0.0002685	0.0624415	1.418E-07	0.0005139	0.0581182	1.431E-07	0.0004783	0.3413123	8.437E-07	0.0028239	0.3356219	7.186E-07	0.0022364	0.2691287	5.56E-07	0.0022216	0.4121953	1.002E-06	0.0039324	0.3273679	9.757E-07	0.0026943	0.2096E-08	4.788E-05	0.0093926	2.283E-08	7.751E-07		
Kam Tin Road	RD_9_10	0500-0600	0.155439	6.297E-07	0.002131	0.1423793	5.788E-07	0.001953	0.1339652	5.427E-07	0.0018176	0.8046537	3.26E-06	0.0110373	0.7326022	2.988E-06	0.00049	0.6906529	2.798E-06	0.0004736	0.9609028	3.889E-06	0.0031694	0.8246181	3.946E-06	0.0011811	0.1665006	6.745E-08	0.0002284	0.0191239	7.346E-08		
Kam Tin Road	RD_9_10	0600-0700	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000		
Kam Tin Road	RD_9_10	0700-0800	0.032251	1.466E-06	0.0105522	0.1251263	2.911E-06	0.0009587	0.1162893	2.700E-06	0.0010065	0.8348689	1.924E-05	0.0567622	0.172045	1.794E-05	0.0007507	0.702671	1.676E-05	0.0007381	0.970112	2.287E-05	0.0031694	0.836554	1.946E-05	0.0018911	0.0097179	1.438E-07	4.487E-08	0.0001502	0.0202823	4.860E-07	0.0016E-07
Kam Tin Road	RD_9_10	0800-0900	0.125415	2.898E-06	0.001181	0.1167571	2.689E-06	0.0010959	0.1082753	2.494E-06	0.0008444	0.8048373	1.854E-05	0.0627692	0.747431	1.722E-05	0.058293	0.6961401	1.603E-05	0.045199	0.9302518	2.143E-05	0.0725503	0.8044154	1.853E-05	0.0627363	0.0184724	4.255E-07	0.0014047	0.0220233	4.658E-07	0.0017E-07	
Kam Tin Road	RD_9_10	0900-1000	0.026218	3.75E-06	0.0012978	0.1254959	2.611E-06	0.0018931	0.1451976	3.261E-06	0.0011048	0.9498433	2.150E-05	0.0775917	0.974371	2.125E-05	0.07802	0.727097	2.009E-05	0.0680283	1.157081	2.646E-05	0.092896	0.133805	2.33705E-05	0.0790701	0.012244	4.89E-07	0.0016568	0.022135	5.332E-07	0.0018E-07	
Kam Tin Road	RD_9_10	1000-1100	0.1606499	3.477E-06	0.0011736	0.1306408	3.26E-06	0.001104	0.1394935	3.030E-06	0.0010231	0.110904	2.881E-06	0.0740861	0.9489893	2.054E-05	0.0695481	0.884786	1.915E-05	0.0648432	1.171554	2.536E-05	0.0885897	0.1402781	2.217E-05	0.0750663	0.0127631	4.702E-07	0.0015922	0.0236705	5.132E-07	0.0017E-07	
Kam Tin Road	RD_9_10	1100-1200	0.179708	3.947E-06	0.0012736	0.1456064	3.43E-06	0.0015911	0.1516678	3.098E-06	0.001717	1.065768	2.235E-05	0.0740861	0.9489893	2.054E-05	0.0712136	0.966781	1.961E-05	0.0698454	1.2397376	2.536E-05	0.0879415	0.1402781	2.217E-05	0.0771221	0.0120376	4.671E-07	0.0015689	0.0236705	5.132E-07	0.0017E-07	
Kam Tin Road	RD_9_10	1200-1300	0.184771	3.847E-06	0.0012736	0.1456064	3.43E-06	0.0015911	0.1516678	3.098E-06	0.001717	1.065768	2.235E-05	0.0740861	0.9489893	2.054E-05	0.0712136	0.966781	1.961E-05	0.0698454	1.2397376	2.536E-05	0.0879415	0.1402781	2.217E-05	0.0771221	0.0120376	4.671E-07	0.0015689	0.0236705	5.132E-07	0.0017E-07	
Kam Tin Road	RD_9_10	1300-1400	0.329712	8.968E-06	0.0038366	0.3107269	8.051E-06	0.0287615	0.2847907	7.746E-06	0.0262288	1.1765461	4.669E-05	0.1587916	1.6234868	4.477E-05	0.1495451	1.5022482	4.086E-05	0.13385	2.062573	5.556E-05	0.1884575	1.7870389	4.861E-05	0.1463839	0.0352398	9.585E-07	0.003245	0.038395	1.044E-06	0.003E-06	
Kam Tin Road	RD_9_10	1400-1500	0.324819	8.534E-06	0.0038966	0.306397	8.05E-06	0.027583	0.2803226	7.756E-06	0.0249384	1.6556459	4.65E-05	0.1472918	1.6234868	4.477E-05	0.1495451	1.5022482	4.086E-05	0.13385	2.062573	5.556E-05	0.1884575	1.7870389	4.861E-05	0.1463839	0.0352398	9.585E-07	0.003245	0.038395	1.044E-06	0.003E-06	
Kam Tin Road	RD_9_10	1500-1600	0.304134	7.815E-06	0.0036216	0.287937	7.839E-06	0.0250516	0.263847	6.779E-06	0.0229546	1.5654956	4.32E-05	0.1362041	1.4685758	3.82E-05	0.1296321	1.3740884	3.531E-05	0.1199591	1.8693689	4.80E-05	0.1626657	1.6379231	4.209E-05	0.1425056	0.032683	8.398E-07	0.002846	0.0356128	9.511E-07	0.0030E-06	
Kam Tin Road	RD_9_10	1600-1700	0.2891034	7.434E-06	0.0034511	0.272124	6.992E-06	0.0235796	0.2495682	6.173E-06	0.021734	1.541326	3.993E-05	0.135216	1.4685758	3.769E-05	0.1296321	1.3740884	3.531E-05	0.1199591	1.844449	4.737E-05	0.1603871	1.6089005	4.170E-05	0.1398065	0.032838	8.487E-07	0.002857	0.0356128	9.511E-07	0.0030E-06	
Kam Tin Road	RD_9_10	1700-1800	0.1701181	2.925E-06	0.0014778	0.1362041	1.4685758	3.769E-05	0.1296321	1.3740884	3.531E-05	0.1199591	1.8693689	4.80E-05	0.1626657	1.6379231	4.209E-05	0.1425056	0.032683	8.398E-07	0.002846	0.0356128	9.511E-07	0.0030E-06	0.0028915	0.0326705	5.132E-07	0.0017E-07	0.0015689	0.0236705	5.132E-07	0.0017E-07	
Kam Tin Road	RD_9_10	1800-1900	0.1862401	4.484E-06	0.0015817	0.1729282	4.133E-06	0.0140966	0.1650897	3.866E-06	0.0130008	0.9287477	2.631E-05	0.089088	0.1051882	2.446E-05	0.0827954	0.0861001	2.283E-05	0.071793	1.279114	2.937E-05	0.1042697	1.1087497	2.696E-05	0.0930821	0.0238993	4.574E-07	0.0013482	0.0261761	6.302E-07	0.0021E-07	
Kam Tin Road	RD_9_10	1900-2000	0.1383	3.042E-06	0.0010304	0.1287933	2.432E-06	0.0095955	0.1196476	2.361E-06	0.0080993	0.8647339	1.902E-05	0.0643905	0.8019496	1.764E-05	0.0597154	0.7506883	1.651E-05	0.0558983	1.030064	2.206E-05	0.0749609	0.8703359	1.941E-05	0.0648076	0.0195559	3.54E-07	0.0014562	0.0214251	4.712E-07	0.0021E-07	
Kam Tin Road	RD_9_10	2000-2100	0.1509934	1.232E-06	0.0072194	0.1394791	1.987E-06	0.0067296	0.1321942	1.867E-06	0.0063026	0.9087338	1.533E-05	0.0519217	0.114465	1.248E-05	0.0483062	0.9533881	1.346E-05	0.0458143	1.2369273	1.737E-05	0.0591411	1.085422	1.533E-05	0.0519491	0.0219688	3.142E-07	0.0015054	0.0240224	3.395E-07	0.0017E-07	
Kam Tin Road	RD_9_10	2100-2200	0.164133	1.881E-06	0.0063682	0.1523261	1.745E-06	0.0059011	0.1431837	1.647E-06	0.0055554	1.1654377	1.833E-05	0.0542178	1.0825475	1.428E-05	0.0440108	1.02228	1.371E-05	0.0396614	1.2397376	1.524E-05	0.051586	1.165411	1.533E-05	0.0452168	0.023964	2.76E-07	0.0009298	0.0262455	3.007E-07	0.0017E-07	
Kam Tin Road	RD_9_10	2200-2300	0.164133	1.881E-06	0.0063682	0.1523261	1.745E-06	0.0059011	0.1431837	1.647E-06	0.0055554	1.1654377	1.833E-05	0.0542178	1.0825475	1.428E-05	0.0440108	1.02228	1.371E-05	0.0396614	1.2397376	1.524E-05	0.051586	1.165411	1.533E-05	0.0452168	0.023964	2.76E-07	0.0009298	0.0262455	3.007E-07	0.0017E-07	
Kam Tin Road	RD_9_10	2300-0000	0.102423	7.231E-07	0.0004486	0.0404116	6.637E-07	0.0022475	0.088259	6.233E-07	0.0021106	0.693072	8.893E-07	0.0156889	0.2764736	4.831E-06	0.0150047	0.5873839	4.15E-06	0.0140351	0.7954963	5.916E-06	0.0190175	0.671248	1.774E-06	0.0161637	0.0151401	1.069E-07	0.0003619	0.0166098	1.173E-07	0.0004E-07	
Kam Tin Road	RD_11_12	0000-0100	0.043475	1.858E-07	0.0002089	0.3995548	1.077E-07	0.000634	0.374853	1.047E-07	0.0005948	0.4231742	4.803E-06	0.0067151	0.6874661	1.645E-06	0.0061089	0.3418249	1.545E-06	0.005935	0.4666477	5.614E-06	0.0074049	0.3899277	1.770E-06	0.006303	0.029868	4.91E-07	0.0001599	0.001477	4.593E-08	0.0001E-07	
Kam Tin Road	RD_11_12	0100-0200	0.0420317	1.033E-07	0.0003835	0.833668	9.448E-08	0.0003501	0.0359486	8.834E-08	0.000328	0.4459499	1.096E-06	0.004069	0.3995181	9.817E-07	0.0036453	0.3721815	9.914E-07	0.0033959	0.4878815	1.193E-06	0.0045225	0.4801301	1.003E-06	0.0037239	0.0091245						

Year 2031 Composite EFs

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission						PM2.5 Emission						PM10 Emission						
			Annual/Hour			Monthly/Hour			Annual/Hour			Monthly/Hour			Annual/Hour			Monthly/Hour			Annual/Hour			Monthly/Hour			Annual/Hour			Monthly/Hour			
			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	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	
Kam Tin Road	RD_15_16	2200-2300	0.0007752	1.654E-06	0.0000273	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000		
Kam Tin Road	RD_15_16	2300-0000	0.0992776	7.007E-07	0.0003236	0.09107	6.431E-07	0.0000475	0.0855116	6.107E-07	0.0000897	0.6799749	4.801E-06	0.0007044	0.6153835	4.436E-06	0.0004003	0.5756474	4.066E-06	0.0059913	0.7792246	5.501E-06	0.008107	0.661386	4.67E-06	0.0060881	0.0148782	1.05E-07	0.0001548	0.0163271	0.0001699		
Kam Tin Road	RD_17	0800-0100	0.0388752	1.664E-07	0.0002289	0.0355291	1.532E-07	0.0002092	0.0330653	1.436E-07	0.0001947	0.2331489	1.385E-06	0.0001709	0.2675866	1.145E-06	0.0001348	0.3629492	1.551E-06	0.0005334	1.287E-06	0.00017694	0.0008356	1.95E-07	0.0001694	0.0008356	1.95E-07	0.0001694	0.0008356	1.95E-07	0.0001694	0.0008356	
Kam Tin Road	RD_17	0100-0200	0.0375646	9.484E-08	0.0001304	0.0340508	8.597E-08	0.0001182	0.0317627	8.019E-08	0.0001103	0.3353057	8.914E-07	0.0001259	0.3097466	7.823E-07	0.0001095	0.2853499	7.204E-07	0.0005908	0.3061653	7.816E-07	0.0001563	0.3171124	8.066E-07	0.0001101	0.0007731	1.96E-08	0.0005461	0.0008405	2.141E-08	2.935E-05	
Kam Tin Road	RD_17	0200-0300	0.0594947	1.241E-07	0.0001707	0.0503745	1.121E-07	0.0001542	0.0500908	1.043E-07	0.0001434	0.2383357	5.92E-07	0.0000814	0.2423107	5.054E-07	0.0000695	0.2898989	4.570E-07	0.0000631	0.3433305	9.61E-07	0.0000948	0.2699997	5.631E-07	0.0000775	0.0007749	1.567E-08	2.165E-05	0.0001401	1.698E-08	2.345E-05	
Kam Tin Road	RD_17	0300-0400	0.0802352	1.41E-07	0.0001038	0.0726235	1.724E-07	0.0001074	0.0671479	1.179E-07	0.0001035	0.2769664	6.22E-07	0.00009105	0.32331	5.678E-07	0.0007809	0.2912658	5.122E-07	0.0007004	0.4571927	8.03E-07	0.0011044	0.3587737	6.301E-07	0.0006668	0.0004848	1.666E-08	2.291E-05	0.0103456	1.817E-08	2.499E-05	
Kam Tin Road	RD_17	0400-0500	0.070871	1.556E-07	0.000214	0.0641516	1.406E-07	0.0001937	0.0608816	1.341E-07	0.0001817	0.2973717	6.467E-07	0.0001917	0.2793767	6.111E-07	0.0001917	0.2793767	6.111E-07	0.0001917	0.2793767	6.111E-07	0.0001917	0.2793767	6.111E-07	0.0001917	0.2793767	6.111E-07	0.0001917	0.2793767	6.111E-07	0.0001917	0.2793767
Kam Tin Road	RD_17	0500-0600	0.0553255	5.73E-07	0.0007881	0.4046337	1.274E-07	0.0007721	0.1319001	9.77E-07	0.0006677	0.7294355	2.722E-06	0.0003741	0.6802899	2.463E-06	0.0003671	0.6811971	2.311E-06	0.0001378	0.8289768	2.956E-06	0.00045321	0.750188	2.801E-06	0.00038549	0.0153471	5.728E-08	7.877E-05	0.0167184	6.24E-08	8.49E-05	
Kam Tin Road	RD_17	0600-0700	0.069943	6.449E-07	0.000887	0.0638301	5.886E-07	0.0008094	0.0598807	5.521E-07	0.0007594	0.7521777	4.807E-06	0.0061034	0.6472753	4.285E-06	0.0058933	0.4339092	4.001E-06	0.0050055	0.5912203	5.451E-06	0.0074974	0.4937899	4.553E-06	0.0062618	0.0126172	1.163E-07	0.00016	0.0138972	1.281E-07	0.0001762	
Kam Tin Road	RD_17	0700-0800	0.1368188	2.899E-06	0.0039864	0.1263192	2.676E-06	0.0036805	0.1175439	2.490E-06	0.0034248	0.9687709	8.07E-06	0.032318	0.7334866	1.545E-05	0.0199686	0.9312893	1.452E-05	0.0199686	0.9312893	1.452E-05	0.0199686	0.9312893	1.452E-05	0.0199686	0.9312893	1.452E-05	0.0199686	0.9312893	1.452E-05	0.0199686	0.9312893
Kam Tin Road	RD_17	0800-0900	0.1295927	2.717E-06	0.0037367	0.1203242	2.523E-06	0.0034694	0.1115545	2.399E-06	0.0032166	0.914404	1.1554E-05	0.0229014	0.735248	1.542E-05	0.0212605	0.6841505	1.481E-05	0.0197272	0.9238271	1.937E-05	0.0266381	0.7957048	1.668E-05	0.0229438	0.018393	3.856E-07	0.0005304	0.0201429	4.223E-07	0.0005808	
Kam Tin Road	RD_17	0900-1000	0.155211	3.237E-06	0.004552	0.145198	3.028E-06	0.0041648	0.134660	2.809E-06	0.0038611	0.9598353	2.077E-05	0.0258641	0.9322385	1.944E-05	0.0226199	0.8699105	1.814E-05	0.0240519	1.1510463	2.401E-05	0.0330161	1.0045105	2.095E-05	0.028813	0.021906	4.450E-07	0.0006305	0.021906	4.450E-07	0.0006305	
Kam Tin Road	RD_17	1000-1100	0.1655303	3.289E-06	0.0045231	0.1550584	3.081E-06	0.004237	0.1437865	2.875E-06	0.003939	1.0043616	1.996E-05	0.0274481	0.941652	1.871E-05	0.0257314	0.8780955	1.746E-05	0.0240103	1.1089919	2.234E-05	0.0319673	1.022482	2.032E-05	0.0279392	0.0217384	4.317E-07	0.0019597	0.0216721	4.703E-07	0.0006468	
Kam Tin Road	RD_17	1100-1200	0.175629	3.393E-06	0.0046665	0.1645296	3.179E-06	0.0043716	0.1524427	2.945E-06	0.0040504	1.053111	2E-05	0.0275083	0.9724647	1.879E-05	0.0258432	0.9078033	1.754E-05	0.0241211	1.1209401	2.399E-05	0.0321748	1.060273	2.048E-05	0.0281715	0.0257252	4.361E-07	0.0005997	0.024548	4.75E-07	0.0005533	
Kam Tin Road	RD_17	1200-1300	0.2390188	4.433E-06	0.0088472	0.2745846	6.028E-06	0.0082906	0.253695	5.668E-06	0.0076582	1.5420594	3.347E-05	0.0460298	1.93236	3.147E-05	0.034285	1.2345299	2.925E-05	0.0402856	1.874247	3.99E-05	0.054877	1.5878994	3.486E-05	0.0479438	0.0202455	7.031E-07	0.0009669	0.0243943	7.667E-07	0.0010545	
Kam Tin Road	RD_17	1300-1400	0.3229928	8.407E-06	0.0151623	0.3129676	7.902E-06	0.0108669	0.2881973	7.279E-06	0.0100069	1.702212	4.298E-05	0.0559106	1.602252	4.055E-05	0.0527717	1.4918369	3.766E-05	0.0517999	2.0520448	5.138E-05	0.0706669	1.7800342	4.494E-05	0.0618068	0.0351062	8.863E-07	0.001219	0.038252	9.658E-07	0.0013282	
Kam Tin Road	RD_17	1400-1500	0.3280819	8.031E-06	0.011045	0.3087676	7.558E-06	0.0103948	0.2830501	6.929E-06	0.009529	1.642214	4.02E-05	0.055286	1.5510463	3.979E-05	0.0525766	1.4348316	3.791E-05	0.0544285	1.9701961	4.823E-05	0.0663276	1.7174114	4.204E-05	0.0578175	0.034069	8.332E-07	0.0011459	0.0370888	9.079E-07	0.0012486	
Kam Tin Road	RD_17	1500-1600	0.3008222	7.166E-06	0.0099549	0.283111	6.744E-06	0.0092746	0.2602419	6.199E-06	0.0085254	1.5160239	3.611E-05	0.0496565	1.4313125	3.409E-05	0.0468093	1.3263021	3.159E-05	0.0444403	1.8164667	4.328E-05	0.0595193	1.586451	3.779E-05	0.0519747	0.0317488	7.553E-07	0.0010401	0.0346081	8.244E-07	0.0011338	
Kam Tin Road	RD_17	1600-1700	0.2851486	6.761E-06	0.0092983	0.2674597	6.342E-06	0.0087215	0.2464285	5.848E-06	0.0080357	1.4973928	3.55E-05	0.048828	1.409471	3.342E-05	0.0459593	1.3093524	3.105E-05	0.0426963	1.7625414	4.216E-05	0.0581264	1.5557808	3.689E-05	0.050732	0.0317488	7.557E-07	0.0010393	0.0346268	8.258E-07	0.0011357	
Kam Tin Road	RD_17	1700-1800	0.1522237	1.192E-06	0.0043893	0.1417056	2.971E-06	0.004086	0.1310729	2.749E-06	0.0037794	0.9494482	1.873E-05	0.0254829	0.9324578	1.724E-05	0.0243719	0.8712618	1.724E-05	0.0231729	1.101754	2.399E-05	0.0317662	0.9534515	1.999E-05	0.0274923	0.0210733	4.418E-07	0.0006076	0.0237032	4.438E-07	0.0006653	
Kam Tin Road	RD_17	1800-1900	0.1876044	4.201E-06	0.0057777	0.1741529	3.95E-06	0.005364	0.1621941	3.626E-06	0.0049866	1.0653139	2.386E-05	0.0238086	0.9883808	2.213E-05	0.0304393	0.9230561	1.661E-05	0.0284275	1.2529183	2.806E-05	0.0385863	1.0489732	2.43E-05	0.033414	0.0237434	2.526E-07	0.0007229	0.025169	5.759E-07	0.000792	
Kam Tin Road	RD_17	1900-2000	0.1431584	2.97E-06	0.0040847	0.1328652	2.757E-06	0.003791	0.1214443	2.576E-06	0.0035422	0.8876924	1.824E-05	0.0323862	0.8240662	1.706E-05	0.0234654	0.771497	1.601E-05	0.02294129	0.8956118	1.858E-05	0.0255542	0.8020319	1.416E-05	0.0075716	0.0219311	4.555E-07	0.000.				

Year 2031 Composite EFs

Route Name	Road ID	Hour	NO2 Emission									NO Emission									NOX Emission									PM2.5 Emission									PM10 Emission								
			AnnualHourly			MonthlyHourly			MonthlyHourlyAverage			AnnualHourly			MonthlyHourly			MonthlyHourlyAverage			AnnualHourly			MonthlyHourly			MonthlyHourlyAverage			AnnualHourly			MonthlyHourly			MonthlyHourlyAverage			AnnualHourly			MonthlyHourly			MonthlyHourlyAverage		
			g/m/veh	g/s/m2	tonne/year	g/m/veh	g/s/m2	tonne/year	g/m/veh	g/s/m2	tonne/year	g/m/veh	g/s/m2	tonne/year	g/m/veh	g/s/m2	tonne/year	g/m/veh	g/s/m2	tonne/year	g/m/veh	g/s/m2	tonne/year	g/m/veh	g/s/m2	tonne/year	g/m/veh	g/s/m2	tonne/year	g/m/veh	g/s/m2	tonne/year	g/m/veh	g/s/m2	tonne/year	g/m/veh	g/s/m2	tonne/year	g/m/veh	g/s/m2	tonne/year	g/m/veh	g/s/m2	tonne/year	g/m/veh	g/s/m2	tonne/year
Route Tuen B/L and Car Park	RD_23_24	2100-2200	0.0494703	1.409E-07	8.358E-05	0.03365	1.381E-07	7.596E-05	0.03113	1.155E-07	7.028E-05	0.253852	1.621E-06	0.0009614	0.3784606	1.414E-06	0.000854	0.3473421	1.322E-06	0.0007841	0.4620676	1.762E-06	0.001045	0.3784753	1.441E-06	0.0008544	0.0112634	4.878E-08	1.542E-05	0.0120309	4.76E-08	2.823E-05	0.0112634	4.878E-08	1.542E-05	0.0120309	4.76E-08	2.823E-05	0.0112634	4.878E-08	1.542E-05	0.0120309	4.76E-08	2.823E-05	0.0112634	4.878E-08	1.542E-05
Route Tuen B/L and Car Park	RD_23_24	2200-2300	0.0494703	1.171E-07	6.942E-05	0.0450338	1.055E-07	6.315E-05	0.0419343	9.932E-08	5.885E-05	0.4163352	9.852E-07	0.0005843	0.366651	8.676E-07	0.0005145	0.3374333	7.985E-07	0.0004253	0.5582335	1.102E-06	0.0006537	0.3793676	8.977E-07	0.0005324	0.0100399	2.376E-08	1.409E-05	0.0110498	2.615E-08	1.551E-05	0.0110498	2.615E-08	1.551E-05	0.0110498	2.615E-08	1.551E-05	0.0110498	2.615E-08	1.551E-05	0.0110498	2.615E-08	1.551E-05	0.0110498	2.615E-08	1.551E-05
Route Tuen B/L and Car Park	RD_23_24	2300-0000	0.0517419	1.331E-07	7.892E-05	0.0470358	1.21E-07	7.174E-05	0.0440207	1.132E-07	6.715E-05	0.4846728	1.283E-06	0.0007607	0.4446284	1.144E-06	0.0006384	0.4183362	1.064E-06	0.0006312	0.5504687	1.161E-06	0.0008396	0.4578539	1.178E-06	0.0006984	0.0123043	3.165E-08	1.470E-05	0.0135713	3.491E-08	1.470E-05	0.0135713	3.491E-08	1.470E-05	0.0135713	3.491E-08	1.470E-05	0.0135713	3.491E-08	1.470E-05	0.0135713	3.491E-08	1.470E-05	0.0135713	3.491E-08	1.470E-05
Access Road	RD_25_26	0000-0100	0.2101043	4.748E-08	6.632E-05	0.1945707	4.397E-08	6.134E-05	0.132159	5.742E-05	0.1507585	3.408E-07	0.0004754	1.3940046	3.162E-07	0.0004412	1.31356	2.968E-07	0.0004141	1.7180627	3.882E-07	0.0005416	1.495719	3.38E-07	0.0004715	0.0287423	6.495E-09	9.061E-06	0.0311943	7.049E-09	9.834E-06	0.0311943	7.049E-09	9.834E-06	0.0311943	7.049E-09	9.834E-06	0.0311943	7.049E-09	9.834E-06	0.0311943	7.049E-09	9.834E-06	0.0311943	7.049E-09	9.834E-06	
Access Road	RD_25_26	0100-0200	0.2104738	4.756E-08	6.632E-05	0.1939551	4.398E-08	6.114E-05	0.1822722	4.119E-08	5.746E-05	0.1507585	3.147E-07	0.0004763	1.3952808	3.162E-07	0.0004399	1.3144051	2.971E-07	0.0004141	1.712224	3.882E-07	0.0005416	1.4967223	3.382E-07	0.0004718	0.0287423	6.495E-09	9.061E-06	0.0311943	7.049E-09	9.834E-06	0.0311943	7.049E-09	9.834E-06	0.0311943	7.049E-09	9.834E-06	0.0311943	7.049E-09	9.834E-06	0.0311943	7.049E-09	9.834E-06	0.0311943	7.049E-09	9.834E-06
Access Road	RD_25_26	0200-0300	0.2112808	4.774E-08	6.661E-05	0.1943722	4.430E-08	6.127E-05	0.1837604	4.113E-08	5.762E-05	0.1516447	3.427E-07	0.0004748	1.3982304	3.16E-07	0.0004410	1.3179172	2.978E-07	0.0004155	1.727695	3.907E-07	0.0005446	1.5006838	3.391E-07	0.0004731	0.0287423	6.495E-09	9.061E-06	0.0311943	7.049E-09	9.834E-06	0.0311943	7.049E-09	9.834E-06	0.0311943	7.049E-09	9.834E-06	0.0311943	7.049E-09	9.834E-06	0.0311943	7.049E-09	9.834E-06	0.0311943	7.049E-09	9.834E-06
Access Road	RD_25_26	0300-0400	0.2114009	4.777E-08	6.638E-05	0.1949466	4.430E-08	6.118E-05	0.1831682	4.113E-08	5.742E-05	0.1517487	3.427E-07	0.0004784	1.40251	3.16E-07	0.0004421	1.3176161	2.977E-07	0.0004155	1.728935	3.912E-07	0.0005445	1.500643	3.391E-07	0.0004729	0.0287423	6.495E-09	9.061E-06	0.0311943	7.049E-09	9.834E-06	0.0311943	7.049E-09	9.834E-06	0.0311943	7.049E-09	9.834E-06	0.0311943	7.049E-09	9.834E-06	0.0311943	7.049E-09	9.834E-06	0.0311943	7.049E-09	9.834E-06
Access Road	RD_25_26	0400-0500	0.2117013	4.784E-08	6.674E-05	0.1948608	4.440E-08	6.143E-05	0.1831767	4.113E-08	5.775E-05	0.1516497	3.434E-07	0.0004791	1.401672	3.167E-07	0.0004410	1.3207462	2.985E-07	0.0004164	1.731105	3.912E-07	0.0005458	1.5039428	3.398E-07	0.0004741	0.0287423	6.495E-09	9.061E-06	0.0311943	7.049E-09	9.834E-06	0.0311943	7.049E-09	9.834E-06	0.0311943	7.049E-09	9.834E-06	0.0311943	7.049E-09	9.834E-06	0.0311943	7.049E-09	9.834E-06	0.0311943	7.049E-09	9.834E-06
Access Road	RD_25_26	0500-0600	0.2122238	4.796E-08	6.696E-05	0.1948056	4.440E-08	6.141E-05	0.1831832	4.119E-08	5.775E-05	0.1523476	3.443E-07	0.0004803	1.401259	3.166E-07	0.0004414	1.3207725	2.985E-07	0.0004164	1.7356714	3.922E-07	0.0005472	1.5039557	3.399E-07	0.0004741	0.0287423	6.495E-09	9.061E-06	0.0311943	7.049E-09	9.834E-06	0.0311943	7.049E-09	9.834E-06	0.0311943	7.049E-09	9.834E-06	0.0311943	7.049E-09	9.834E-06	0.0311943	7.049E-09	9.834E-06	0.0311943	7.049E-09	9.834E-06
Access Road	RD_25_26	0600-0700	0.2121238	4.793E-08	6.687E-05	0.1946593	4.439E-08	6.137E-05	0.1825429	4.125E-08	5.754E-05	0.1523476	3.441E-07	0.0004804	1.401525	3.164E-07	0.0004414	1.3162266	2.974E-07	0.0004164	1.7346714	3.922E-07	0.0005468	1.4987276	3.387E-07	0.0004725	0.0287423	6.495E-09	9.061E-06	0.0311943	7.049E-09	9.834E-06	0.0311943	7.049E-09	9.834E-06	0.0311943	7.049E-09	9.834E-06	0.0311943	7.049E-09	9.834E-06	0.0311943	7.049E-09	9.834E-06	0.0311943	7.049E-09	9.834E-06
Access Road	RD_25_26	0700-0800	0.1158919	5.238E-08	7.307E-05	0.1071294	4.842E-08	6.754E-05	0.0997456	4.508E-08	6.289E-05	0.0881796	3.986E-07	0.000556	0.831844	3.681E-07	0.0005127	0.7567101	3.42E-07	0.0004771	0.997715	4.509E-07	0.0006291	0.8564557	3.871E-07	0.0005054	0.017947	8.111E-09	1.132E-05	0.019445	8.788E-09	1.126E-05	0.019445	8.788E-09	1.126E-05	0.019445	8.788E-09	1.126E-05	0.019445	8.788E-09	1.126E-05	0.019445	8.788E-09	1.126E-05	0.019445	8.788E-09	1.126E-05
Access Road	RD_25_26	0800-0900	0.0115577	2.223E-08	7.287E-05	0.1073345	4.851E-08	6.767E-05	0.0994427	4.494E-08	6.27E-05	0.0890138	3.973E-07	0.0005542	0.835448	3.681E-07	0.0005125	0.7544149	3.41E-07	0.0004771	0.9949515	4.495E-07	0.0006291	0.8538576	3.859E-07	0.0005053	0.017947	8.111E-09	1.132E-05	0.019445	8.788E-09	1.126E-05	0.019445	8.788E-09	1.126E-05	0.019445	8.788E-09	1.126E-05	0.019445	8.788E-09	1.126E-05	0.019445	8.788E-09	1.126E-05	0.019445	8.788E-09	1.126E-05
Access Road	RD_25_26	0900-1000	0.1151951	5.206E-08	7.283E-05	0.1073436	4.86E-08	6.781E-05	0.0993951	4.492E-08	6.267E-05	0.0876063	3.959E-07	0.0005523	0.818162	3.688E-07	0.0005145	0.7539816	3.408E-07	0.0004754	0.9912544	4.48E-07	0.000625	0.8533767	3.857E-07	0.0005058	0.017947	8.111E-09	1.132E-05	0.019445	8.788E-09	1.126E-05	0.019445	8.788E-09	1.126E-05	0.019445	8.788E-09	1.126E-05	0.019445	8.788E-09	1.126E-05	0.019445	8.788E-09	1.126E-05	0.019445	8.788E-09	1.126E-05
Access Road	RD_25_26	1000-1100	0.1151789	5.205E-08	7.262E-05	0.1076438	4.855E-08	6.787E-05	0.0995253	4.489E-08	6.275E-05	0.0875415	3.956E-07	0.0005519	0.8165086	3.69E-07	0.0005148	0.7548696	3.412E-07	0.0004759	0.9905934	4.477E-07	0.0006246	0.8543949	3.851E-07	0.0005057	0.017947	8.111E-09	1.132E-05	0.019445	8.788E-09	1.126E-05	0.019445	8.788E-09	1.126E-05	0.019445	8.788E-09	1.126E-05	0.019445	8.788E-09	1.126E-05	0.019445	8.788E-09	1.126E-05	0.019445	8.788E-09	1.126E-05
Access Road	RD_25_26	1100-1200	0.1152946	5.211E-08	7.269E-05	0.1077616	4.879E-08	6.794E-05	0.0995712	4.5E-08	6.278E-05	0.0875801	3.958E-07	0.0005522	0.8179362	3.694E-07	0.0005154	0.7552241	3.413E-07	0.0004762	0.9914921	4.479E-07	0.0006249	0.8548122	3.863E-07	0.0005059	0.017947	8.111E-09	1.132E-05	0.019445	8.788E-09	1.126E-05	0.019445	8.788E-09	1.126E-05	0.019445	8.788E-09	1.126E-05	0.019445	8.788E-09	1.126E-05	0.019445	8.788E-09	1.126E-05	0.019445	8.788E-09	1.126.

Year 2031 Composite EFs

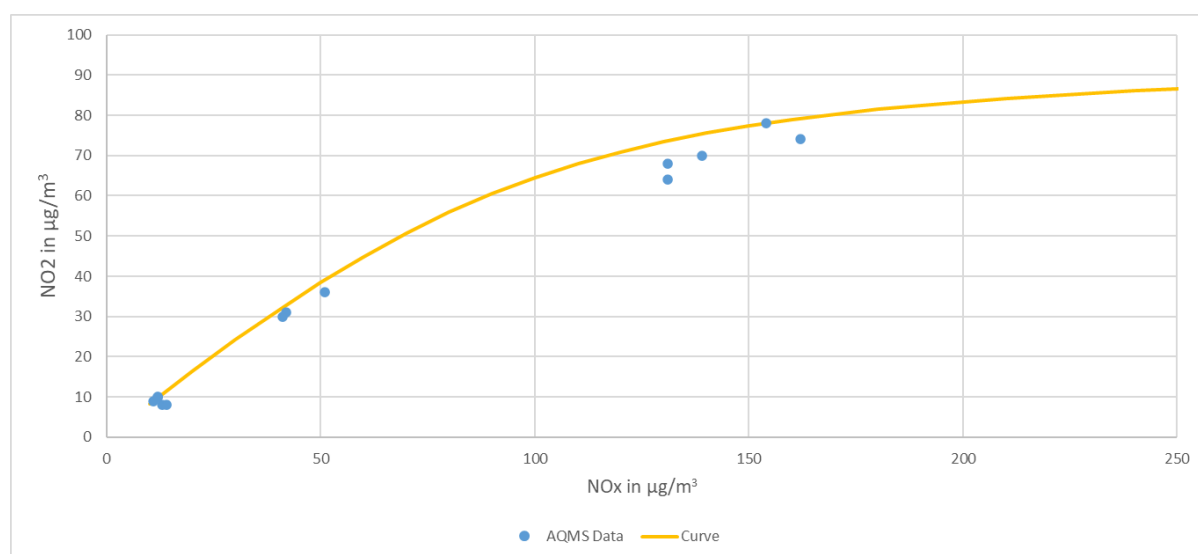
Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOx Emission						PM2.5 Emission						PM10 Emission					
			AnnualHourly	MonthlyHourly	MonthlyHourly	MonthlyHourly	MonthlyHourly	MonthlyHourly	AnnualHourly	MonthlyHourly	MonthlyHourly	MonthlyHourly	MonthlyHourly	AnnualHourly	MonthlyHourly	MonthlyHourly	MonthlyHourly	AnnualHourly	MonthlyHourly	MonthlyHourly	MonthlyHourly	AnnualHourly	MonthlyHourly	MonthlyHourly	MonthlyHourly							
Village Access Road	RD_30_31	2000-2100	0.002928	8.997E-10	1.644E-06	0.002488	7.575E-10	1.831E-06	0.0022174	6.733E-10	1.231E-06	0.0055384	1.682E-08	3.074E-05	0.00456636	1.387E-08	2.534E-05	0.0047068	1.238E-08	2.263E-05	0.0053468	1.772E-08	3.238E-05	0.0042989	1.305E-08	2.386E-05	0.0053993	1.644E-09	2.996E-06	0.0057794	1.755E-09	3.207E-06
Village Access Road	RD_30_31	2100-2200	0.0030491	9.355E-10	1.717E-06	0.002499	7.591E-10	1.837E-06	0.0022216	6.746E-10	1.233E-06	0.0057528	1.748E-08	3.195E-05	0.00461523	1.401E-08	2.561E-05	0.0040885	1.242E-08	2.269E-05	0.0060569	1.842E-08	3.366E-05	0.0043101	1.307E-08	2.402E-05	0.0053993	1.644E-09	2.996E-06	0.0057794	1.755E-09	3.207E-06
Village Access Road	RD_30_31	2300-0000	0.0030941	9.395E-10	1.717E-06	0.0024918	7.566E-10	1.837E-06	0.0022454	6.818E-10	1.233E-06	0.0057028	1.748E-08	3.191E-05	0.00460992	1.401E-08	2.558E-05	0.0041311	1.242E-08	2.283E-05	0.0060569	1.842E-08	3.363E-05	0.0043375	1.307E-08	2.402E-05	0.0053993	1.644E-09	2.996E-06	0.0057794	1.755E-09	3.207E-06
Emission Point 19 Paved Road	EP19_1_7	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Emission Point 19 Paved Road	EP19_1_7	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Emission Point 19 Paved Road	EP19_1_7	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Emission Point 19 Paved Road	EP19_1_7	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Emission Point 19 Paved Road	EP19_1_7	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Emission Point 19 Paved Road	EP19_1_7	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Emission Point 19 Paved Road	EP19_1_7	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Emission Point 19 Paved Road	EP19_1_7	0700-0800	1.2417505	2.608E-06	0.0038378	1.3431613	2.399E-06	0.0033331	1.0542111	2.213E-06	0.0032582	7.0412214	1.478E-05	0.0217621	6.5608874	1.377E-05	0.0202776	6.1275841	1.286E-05	0.0189384	8.2829629	1.738E-05	0.0255999	7.1817951	1.507E-05	0.0221966	0.14789	3.104E-07	0.0004571	0.16078	3.374E-07	0.0004969
Emission Point 19 Paved Road	EP19_1_7	0800-0900	1.2382505	2.599E-06	0.0038187	1.146112	2.441E-06	0.0031423	1.0527439	2.209E-06	0.0032137	7.0421214	1.478E-05	0.0217095	6.5713894	1.378E-05	0.0202123	6.1202932	1.285E-05	0.0189158	8.2624629	1.734E-05	0.0255456	7.1737717	1.507E-05	0.0221474	0.14789	3.104E-07	0.0004571	0.16078	3.374E-07	0.0004969
Emission Point 19 Paved Road	EP19_1_7	0900-1000	1.2336005	2.585E-06	0.003811	1.145803	2.405E-06	0.0030343	1.051817	2.208E-06	0.0032515	6.9988024	1.476E-05	0.021631	6.5737021	1.388E-05	0.0203717	6.116295	1.284E-05	0.0189035	8.2138629	1.735E-05	0.025442	7.1681758	1.504E-05	0.0221545	0.14789	3.104E-07	0.0004571	0.16078	3.374E-07	0.0004969
Emission Point 19 Paved Road	EP19_1_7	1000-1100	1.2358505	2.594E-06	0.0038196	1.149343	2.412E-06	0.0030522	1.051094	2.206E-06	0.0032486	7.0122124	1.472E-05	0.0216275	6.591007	1.388E-05	0.0203707	6.1124795	1.283E-05	0.0188917	8.2480629	1.731E-05	0.0254291	7.1653889	1.503E-05	0.0221403	0.14789	3.104E-07	0.0004571	0.16078	3.374E-07	0.0004969
Emission Point 19 Paved Road	EP19_1_7	1100-1200	1.2375505	2.597E-06	0.0038249	1.1535482	2.421E-06	0.0030562	1.0545686	2.213E-06	0.0032593	7.0208124	1.474E-05	0.021699	6.611412	1.388E-05	0.0204338	6.1296398	1.285E-05	0.0189439	8.2583629	1.733E-05	0.0255239	7.1689324	1.508E-05	0.0222032	0.14789	3.104E-07	0.0004571	0.16078	3.374E-07	0.0004969
Emission Point 19 Paved Road	EP19_1_7	1200-1300	1.2375505	2.597E-06	0.0038249	1.1535507	2.425E-06	0.0030573	1.053248	2.211E-06	0.0032555	7.0208124	1.474E-05	0.021699	6.621055	1.39E-05	0.0204635	6.1232761	1.285E-05	0.0189251	8.2583629	1.733E-05	0.0255239	7.1766009	1.504E-05	0.0221805	0.14789	3.104E-07	0.0004571	0.16078	3.374E-07	0.0004969
Emission Point 19 Paved Road	EP19_1_7	1300-1400	1.2395505	2.597E-06	0.0038249	1.1535507	2.425E-06	0.0030573	1.053248	2.211E-06	0.0032555	7.0208124	1.474E-05	0.021699	6.621055	1.39E-05	0.0204635	6.1232761	1.285E-05	0.0189251	8.2583629	1.733E-05	0.0255239	7.1766009	1.504E-05	0.0221805	0.14789	3.104E-07	0.0004571	0.16078	3.374E-07	0.0004969
Emission Point 19 Paved Road	EP19_1_7	1400-1500	1.2405505	2.604E-06	0.0038341	1.1628084	2.431E-06	0.0030593	1.0515387	2.207E-06	0.00325	7.0208124	1.476E-05	0.0217432	6.656583	1.39E-05	0.0205733	6.1145148	1.286E-05	0.018898	8.2756629	1.737E-05	0.0255774	7.1660535	1.504E-05	0.0221479	0.14789	3.104E-07	0.0004571	0.16078	3.374E-07	0.0004969
Emission Point 19 Paved Road	EP19_1_7	1500-1600	1.2336005	2.589E-06	0.0038122	1.1609967	2.437E-06	0.0030583	1.0523445	2.209E-06	0.0032525	7.0060024	1.469E-05	0.0216366	6.6477452	1.395E-05	0.020546	6.1185408	1.284E-05	0.0189104	8.2340629	1.728E-05	0.0254488	7.1708853	1.505E-05	0.0221629	0.14789	3.104E-07	0.0004571	0.16078	3.374E-07	0.0004969
Emission Point 19 Paved Road	EP19_1_7	1600-1700	1.2360505	2.594E-06	0.0038202	1.159861	2.424E-06	0.0030566	1.0473401	2.209E-06	0.0032371	7.0412214	1.476E-05	0.0216768	6.618445	1.395E-05	0.0204555	6.094155	1.279E-05	0.018835	8.2496629	1.731E-05	0.025497	7.141951	1.499E-05	0.022072	0.14789	3.104E-07	0.0004571	0.16078	3.374E-07	0.0004969
Emission Point 19 Paved Road	EP19_1_7	1700-1800	1.2413505	2.605E-06	0.0038366	1.1489235	2.411E-06	0.0030559	1.0474911	2.198E-06	0.0032375	7.0392124	1.477E-05	0.0217559	6.5889874	1.388E-05	0.0203644	6.0948965	1.279E-05	0.0188373	8.2805629	1.738E-05	0.0255255	7.1423876	1.504E-05	0.0220748	0.14789	3.104E-07	0.0004571	0.16078	3.374E-07	0.0004969
Emission Point 19 Paved Road	EP19_1_7	1800-1900	1.2413505	2.605E-06	0.0038366	1.1489235	2.41E-06	0.0030559	1.0508467	2.205E-06	0.0032478	7.0392124	1.477E-05	0.0217559	6.5651731	1.377E-05	0.0203797	6.1112232	1.283E-05	0.0188878	8.2805629	1.738E-05	0.0255255	7.1620886	1.503E-05	0.0221356	0.14789	3.104E-07	0.0004571	0.16078	3.374E-07	0.0004969
Emission Point 19 Paved Road	EP19_1_7	1900-2000	1.2395505	2.597E-06	0.0038249	1.1535507	2.425E-06	0.0030573	1.053248	2.211E-06	0.0032555	7.0208124	1.474E-05	0.021699	6.621055	1.39E-05	0.0204635	6.1232761	1.285E-05	0.0189251	8.2583629	1.733E-05	0.0255239	7.1766009	1.504E-05	0.0221805	0.14789	3.104E-07	0.0004571	0.16078	3.374E-07	0.0004969
Emission Point 19 Paved Road	EP19_1_7	2000-2100	1.2395505	2.602E-06	0.0038214	1.1393857	2.391E-06	0.0030525	1.0534549	2.211E-06	0.0032559	7.0408124	1.478E-05	0.02173	6.5424317	1.373E-05	0.0202205	6.1238755	1.285E-05	0.0189269	8.2704629	1.736E-05	0.0255613	7.1737124	1.506E-05	0.0221803	0.14789	3.104E-07	0.0004571	0.16078	3.374E-07	0.0004969
Emission Point 19 Paved Road	EP19_1_7	2100-2200	1.2413505	2.609E-06	0.0038422	1.1737811	2.387E-06	0.0030553	1.0532496	2.211E-06	0.0032554	7.0412214	1.478E-05	0.0217822	6.5328539	1.377E-05	0.0201904	6.1232096	1.285E-05	0.0189248	8.2068629	1.74E-05	0.0256244	7.1675166	1.506E-05	0.0221803	0.14789	3.104E-07	0.0004571	0.16078	3.374E-07	0.0004969
Emission Point 19 Paved Road	EP19_1_7	2200-2300	1.2451505	2.613E-06	0.0038484	1.1385454	2.39E-06	0.0035189	1.0526379	2.209E-06	0.0032534	7.0577124	1.481E-05	0.0218311	6.5384429	1.372E-05	0.0202082	6.1199055	1.284E-05	0.0189146	8.3028629	1.743E-05	0.0256614	7.1725434	1.505E-05	0.022168	0.14789	3.104E-07	0.0004571	0.16078	3.374E-07	0.0004969
Emission Point 19 Paved Road	EP19_1_7	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Emission Point 19 Paved Road	EP19_1_7	0000-0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Emission Point 19 Paved Road	EP19_1_7	0100-0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Emission Point 19 Paved Road	EP19_1_7	0200-0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Emission Point 19 Paved Road	EP19_1_7	0300-0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Emission Point 19 Paved Road	EP19_1_7	0400-0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Emission Point 19 Paved Road	EP19_1_7	0500-0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Emission Point 19 Paved Road	EP19_1_7	0600-0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Emission Point 19 Paved Road	EP19_1_7	0700-0800	1.2417505	2.605E-06	0.0038366	1.1489235	2.411E-06	0.0030559	1.0474911	2.198E-06	0.																					

Road Name	Road ID	Hour	NO2 Emission						NO Emission						NOX Emission						PM25 Emission						PM10 Emission					
			AnnualHourMin			MonthlyHourMin			MonthlyHourAverage			AnnualHourMin			MonthlyHourAverage			AnnualHourMin			MonthlyHourAverage			AnnualHourMin			MonthlyHourAverage			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	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
Emission Point 19 Paved Road	EP19_14	1900-2000	1.2396505	1.837E-06	0.0006302	1.1410852	1.69E-06	0.0005801	1.0521795	1.559E-06	0.0005349	7.0308124	1.042E-05	0.0035741	6.5507383	9.705E-06	0.00333	6.1176633	9.063E-06	0.0031099	8.2704629	1.225E-05	0.0042042	7.1698428	1.063E-05	0.0036447	0.14789	2.191E-07	7.518E-05	0.16078	2.382E-07	8.173E-05
Emission Point 19 Paved Road	EP19_14	2000-2100	1.2396505	1.837E-06	0.0006302	1.1393857	1.688E-06	0.0005792	1.0534549	1.561E-06	0.0005355	7.0308124	1.042E-05	0.0035741	6.5424317	9.692E-06	0.0033258	6.1238575	9.072E-06	0.003113	8.2704629	1.225E-05	0.0042042	7.1773124	1.063E-05	0.0036485	0.14789	2.191E-07	7.518E-05	0.16078	2.382E-07	8.173E-05
Emission Point 19 Paved Road	EP19_14	2100-2200	1.2431505	1.842E-06	0.0006319	1.1373811	1.685E-06	0.0005782	1.0533069	1.56E-06	0.0005354	7.0477124	1.044E-05	0.0035827	6.5326681	9.678E-06	0.0033208	6.1232096	9.071E-06	0.0031127	8.2908629	1.228E-05	0.0042146	7.1765166	1.063E-05	0.0036481	0.14789	2.191E-07	7.518E-05	0.16078	2.382E-07	8.173E-05
Emission Point 19 Paved Road	EP19_14	2200-2300	1.2451505	1.845E-06	0.000633	1.1385454	1.687E-06	0.0005788	1.0526379	1.559E-06	0.0005351	7.0577124	1.046E-05	0.0035877	6.5384429	9.687E-06	0.0033238	6.1199055	9.067E-06	0.003111	8.3028629	1.23E-05	0.0042207	7.1725434	1.063E-05	0.0036461	0.14789	2.191E-07	7.518E-05	0.16078	2.382E-07	8.173E-05
Emission Point 19 Paved Road	EP19_14	2300-0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix C-3 Derivation of Cumulative Annual Average Nox to NO₂ Conversion Equation using Jenkin Method by SAMP

Annual Average NO_x, NO₂ and OX concentration in Recent Five Years (Year 201 – 2023) at Selected EPD AQMS

AQMS Data of the Past 5 Years				
Year	Station	NO ₂ (ug/m ³)	NO _x (ug/m ³)	Conversion
2021	NORTH	36	51	39.1
2022	NORTH	31	42	33.0
2023	NORTH	30	41	32.3
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



OX = 95.57

J/K = 17.114

Appendix D Cumulative Results comparing to Updated Pollutants of Proposed AQOs

Table D-21 Predicted FSP and RSP Concentrations at Representative ASRs (2025 AQOs)

ASR ID	DESCRIPTION	PATH GRID	HEIGHT (mPD)	HEIGHT (mAG)	RSP, $\mu\text{g}/\text{m}^3$		FSP, $\mu\text{g}/\text{m}^3$	
					10 th HIGHEST DAILY AVERAGE	ANNUAL AVERAGE	19 th HIGHEST DAILY AVERAGE	ANNUAL AVERAGE
ASR1	Village House 1	(33,46)	53.1	1.5	56.5	21.0	33.7	13.2
ASR1	Village House 1	(33,46)	56.1	4.5	56.5	21.0	33.7	13.1
ASR2	Auto Repair Shop 1	(33,46)	51.8	1.5	56.6	21.3	33.9	13.3
ASR2	Auto Repair Shop 1	(33,46)	54.8	4.5	56.5	21.3	33.8	13.2
ASR3	Auto Repair Shop 2	(33,46)	54.3	1.5	56.5	21.0	33.7	13.1
ASR3	Auto Repair Shop 2	(33,46)	57.3	4.5	56.4	20.9	33.7	13.1
ASR4	Warehouse 1	(33,46)	53.1	1.5	56.4	20.9	33.6	13.1
ASR4	Warehouse 1	(33,46)	56.1	4.5	56.4	20.9	33.6	13.1
ASR4	Warehouse 1	(33,46)	59.1	7.5	56.4	20.9	33.6	13.1
ASR5	Warehouse 2	(33,46)	56.2	1.5	56.4	20.9	33.6	13.1
ASR5	Warehouse 2	(33,46)	59.2	4.5	56.4	20.9	33.6	13.1
ASR5	Warehouse 2	(33,46)	62.2	7.5	56.4	20.9	33.6	13.1
ASR6	Corporate Office	(33,46)	62.7	1.5	56.4	20.9	33.6	13.1
ASR6	Corporate Office	(33,46)	65.7	4.5	56.4	20.9	33.6	13.1
ASR7	Village House 2	(33,46)	68.5	1.5	56.4	20.9	33.6	13.1
ASR7	Village House 2	(33,46)	71.5	4.5	56.4	20.9	33.6	13.1
ASR8	Village House 3	(33,46)	83.4	1.5	56.4	20.9	33.6	13.1
ASR9	Auto Repair Shop 3	(33,46)	58.6	1.5	57.9	23.2	34.1	13.8
ASR9	Auto Repair Shop 3	(33,46)	61.6	4.5	57.1	22.2	34.0	13.7
ASR10	Village House 4	(33,46)	47	1.5	57.3	21.5	34.5	13.6
ASR10	Village House 4	(33,46)	50	4.5	57.2	21.4	34.4	13.6
ASR11	Construction equipment rental	(33,46)	44.6	1.5	56.6	21.2	33.9	13.3

ASR ID	DESCRIPTION	PATH GRID	HEIGHT (mPD)	HEIGHT (mAG)	RSP, $\mu\text{g}/\text{m}^3$		FSP, $\mu\text{g}/\text{m}^3$	
					10 th HIGHEST DAILY AVERAGE	ANNUAL AVERAGE	19 th HIGHEST DAILY AVERAGE	ANNUAL AVERAGE
ASR 11	Construction equipment rental	(33,46)	47.6	4.5	56.6	21.1	33.8	13.3
ASR 12	Tire Shop	(33,46)	46.2	1.5	56.4	20.9	33.7	13.1
ASR 12	Tire Shop	(33,46)	49.2	4.5	56.4	20.9	33.7	13.1
ASR 13	Village House 5	(33,46)	43.8	1.5	56.6	21.0	33.9	13.2
ASR 13	Village House 5	(33,46)	46.8	4.5	56.6	21.0	33.9	13.2
ASR 13	Village House 5	(33,46)	49.8	7.5	56.6	21.0	33.9	13.2
ASR 14	Food Manufacturer Office	(33,46)	59.5	1.5	56.6	21.0	33.8	13.2
ASR 14	Food Manufacturer Office	(33,46)	62.5	4.5	56.5	21.0	33.8	13.2
Proposed 2025 AQOs					75	30	37.5	15

Table D-32 Predicted NO_2 Concentrations at Representative ASRs (2025 AQOs)

ASR ID	DESCRIPTION	PATH GRID	HEIGHT, mPD	HEIGHT, mAG	NO_2 , $\mu\text{g}/\text{m}^3$		
					19 th HIGHEST HOURLY AVERAGE	10 th HIGHEST DAILY AVERAGE	ANNUAL AVERAGE
ASR1	Village House 1	(33,46)	53.1	1.5	55.3	22.0	11.2
ASR1	Village House 1	(33,46)	56.1	4.5	54.2	21.6	10.9
ASR2	Auto Repair Shop 1	(33,46)	51.8	1.5	58.1	22.5	10.8
ASR2	Auto Repair Shop 1	(33,46)	54.8	4.5	56.0	22.2	10.8
ASR3	Auto Repair Shop 2	(33,46)	54.3	1.5	53.3	22.7	10.9
ASR3	Auto Repair Shop 2	(33,46)	57.3	4.5	52.7	21.6	10.6
ASR4	Warehouse 1	(33,46)	53.1	1.5	53.1	20.7	10.4
ASR4	Warehouse 1	(33,46)	56.1	4.5	53.1	20.6	10.4
ASR4	Warehouse 1	(33,46)	59.1	7.5	52.4	20.6	10.4
ASR5	Warehouse 2	(33,46)	56.2	1.5	51.9	20.5	10.3

ASR ID	DESCRIPTION	PATH GRID	HEIGHT, mPD	HEIGHT, mAG	NO ₂ , µg/m ³		
					19 th HIGHEST HOURLY AVERAGE	10 th HIGHEST DAILY AVERAGE	ANNUAL AVERAGE
ASR5	Warehouse 2	(33,46)	59.2	4.5	51.9	20.4	10.3
ASR5	Warehouse 2	(33,46)	62.2	7.5	50.4	20.2	10.3
ASR6	Corporate Office	(33,46)	62.7	1.5	49.4	19.7	10.2
ASR6	Corporate Office	(33,46)	65.7	4.5	49.4	19.7	10.2
ASR7	Village House 2	(33,46)	68.5	1.5	49.0	19.7	10.2
ASR7	Village House 2	(33,46)	71.5	4.5	49.0	19.6	10.1
ASR8	Village House 3	(33,46)	83.4	1.5	49.0	19.5	10.1
ASR9	Auto Repair Shop 3	(33,46)	58.6	1.5	64.5	24.5	11.9
ASR9	Auto Repair Shop 3	(33,46)	61.6	4.5	59.9	23.2	11.4
ASR10	Village House 4	(33,46)	47	1.5	168.3	57.4	27.1
ASR10	Village House 4	(33,46)	50	4.5	156.4	50.3	24.4
ASR11	Construction equipment rental	(33,46)	44.6	1.5	98.6	39.2	15.0
ASR 11	Construction equipment rental	(33,46)	47.6	4.5	93.4	35.8	14.3
ASR 12	Tire Shop	(33,46)	46.2	1.5	59.0	22.5	10.9
ASR 12	Tire Shop	(33,46)	49.2	4.5	59.1	22.5	10.9
ASR 13	Village House 5	(33,46)	43.8	1.5	102.5	28.3	15.3
ASR 13	Village House 5	(33,46)	46.8	4.5	100.9	27.3	14.9
ASR 13	Village House 5	(33,46)	49.8	7.5	85.6	25.2	13.9
ASR 14	Food Manufacturer Office	(33,46)	59.5	1.5	65.1	24.3	11.5
ASR 14	Food Manufacturer Office	(33,46)	62.5	4.5	62.6	23.7	11.4
Proposed 2025 AQOs Standard					200	120	40

Appendix E Background Noise Monitoring Data

BN1

Sampling Date:	10 December 2024	<u>Noise Measurement</u>
Sampling Period:	0700 to 1900	Noise Meter Model: Rion, NL-52
Weather Conditions:	Sunny	<u>Calibration</u>
Wind Speed:	<5 m/s	Calibrator Model: Rion, NC-74
Noise Meter Model:	Rion, NL-52	Before: 94.0 dB(A)
Facade/ Free-field:	Free-field	After: 94.0 dB(A)

Start Time	Leq (30min)	Lmax	Lmin	L10	L90 (1hr)
10/12/2024 7:00	48.2	67.8	42.1	51.3	43.7
10/12/2024 7:30	49.4	78.9	42.1	49.6	
10/12/2024 8:00	50.3	79	42.6	52.5	44.4
10/12/2024 8:30	48.5	68.8	42.5	51.6	
10/12/2024 9:00	51.5	74.8	42.5	53.8	44.3
10/12/2024 9:30	56	83.6	42.5	56.1	
10/12/2024 10:00	51.5	76.8	42.2	54.4	44.9
10/12/2024 10:30	52.4	73	42.3	54.8	
10/12/2024 11:00	63.5	91.9	44	66.7	46.1
10/12/2024 11:30	56.4	85.3	42.9	55.6	
10/12/2024 12:00	48.3	62.6	41.9	51.3	44.4
10/12/2024 12:30	54.9	79.6	42.7	53.9	
10/12/2024 13:00	56.3	80.3	41.4	53.5	44.2
10/12/2024 13:30	57.6	81.6	41	55.8	
10/12/2024 14:00	48.3	77.8	41.4	49.3	43.9
10/12/2024 14:30	51.8	76.9	43.5	54.2	
10/12/2024 15:00	49.7	72.2	43.8	49.9	46
10/12/2024 15:30	50.3	71.7	44.6	51.1	
10/12/2024 16:00	47.6	66.6	41.5	49.6	43.4
10/12/2024 16:30	54.2	78.9	41.7	53.5	
10/12/2024 17:00	50.6	74.6	40.5	48.7	43.1
10/12/2024 17:30	46.7	78.2	41.6	47	
10/12/2024 18:00	51.6	81.7	42.2	50.7	45
10/12/2024 18:30	48.2	73.8	42.8	49.2	

Day (0700-1900)

Minimum	46.7	62.6	40.5	47	43.1
Average	51.8	76.5	42.3	52.7	44.5

BN2

Sampling Date:	10 December 2024	<u>Noise Measurement</u>
Sampling Period:	0700 to 1900	Noise Meter Model: Rion, NL-52
Weather Conditions:	Sunny	<u>Calibration</u>
Wind Speed:	<5 m/s	Calibrator Model: Rion, NC-74
Noise Meter Model:	Rion, NL-52	Before: 93.8 dB(A)
Façade/ Free-field:	Free-field	After: 93.8 dB(A)

Start Time	Leq (30min)	Lmax	Lmin	L10	L90 (1hr)
10/12/2024 7:00	48.5	66.8	36.1	52.2	
10/12/2024 7:30	61.4	91.8	34.7	51.5	39.1
10/12/2024 8:00	47.5	71.1	36.2	50.2	
10/12/2024 8:30	51.5	76	37.2	51.4	40.2
10/12/2024 9:00	52	76.7	36.8	50.1	
10/12/2024 9:30	50.8	77.1	38	51.6	41.2
10/12/2024 10:00	50.5	76.8	40.1	51.8	
10/12/2024 10:30	51.6	75.7	40.3	54.2	43.6
10/12/2024 11:00	51.7	71.4	41.3	54.9	
10/12/2024 11:30	52.8	80.7	38.9	52.9	43.6
10/12/2024 12:00	49.5	75.5	38.3	51.1	
10/12/2024 12:30	49.5	72.7	37.4	51.5	42
10/12/2024 13:00	49.8	83.3	35.7	48.7	
10/12/2024 13:30	47.9	68	37.2	50.4	40
10/12/2024 14:00	45.8	63.2	38.6	48.3	
10/12/2024 14:30	60.5	72.4	47.1	62	42.5
10/12/2024 15:00	62.6	73.4	58.7	65.1	
10/12/2024 15:30	64.6	83.6	58.8	66.3	60.5
10/12/2024 16:00	55.1	68	40.1	62.5	
10/12/2024 16:30	59.9	83	38.2	66.8	42.3
10/12/2024 17:00	55.3	67.2	38	58.2	
10/12/2024 17:30	53.9	72.1	37.9	57.6	40.4
10/12/2024 18:00	44.8	64.9	35.1	46.4	
10/12/2024 18:30	43.6	68.9	34.9	45.4	38.1

Day (0700-1900)

Minimum	43.6	63.2	34.7	45.4	38.1
Average	52.5	74.2	39.8	54.2	42.8

BN3

Sampling Date:	10 December 2024	<u>Noise Measurement</u>
Sampling Period:	0700 to 1900	Noise Meter Model: Rion, NL-52
Weather Conditions:	Sunny	<u>Calibration</u>
Wind Speed:	<5 m/s	Calibrator Model: Rion, NC-74
Noise Meter Model:	Rion, NL-52	Before: 94.0 dB(A)
Facade/ Free-field:	Free-field	After: 94.0 dB(A)

Start Time	Leq (30min)	Lmax	Lmin	L10	L90 (1hr)
10/12/2024 7:00	55.8	81.2	48.7	62.7	51
10/12/2024 7:30	56.1	79.2	49.2	62.6	
10/12/2024 8:00	55.2	83.4	47.9	62.9	49.9
10/12/2024 8:30	54.6	78.7	47.6	60.3	
10/12/2024 9:00	56.8	77.3	49.5	60.4	51.8
10/12/2024 9:30	56.3	82.3	49.1	62.4	
10/12/2024 10:00	53.7	86.4	47.4	61.2	49
10/12/2024 10:30	53.3	79.7	47.9	60	
10/12/2024 11:00	54.1	81.6	47.4	61.9	49.5
10/12/2024 11:30	54.5	75.5	47.1	60	
10/12/2024 12:00	53.7	81.4	46.6	61.6	48.6
10/12/2024 12:30	53.9	76.5	47.2	61.5	
10/12/2024 13:00	52.7	77.3	46.6	59.3	48.2
10/12/2024 13:30	53.2	76	46.1	60.3	
10/12/2024 14:00	52.5	77.5	45.9	59.5	47.6
10/12/2024 14:30	52.1	79.4	46.3	58.8	
10/12/2024 15:00	51.4	78.7	46.3	57.7	47.3
10/12/2024 15:30	51.2	74.8	46	57.6	
10/12/2024 16:00	51.4	78.7	46.2	57.9	47.3
10/12/2024 16:30	52.3	76.9	46.1	60.6	
10/12/2024 17:00	51.5	77.2	45.9	60.6	46.8
10/12/2024 17:30	50.1	75.8	46.1	57.6	
10/12/2024 18:00	50.7	76.9	46.2	58.9	46.9
10/12/2024 18:30	49.1	79.7	46.1	54	

Day (0700-1900)

Minimum	49.1	74.8	45.9	54	46.8
Average	53.2	78.8	47.1	60.0	48.7

Photographic Record of Prevailing Background Noise Measurement

BN1	BN2
	
BN3	
	

Appendix F Noise Meter Calibration Certificates



Calibration Certificate

Certificate No. 311869

Page 1 of 3 Pages

Customer : Enovative Environmental Service Limited

Address : Room 23, 6/F, Block C, Goldfield Industrial Centre, 1 Siu Wo Road, Shatin, N.T.

Order No. : Q34412

Date of receipt : 14-Dec-23

Item Tested

Description : Sound Level Meter

Manufacturer : RION

I.D. : --

Model : NL-52

Serial No. : 01143483

Test Conditions

Date of Test : 9-Jan-24

Supply Voltage : --

Ambient Temperature : $(23 \pm 3)^{\circ}\text{C}$ Relative Humidity : $(50 \pm 25) \%$

Test Specifications

Calibration check.

The UUT has an indication that it conforms to IEC 61672-1:2002 Class 1

Ref. Document/Procedure: Z01, IEC 61672-1:2013.

Test Results

All results were within the IEC 61672 Class 1, manufacturer's specification or Tolerance.

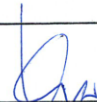
The results are shown in the attached page(s).

Main Test equipment used:

Equipment No.	Description	Cert. No.	Traceable to
S240	Sound Level Calibrator	303941	NIM-PRC & SCL-HKSAR
S017	Multi-Function Generator	C211339	SCL-HKSAR

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI), or by reference to a natural constant.
The test results apply to the above Unit-Under-Test only

Calibrated by : 
Elva ChongApproved by : 
Kin Wong

Date: 9-Jan-24

This Certificate is issued by:
Hong Kong Calibration Ltd.
Unit 6B, 24/F, Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street, Kwai Chung, NT, Hong Kong.
Tel: 2425 8801 Fax: 2425 8846

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Calibration Certificate

Certificate No. 311869

Page 2 of 3 Pages

Results :

Acoustical signal test

1. Indication at the Calibration Check Frequency (1kHz)

UUT Setting		Applied Value (dB)	UUT Reading (dB)
Weight.	Response		After Adjust.*
A	F	94.0	94.0
	S		94.0
C	F		94.0
Z			94.0

*Adjustment using the customer's sound calibrator was performed immediately before test.

Tolerance : ± 1.0 dBUncertainty : ± 0.1 dB

2. Self-generated noise (Microphone Installed, most sensitive range) : 14.5 dBA (Mfr's Spec. ≤ 17 dBA)

Electrical signal tests

3. Frequency weightings (A ,F)

Frequency	Attenuation (dB)	IEC 61672-1 Class 1 Spec.
31.5 Hz	-39.6	- 39.4 dB, ± 1.5 dB
63 Hz	-26.2	- 26.2 dB, ± 1.0 dB
125 Hz	-16.2	- 16.1 dB, ± 1.0 dB
250 Hz	-8.7	- 8.6 dB, ± 1.0 dB
500 Hz	-3.2	- 3.2 dB, ± 1.0 dB
1 kHz	0.0 (Ref)	0 dB, ± 0.7 dB
2 kHz	+1.0	+ 1.2 dB, ± 1.0 dB
4 kHz	+0.6	+ 1.0 dB, ± 1.0 dB
8 kHz	-1.2	- 1.1 dB, + 1.5 dB $\sim$ -2.5 dB
16 kHz	-8.6	- 6.6 dB, + 2.5 dB $\sim$ -16.0 dB

Uncertainty : ± 0.1 dB

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Calibration Certificate

Certificate No. 311869

Page 3 of 3 Pages

4. Frequency & Time weightings

4.1 Frequency Weighting (1kHz)

UUT Setting		Anticipated Value (dB)	UUT Reading (dB)	IEC 61672-1 Class 1 Spec.
Time Weight.	Freq. Weight.			
F	A	94.0	94.0 (Ref.)	--
	C		94.0	± 0.2 dB
	Z		94.0	

Uncertainty : ± 0.1 dB

4.2 Time Weighting (1kHz)

UUT Setting		Anticipated Value (dB)	UUT Reading (dB)	IEC 61672-1 Class 1 Spec.
Time Weight.	Freq. Weight.			
F	A	94.0	94.0 (Ref.)	--
S			94.0	± 0.1 dB
eq			94.0	

Uncertainty : ± 0.1 dB

5. Level Linearity on the Reference Level Range (8 kHz, A, F)

Anticipated Value (dB)	UUT Reading (dB)	IEC 61672-1 Class 1 Spec.
124.0	124.0	± 0.8 dB
114.0	114.0	
104.0	104.0	
94.0	94.0 (Ref.)	
84.0	84.0	
74.0	74.0	
64.0	64.0	
54.0	54.0	
44.0	44.1	

Uncertainty : ± 0.1 dB

6. Level Linearity including the level range control (1 kHz, A, F)

N.A. (UUT is single range)

- Remarks :
1. UUT : Unit-Under-Test
 2. The uncertainty claimed is for a confidence probability of not less than 95%.
 3. Atmospheric Pressure: 1 008 hPa.
 4. Microphone model: UC-59, S/N: 11558.
 5. Preamplifier model: NH-25, S/N: 43502.

----- END -----

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Calibration Certificate

Certificate No. **411654**

Page 1 of 3 Pages

Customer : Enovative Environmental Service Limited**Address :** Room 23, 6/F, Block C, Goldfield Industrial Centre, 1 Siu Wo Road, Shatin, N.T.**Order No. :** Q44338**Date of receipt :** 8-Nov-24**Item Tested****Description :** Sound Level Meter**Manufacturer :** RION**I.D. :** N15-RION-008**Model :** NL-52**Serial No. :** 01143485**Test Conditions****Date of Test :** 18-Nov-24**Supply Voltage :** --**Ambient Temperature :** (23 ± 3)°C**Relative Humidity :** (50 ± 25) %**Test Specifications**

Calibration check.

The UUT has an indication that it conforms to IEC 61672-1:2013 Class 1

Ref. Document/Procedure: Z01, IEC 61672-1:2013.

Test Results

The results are shown in the attached page(s).

Main Test equipment used:

<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Traceable to</u>
S240	Sound Level Calibrator	405380	NIM-PRC & SCL-HKSAR
S017	Multi-Function Generator	C211339	SCL-HKSAR

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI), or by reference to a natural constant.
The test results apply to the above Unit-Under-Test only

Calibrated by : 
Elva Chong**Approved by :** 
Kin Wong**Date:** 18-Nov-24

This Certificate is issued by:
Hong Kong Calibration Ltd.
Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street, Kwai Chung, NT, Hong Kong.
Tel: 2425 8801 Fax: 2425 8646

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Calibration Certificate

Certificate No. **411654**

Page 2 of 3 Pages

Results :

Acoustical signal test

1. Indication at the Calibration Check Frequency (1kHz)

UUT Setting		Applied Value (dB)	UUT Reading (dB)
Weight.	Response		After Adjust.*
A	F	94.0	93.8
	S		93.8
C	F		93.8
Z			93.8

*Adjustment using the customer's sound calibrator was performed immediately before test.

Tolerance : ± 1.0 dB

Uncertainty : ± 0.1 dB

2. Self-generated noise (Microphone Installed, most sensitive range) : 16.6 dBA (Mfr's Spec. ≤ 17 dBA)

Electrical signal tests

3. Frequency weightings (A , F)

Frequency	Attenuation (dB)	IEC 61672-1 Class 1 Spec.
31.5 Hz	-39.5	- 39.4 dB, ± 1.5 dB
63 Hz	-26.1	- 26.2 dB, ± 1.0 dB
125 Hz	-16.1	- 16.1 dB, ± 1.0 dB
250 Hz	-8.6	- 8.6 dB, ± 1.0 dB
500 Hz	-3.2	- 3.2 dB, ± 1.0 dB
1 kHz	0.0 (Ref)	0 dB, ± 0.7 dB
2 kHz	+1.2	+ 1.2 dB, ± 1.0 dB
4 kHz	+1.3	+ 1.0 dB, ± 1.0 dB
8 kHz	-1.0	- 1.1 dB, + 1.5 dB $\sim$ -2.5 dB
16 kHz	-2.5	- 6.6 dB, + 2.5 dB $\sim$ - 16.0 dB

Uncertainty : ± 0.1 dB

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Certificate No. **411654**

Page 3 of 3 Pages

4. Frequency & Time weightings

4.1 Frequency Weighting (1kHz)

UUT Setting		Anticipated Value (dB)	UUT Reading (dB)	IEC 61672-1 Class 1 Spec.
Time Weight.	Freq. Weight.			
F	A	94.0	94.0 (Ref.)	--
	C		94.0	± 0.2 dB
	Z		94.0	

Uncertainty : ± 0.1 dB

4.2 Time Weighting (1kHz)

UUT Setting		Anticipated Value (dB)	UUT Reading (dB)	IEC 61672-1 Class 1 Spec.
Time Weight.	Freq. Weight.			
F	A	94.0	94.0 (Ref.)	--
S			94.0	± 0.1 dB
eq			94.0	

Uncertainty : ± 0.1 dB

5. Level Linearity on the Reference Level Range (8 kHz, A, F)

Anticipated Value (dB)	UUT Reading (dB)	IEC 61672-1 Class 1 Spec.
124.0	123.9	± 0.8 dB
114.0	113.9	
104.0	104.0	
94.0	94.0 (Ref.)	
84.0	84.0	
74.0	74.0	
64.0	64.0	
54.0	54.0	
44.0	44.1	

Uncertainty : ± 0.1 dB

6. Level Linearity including the level range control (1 kHz, A, F)

N.A. (UUT is single range)

Remarks : 1. UUT : Unit-Under-Test

2. The uncertainty claimed is for a confidence probability of not less than 95%.

3. Atmospheric Pressure: 1 007 hPa.

4. Microphone model: UC-59, S/N: 04030.

5. Preamplifier model: NH-25, S/N: 21113.

----- END -----

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Calibration Certificate

Certificate No. 411655

Page 1 of 4 Pages

Customer : Enovative Environmental Service Limited

Address : Room 23, 6/F, Block C, Goldfield Industrial Centre, 1 Siu Wo Road, Shatin, N.T.

Order No. : Q44338

Date of receipt : 8-Nov-24

Item Tested

Description : Sound Level Meter

Manufacturer : RION

I.D. : --

Model : NL-52

Serial No. : 00175560

Test Conditions

Date of Test : 18-Nov-24

Supply Voltage : --

Ambient Temperature : (23 ± 3)°C

Relative Humidity : (50 ± 25) %

Test Specifications

Calibration check.

The UUT has an indication that it conforms to IEC 61672-1:2013/2002 Class 1

Ref. Document/Procedure: Z01, IEC 61672-1:2013, IEC 61260-1:2014.

Test Results

The results are shown in the attached page(s).

Main Test equipment used:

Equipment No.	Description	Cert. No.	Traceable to
S240	Sound Level Calibrator	405380	NIM-PRC & SCL-HKSAR
S017	Multi-Function Generator	C211339	SCL-HKSAR

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI), or by reference to a natural constant.
The test results apply to the above Unit-Under-Test only

Calibrated by : 
Elva Chong

Approved by : 
Kin Wong

Date: 18-Nov-24

This Certificate is issued by:
Hong Kong Calibration Ltd.
Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street, Kwai Chung, NT, Hong Kong.
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Calibration Certificate

Certificate No. **411655**

Page 2 of 4 Pages

Results :

Acoustical signal test

1. Indication at the Calibration Check Frequency (1kHz)

UUT Setting		Applied Value (dB)	UUT Reading (dB)
Weight.	Response		After Adjust.*
A	F	94.0	94.0
	S		94.0
C	F		94.0
Z			94.0

*Adjustment using the customer's sound calibrator was performed immediately before test.

Tolerance : ± 1.0 dB

Uncertainty : ± 0.1 dB

2. Self-generated noise (Microphone Installed, most sensitive range) : 23.1 dBA (Mfr's Spec. ≤ 17 dBA)

Electrical signal tests

3. Frequency weightings (A , F)

Frequency	Attenuation (dB)	IEC 61672-1 Class 1 Spec.
31.5 Hz	-39.5	- 39.4 dB, ± 1.5 dB
63 Hz	-26.2	- 26.2 dB, ± 1.0 dB
125 Hz	-16.2	- 16.1 dB, ± 1.0 dB
250 Hz	-8.7	- 8.6 dB, ± 1.0 dB
500 Hz	-3.2	- 3.2 dB, ± 1.0 dB
1 kHz	0.0 (Ref)	0 dB, ± 0.7 dB
2 kHz	+1.2	+ 1.2 dB, ± 1.0 dB
4 kHz	+1.3	+ 1.0 dB, ± 1.0 dB
8 kHz	-1.0	- 1.1 dB, + 1.5 dB $\sim$ -2.5 dB
16 kHz	-2.5	- 6.6 dB, + 2.5 dB $\sim$ - 16.0 dB

Uncertainty : ± 0.1 dB

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Certificate No. 411655

Page 3 of 4 Pages

4. Frequency & Time weightings

4.1 Frequency Weighting (1kHz)

UUT Setting		Anticipated Value (dB)	UUT Reading (dB)	IEC 61672-1 Class 1 Spec.
Time Weight.	Freq. Weight.			
F	A	94.0	94.0 (Ref.)	--
	C		94.0	± 0.2 dB
	Z		94.0	

Uncertainty : ± 0.1 dB

4.2 Time Weighting (1kHz)

UUT Setting		Anticipated Value (dB)	UUT Reading (dB)	IEC 61672-1 Class 1 Spec.
Time Weight.	Freq. Weight.			
F	A	94.0	94.0 (Ref.)	--
S			94.0	± 0.1 dB
eq			94.0	

Uncertainty : ± 0.1 dB

5. Level Linearity on the Reference Level Range (8 kHz, A, F)

Anticipated Value (dB)	UUT Reading (dB)	IEC 61672-1 Class 1 Spec.
124.0	123.9	± 0.8 dB
114.0	114.0	
104.0	104.0	
94.0	94.0 (Ref.)	
84.0	84.0	
74.0	74.0	
64.0	64.0	
54.0	54.0	
44.0	44.1	

Uncertainty : ± 0.1 dB

6. Level Linearity including the level range control (1 kHz, A, F)

N.A. (UUT is single range)

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Certificate No. 411655

Page 4 of 4 Pages

7. Filter Characteristics

7.1 1/1 – Octave Filter

Frequency	Attenuation (dB)	Tolerance (dB) (Ref: IEC 61260-1 Class 1 Spec.)
125 Hz	-76.7	< - 60
250 Hz	-71.4	< - 40.5
500 Hz	-39.9	< - 16.6
707 Hz	-3.3	+ 0.4 ~ - 5.3
1 kHz (Ref)	--	--
1.414 kHz	-3.3	+ 0.4 ~ - 5.3
2 kHz	-40.9	< - 16.6
4 kHz	-85.7	< - 40.5
8 kHz	-86.3	< - 60

Uncertainty : ± 0.25 dB

7.2 1/3 – Octave Filter

Frequency	Attenuation (dB)	Tolerance (dB) (Ref: IEC 61260-1 Class 1 Spec.)
326 Hz	-65.3	< - 60
530 Hz	-47.3	< - 40.5
772 Hz	-22.5	< - 16.6
891 Hz	-3.6	+ 0.4 ~ - 5.3
1 kHz (Ref)	--	--
1.122 kHz	-3.8	+ 0.4 ~ - 5.3
1.296 kHz	-22.8	< - 16.6
1.887 kHz	-47.7	< - 40.5
3.070 kHz	-92.6	< - 60

Uncertainty : ± 0.25 dB

Remarks : 1. UUT : Unit-Under-Test

2. The uncertainty claimed is for a confidence probability of not less than 95%.

3. Atmospheric Pressure: 1 007 hPa.

4. Microphone model: UC-59, S/N: 10989.

5. Preamplifier model: NH-25, S/N: 65662.

----- END -----

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Calibration Certificate

Certificate No. **411656**Page **1** of **2** Pages**Customer :** Enovative Environmental Service Limited**Address :** Room 23, 6/F, Block C, Goldfield Industrial Centre, 1 Siu Wo Road, Shatin, N.T.**Order No. :** Q44338**Date of receipt :** 8-Nov-24**Item Tested****Description :** Sound Calibrator**Manufacturer :** RION**I.D. :** --**Model :** NC-74**Serial No. :** 34857296**Test Conditions****Date of Test :** 18-Nov-24**Supply Voltage :** --**Ambient Temperature :** (23 ± 3)°C**Relative Humidity :** (50 ± 25) %**Test Specifications**

Calibration check.

The UUT has an indication that it conforms to IEC 60942:2003 Class 1.

Ref. Document/Procedure : F21, Z02, IEC 60942:2003.

Test Results

All results were within the IEC 60942 Class 1 specification.

The results are shown in the attached page(s).

Main Test equipment used:

<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Traceable to</u>
S014	Spectrum Analyzer	405219	NIM-PRC & SCL-HKSAR
S240	Sound Level Calibrator	405380	NIM-PRC & SCL-HKSAR
S041	Universal Counter	402289	SCL-HKSAR
S206	Sound Level Meter	405379	SCL-HKSAR

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI), or by reference to a natural constant.

The test results apply to the above Unit-Under-Test only

Calibrated by : 
Elva Chong

Approved by : 
Kin Wong

Date: 18-Nov-24

This Certificate is issued by:
Hong Kong Calibration Ltd.
Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street, Kwai Chung, NT, Hong Kong.
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Calibration Certificate

Certificate No. 411656

Page 2 of 2 Pages

Results :

1. Generated Sound Pressure Level

UUT Nominal Value (dB)	Measured Value (dB)	IEC 60942 Class 1 Spec.
94.0	94.0	± 0.4 dB

Uncertainty : ± 0.2 dB

2. Short-term Level Fluctuation : 0.0 dB

IEC 60942 Class 1 Spec. : ± 0.1 dB

Uncertainty : ± 0.05 dB

3. Frequency

UUT Nominal Value (kHz)	Measured Value (kHz)	IEC 60942 Class 1 Spec.
1	1.002	± 1 %

Uncertainty : $\pm 3.6 \times 10^{-6}$

4. Total Distortion + Noise : < 1.4 %

IEC 60942 Class 1 Spec. : < 3.0 %

Uncertainty : ± 2.3 % of reading

Remark : 1. UUT : Unit-Under-Test

2. The uncertainty claimed is for a confidence probability of not less than 95%.

3. Atmospheric Pressure : 1 007 hPa.

----- END -----

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Appendix G Result of Industrial Noise Impact Assessment

Daytime – Scenario 1

Predicted Noise Level at IN1

Fixed-noise Sources	Source Type	Ref. Code	SWL/unit, dB(A)	Quantity	At-source Noise Mitigation Measures	Noise Reduction from Mitigation Measures, dB(A)	Corrected SWL, dB(A)	Distance, m	Speed, km/h	Angle of view, degree	Operation (30mins)	% on time	Correction						CNL, dB(A)	Total CNL, dB(A)	Criterion, dB(A)
													Time	Distance	Angle of view	Speed	Screening Effect, dB(A) ⁽¹⁾	Facade			
Concrete mixer 1(electric)	Stationary	CNP 045	96	1	Enclosure	-20	76.0	121.7	NA	NA	30	100.0%	0.0	-49.7	NA	NA	0	3	29.3	46	46
Concrete mixer 2(electric)	Stationary	CNP 045	96	1	Enclosure	-20	76.0	111.8	NA	NA	30	100.0%	0.0	-48.9	NA	NA	0	3	30.1		
Filter Fan (mixing unit) - blower (mixer 1)	Stationary	Other PME	95	1	Enclosure	-20	75.0	121.7	NA	NA	30	100.0%	0.0	-49.7	NA	NA	0	3	28.3		
Filter Fan (mixing unit) - blower (mixer 2)	Stationary	Other PME	95	1	Enclosure	-20	75.0	111.8	NA	NA	30	100.0%	0.0	-48.9	NA	NA	0	3	29.1		
Truck (Concrete Collection)	Stationary	CNP044	109	5	Enclosure	-20	96.0	121.7	NA	NA	3	10.0%	-10.0	-49.7	NA	NA	0	3	39.3		
Truck (Concrete Collection)	Stationary	CNP044	109	5	Enclosure	-20	96.0	111.8	NA	NA	3	10.0%	-10.0	-48.9	NA	NA	0	3	40.1		
Conveyor / Screw Conveyors	Stationary	CNP 041	90	2	Enclosure	-20	73.0	103.4	NA	NA	30	100.0%	0.0	-48.3	NA	NA	0	3	27.7		
Conveyor / Screw Conveyors	Stationary	CNP 041	90	1	Semi-enclosure	-15	75.0	92.7	NA	NA	30	100.0%	0.0	-47.3	NA	NA	0	3	30.7		
Water / Admixture Pump	Stationary	CNP 281	88	1	Semi-enclosure	-15	73.0	98.1	NA	NA	30	100.0%	0.0	-47.8	NA	NA	0	3	28.2		
Pump (silo)	Stationary	CNP 281	88	4	Enclosure	-20	74.0	120.8	NA	NA	30	100.0%	0.0	-49.6	NA	NA	0	3	27.4		
Rd1 Concrete Truck	Haul Road	CNP044	109	10	NA	NA	NA	128.9	15	3.6	NA	N/A	NA	-21.1	-17	-11.8	-10	3	29.1		
Rd2 Concrete truck	Haul Road	CNP044	109	10	NA	NA	NA	119.3	15	9.4	NA	N/A	NA	-20.8	-12.8	-11.8	-10	3	33.6		
Rd3 Concrete truck	Haul Road	CNP044	109	10	NA	NA	NA	115.8	15	9.8	NA	N/A	NA	-20.6	-12.6	-11.8	-10	3	34.0		
Rd4 Concrete truck	Haul Road	CNP044	109	10	NA	NA	NA	112.1	15	3.7	NA	N/A	NA	-20.5	-16.8	-11.8	-10	3	29.9		
Rd5 Concrete truck	Haul Road	CNP044	109	10	NA	NA	NA	103.4	15	0.7	NA	N/A	NA	-20.1	-24.2	-11.8	-10	3	22.9		
Rd6 Concrete truck	Haul Road	CNP044	109	10	NA	NA	NA	92.4	15	4.6	NA	N/A	NA	-19.7	-15.9	-11.8	-10	3	31.6		
Rd7 Concrete truck	Haul Road	CNP044	109	10	NA	NA	NA	88.7	15	21.7	NA	N/A	NA	-19.5	-9.2	-11.8	-10	3	38.5		
Rd8 Concrete truck	Haul Road	CNP044	109	10	NA	NA	NA	96.1	15	5.1	NA	N/A	NA	-19.8	-15.4	-11.8	-10	3	32.0		
Rd9 Concrete truck	Haul Road	CNP044	109	5	NA	NA	NA	103.1	15	3.1	NA	N/A	NA	-20.1	-17.7	-11.8	-10	3	26.4		
Rd10 Concrete truck	Haul Road	CNP044	109	5	NA	NA	NA	114.5	15	4.0	NA	N/A	NA	-20.6	-16.6	-11.8	-10	3	27.0		
Rd11 Concrete truck	Haul Road	CNP044	109	5	NA	NA	NA	116.7	15	2.6	NA	N/A	NA	-20.7	-18.4	-11.8	-10	3	25.1		
Rd12 Concrete truck	Haul Road	CNP044	109	5	NA	NA	NA	128.6	15	3.3	NA	N/A	NA	-21.1	-17.3	-11.8	-10	3	25.8		
Rd13 Concrete truck	Haul Road	CNP044	109	5	NA	NA	NA	128.6	15	3.4	NA	N/A	NA	-21.1	-17.3	-11.8	-10	3	25.8		

Notes:

1 A 10dB(A) noise reduction was applied, as IN1 is 1 storey building, and was blocked by the existing solid wall of the Open Storage located between the Site and the IN1, thus, no line of sight to the entire proposed development as well as the haul road.

Predicted Noise Level at IN2

Fixed-noise Sources	Source Type	Ref. Code	SWL/unit, dB(A)	Quantity	At-source Noise Mitigation Measures	Noise Reduction from Mitigation Measures, dB(A)	Corrected SWL, dB(A)	Distance, m	Speed, km/h	Angle of view, degree	Operation (30mins)	% on time	Correction						CNL, dB(A)	Total CNL, dB(A)	Criterion, dB(A)
													Time	Distance	Angle of view	Speed	Screening Effect, dB(A)	Facade			
Concrete mixer 1(electric)	Stationary	CNP 045	96	1	Enclosure	-20	76.0	221.4	NA	NA	30	100.0%	0.0	-54.9	NA	NA	0	3	24.1	45	48
Concrete mixer 2(electric)	Stationary	CNP 045	96	1	Enclosure	-20	76.0	213.4	NA	NA	30	100.0%	0.0	-54.6	NA	NA	0	3	24.4		
Filter Fan (mixing unit) - blower (mixer 1)	Stationary	Other PME	95	1	Enclosure	-20	75.0	121.7	NA	NA	30	100.0%	0.0	-49.7	NA	NA	0	3	28.3		
Filter Fan (mixing unit) - blower (mixer 2)	Stationary	Other PME	95	1	Enclosure	-20	75.0	111.8	NA	NA	30	100.0%	0.0	-48.9	NA	NA	0	3	29.1		
Truck (Concrete Collection)	Stationary	CNP044	109	5	Enclosure	-20	96.0	221.4	NA	NA	3	10.0%	-10.0	-54.9	NA	NA	0	3	34.1		
Truck (Concrete Collection)	Stationary	CNP044	109	5	Enclosure	-20	96.0	213.4	NA	NA	3	10.0%	-10.0	-54.6	NA	NA	0	3	34.4		
Conveyor / Screw Conveyors	Stationary	Other PME	90	2	Enclosure	-20	73.0	173.7	NA	NA	30	100.0%	0.0	-52.8	NA	NA	0	3	23.2		
Conveyor / Screw Conveyors	Stationary	Other PME	90	1	Semi-enclosure	-15	75.0	145.3	NA	NA	30	100.0%	0.0	-51.2	NA	NA	0	3	26.8		
Water / Admixture Pump	Stationary	CNP044	88	1	Semi-enclosure	-15	73.0	178.1	NA	NA	30	100.0%	0.0	-53.0	NA	NA	0	3	23.0		
Pump (silo)	Stationary	CNP 281	88	4	Enclosure	-20	74.0	187.2	NA	NA	30	100.0%	0.0	-53.4	NA	NA	0	3	23.6		
Rd1 Concrete truck	Haul Road	CNP044	109	10	NA	NA	NA	213.4	15	2.8	NA	N/A	NA	-23.3	-18.1	-11.8	-10	3	25.8		
Rd2 Concrete truck	Haul Road	CNP044	109	10	NA	NA	NA	197.4	15	0.5	NA	N/A	NA	-23	-25.5	-11.8	0	3	28.7		
Rd3 Concrete truck	Haul Road	CNP044	109	10	NA	NA	NA	177.4	15	0.6	NA	N/A	NA	-22.5	-25	-11.8	0	3	29.7		
Rd4 Concrete truck	Haul Road	CNP044	109	10	NA	NA	NA	164.3	15	2.6	NA	N/A	NA	-22.2	-18.5	-11.8	0	3	36.5		
Rd5 Concrete truck	Haul Road	CNP044	109	10	NA	NA	NA	161.9	15	4.0	NA	N/A	NA	-22.1	-16.6	-11.8	0	3	38.5		
Rd6 Concrete truck	Haul Road	CNP044	109	10	NA	NA	NA	167.7	15	2.9	NA	N/A	NA	-22.2	-18	-11.8	-10	3	27.0		
Rd7 Concrete truck	Haul Road	CNP044	109	10	NA	NA	NA	189.5	15	2.4	NA	N/A	NA	-22.8	-18.7	-11.8	-10	3	25.7		
Rd8 Concrete truck	Haul Road	CNP044	109	10	NA	NA	NA	211.2	15	0.8	NA	N/A	NA	-23.2	-23.3	-11.8	-10	3	20.7		
Rd9 Concrete truck	Haul Road	CNP044	109	5	NA	NA	NA	219.9	15	1.7	NA	N/A	NA	-23.4	-20.2	-11.8	-10	3	20.6		
Rd10 Concrete truck	Haul Road	CNP044	109	5	NA	NA	NA	222.5	15	4.1	NA	N/A	NA	-23.5	-16.4	-11.8	-10	3	24.3		
Rd11 Concrete truck	Haul Road	CNP044	109	5	NA	NA	NA	217.4	15	2.0	NA	N/A	NA	-23.4	-19.4	-11.8	-10	4	22.4		
Rd12 Concrete truck	Haul Road	CNP044	109	5	NA	NA	NA	220.2	15	4.1	NA	N/A	NA	-23.4	-16.4	-11.8	0	3	34.4		
Rd13 Concrete truck	Haul Road	CNP044	109	5	NA	NA	NA	220.3	15	4.1	NA	N/A	NA	-23.4	-16.4	-11.8	0	3	34.4		

Predicted Noise Level at IN3

Fixed-noise Sources	Source Type	Ref. Code	SWL/unit, dB(A)	Quantity	At-source Noise Mitigation Measures	Noise Reduction from Mitigation Measures, dB(A)	Corrected SWL, dB(A)	Distance, m	Speed, km/h	Angle of view, degree	Operation (30mins)	% on time	Correction						CNL, dB(A)	Total CNL, dB(A)	Criterion, dB(A)
													Time	Distance	Angle of view	Speed	Screening Effect, dB(A)	Facade			
Concrete mixer 1(electric)	Stationary	CNP 045	96	1	Enclosure	-20	76.0	248.1	NA	NA	30	100.0%	0.0	-55.9	NA	NA	0	3	23.1	45	48
Concrete mixer 2(electric)	Stationary	CNP 045	96	1	Enclosure	-20	76.0	241.4	NA	NA	30	100.0%	0.0	-55.6	NA	NA	0	3	23.4		
Filter Fan (mixing unit) - blower (mixer 1)	Stationary	Other PME	95	1	Enclosure	-20	75.0	121.7	NA	NA	30	100.0%	0.0	-49.7	NA	NA	0	3	28.3		
Filter Fan (mixing unit) - blower (mixer 2)	Stationary	Other PME	95	1	Enclosure	-20	75.0	111.8	NA	NA	30	100.0%	0.0	-48.9	NA	NA	0	3	29.1		
Truck (Concrete Collection)	Stationary	CNP044	109	5	Enclosure	-20	96.0	248.1	NA	NA	3	10.0%	-10.0	-55.9	NA	NA	0	3	33.1		
Truck (Concrete Collection)	Stationary	CNP044	109	5	Enclosure	-20	96.0	241.4	NA	NA	3	10.0%	-10.0	-55.6	NA	NA	0	3	33.4		
Conveyor / Screw Conveyors	Stationary	Other PME	90	2	Enclosure	-20	73.0	202.2	NA	NA	30	100.0%	0.0	-54.1	NA	NA	0	3	21.9		
Conveyor / Screw Conveyors	Stationary	Other PME	90	1	Semi-enclosure	-15	75.0	182.5	NA	NA	30	100.0%	0.0	-53.2	NA	NA	0	3	24.8		
Water / Admixture Pump	Stationary	CNP044	88	1	Semi-enclosure	-15	73.0	208.1	NA	NA	30	100.0%	0.0	-54.3	NA	NA	0	3	21.7		
Pump (silo)	Stationary	CNP 281	88	4	Enclosure	-20	74.0	213.3	NA	NA	30	100.0%	0.0	-54.6	NA	NA	0	3	22.4		
Rd1 Concrete truck	Haul Road	CNP044	109	10	NA	NA	NA	238.7	15	2.9	NA	N/A	NA	-23.8	-18	-11.8	-10	3	25.4		
Rd2 Concrete truck	Haul Road	CNP044	109	10	NA	NA	NA	223.9	15	1.3	NA	N/A	NA	-23.5	-21.5	-11.8	-10	3	22.2		
Rd3 Concrete truck	Haul Road	CNP044	109	10	NA	NA	NA	204.4	15	1.5	NA	N/A	NA	-23.1	-20.9	-11.8	0	3	33.2		
Rd4 Concrete truck	Haul Road	CNP044	109	10	NA	NA	NA	192.4	15	2.5	NA	N/A	NA	-22.8	-18.6	-11.8	0	3	35.8		
Rd5 Concrete truck	Haul Road	CNP044	109	10	NA	NA	NA	191.6	15	3.2	NA	N/A	NA	-22.8	-17.5	-11.8	0	3	36.9		
Rd6 Concrete truck	Haul Road	CNP044	109	10	NA	NA	NA	199.0	15	1.9	NA	N/A	NA	-23.0	-19.7	-11.8	0	3	34.5		
Rd7 Concrete truck	Haul Road	CNP044	109	10	NA	NA	NA	220.7	15	3.3	NA	N/A	NA	-23.4	-17.3	-11.8	0	3	36.5		
Rd8 Concrete truck	Haul Road	CNP044	109	10	NA	NA	NA	241.3	15	1.0	NA	N/A	NA	-23.8	-22.4	-11.8	-10	3	21.0		
Rd9 Concrete truck	Haul Road	CNP044	109	5	NA	NA	NA	249.3	15	1.7	NA	N/A	NA	-24.0	-20.1	-11.8	-10	3	20.1		
Rd10 Concrete truck	Haul Road	CNP044	109	5	NA	NA	NA	250.4	15	3.6	NA	N/A	NA	-24.0	-17	-11.8	-10	3	23.2		
Rd11 Concrete truck	Haul Road	CNP044	109	5	NA	NA	NA	244.8	15	2.1	NA	N/A	NA	-23.9	-19.4	-11.8	-10	3	20.9		
Rd12 Concrete truck	Haul Road	CNP044	109	5	NA	NA	NA	245.9	15	3.6	NA	N/A	NA	-23.9	-17	-11.8	0	3	33.3		
Rd13 Concrete truck	Haul Road	CNP044	109	5	NA	NA	NA	245.9	15	3.6	NA	N/A	NA	-23.9	-17	-11.8	0	3	33.3		

Predicted Noise Level at IN4

Fixed-noise Sources	Source Type	Ref. Code	SWL/unit, dB(A)	Quantity	At-source Noise Mitigation Measures	Noise Reduction from Mitigation Measures, dB(A)	Corrected SWL, dB(A)	Distance, m	Speed, km/h	Angle of view, degree	Operation (30mins)	% on time	Correction						CNL, dB(A)	Total CNL, dB(A)	Criterion, dB(A)
													Time	Distance	Angle of view	Speed	Screening Effect, dB(A) ¹⁾	Facade			
Concrete mixer 1(electric)	Stationary	CNP 045	96	1	Enclosure	-20	76.0	253.5	NA	NA	30	100.0%	0.0	-56.1	NA	NA	0	3	22.9	39	52
Concrete mixer 2(electric)	Stationary	CNP 045	96	1	Enclosure	-20	76.0	259.9	NA	NA	30	100.0%	0.0	-56.3	NA	NA	0	3	22.7		
Filter Fan (mixing unit) - blower (mixer 1)	Stationary	Other PME	95	1	Enclosure	-20	75.0	121.7	NA	NA	30	100.0%	0.0	-49.7	NA	NA	0	3	28.3		
Filter Fan (mixing unit) - blower (mixer 2)	Stationary	Other PME	95	1	Enclosure	-20	75.0	111.8	NA	NA	30	100.0%	0.0	-48.9	NA	NA	0	3	29.1		
Truck (Concrete Collection)	Stationary	CNP044	109	5	Enclosure	-20	96.0	253.5	NA	NA	3	10.0%	-10.0	-56.1	NA	NA	0	3	32.9		
Truck (Concrete Collection)	Stationary	CNP044	109	5	Enclosure	-20	96.0	259.9	NA	NA	3	10.0%	-10.0	-56.3	NA	NA	0	3	32.7		
Conveyor / Screw Conveyors	Stationary	Other PME	90	2	Enclosure	-20	73.0	245.1	NA	NA	30	100.0%	0.0	-55.8	NA	NA	0	3	20.2		
Conveyor / Screw Conveyors	Stationary	Other PME	90	1	Semi-enclosure	-15	75.0	272.1	NA	NA	30	100.0%	0.0	-56.7	NA	NA	0	4	22.3		
Water / Admixture Pump	Stationary	Other PME	88	1	Semi-enclosure	-15	73.0	294.0	NA	NA	30	100.0%	0.0	-57.4	NA	NA	0	3	18.6		
Pump (silo)	Stationary	CNP 281	88	4	Enclosure	-20	74.0	288.4	NA	NA	30	100.0%	0.0	-57.2	NA	NA	0	3	19.8		
Rd1 Concrete truck	Haul Road	CNP044	109	10	NA	NA	NA	263.9	15	2.9	NA	N/A	NA	-24.2	-17.9	-11.8	-10	3	25.1		
Rd2 Concrete truck	Haul Road	CNP044	109	10	NA	NA	NA	277.8	15	1.3	NA	N/A	NA	-24.4	-21.4	-11.8	-10	3	21.4		
Rd3 Concrete truck	Haul Road	CNP044	109	10	NA	NA	NA	296.9	15	1.1	NA	N/A	NA	-24.7	-22.1	-11.8	-10	3	20.4		
Rd4 Concrete truck	Haul Road	CNP044	109	10	NA	NA	NA	309.0	15	1.5	NA	N/A	NA	-24.9	-20.7	-11.8	-10	3	21.6		
Rd5 Concrete truck	Haul Road	CNP044	109	10	NA	NA	NA	310.4	15	2.0	NA	N/A	NA	-24.9	-19.5	-11.8	-10	3	22.8		
Rd6 Concrete truck	Haul Road	CNP044	109	10	NA	NA	NA	304.4	15	1.6	NA	N/A	NA	-24.8	-20.4	-11.8	-10	3	22.0		
Rd7 Concrete truck	Haul Road	CNP044	109	10	NA	NA	NA	282.6	15	1.4	NA	N/A	NA	-24.5	-21.1	-11.8	-10	3	21.6		
Rd8 Concrete truck	Haul Road	CNP044	109	10	NA	NA	NA	260.9	15	0.7	NA	N/A	NA	-24.2	-24	-11.8	-10	3	19.0		
Rd9 Concrete truck	Haul Road	CNP044	109	5	NA	NA	NA	252.4	15	1.6	NA	N/A	NA	-24.0	-20.5	-11.8	-10	3	19.7		
Rd10 Concrete truck	Haul Road	CNP044	109	5	NA	NA	NA	250.9	15	3.5	NA	N/A	NA	-24.0	-17.1	-11.8	-10	3	23.1		
Rd11 Concrete truck	Haul Road	CNP044	109	5	NA	NA	NA	256.6	15	2.0	NA	N/A	NA	-24.1	-19.5	-11.8	-10	3	20.6		
Rd12 Concrete truck	Haul Road	CNP044	109	5	NA	NA	NA	256.6	15	3.3	NA	N/A	NA	-24.1	-17.4	-11.8	-10	3	22.7		
Rd13 Concrete truck	Haul Road	CNP044	109	5	NA	NA	NA	256.5	15	3.3	NA	N/A	NA	-24.1	-17.4	-11.8	-10	3	22.7		

Notes:

1 A 10dB(A) noise reduction was applied, as IN4 is 1 storey building, and was blocked by the existing buildings located between the Site and the IN4, thus, no line of sight to the entire proposed development as well as the haul road.

Daytime – Scenario 2

Predicted Noise Level at IN1

Fixed-noise Sources		Source Type	Ref. Code	SWL/unit, dB(A)	Quantity	At-source Noise Mitigation Measures	Noise Reduction from Mitigation Measures, dB(A)	Corrected SWL, dB(A)	Distance, m	Speed, km/h	Angle of view, degree	Operation (30mins)	% on time	Correction						CNL, dB(A)	Total CNL, dB(A)	Criterion
														Time	Distance	Angle of view	Speed	Screening Effect, dB(A) ⁽¹⁾	Facade			
Conveyor / Screw Conveyors		Stationary	CNP 041	90	2	Enclosure	-20	73.0	103.4	NA	NA	30	100.0%	0.0	-48.3	NA	NA	0	3	27.7	43	46
Conveyor / Screw Conveyors		Stationary	CNP 041	90	1	Semi-enclosure	-15	75.0	92.7	NA	NA	30	100.0%	0.0	-47.3	NA	NA	0	3	30.7		
Water / Admixture Pump		Stationary	CNP 281	88	1	Semi-enclosure	-15	73.0	98.1	NA	NA	30	100.0%	0.0	-47.8	NA	NA	0	3	28.2		
Pump (mounted on unloading tank)		Stationary	CNP 281	88	4	Enclosure	-20	74.0	120.8	NA	NA	30	100.0%	0.0	-49.6	NA	NA	0	3	27.4		
Filter Fan (silo) - blower		Stationary	Other PME	95	4	Semi-enclosure	-15	86.0	120.8	NA	NA	30	100.0%	0.0	-49.6	NA	NA	0	3	39.4		
Rd1	Aggregates Truck	Haul Road	Other PME	105	7	NA	NA	NA	128.9	15	3.6	NA	N/A	NA	-21.1	-17.0	-11.8	-10	3	23.6		
	Cement / PFA / GGBS/ Admixture tanker	Haul Road	Other PME	105	2	NA	NA	NA	128.9	15	3.6	NA	N/A	NA	-21.1	-17	-11.8	-10	3	18.1		
	Lorry	Haul Road	Other PME	105	7	NA	NA	NA	128.9	15	3.6	NA	N/A	NA	-21.1	-17	-11.8	-10	3	23.6		
Rd2	Aggregates Truck	Haul Road	Other PME	105	9	NA	NA	NA	119.3	15	9.4	NA	N/A	NA	-20.8	-12.8	-11.8	-10	3	29.1		
	Cement / PFA / GGBS/ Admixture tanker	Haul Road	Other PME	105	2	NA	NA	NA	119.3	15	9.4	NA	N/A	NA	-20.8	-12.8	-11.8	-10	3	22.6		
Rd3	Aggregates Truck	Haul Road	Other PME	105	7	NA	NA	NA	115.8	15	9.8	NA	N/A	NA	-20.6	-12.6	-11.8	-10	3	28.5		
	Cement / PFA / GGBS/ Admixture tanker	Haul Road	Other PME	105	1	NA	NA	NA	115.8	15	9.8	NA	N/A	NA	-20.6	-12.6	-11.8	-10	3	20.0		
	Lorry	Haul Road	Other PME	105	1	NA	NA	NA	115.8	15	9.8	NA	N/A	NA	-20.6	-12.6	-11.8	-10	3	20.0		
Rd4	Aggregates Truck	Haul Road	Other PME	105	4	NA	NA	NA	112.1	15	3.7	NA	N/A	NA	-20.5	-16.8	-11.8	-10	3	21.9		
	Cement / PFA / GGBS/ Admixture tanker	Haul Road	Other PME	105	1	NA	NA	NA	112.1	15	3.7	NA	N/A	NA	-20.5	-16.8	-11.8	-10	3	15.9		
	Lorry	Haul Road	Other PME	105	5	NA	NA	NA	112.1	15	3.7	NA	N/A	NA	-20.5	-16.8	-11.8	-10	3	22.9		
Rd5	Aggregates Truck	Haul Road	Other PME	105	4	NA	NA	NA	103.4	15	0.7	NA	N/A	NA	-20.1	-24.2	-11.8	-10	3	14.9		
	Cement / PFA / GGBS/ Admixture tanker	Haul Road	Other PME	105	1	NA	NA	NA	103.4	15	0.7	NA	N/A	NA	-20.1	-24.2	-11.8	-10	3	8.9		
	Lorry	Haul Road	Other PME	105	5	NA	NA	NA	103.4	15	0.7	NA	N/A	NA	-20.1	-24.2	-11.8	-10	3	15.9		
Rd6	Lorry	Haul Road	Other PME	105	9	NA	NA	NA	92.4	15	4.6	NA	N/A	NA	-19.7	-15.9	-11.8	-10	3	27.1		
Rd7	Lorry	Haul Road	Other PME	105	9	NA	NA	NA	88.7	15	21.7	NA	N/A	NA	-19.5	-9.2	-11.8	-10	3	34.0		
Rd14	Lorry	Haul Road	Other PME	105	9	NA	NA	NA	107.9	15	2.7	NA	N/A	NA	-20.3	-18.3	-11.8	-10	3	24.1		

Notes:

1 A 10dB(A) noise reduction was applied, as IN1 is 1 storey building, and was blocked by the existing solid wall of the Open Storage located between the Site and the IN1, thus, no line of sight to the entire proposed development as well as the haul road.

Predicted Noise Level at IN2

Fixed-noise Sources		Source Type	Ref. Code	SWL/unit, dB(A)	Quantity	At-source Noise Mitigation Measures	Noise Reduction from Mitigation Measures, dB(A)	Corrected SWL, dB(A)	Distance, m	Speed, km/h	Angle of view, degree	Operation (30mins)	% on time	Correction						CNL, dB(A)	Total CNL, dB(A)	Criterion
														Time	Distance	Angle of view	Speed	Screening Effect, dB(A)	Facade			
Conveyor / Screw Conveyors		Stationary	CNP 041	90	2	Enclosure	-20	73.0	173.7	NA	NA	30	100.0%	0.0	-52.8	NA	NA	0	3	23.2	40	48
Conveyor / Screw Conveyors		Stationary	CNP 041	90	1	Semi-enclosure	-15	75.0	145.3	NA	NA	30	100.0%	0.0	-51.2	NA	NA	0	3	26.8		
Water / Admixture Pump		Stationary	CNP 281	88	1	Semi-enclosure	-15	73.0	178.1	NA	NA	30	100.0%	0.0	-53.0	NA	NA	0	3	23.0		
Pump (mounted on unloading tank)		Stationary	CNP 281	88	4	Enclosure	-20	74.0	187.2	NA	NA	30	100.0%	0.0	-53.4	NA	NA	0	3	23.6		
Filter Fan (silo) - blower		Stationary	Other PME	95	4	Semi-enclosure	-15	86.0	187.2	NA	NA	30	100.0%	0.0	-53.4	NA	NA	0	3	35.6		
Rd1	Aggregates Truck	Haul Road	Other PME	105	7	NA	NA	NA	213.4	15	2.8	NA	N/A	NA	-23.3	-18.1	-11.8	-10	3	20.3		
	Cement / PFA / GGBS/ Admixture tanker	Haul Road	Other PME	105	2	NA	NA	NA	213.4	15	2.8	NA	N/A	NA	-23.3	-18.1	-11.8	-10	3	14.8		
	Lorry	Haul Road	Other PME	105	7	NA	NA	NA	213.4	15	2.8	NA	N/A	NA	-23.3	-18.1	-11.8	-10	3	20.3		
Rd2	Aggregates Truck	Haul Road	Other PME	105	9	NA	NA	NA	197.4	15	0.5	NA	N/A	NA	-23	-25.5	-11.8	0	3	24.2		
	Cement / PFA / GGBS/ Admixture tanker	Haul Road	Other PME	105	2	NA	NA	NA	197.4	15	0.5	NA	N/A	NA	-23	-25.5	-11.8	0	3	17.7		
Rd3	Aggregates Truck	Haul Road	Other PME	105	7	NA	NA	NA	177.4	15	0.6	NA	N/A	NA	-22.5	-25	-11.8	0	3	24.2		
	Cement / PFA / GGBS/ Admixture tanker	Haul Road	Other PME	105	1	NA	NA	NA	177.4	15	0.6	NA	N/A	NA	-22.5	-25	-11.8	0	3	15.7		
	Lorry	Haul Road	Other PME	105	1	NA	NA	NA	177.4	15	0.6	NA	N/A	NA	-22.5	-25	-11.8	0	3	15.7		
Rd4	Aggregates Truck	Haul Road	Other PME	105	4	NA	NA	NA	164.3	15	2.6	NA	N/A	NA	-22.2	-18.5	-11.8	0	3	28.5		
	Cement / PFA / GGBS/ Admixture tanker	Haul Road	Other PME	105	1	NA	NA	NA	164.3	15	2.6	NA	N/A	NA	-22.2	-18.5	-11.8	0	3	22.5		
	Lorry	Haul Road	Other PME	105	5	NA	NA	NA	164.3	15	2.6	NA	N/A	NA	-22.2	-18.5	-11.8	0	3	29.5		
Rd5	Aggregates Truck	Haul Road	Other PME	105	4	NA	NA	NA	161.9	15	4.0	NA	N/A	NA	-22.1	-16.6	-11.8	0	3	30.5		
	Cement / PFA / GGBS/ Admixture tanker	Haul Road	Other PME	105	1	NA	NA	NA	161.9	15	4.0	NA	N/A	NA	-22.1	-16.6	-11.8	0	3	24.5		
	Lorry	Haul Road	Other PME	105	5	NA	NA	NA	161.9	15	4.0	NA	N/A	NA	-22.1	-16.6	-11.8	0	3	31.5		
Rd6	Lorry	Haul Road	Other PME	105	9	NA	NA	NA	167.7	15	2.9	NA	N/A	NA	-22.2	-18	-11.8	-10	3	22.5		
Rd7	Lorry	Haul Road	Other PME	105	9	NA	NA	NA	189.5	15	2.4	NA	N/A	NA	-22.8	-18.7	-11.8	-10	3	21.2		
Rd14	Lorry	Haul Road	Other PME	105	9	NA	NA	NA	206.4	15	8.0	NA	N/A	NA	-23.1	-13.5	-11.8	-10	3	26.1		

Predicted Noise Level at IN3

Fixed-noise Sources	Source Type	Ref. Code	SWL/unit, dB(A)	Quantity	At-source Noise Mitigation Measures	Noise Reduction from Mitigation Measures, dB(A)	Corrected SWL, dB(A)	Distance, m	Speed, km/h	Angle of view, degree	Operation (30mins)	% on time	Correction						CNL, dB(A)	Total CNL, dB(A)	Criterion
													Time	Distance	Angle of view	Speed	Screening Effect, dB(A)	Facade			
Conveyor / Screw Conveyors	Stationary	CNP 041	90	2	Enclosure	-20	73.0	202.2	NA	NA	30	100.0%	0.0	-54.1	NA	NA	0	3	21.9	40	48
Conveyor / Screw Conveyors	Stationary	CNP 041	90	1	Semi-enclosure	-15	75.0	182.5	NA	NA	30	100.0%	0.0	-53.2	NA	NA	0	3	24.8		
Water / Admixture Pump	Stationary	CNP 281	88	1	Semi-enclosure	-15	73.0	208.1	NA	NA	30	100.0%	0.0	-54.3	NA	NA	0	3	21.7		
Pump (mounted on unloading tank)	Stationary	CNP 281	88	4	Enclosure	-20	74.0	213.3	NA	NA	30	100.0%	0.0	-54.6	NA	NA	0	3	22.4		
Filter Fan (silo) - blower	Stationary	Other PME	95	4	Semi-enclosure	-15	86.0	213.3	NA	NA	30	100.0%	0.0	-54.6	NA	NA	0	3	34.4		
Rd1	Aggregates Truck	Haul Road	Other PME	105	7	NA	NA	238.7	15	2.9	NA	N/A	NA	-23.8	-18.0	-11.8	-10	3	19.9		
	Cement / PFA / GGBS/ Admixture tanker	Haul Road	Other PME	105	2	NA	NA	238.7	15	2.9	NA	N/A	NA	-23.8	-18	-11.8	-10	3	14.4		
Rd2	Lorry	Haul Road	Other PME	105	7	NA	NA	238.7	15	2.9	NA	N/A	NA	-23.8	-18	-11.8	-10	3	19.9		
	Aggregates Truck	Haul Road	Other PME	105	9	NA	NA	223.9	15	1.3	NA	N/A	NA	-23.5	-21.5	-11.8	-10	3	17.7		
Rd3	Cement / PFA / GGBS/ Admixture tanker	Haul Road	Other PME	105	2	NA	NA	223.9	15	1.3	NA	N/A	NA	-23.5	-21.5	-11.8	-10	3	11.2		
	Aggregates Truck	Haul Road	Other PME	105	7	NA	NA	204.4	15	1.5	NA	N/A	NA	-23.1	-20.9	-11.8	0	3	27.7		
Rd4	Cement / PFA / GGBS/ Admixture tanker	Haul Road	Other PME	105	1	NA	NA	204.4	15	1.5	NA	N/A	NA	-23.1	-20.9	-11.8	0	3	19.2		
	Lorry	Haul Road	Other PME	105	1	NA	NA	204.4	15	1.5	NA	N/A	NA	-23.1	-20.9	-11.8	0	3	19.2		
Rd5	Aggregates Truck	Haul Road	Other PME	105	4	NA	NA	192.4	15	2.5	NA	N/A	NA	-22.8	-18.6	-11.8	0	3	27.8		
	Cement / PFA / GGBS/ Admixture tanker	Haul Road	Other PME	105	1	NA	NA	192.4	15	2.5	NA	N/A	NA	-22.8	-18.6	-11.8	0	3	21.8		
Rd6	Lorry	Haul Road	Other PME	105	5	NA	NA	192.4	15	2.5	NA	N/A	NA	-22.8	-18.6	-11.8	0	3	28.8		
	Aggregates Truck	Haul Road	Other PME	105	4	NA	NA	191.6	15	3.2	NA	N/A	NA	-22.8	-17.5	-11.8	0	3	28.9		
Rd7	Cement / PFA / GGBS/ Admixture tanker	Haul Road	Other PME	105	1	NA	NA	191.6	15	3.2	NA	N/A	NA	-22.8	-17.5	-11.8	0	3	22.9		
	Lorry	Haul Road	Other PME	105	5	NA	NA	191.6	15	3.2	NA	N/A	NA	-22.8	-17.5	-11.8	0	3	29.9		
Rd14	Lorry	Haul Road	Other PME	105	9	NA	NA	199.0	15	1.9	NA	N/A	NA	-23	-19.7	-11.8	0	3	30.0		
Rd7	Lorry	Haul Road	Other PME	105	9	NA	NA	220.7	15	3.3	NA	N/A	NA	-23.4	-17.3	-11.8	0	3	32.0		
Rd14	Lorry	Haul Road	Other PME	105	9	NA	NA	234.8	15	7.0	NA	N/A	NA	-23.7	-14.1	-11.8	-10	3	24.9		

Predicted Noise Level at IN4

Fixed-noise Sources	Source Type	Ref. Code	SWL/unit, dB(A)	Quantity	At-source Noise Mitigation Measures	Noise Reduction from Mitigation Measures, dB(A)	Corrected SWL, dB(A)	Distance, m	Speed, km/h	Angle of view, degree	Operation (30mins)	% on time	Correction						CNL, dB(A)	Total CNL, dB(A)	Criterion
													Time	Distance	Angle of view	Speed	Screening Effect, dB(A)	Facade			
Conveyor / Screw Conveyors	Stationary	CNP 041	90	2	Enclosure	-20	73.0	245.1	NA	NA	30	100.0%	0.0	-55.8	NA	NA	0	3	20.2	39	52
Conveyor / Screw Conveyors	Stationary	CNP 041	90	1	Semi-enclosure	-15	75.0	272.1	NA	NA	30	100.0%	0.0	-56.7	NA	NA	0	3	21.3		
Water / Admixture Pump	Stationary	CNP 281	88	1	Semi-enclosure	-15	73.0	294.0	NA	NA	30	100.0%	0.0	-57.4	NA	NA	0	3	18.6		
Pump (mounted on unloading tank)	Stationary	CNP 281	88	4	Enclosure	-20	74.0	288.4	NA	NA	30	100.0%	0.0	-57.2	NA	NA	0	3	19.8		
Filter Fan (silo) - blower	Stationary	CNP044	109	4	Semi-enclosure	-15	100.0	288.4	NA	NA	5	16.7%	-7.8	-57.2	NA	NA	0	3	38.0		
Rd1	Aggregates Truck	Haul Road	Other PME	105	7	NA	NA	263.9	15	2.9	NA	N/A	NA	-24.2	-17.9	-11.8	-10	3	19.6		
	Cement / PFA / GGBS/ Admixture tanker	Haul Road	Other PME	105	2	NA	NA	263.9	15	2.9	NA	N/A	NA	-24.2	-17.9	-11.8	-10	3	14.1		
Rd2	Lorry	Haul Road	Other PME	105	7	NA	NA	263.9	15	2.9	NA	N/A	NA	-24.2	-17.9	-11.8	-10	3	19.6		
	Aggregates Truck	Haul Road	Other PME	105	9	NA	NA	277.8	15	1.3	NA	N/A	NA	-24.4	-21.4	-11.8	-10	3	16.9		
Rd3	Cement / PFA / GGBS/ Admixture tanker	Haul Road	Other PME	105	2	NA	NA	277.8	15	1.3	NA	N/A	NA	-24.4	-21.4	-11.8	-10	3	10.4		
	Aggregates Truck	Haul Road	Other PME	105	7	NA	NA	296.9	15	1.1	NA	N/A	NA	-24.7	-22.1	-11.8	-10	3	14.9		
Rd4	Cement / PFA / GGBS/ Admixture tanker	Haul Road	Other PME	105	1	NA	NA	296.9	15	1.1	NA	N/A	NA	-24.7	-22.1	-11.8	-10	3	6.4		
	Lorry	Haul Road	Other PME	105	1	NA	NA	296.9	15	1.1	NA	N/A	NA	-24.7	-22.1	-11.8	-10	3	6.4		
Rd5	Aggregates Truck	Haul Road	Other PME	105	4	NA	NA	309.0	15	1.5	NA	N/A	NA	-24.9	-20.7	-11.8	-10	3	13.6		
	Cement / PFA / GGBS/ Admixture tanker	Haul Road	Other PME	105	1	NA	NA	309.0	15	1.5	NA	N/A	NA	-24.9	-20.7	-11.8	-10	3	7.6		
Rd6	Lorry	Haul Road	Other PME	105	5	NA	NA	309.0	15	1.5	NA	N/A	NA	-24.9	-20.7	-11.8	-10	3	14.6		
	Aggregates Truck	Haul Road	Other PME	105	4	NA	NA	310.4	15	2.0	NA	N/A	NA	-24.9	-19.5	-11.8	-10	3	14.8		
Rd7	Cement / PFA / GGBS/ Admixture tanker	Haul Road	Other PME	105	1	NA	NA	310.4	15	2.0	NA	N/A	NA	-24.9	-19.5	-11.8	-10	3	8.8		
	Lorry	Haul Road	Other PME	105	5	NA	NA	310.4	15	2.0	NA	N/A	NA	-24.9	-19.5	-11.8	-10	3	15.8		
Rd14	Lorry	Haul Road	Other PME	105	9	NA	NA	304.4	15	1.6	NA	N/A	NA	-24.8	-20.4	-11.8	-10	3	17.5		
Rd7	Lorry	Haul Road	Other PME	105	9	NA	NA	282.6	15	1.4	NA	N/A	NA	-24.5	-21.1	-11.8	-10	3	17.1		
Rd14	Lorry	Haul Road	Other PME	105	9	NA	NA	266.5	15	6.2	NA	N/A	NA	-24.3	-14.6	-11.8	-10	3	23.8		

Notes:

1 A 10dB(A) noise reduction was applied, as IN4 is 1 storey building, and was blocked by the existing buildings located between the Site and the IN4, thus, no line of sight to the entire proposed development as well as the haul road.

Evening – Scenario 1

Predicted Noise Level at IN1

Fixed-noise Sources	Source Type	Ref. Code	SWL/unit, dB(A)	Quantity	At-source Noise Mitigation Measures	Noise Reduction from Mitigation Measures, dB(A)	Corrected SWL, dB(A)	Distance, m	Speed, km/h	Angle of view, degree	Operation (30mins)	% on time	Correction						CNL, dB(A)	Total CNL, dB(A)	Criterion, dB(A)
													Time	Distance	Angle of view	Speed	Screening Effect, dB(A) ⁽¹⁾	Facade			
Concrete mixer 2(electric)	Stationary	CNP 045	96	1	Enclosure	-20	76.0	111.8	NA	NA	30	100.0%	0.0	-48.9	NA	NA	0	3	30.1	40	40
Filter Fan (mixing unit) - blower (mixer 2)	Stationary	Other PME	95	1	Enclosure	-20	75.0	111.8	NA	NA	30	100.0%	0.0	-48.9	NA	NA	0	3	29.1		
Truck (Concrete Collection)	Stationary	CNP044	109	1	Enclosure	-20	89.0	111.8	NA	NA	3	10.0%	-10.0	-48.9	NA	NA	0	3	33.1		
Conveyor / Screw Conveyors	Stationary	CNP 041	90	2	Enclosure	-20	73.0	103.4	NA	NA	30	100.0%	0.0	-48.3	NA	NA	0	3	27.7		
Conveyor / Screw Conveyors	Stationary	CNP 041	90	1	Semi-enclosure	-15	75.0	92.7	NA	NA	30	100.0%	0.0	-47.3	NA	NA	0	3	30.7		
Water / Admixture Pump	Stationary	CNP 281	88	1	Semi-enclosure	-15	73.0	98.1	NA	NA	30	100.0%	0.0	-47.8	NA	NA	0	3	28.2		
Pump (silo)	Stationary	CNP 281	88	2	Enclosure	-20	71.0	120.8	NA	NA	30	100.0%	0.0	-49.6	NA	NA	0	3	24.4		
Rd1 Concrete Truck	Haul Road	CNP044	109	2	NA	NA	NA	128.9	15	3.6	NA	N/A	NA	-21.1	-17	-11.8	-10	3	22.1		
Rd2 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	119.3	15	9.4	NA	N/A	NA	-20.8	-12.8	-11.8	-10	3	26.6		
Rd3 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	115.8	15	9.8	NA	N/A	NA	-20.6	-12.6	-11.8	-10	3	27.0		
Rd4 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	112.1	15	3.7	NA	N/A	NA	-20.5	-16.8	-11.8	-10	3	22.9		
Rd5 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	103.4	15	0.7	NA	N/A	NA	-20.1	-24.2	-11.8	-10	3	15.9		
Rd6 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	92.4	15	4.6	NA	N/A	NA	-19.7	-15.9	-11.8	-10	3	24.6		
Rd7 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	88.7	15	21.7	NA	N/A	NA	-19.5	-9.2	-11.8	-10	3	31.5		
Rd8 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	96.1	15	5.1	NA	N/A	NA	-19.8	-15.4	-11.8	-10	3	25.0		
Rd9 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	103.1	15	3.1	NA	N/A	NA	-20.1	-17.7	-11.8	-10	3	22.4		
Rd10 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	114.5	15	4.0	NA	N/A	NA	-20.6	-16.6	-11.8	-10	3	23.0		
Rd11 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	116.7	15	2.6	NA	N/A	NA	-20.7	-18.4	-11.8	-10	3	21.1		
Rd12 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	128.6	15	3.3	NA	N/A	NA	-21.1	-17.3	-11.8	-10	3	21.8		
Rd13 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	128.6	15	3.4	NA	N/A	NA	-21.1	-17.3	-11.8	-10	3	21.8		

Notes:

1 A 10dB(A) noise reduction was applied, as IN1 is 1 storey building, and was blocked by the existing solid wall of the Open Storage located between the Site and the IN1, thus, no line of sight to the entire proposed development as well as the haul road.

Predicted Noise Level at IN2

Fixed-noise Sources	Source Type	Ref. Code	SWL/unit, dB(A)	Quantity	At-source Noise Mitigation Measures	Noise Reduction from Mitigation Measures, dB(A)	Corrected SWL, dB(A)	Distance, m	Speed, km/h	Angle of view, degree	Operation (30mins)	% on time	Correction						CNL, dB(A)	Total CNL, dB(A)	Criterion, dB(A)
													Time	Distance	Angle of view	Speed	Screening Effect, dB(A)	Facade			
Concrete mixer 1(electric)	Stationary	CNP 045	96	0	Enclosure	-20	0.0	221.4	NA	NA	30	100.0%	0.0	-54.9	NA	NA	0	3	-51.9	39	47
Concrete mixer 2(electric)	Stationary	CNP 045	96	1	Enclosure	-20	76.0	213.4	NA	NA	30	100.0%	0.0	-54.6	NA	NA	0	3	24.4		
Filter Fan (mixing unit) - blower (mixer 1)	Stationary	Other PME	95	0	Enclosure	-20	0.0	121.7	NA	NA	30	100.0%	0.0	-49.7	NA	NA	0	3	-46.7		
Filter Fan (mixing unit) - blower (mixer 2)	Stationary	Other PME	95	1	Enclosure	-20	75.0	111.8	NA	NA	30	100.0%	0.0	-48.9	NA	NA	0	3	29.1		
Truck (Concrete Collection)	Stationary	CNP044	109	0	used Semi-enclosure	-20	0.0	221.4	NA	NA	2	6.7%	-11.8	-54.9	NA	NA	0	3	-63.7		
Truck (Concrete Collection)	Stationary	CNP044	109	1	Enclosure	-20	89.0	213.4	NA	NA	3	10.0%	-10.0	-54.6	NA	NA	0	3	27.4		
Conveyor / Screw Conveyors	Stationary	Other PME	90	2	Enclosure	-20	73.0	173.7	NA	NA	30	100.0%	0.0	-52.8	NA	NA	0	3	23.2		
Conveyor / Screw Conveyors	Stationary	Other PME	90	1	Semi-enclosure	-15	75.0	145.3	NA	NA	30	100.0%	0.0	-51.2	NA	NA	0	3	26.8		
Water / Admixture Pump	Stationary	CNP044	88	1	Semi-enclosure	-15	73.0	178.1	NA	NA	30	100.0%	0.0	-53.0	NA	NA	0	3	23.0		
Pump (silo)	Stationary	CNP 281	88	2	Enclosure	-20	71.0	187.2	NA	NA	30	100.0%	0.0	-53.4	NA	NA	0	3	20.6		
Rd1 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	213.4	15	2.8	NA	N/A	NA	-23.3	-18.1	-11.8	-10	3	18.8		
Rd2 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	197.4	15	0.5	NA	N/A	NA	-23	-25.5	-11.8	0	3	21.7		
Rd3 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	177.4	15	0.6	NA	N/A	NA	-22.5	-25	-11.8	0	3	22.7		
Rd4 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	164.3	15	2.6	NA	N/A	NA	-22.2	-18.5	-11.8	0	3	29.5		
Rd5 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	161.9	15	4.0	NA	N/A	NA	-22.1	-16.6	-11.8	0	3	31.5		
Rd6 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	167.7	15	2.9	NA	N/A	NA	-22.2	-18	-11.8	-10	3	20.0		
Rd7 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	189.5	15	2.4	NA	N/A	NA	-22.8	-18.7	-11.8	-10	3	18.7		
Rd8 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	211.2	15	0.8	NA	N/A	NA	-23.2	-23.3	-11.8	-10	3	13.7		
Rd9 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	219.9	15	1.7	NA	N/A	NA	-23.4	-20.2	-11.8	-10	3	16.6		
Rd10 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	222.5	15	4.1	NA	N/A	NA	-23.5	-16.4	-11.8	-10	3	20.3		
Rd11 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	217.4	15	2.0	NA	N/A	NA	-23.4	-19.4	-11.8	-10	4	18.4		
Rd12 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	220.2	15	4.1	NA	N/A	NA	-23.4	-16.4	-11.8	0	3	30.4		
Rd13 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	220.3	15	4.1	NA	N/A	NA	-23.4	-16.4	-11.8	0	3	30.4		

Predicted Noise Level at IN3

Fixed-noise Sources	Source Type	Ref. Code	SWL/unit, dB(A)	Quantity	At-source Noise Mitigation Measures	Noise Reduction from Mitigation Measures, dB(A)	Corrected SWL, dB(A)	Distance, m	Speed, km/h	Angle of view, degree	Operation (30mins)	% on time	Correction						CNL, dB(A)	Total CNL, dB(A)	Criterion
													Time	Distance	Angle of view	Speed	Screening Effect, dB(A)	Facade			
Concrete mixer 1(electric)	Stationary	CNP 045	96	0	Enclosure	-20	0.0	248.1	NA	NA	30	100.0%	0.0	-55.9	NA	NA	0	3	-52.9	39	47
Concrete mixer 2(electric)	Stationary	CNP 045	96	1	Enclosure	-20	76.0	241.4	NA	NA	30	100.0%	0.0	-55.6	NA	NA	0	3	23.4		
Filter Fan (mixing unit) - blower (mixer 1)	Stationary	Other PME	95	0	Enclosure	-20	0.0	121.7	NA	NA	30	100.0%	0.0	-49.7	NA	NA	0	3	-46.7		
Filter Fan (mixing unit) - blower (mixer 2)	Stationary	Other PME	95	1	Enclosure	-20	75.0	111.8	NA	NA	30	100.0%	0.0	-48.9	NA	NA	0	3	29.1		
Truck (Concrete Collection)	Stationary	CNP044	109	0	sed Semi-enclosure	-20	0.0	248.1	NA	NA	2	6.7%	-11.8	-55.9	NA	NA	0	3	-64.7		
Truck (Concrete Collection)	Stationary	CNP044	109	1	Enclosure	-20	89.0	241.4	NA	NA	3	10.0%	-10.0	-55.6	NA	NA	0	3	26.4		
Conveyor / Screw Conveyors	Stationary	Other PME	90	2	Enclosure	-20	73.0	202.2	NA	NA	30	100.0%	0.0	-54.1	NA	NA	0	3	21.9		
Conveyor / Screw Conveyors	Stationary	Other PME	90	1	Semi-enclosure	-15	75.0	182.5	NA	NA	30	100.0%	0.0	-53.2	NA	NA	0	3	24.8		
Water / Admixture Pump	Stationary	CNP044	88	1	Semi-enclosure	-15	73.0	208.1	NA	NA	30	100.0%	0.0	-54.3	NA	NA	0	3	21.7		
Pump (silo)	Stationary	CNP 281	88	2	Enclosure	-20	71.0	213.3	NA	NA	30	100.0%	0.0	-54.6	NA	NA	0	3	19.4		
Rd1 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	238.7	15	2.9	NA	N/A	NA	-23.8	-18	-11.8	-10	3	18.4		
Rd2 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	223.9	15	1.3	NA	N/A	NA	-23.5	-21.5	-11.8	-10	3	15.2		
Rd3 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	204.4	15	1.5	NA	N/A	NA	-23.1	-20.9	-11.8	0	3	26.2		
Rd4 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	192.4	15	2.5	NA	N/A	NA	-22.8	-18.6	-11.8	0	3	28.8		
Rd5 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	191.6	15	3.2	NA	N/A	NA	-22.8	-17.5	-11.8	0	3	29.9		
Rd6 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	199.0	15	1.9	NA	N/A	NA	-23.0	-19.7	-11.8	0	3	27.5		
Rd7 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	220.7	15	3.3	NA	N/A	NA	-23.4	-17.3	-11.8	0	3	29.5		
Rd8 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	241.3	15	1.0	NA	N/A	NA	-23.8	-22.4	-11.8	-10	3	14.0		
Rd9 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	249.3	15	1.7	NA	N/A	NA	-24.0	-20.1	-11.8	-10	3	16.1		
Rd10 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	250.4	15	3.6	NA	N/A	NA	-24.0	-17	-11.8	-10	3	19.2		
Rd11 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	244.8	15	2.1	NA	N/A	NA	-23.9	-19.4	-11.8	-10	3	16.9		
Rd12 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	245.9	15	3.6	NA	N/A	NA	-23.9	-17	-11.8	0	3	29.3		
Rd13 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	245.9	15	3.6	NA	N/A	NA	-23.9	-17	-11.8	0	3	29.3		

Predicted Noise Level at IN4

Fixed-noise Sources	Source Type	Ref. Code	SWL/unit, dB(A)	Quantity	At-source Noise Mitigation Measures	Noise Reduction from Mitigation Measures, dB(A)	Corrected SWL, dB(A)	Distance, m	Speed, km/h	Angle of view, degree	Operation (30mins)	% on time	Correction						CNL, dB(A)	Total CNL, dB(A)	Criterion
													Time	Distance	Angle of view	Speed	Screening Effect, dB(A) ¹⁾	Facade			
Concrete mixer 1(electric)	Stationary	CNP 045	96	0	Enclosure	-20	0.0	253.5	NA	NA	30	100.0%	0.0	-56.1	NA	NA	0	3	-53.1	34	49
Concrete mixer 2(electric)	Stationary	CNP 045	96	1	Enclosure	-20	76.0	259.9	NA	NA	30	100.0%	0.0	-56.3	NA	NA	0	3	22.7		
Filter Fan (mixing unit) - blower (mixer 1)	Stationary	Other PME	95	0	Enclosure	-20	0.0	121.7	NA	NA	30	100.0%	0.0	-49.7	NA	NA	0	3	-46.7		
Filter Fan (mixing unit) - blower (mixer 2)	Stationary	Other PME	95	1	Enclosure	-20	75.0	111.8	NA	NA	30	100.0%	0.0	-48.9	NA	NA	0	3	29.1		
Truck (Concrete Collection)	Stationary	CNP044	109	0	sed Semi-enclosure	-20	0.0	253.5	NA	NA	2	6.7%	-11.8	-56.1	NA	NA	0	3	-64.9		
Truck (Concrete Collection)	Stationary	CNP044	109	1	Enclosure	-20	89.0	259.9	NA	NA	3	10.0%	-10.0	-56.3	NA	NA	0	3	25.7		
Conveyor / Screw Conveyors	Stationary	Other PME	90	2	Enclosure	-20	73.0	245.1	NA	NA	30	100.0%	0.0	-55.8	NA	NA	0	3	20.2		
Conveyor / Screw Conveyors	Stationary	Other PME	90	1	Semi-enclosure	-15	75.0	272.1	NA	NA	30	100.0%	0.0	-56.7	NA	NA	0	4	22.3		
Water / Admixture Pump	Stationary	Other PME	88	1	Semi-enclosure	-15	73.0	294.0	NA	NA	30	100.0%	0.0	-57.4	NA	NA	0	3	18.6		
Pump (silo)	Stationary	CNP 281	88	2	Enclosure	-20	71.0	288.4	NA	NA	30	100.0%	0.0	-57.2	NA	NA	0	3	16.8		
Rd1 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	263.9	15	2.9	NA	N/A	NA	-24.2	-17.9	-11.8	-10	3	18.1		
Rd2 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	277.8	15	1.3	NA	N/A	NA	-24.4	-21.4	-11.8	-10	3	14.4		
Rd3 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	296.9	15	1.1	NA	N/A	NA	-24.7	-22.1	-11.8	-10	3	13.4		
Rd4 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	309.0	15	1.5	NA	N/A	NA	-24.9	-20.7	-11.8	-10	3	14.6		
Rd5 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	310.4	15	2.0	NA	N/A	NA	-24.9	-19.5	-11.8	-10	3	15.8		
Rd6 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	304.4	15	1.6	NA	N/A	NA	-24.8	-20.4	-11.8	-10	3	15.0		
Rd7 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	282.6	15	1.4	NA	N/A	NA	-24.5	-21.1	-11.8	-10	3	14.6		
Rd8 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	260.9	15	0.7	NA	N/A	NA	-24.2	-24	-11.8	-10	3	12.0		
Rd9 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	252.4	15	1.6	NA	N/A	NA	-24.0	-20.5	-11.8	-10	3	15.7		
Rd10 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	250.9	15	3.5	NA	N/A	NA	-24.0	-17.1	-11.8	-10	3	19.1		
Rd11 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	256.6	15	2.0	NA	N/A	NA	-24.1	-19.5	-11.8	-10	3	16.6		
Rd12 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	256.6	15	3.3	NA	N/A	NA	-24.1	-17.4	-11.8	-10	3	18.7		
Rd13 Concrete truck	Haul Road	CNP044	109	2	NA	NA	NA	256.5	15	3.3	NA	N/A	NA	-24.1	-17.4	-11.8	-10	3	18.7		

Notes:

1 A 10dB(A) noise reduction was applied, as IN4 is 1 storey building, and was blocked by the existing buildings located between the Site and the IN4, thus, no line of sight to the entire proposed development as well as the haul road.

Evening – Scenario 2

Predicted Noise Level at IN1

Fixed-noise Sources	Source Type	Ref. Code	SWL/unit, dB(A)	Quantity	At-source Noise Mitigation Measures	Noise Reduction from Mitigation Measures, dB(A)	Corrected SWL, dB(A)	Distance, m	Speed, km/h	Angle of view, degree	Operation (30mins)	% on time	Correction						CNL, dB(A)	Total CNL, dB(A)	Criterion, dB(A)
													Time	Distance	Angle of view	Speed	Screening Effect, dB(A) ¹⁾	Facade			
Conveyor / Screw Conveyors	Stationary	CNP 041	90	2	Enclosure	-20	73.0	103.4	NA	NA	30	100.0%	0.0	-48.3	NA	NA	0	3	27.7	40	40
Conveyor / Screw Conveyors	Stationary	CNP 041	90	1	Semi-enclosure	-15	75.0	92.7	NA	NA	30	100.0%	0.0	-47.3	NA	NA	0	3	30.7		
Water / Admixture Pump	Stationary	CNP 281	88	1	Semi-enclosure	-15	73.0	98.1	NA	NA	30	100.0%	0.0	-47.8	NA	NA	0	3	28.2		
Pump (mounted on unloading tank)	Stationary	CNP 281	88	2	Enclosure	-20	71.0	120.8	NA	NA	30	100.0%	0.0	-49.6	NA	NA	0	3	24.4		
Filter Fan (silo) - blower	Stationary		95	2	Semi-enclosure	-15	83.0	120.8	NA	NA	30	100.0%	0.0	-49.6	NA	NA	0	3	36.4		
Aggregates Truck	Haul Road	Other PME	105	5	NA	NA	NA	128.9	15	3.6	NA	N/A	NA	-21.1	-17.0	-11.8	-10	3	22.1		
Cement / PFA / GGBS/ Admixture tanker	Haul Road	Other PME	105	1	NA	NA	NA	128.9	15	3.6	NA	N/A	NA	-21.1	-17	-11.8	-10	3	15.1		
Lorry	Haul Road	Other PME	105	6	NA	NA	NA	128.9	15	3.6	NA	N/A	NA	-21.1	-17	-11.8	-10	3	22.9		
Aggregates Truck	Haul Road	Other PME	105	5	NA	NA	NA	119.3	15	9.4	NA	N/A	NA	-20.8	-12.8	-11.8	-10	3	26.6		
Cement / PFA / GGBS/ Admixture tanker	Haul Road	Other PME	105	1	NA	NA	NA	119.3	15	9.4	NA	N/A	NA	-20.8	-12.8	-11.8	-10	3	19.6		
Aggregates Truck	Haul Road	Other PME	105	5	NA	NA	NA	115.8	15	9.8	NA	N/A	NA	-20.6	-12.6	-11.8	-10	3	27.0		
Lorry	Haul Road	Other PME	105	1	NA	NA	NA	115.8	15	9.8	NA	N/A	NA	-20.6	-12.6	-11.8	-10	3	20.0		
Aggregates Truck	Haul Road	Other PME	105	2	NA	NA	NA	112.1	15	3.7	NA	N/A	NA	-20.5	-16.8	-11.8	-10	3	18.9		
Lorry	Haul Road	Other PME	105	4	NA	NA	NA	112.1	15	3.7	NA	N/A	NA	-20.5	-16.8	-11.8	-10	3	21.9		
Aggregates Truck	Haul Road	Other PME	105	2	NA	NA	NA	103.4	15	0.7	NA	N/A	NA	-20.1	-24.2	-11.8	-10	3	11.9		
Lorry	Haul Road	Other PME	105	4	NA	NA	NA	103.4	15	0.7	NA	N/A	NA	-20.1	-24.2	-11.8	-10	3	14.9		
Lorry	Haul Road	Other PME	105	6	NA	NA	NA	92.4	15	4.6	NA	N/A	NA	-19.7	-15.9	-11.8	-10	3	25.4		
Lorry	Haul Road	Other PME	105	6	NA	NA	NA	88.7	15	21.7	NA	N/A	NA	-19.5	-9.2	-11.8	-10	3	32.3		
Lorry	Haul Road	Other PME	105	6	NA	NA	NA	107.9	15	2.7	NA	N/A	NA	-20.3	-18.3	-11.8	-10	3	22.4		

Notes:

- 1 A 10dB(A) noise reduction was applied, as IN1 is 1 storey building, and was blocked by the existing solid wall of the Open Storage located between the Site and the IN1, thus, no line of sight to the entire proposed development as well as the haul road.

Predicted Noise Level at IN2

Fixed-noise Sources	Source Type	Ref. Code	SWL/unit, dB(A)	Quantity	At-source Noise Mitigation Measures	Noise Reduction from Mitigation Measures, dB(A)	Corrected SWL, dB(A)	Distance, m	Speed, km/h	Angle of view, degree	Operation (30mins)	% on time	Correction						CNL, dB(A)	Total CNL, dB(A)	Criterion, dB(A)
													Time	Distance	Angle of view	Speed	Screening Effect, dB(A)	Facade			
Conveyor / Screw Conveyors	Stationary	CNP 041	90	2	Enclosure	-20	73.0	173.7	NA	NA	30	100.0%	0.0	-52.8	NA	NA	0	3	23.2	40	47
Conveyor / Screw Conveyors	Stationary	CNP 041	90	1	Semi-enclosure	-15	75.0	145.3	NA	NA	30	100.0%	0.0	-51.2	NA	NA	0	3	26.8		
Water / Admixture Pump	Stationary	CNP 281	88	1	Semi-enclosure	-15	73.0	178.1	NA	NA	30	100.0%	0.0	-53.0	NA	NA	0	3	23.0		
Pump (mounted on unloading tank)	Stationary	CNP 281	88	2	NA	-20	71.0	187.2	NA	NA	30	100.0%	0.0	-53.4	NA	NA	0	3	20.6		
Filter Fan (silo) - blower	Stationary	Other PME	95	2	Semi-enclosure	-15	83.0	187.2	NA	NA	30	100.0%	0.0	-53.4	NA	NA	0	3	32.6		
Aggregates Truck	Haul Road	Other PME	105	5	NA	NA	NA	213.4	15	2.8	NA	N/A	NA	-23.3	-18.1	-11.8	-10	3	18.8		
Cement / PFA / GGBS/ Admixture tanker	Haul Road	Other PME	105	1	NA	NA	NA	213.4	15	2.8	NA	N/A	NA	-23.3	-18.1	-11.8	-10	3	11.8		
Lorry	Haul Road	Other PME	105	6	NA	NA	NA	213.4	15	2.8	NA	N/A	NA	-23.3	-18.1	-11.8	-10	3	19.6		
Aggregates Truck	Haul Road	Other PME	105	5	NA	NA	NA	197.4	15	0.5	NA	N/A	NA	-23	-25.5	-11.8	0	3	21.7		
Cement / PFA / GGBS/ Admixture tanker	Haul Road	Other PME	105	1	NA	NA	NA	197.4	15	0.5	NA	N/A	NA	-23	-25.5	-11.8	0	3	14.7		
Aggregates Truck	Haul Road	Other PME	105	5	NA	NA	NA	177.4	15	0.6	NA	N/A	NA	-22.5	-25	-11.8	0	3	22.7		
Lorry	Haul Road	Other PME	105	1	NA	NA	NA	177.4	15	0.6	NA	N/A	NA	-22.5	-25	-11.8	0	3	15.7		
Aggregates Truck	Haul Road	Other PME	105	2	NA	NA	NA	164.3	15	2.6	NA	N/A	NA	-22.2	-18.5	-11.8	0	3	25.5		
Lorry	Haul Road	Other PME	105	4	NA	NA	NA	164.3	15	2.6	NA	N/A	NA	-22.2	-18.5	-11.8	0	3	28.5		
Aggregates Truck	Haul Road	Other PME	105	2	NA	NA	NA	161.9	15	4.0	NA	N/A	NA	-22.1	-16.6	-11.8	0	3	27.5		
Lorry	Haul Road	Other PME	105	4	NA	NA	NA	161.9	15	4.0	NA	N/A	NA	-22.1	-16.6	-11.8	0	3	30.5		
Lorry	Haul Road	Other PME	105	6	NA	NA	NA	167.7	15	2.9	NA	N/A	NA	-22.2	-18	-11.8	-10	3	20.8		
Lorry	Haul Road	Other PME	105	6	NA	NA	NA	189.5	15	2.4	NA	N/A	NA	-22.8	-18.7	-11.8	-10	3	19.5		
Lorry	Haul Road	Other PME	105	6	NA	NA	NA	206.4	15	8.0	NA	N/A	NA	-23.1	-13.5	-11.8	0	3	34.4		

Predicted Noise Level at IN3

Fixed-noise Sources	Source Type	Ref. Code	SWL/unit, dB(A)	Quantity	At-source Noise Mitigation Measures	Noise Reduction from Mitigation Measures, dB(A)	Corrected SWL, dB(A)	Distance, m	Speed, km/h	Angle of view, degree	Operation (30mins)	% on time	Correction						CNL, dB(A)	Total CNL, dB(A)	Criterion, dB(A)
													Time	Distance	Angle of view	Speed	Screening Effect, dB(A)	Facade			
Conveyor / Screw Conveyors	Stationary	CNP 041	90	2	Enclosure	-20	73.0	202.2	NA	NA	30	100.0%	0.0	-54.1	NA	NA	0	3	21.9	39	47
Conveyor / Screw Conveyors	Stationary	CNP 041	90	1	Semi-enclosure	-15	75.0	182.5	NA	NA	30	100.0%	0.0	-53.2	NA	NA	0	3	24.8		
Water / Admixture Pump	Stationary	CNP 281	88	1	Semi-enclosure	-15	73.0	208.1	NA	NA	30	100.0%	0.0	-54.3	NA	NA	0	3	21.7		
Pump (mounted on unloading tank)	Stationary	CNP 281	88	2	NA	-20	71.0	213.3	NA	NA	30	100.0%	0.0	-54.6	NA	NA	0	3	19.4		
Filter Fan (silo) - blower	Stationary	Other PME	95	2	Semi-enclosure	-15	83.0	213.3	NA	NA	30	100.0%	0.0	-54.6	NA	NA	0	3	31.4		
Rd1	Aggregates Truck	Haul Road	Other PME	105	5	NA	NA	238.7	15	2.9	NA	N/A	NA	-23.8	-18.0	-11.8	-10	3	18.4		
	Cement / PFA / GGBS/ Admixture tanker	Haul Road	Other PME	105	1	NA	NA	238.7	15	2.9	NA	N/A	NA	-23.8	-18	-11.8	-10	3	11.4		
Rd2	Lorry	Haul Road	Other PME	105	6	NA	NA	238.7	15	2.9	NA	N/A	NA	-23.8	-18	-11.8	-10	3	19.2		
	Aggregates Truck	Haul Road	Other PME	105	5	NA	NA	223.9	15	1.3	NA	N/A	NA	-23.5	-21.5	-11.8	-10	3	15.2		
Rd3	Cement / PFA / GGBS/ Admixture tanker	Haul Road	Other PME	105	1	NA	NA	223.9	15	1.3	NA	N/A	NA	-23.5	-21.5	-11.8	-10	3	8.2		
	Aggregates Truck	Haul Road	Other PME	105	5	NA	NA	204.4	15	1.5	NA	N/A	NA	-23.1	-20.9	-11.8	0	3	26.2		
Rd4	Lorry	Haul Road	Other PME	105	1	NA	NA	204.4	15	1.5	NA	N/A	NA	-23.1	-20.9	-11.8	0	3	19.2		
	Aggregates Truck	Haul Road	Other PME	105	2	NA	NA	192.4	15	2.5	NA	N/A	NA	-22.8	-18.6	-11.8	0	3	24.8		
Rd5	Lorry	Haul Road	Other PME	105	4	NA	NA	192.4	15	2.5	NA	N/A	NA	-22.8	-18.6	-11.8	0	3	27.8		
	Aggregates Truck	Haul Road	Other PME	105	2	NA	NA	191.6	15	3.2	NA	N/A	NA	-22.8	-17.5	-11.8	0	3	25.9		
Rd6	Lorry	Haul Road	Other PME	105	4	NA	NA	191.6	15	3.2	NA	N/A	NA	-22.8	-17.5	-11.8	0	3	28.9		
	Lorry	Haul Road	Other PME	105	6	NA	NA	199.0	15	1.9	NA	N/A	NA	-23	-19.7	-11.8	0	3	28.3		
Rd7	Lorry	Haul Road	Other PME	105	6	NA	NA	220.7	15	3.3	NA	N/A	NA	-23.4	-17.3	-11.8	0	3	30.3		
Rd14	Lorry	Haul Road	Other PME	105	6	NA	NA	234.8	15	7.0	NA	N/A	NA	-23.7	-14.1	-11.8	0	3	33.2		

Predicted Noise Level at IN4

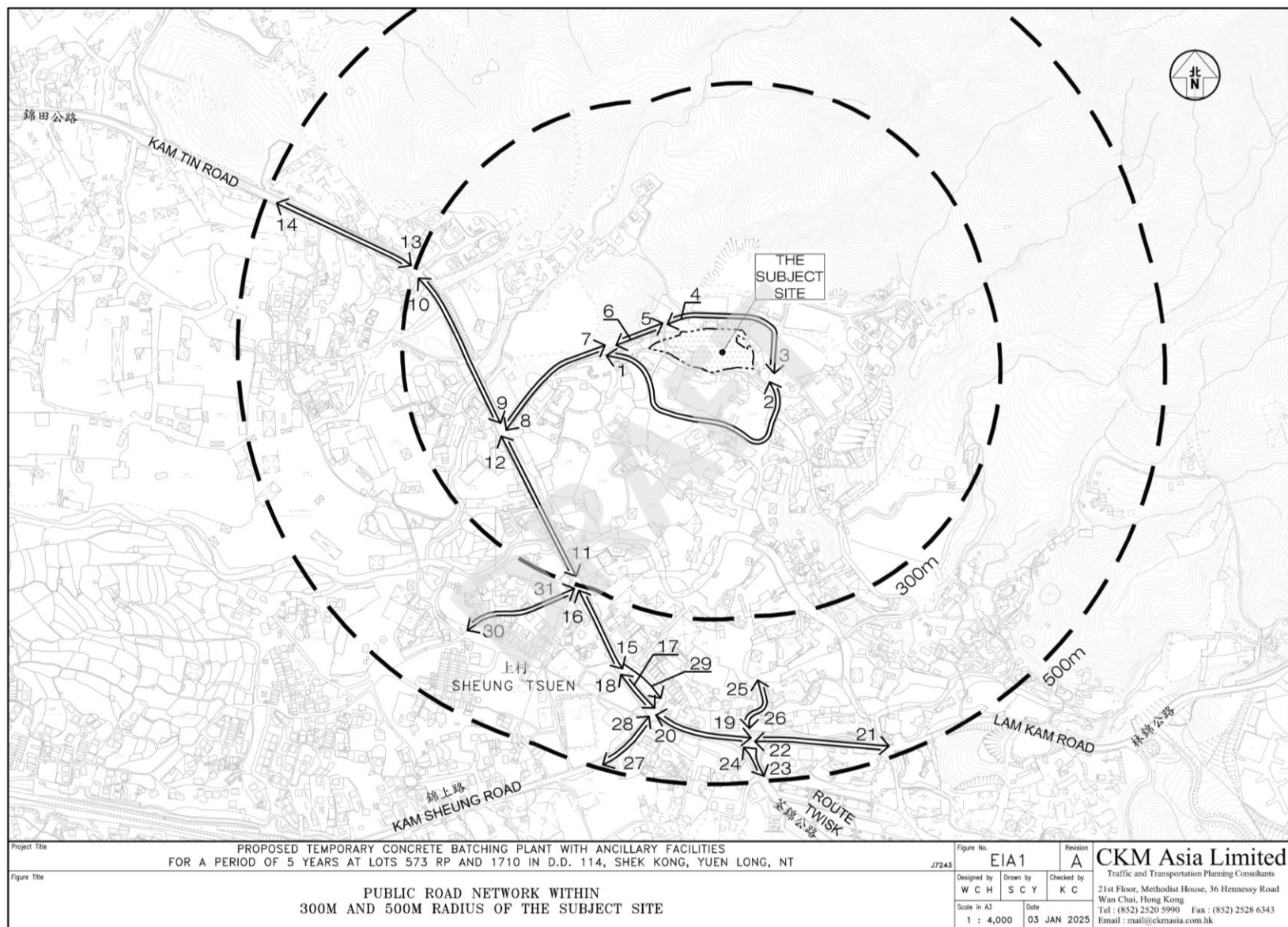
Fixed-noise Sources	Source Type	Ref. Code	SWL/unit, dB(A)	Quantity	At-source Noise Mitigation Measures	Noise Reduction from Mitigation Measures, dB(A)	Corrected SWL, dB(A)	Distance, m	Speed, km/h	Angle of view, degree	Operation (30mins)	% on time	Correction						CNL, dB(A)	Total CNL, dB(A)	Criterion, dB(A)
													Time	Distance	Angle of view	Speed	Screening Effect, dB(A) ⁽¹⁾	Facade			
Conveyor / Screw Conveyors	Stationary	CNP 041	90	2	Enclosure	-20	73.0	245.1	NA	NA	30	100.0%	0.0	-55.8	NA	NA	0	3	20.2	36	49
Conveyor / Screw Conveyors	Stationary	CNP 041	90	1	Semi-enclosure	-15	75.0	272.1	NA	NA	30	100.0%	0.0	-56.7	NA	NA	0	4	22.3		
Water / Admixture Pump	Stationary	CNP 281	88	1	Semi-enclosure	-15	73.0	294.0	NA	NA	30	100.0%	0.0	-57.4	NA	NA	0	3	18.6		
Pump (mounted on unloading tank)	Stationary	CNP 281	88	2	NA	-20	71.0	288.4	NA	NA	30	100.0%	0.0	-57.2	NA	NA	0	3	16.8		
Filter Fan (silo) - blower	Stationary	CNP044	109	2	Semi-enclosure	-15	97.0	288.4	NA	NA	5	16.7%	-7.8	-57.2	NA	NA	0	3	35.0		
Rd1	Aggregates Truck	Haul Road	Other PME	105	5	NA	NA	263.9	15	2.9	NA	N/A	NA	-24.2	-17.9	-11.8	-10	3	18.1		
	Cement / PFA / GGBS/ Admixture tanker	Haul Road	Other PME	105	1	NA	NA	263.9	15	2.9	NA	N/A	NA	-24.2	-17.9	-11.8	-10	3	11.1		
Rd2	Lorry	Haul Road	Other PME	105	6	NA	NA	263.9	15	2.9	NA	N/A	NA	-24.2	-17.9	-11.8	-10	3	18.9		
	Aggregates Truck	Haul Road	Other PME	105	5	NA	NA	277.8	15	1.3	NA	N/A	NA	-24.4	-21.4	-11.8	-10	3	14.4		
Rd3	Cement / PFA / GGBS/ Admixture tanker	Haul Road	Other PME	105	1	NA	NA	277.8	15	1.3	NA	N/A	NA	-24.4	-21.4	-11.8	-10	3	7.4		
	Aggregates Truck	Haul Road	Other PME	105	5	NA	NA	296.9	15	1.1	NA	N/A	NA	-24.7	-22.1	-11.8	-10	3	13.4		
Rd4	Lorry	Haul Road	Other PME	105	1	NA	NA	296.9	15	1.1	NA	N/A	NA	-24.7	-22.1	-11.8	-10	3	6.4		
	Aggregates Truck	Haul Road	Other PME	105	2	NA	NA	309.0	15	1.5	NA	N/A	NA	-24.9	-20.7	-11.8	-10	3	10.6		
Rd5	Lorry	Haul Road	Other PME	105	4	NA	NA	309.0	15	1.5	NA	N/A	NA	-24.9	-20.7	-11.8	-10	3	13.6		
	Aggregates Truck	Haul Road	Other PME	105	2	NA	NA	310.4	15	2.0	NA	N/A	NA	-24.9	-19.5	-11.8	-10	3	11.8		
Rd6	Lorry	Haul Road	Other PME	105	4	NA	NA	310.4	15	2.0	NA	N/A	NA	-24.9	-19.5	-11.8	-10	3	14.8		
	Lorry	Haul Road	Other PME	105	6	NA	NA	304.4	15	1.6	NA	N/A	NA	-24.8	-20.4	-11.8	-10	3	15.8		
Rd7	Lorry	Haul Road	Other PME	105	6	NA	NA	282.6	15	1.4	NA	N/A	NA	-24.5	-21.1	-11.8	-10	3	15.4		
Rd14	Lorry	Haul Road	Other PME	105	6	NA	NA	266.5	15	6.2	NA	N/A	NA	-24.3	-14.6	-11.8	-10	3	22.1		

Notes:

1 A 10dB(A) noise reduction was applied, as IN4 is 1 storey building, and was blocked by the existing buildings located between the Site and the IN4, thus, no line of sight to the entire proposed development as well as the haul road.

Appendix H Traffic Forecasts for Year 2031

Link ID	Road Section	With the Site						Without the Site					
		AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
		Traffic Flows (veh/hr)	%LV	%HV	Traffic Flows (veh/hr)	%LV	%HV	Traffic Flows (veh/hr)	%LV	%HV	Traffic Flows (veh/hr)	%LV	%HV
RD_001	Chun Yiu Road	10	50.0%	50.0%	30	40.0%	60.0%	10	50.0%	50.0%	30	40.0%	60.0%
RD_002	Chun Yiu Road	15	69.2%	30.8%	25	44.0%	56.0%	15	69.2%	30.8%	25	44.0%	56.0%
RD_003	Chun Yiu Road	25	68.2%	31.8%	25	54.5%	45.5%	25	68.2%	31.8%	25	54.5%	45.5%
RD_004	Chun Yiu Road	10	100.0%	0.0%	35	37.4%	62.6%	10	100.0%	0.0%	35	37.4%	62.6%
RD_005	Chun Yiu Road	45	34.1%	65.9%	60	20.0%	80.0%	25	68.2%	31.8%	25	54.5%	45.5%
RD_006	Chun Yiu Road	30	21.4%	78.6%	70	17.1%	82.9%	10	100.0%	0.0%	35	37.4%	62.6%
RD_007	Chun Yiu Road	60	41.4%	58.6%	85	26.2%	73.8%	40	66.7%	33.3%	50	47.9%	52.1%
RD_008	Chun Yiu Road	40	30.8%	69.2%	100	22.2%	77.8%	20	70.5%	29.5%	65	36.0%	64.0%
RD_009	Kam Tin Road	485	67.4%	32.6%	690	51.0%	49.0%	460	70.4%	29.6%	655	53.9%	46.1%
RD_010	Kam Tin Road	500	69.1%	30.9%	635	46.4%	53.6%	480	72.4%	27.6%	595	49.3%	50.7%
RD_011	Kam Tin Road	470	66.9%	33.1%	510	66.9%	33.1%	435	72.8%	27.2%	460	75.0%	25.0%
RD_012	Kam Tin Road	505	68.6%	31.4%	445	66.3%	33.7%	470	74.2%	25.8%	390	75.5%	24.5%



Appendix I Result of Traffic Noise Impact Assessment

Scenario: Road Traffic Noise - "Before" Scenario

	Existing NSRs			
Floor	IN1	IN2	IN3	IN4
G/F	67.8	54.1	52.6	68.7
1/F	-	54.2	-	-
Criterion	70	70	70	70
Max	68	54	53	69
Compliance	Y	Y	Y	Y

Scenario: Road Traffic Noise - "After" Scenario

	Existing NSRs			
Floor	IN1	IN2	IN3	IN4
G/F	67.9	54.4	53.2	69.5
1/F	-	54.5	-	-
Criterion	70	70	70	70
Max	68	55	53	70
Compliance	Y	Y	Y	Y

Appendix J Calculation of Sewage Generation

Calculation of Sewage Generation

Calculation of Sewage Generation from the Proposed Development			Remarks/ Justification
1) Sewage generated by Staff			
No of onsite staff	=	12 staff	As advised by the Applicant
Unit Flow Factor (UFF) per staff	=	0.23 m ³ /day-staff	Refer to "Commercial Employee" and "J9 Construction" of Table T-2 of reference 1 ^[Note 1] .
Total Sewage Generation	=	2,760.0 L/day	(a)
2) Sewage generated by Truck Drivers			
Total No of toilet visits per day	=	100.0 toilet visit/day	As advised by the Applicant, no more than 100 truck drivers (i.e. non-site staff) use the toilet on-site each day.
Flow rate per flushing	=	7.5 L/flush	(b) Refer to BEAM Plus New Buildings Version 1.2), the estimated toilet flush of 7.5 L/flush. ^[Note 3]
Flow rate per hand washing	=	1.4 L/per hand washing	(c) Refer to BEAM Plus New Buildings Version 1.2, Wastewater used for handwashing (8.3L/min x 10s) ^[Note 3]
Flow rate from micturition per visit	=	0.2 L/per visit	(d) Refer to Human's micturition is assumed to be 200mL in accordance with p. 3081 of "Magill's Medical Guide". 6th ed.. various medical editors. Salem Press. USA. 2011. ^[Note 4]
Unit flow rate (for truck driver)	=	9.1 L/visit	(e) (b) + (c) + (d)
Total Sewage Generation	=	908.3 L/day	(f)
Total Average Daily Dry Weather Flow	=	3,668 L/day	(a) + (f)
	=	3.67 m³/day	
Container Toilets			
The Minimum Total Storage Capacity of Sewage Storage Tank	=	3 m ³ / tank	As advised by the Applicant
No. of containers required (3,000L each)	=	2 tanks	

Notes:

- Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning Version 1.0, Environmental Protection Department of HK Government, March 2005
- The volume of flushing system is advised by the supplier of chemical/container toilet.
- With reference to BEAM Plus New Buildings Version 1.2 in July 2012, it is assumed that water required for hand washing = 8.3L/mins x 10s.
And the estimated toilet flush volume of toilet is about 7.5 L/flush.
- Human's micturition is assumed to be 200mL in accordance with p. 3081 of "Magill's Medical Guide", 6th ed., various medical editors, Salem Press, USA, 2011.

Appendix K Historical Aerial Photographs

Figure J-1: Historical Aerial Photos in Year 1963_Photo No.: 8394

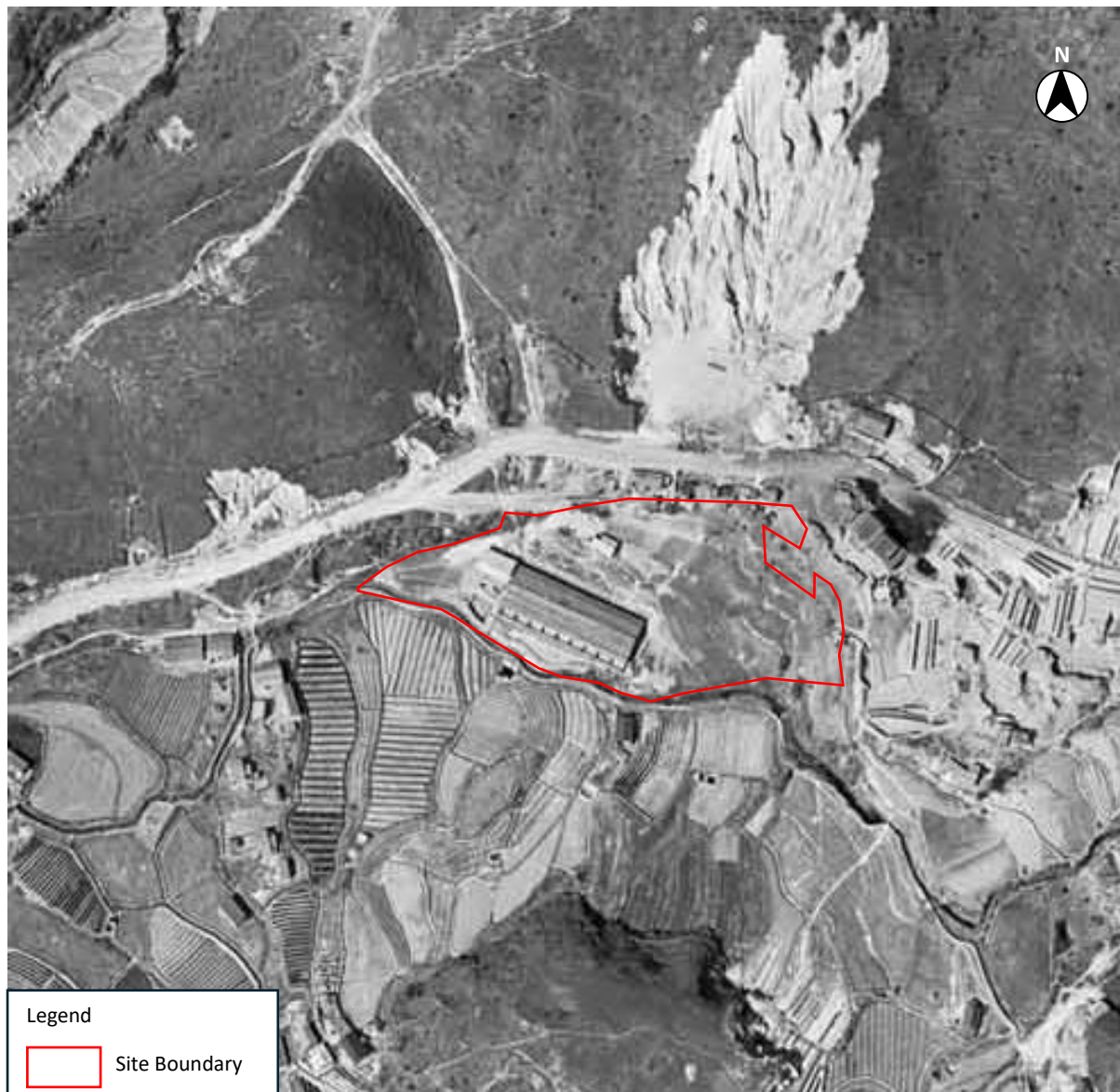


Figure J-2: Historical Aerial Photos in Year 1973_Photo ID: 07328

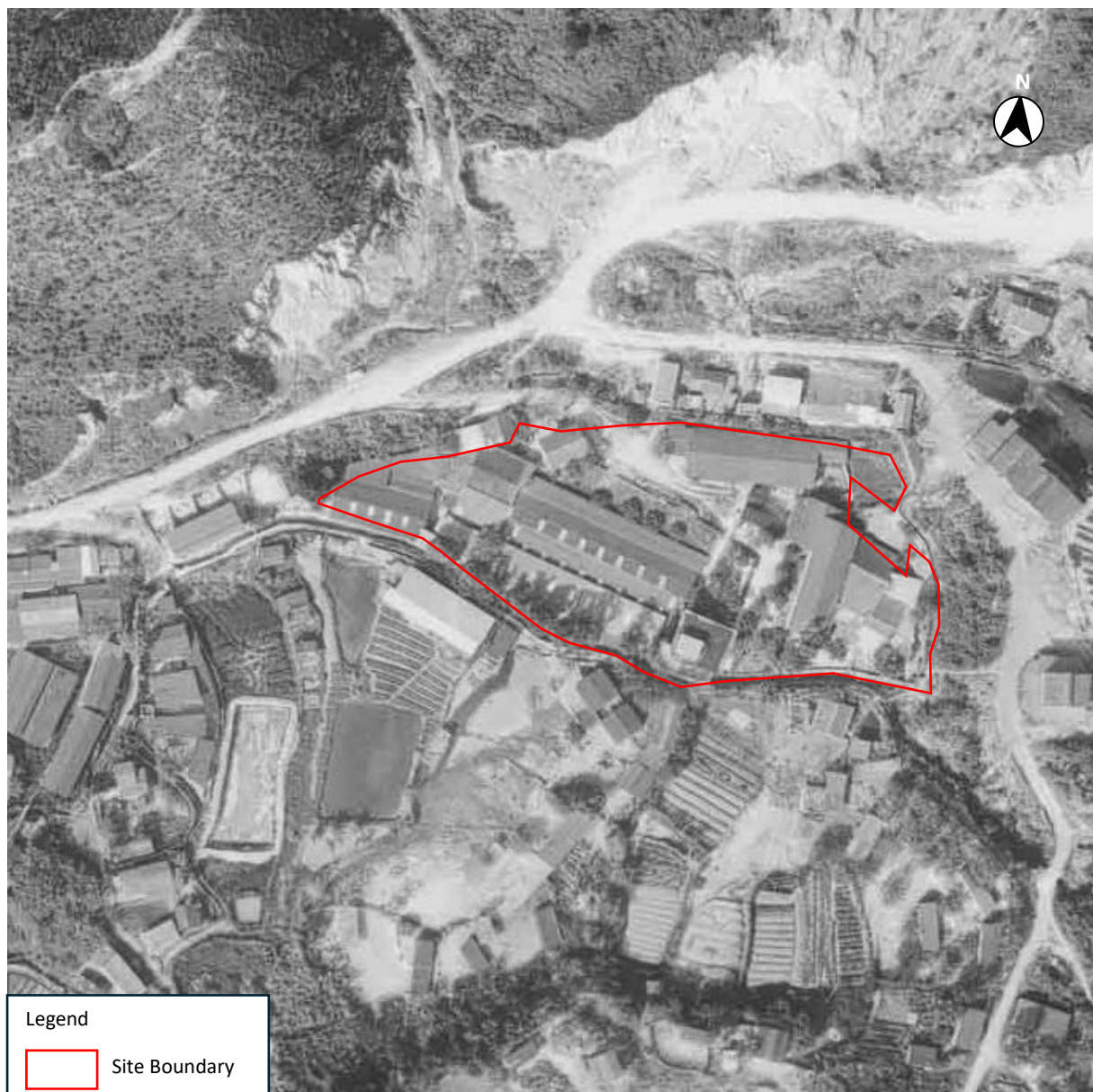


Figure J-3: Historical Aerial Photos in Year 1982_Photo ID: 42976

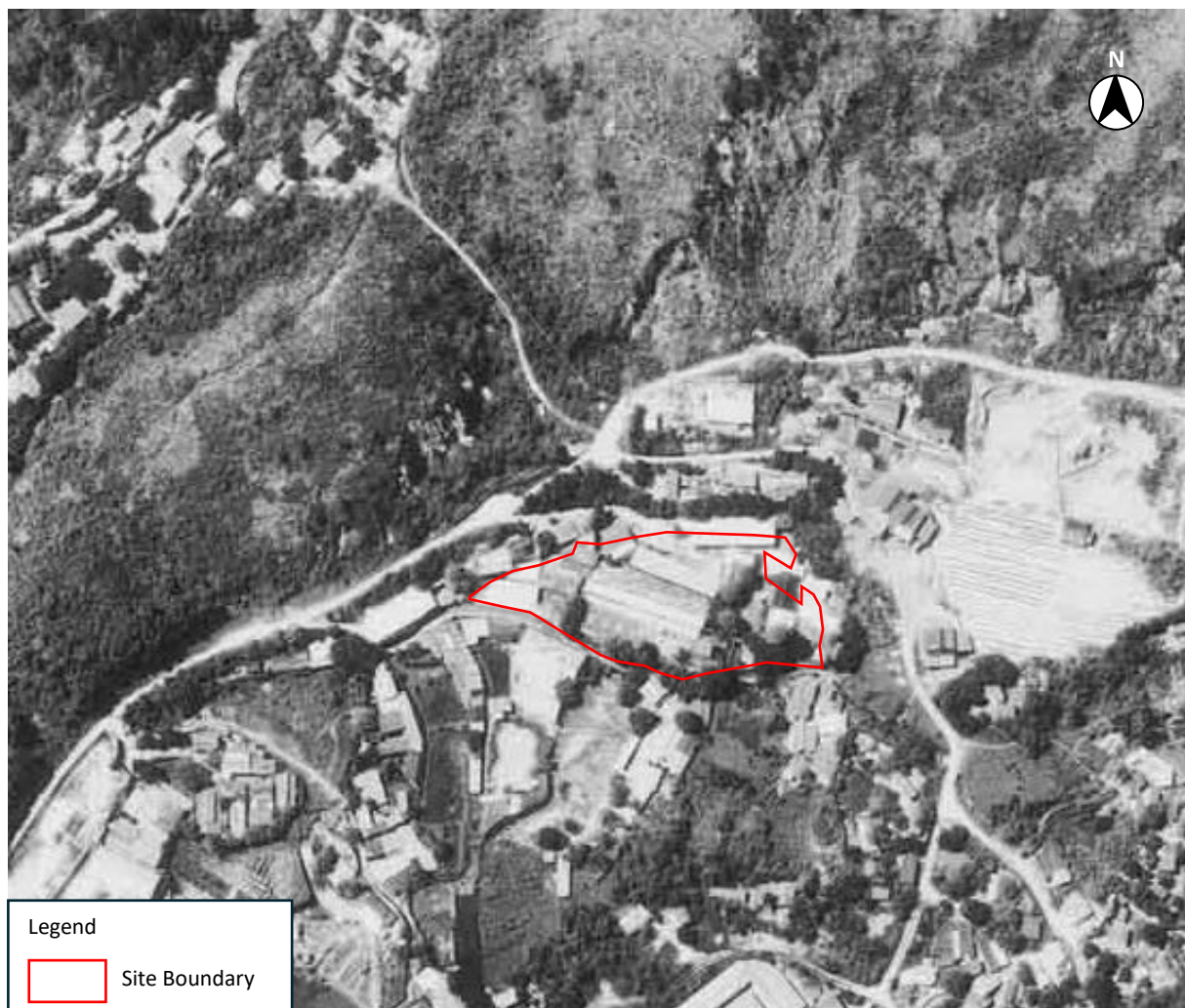


Figure J-4: Historical Aerial Photos in Year 1993_Photo ID: CN05931



Figure J-5: Historical Aerial Photos in Year 2003_Photo ID: CW52218



Figure J-6: Historical Aerial Photos in Year 2013_Photo ID: S43741



Figure J-7: Historical Aerial Photos in Year 2023_Photo ID: E188907C



Appendix L Site Walkover Checklist and Site Photos

Annex C1

Site Walkover Checklist

GENERAL SITE DETAILS

SITE OWNER/CLIENT Join Bright Warehousing Limited

PROPERTY ADDRESS Lots 573 RP and 1710 in D.D. 114, Shek Kong, Yuen Long

PERSON CONDUCTING THE QUESTIONNAIRE

NAME Antony WONG

POSITION Technical Director

AUTHORIZED OWNER/CLIENT REPRESENTATIVE (IF APPLICABLE)

NAME N/A

POSITION N/A

TELEPHONE N/A

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: _____

Part-time: _____

Temporary/Seasonal: _____

Maximum no. of people on site at any time: _____

N/A

Typical hours of operation: _____

Number of shifts: _____

Days per week: _____

Weeks per year: _____

~~Scheduled plant shut down: _____~~

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: 4,411 m²

What area of the site is covered by buildings (%): 0%

Please list all current and previous owners/occupiers if possible. N/A

Is a site plan available? If yes, please attach. ~~Yes~~/No

Are there any other parties on site as tenants or sub-tenants? ~~Yes~~/No

If yes, identify those parties: _____

Describe surrounding land use (residential, industrial, rural, etc.) and identify neighbouring facilities and types of industry.

North: Temporary structures and access road

South: Temporary structures and stream

East: Temporary structures, vegetation and access road

West: Temporary structures and access road

Annex C1

Site Walkover Checklist

Describe the topography of the area (flat terrain, rolling hills, mountains, by a large body of water, vegetation, etc.).

The site is a flat area paved with concrete.

State the size and location of the nearest residential communities.

The nearest residential use is a village house located 140m away from the Site.

Are there any sensitive habitats nearby, such as nature reserves, parks, wetlands or sites of special scientific interest?

The Site is surrounded by temporary structures with non-sensitive use. No sensitive use is identified in the vicinity.

Questionnaire with Existing/Previous Site Owner or Occupier

	Yes/No	Notes
1. What are the main activities/operations at the above address?		Open storage for construction materials and plants
2. How long have you been occupying the site?		More than 20 years
3. Were you the first occupant on site? (If yes, what was the usage of the site prior to occupancy.)		More than 20 years
4. Prior to your occupancy, who occupied the site?		N/A
5. What were the main activities/operations during their occupancy?		N/A
6. Have there been any major changes in operations carried out at the site in the last 10 years?	Yes	The site was used as open storage for abandoned vehicles and vehicle parts
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?	No	
10. Do you have any registered hazardous installations as defined under relevant ordinances? (If yes, please provide details.)	No	
11. Are any chemicals used in your daily operations? (If yes, please provide details.)	Yes	
• Where do you store these chemicals?		Storage in the oil drums
12. Material inventory lists, including quantities and locations available? (If yes, how often are these inventories updated?)	N/A	
13. Has the facility produced a separate hazardous substance inventory?	N/A	
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	
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.)	N/A	
19. How are the wastes disposed of?		General refuse will be collected and disposed of regularly.
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)?	Yes	
2. What are the conditions of the bund walls and floors?		The site is paved with concrete and in good conditions
3. Are any surface water drains located near to drum storage and unloading areas?	No	
4. Are any solid or liquid waste (other than wastewater) generated at the site? (If yes, please provide details.)		General refuse will be generated by on-site staff.
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	

Figure K-1 Site Photos



Appendix M Correspondence with EPD and FSD

Enquiry email to EPD dated 04/07/2024

**EnviroSolutions & Consulting Ltd**

Solutions for Environment | Safety | Sustainability

16/F & 17/F, 700 Nathan Road, Mong Kok,
Kowloon, Hong Kong
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+852 3960 7111
www.envirosc.com | www.simplyehs.com
enquiries@envirosc.com

Our Ref. J24.00171.HK.01/ L00113/AW/JC

4 July 2024

Yuen Long - Regional Office (North)
Environmental Compliance Division
Environmental Protection Department
10th floor, Shatin Government Offices
No.1 Sheung Wo Che Road, Sha Tin
N.T., Hong Kong

By Email (wsfung@epd.gov.hk)Attention: Mr. FUNG Wai Shun

Dear Sir

Section 16 Planning Application for Proposed Temporary Concrete Batching Plant with Ancillary Facilities for a Period of 5 Years at Lots 573 RP and 1710 in D.D. 114, Shek Kong, New Territories Environmental Assessment - Information Request to EPD

Join Bright Warehousing Limited proposes to relocate the existing "Concrete Batching Plant" which operated by Glorious Concrete (H.K.) Ltd. From Lot 1824 RP in D.D. 130 in Hung Shui Kiu to Lot 573 RP and 1710 in D.D. 114 in Shek Kong (the Site) due to the land resumption to facilitate the development of Hung Shui Kiu/ Ha Tsuen New Development Area.

The Site currently falls within an area zoned as "Industrial (Group D)" ("I(D)") on the Approved Shek Kong Outline Zoning Plan (OZP) No. S/YL-SK/9. According to the Notes of the OZP, the proposed use is a Column 2 use within "I(D)" zone, which requires planning permission from the Town Planning Board under Section 16 of the Town Planning Ordinance. We have been appointed by Join Bright Warehousing Limited as the Environmental Consultant to prepare an Environmental Assessment (EA) report for the captioned project. The location of the Site is shown in **Figure 1**. The subcontract for the consultancy service is also enclosed for your information.

To address the potential land contamination issue, we would appreciate if you could provide us with a list of records of Chemical Waste Producers Registration or incidents of chemical spillage/leakage, etc, related to the site if any, including the company name, type of chemical, location etc.

Should you have any enquiries regarding the above, please do not hesitate to contact the undersigned on tel. 3960 7211.

Yours faithfully
for and on behalf of ESC

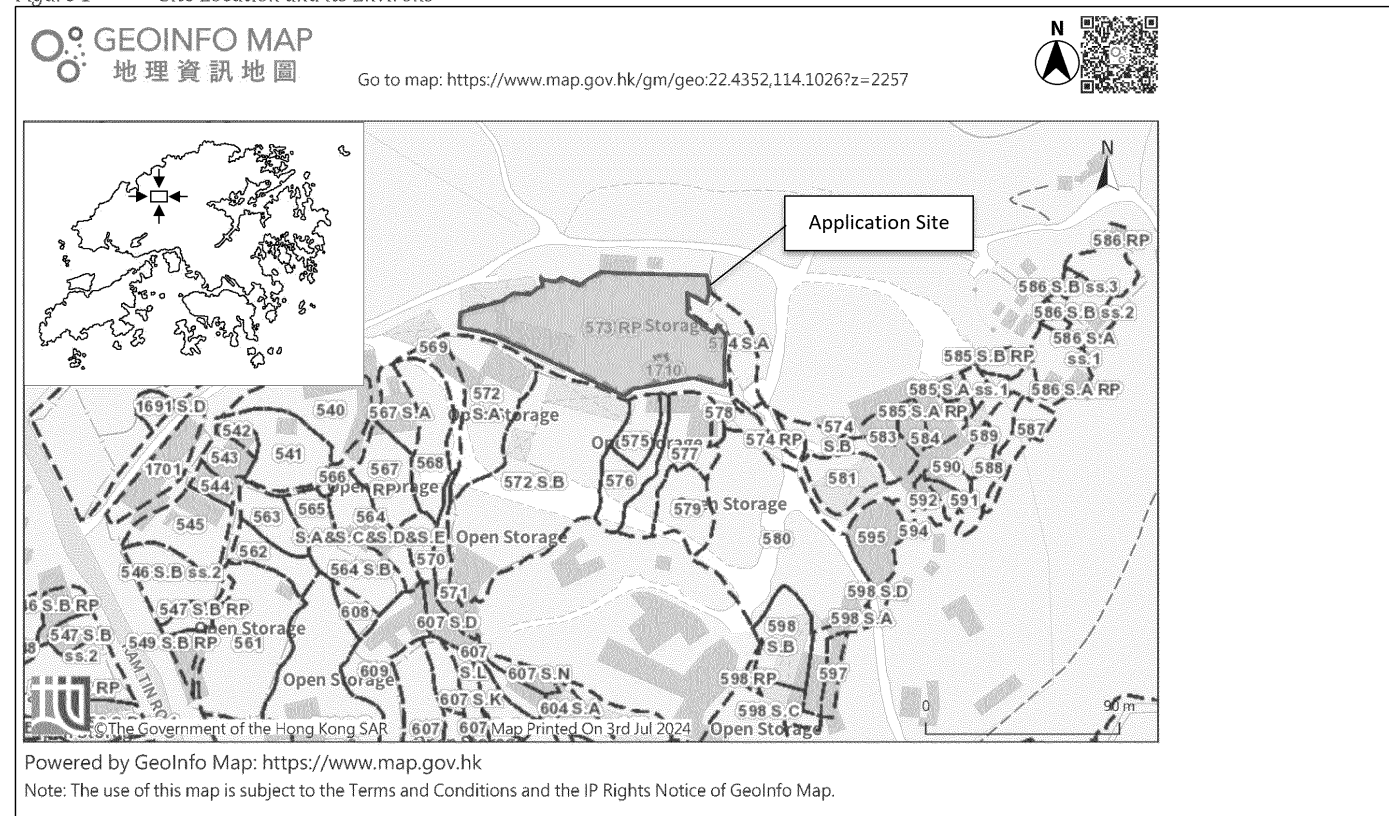


Antony WONG
Country Manager, Hong Kong



Section 16 Planning Application for Proposed Temporary Concrete Batching Plant with Ancillary Facilities for a Period of 5 Years at Lot 573 RP in D.D. 114, Kam Tin Environmental Assessment Report

Figure 1 Site Location and its Environs



Section 16 Planning Application for Proposed Temporary Concrete Batching Plant with Ancillary Facilities for a Period of 5 Years at Lot 573 RP in D.D. 114, Kam Tin Environmental Assessment Report



EnviroSolutions & Consulting Ltd
Solutions for Environment | Safety | Sustainability

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www.envirosc.com | www.simplyehs.com
enquiries@envirosc.com

Our Ref. P24.00171.HK.01/L00095/AB/AW
Your Ref.

2 May 2024

Join Bright Warehousing Limited
Flat D and E, 25/F
Billion Plaza
10 Cheung Yue Street
Cheung Sha Wan, Kowloon

By Email (paul@manfungltd.com)

Attention: Mr Paul POON

Dear Sir

Section 16 Planning Application for Proposed Temporary Concrete Batching Plant with Ancillary Facilities for a Period of 5 Years at Lot 573 RP in D.D. 114, Kam Tin Environmental Assessment and Drainage Proposal Proposal for Services

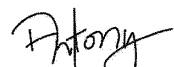
Thank you for your invitation to submit a proposal for the captioned services.

EnviroSolutions & Consulting Ltd ("ESC") is pleased to submit herewith this Technical and Fee Proposal to prepare Environmental Assessment ("EA") and Drainage Proposal for the captioned project.

We trust you find this proposal acceptable and are therefore able to send a signed copy of this proposal back to the undersigned at your earliest convenience. Alternatively, we would be pleased to receive your Works Order/Purchase Order for the Services, referencing this Proposal.

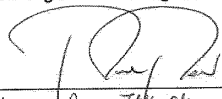
Should you have any queries regarding this proposal, please do not hesitate to contact me on 3960 7211 / 6779 2613 or at antony@envirosc.com.

Yours Faithfully
for and on behalf of ESC


Antony WONG
Country Manager, Hong Kong

Encl.

Accepted
for and on behalf of
Join Bright Warehousing Limited


Name: POON TAK CHUN PAUL

Position: DIRECTOR

Date: -3 MAY 2024



EPD's reply is pending

Enquiry email to FSD dated 04/07/2024**EnviroSolutions & Consulting Ltd**

Solutions for Environment | Safety | Sustainability

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enquiries@envirosc.com

Our Ref. J24.00171.HK.01/ L00114/AW/JC

4 July 2024

Corporate Services Division
Corporate Strategy Command
Fire Services Department
9/F, Fire Services Headquarters Building
1 Hong Chong Road, Tsim Sha Tsui East
Kowloon, Hong Kong

By Email (ado_lad@hkfsd.gov.hk)

Attention: Mr. LAI Kin Man

Dear Sir

Section 16 Planning Application for Proposed Temporary Concrete Batching Plant with Ancillary Facilities for a Period of 5 Years at Lot 573 RP and 1710 in D.D. 114, Shek Kong, New Territories Environmental Assessment - Information Request to FSD

Join Bright Warehousing Limited proposes to relocate the existing "Concrete Batching Plant" which operated by Glorious Concrete (H.K.) Ltd. From Lot 1824 RP in D.D. 130 in Hung Shui Kiu to Lot 573 RP and 1710 in D.D. 114 in Shek Kong (the Site) due to the land resumption to facilitate the development of Hung Shui Kiu/ Ha Tsuen New Development Area.

The Site currently falls within an area zoned as "Industrial (Group D)" ("I(D)") on the Approved Shek Kong Outline Zoning Plan (OZP) No. S/YL-SK/9. According to the Notes of the OZP, the proposed use is a Column 2 use within "I(D)" zone, which requires planning permission from the Town Planning Board under Section 16 of the Town Planning Ordinance. We have been appointed by Join Bright Warehousing Limited as the Environmental Consultant to prepare an Environmental Assessment (EA) report for the captioned project. The location of the Site is shown in **Figure 1**. The subcontract for the consultancy service is also enclosed for your information.

To address the potential land contamination issue, we would appreciate if you could provide us with a list of records of dangerous goods license, fire incidents or incidents of dangerous goods spillage/leakage, etc, related to the site if any, including the company name, type of chemical, location etc.

Should you have any enquiries regarding the above, please do not hesitate to contact the undersigned on tel. 3960 7211.

Yours faithfully
for and on behalf of ESC

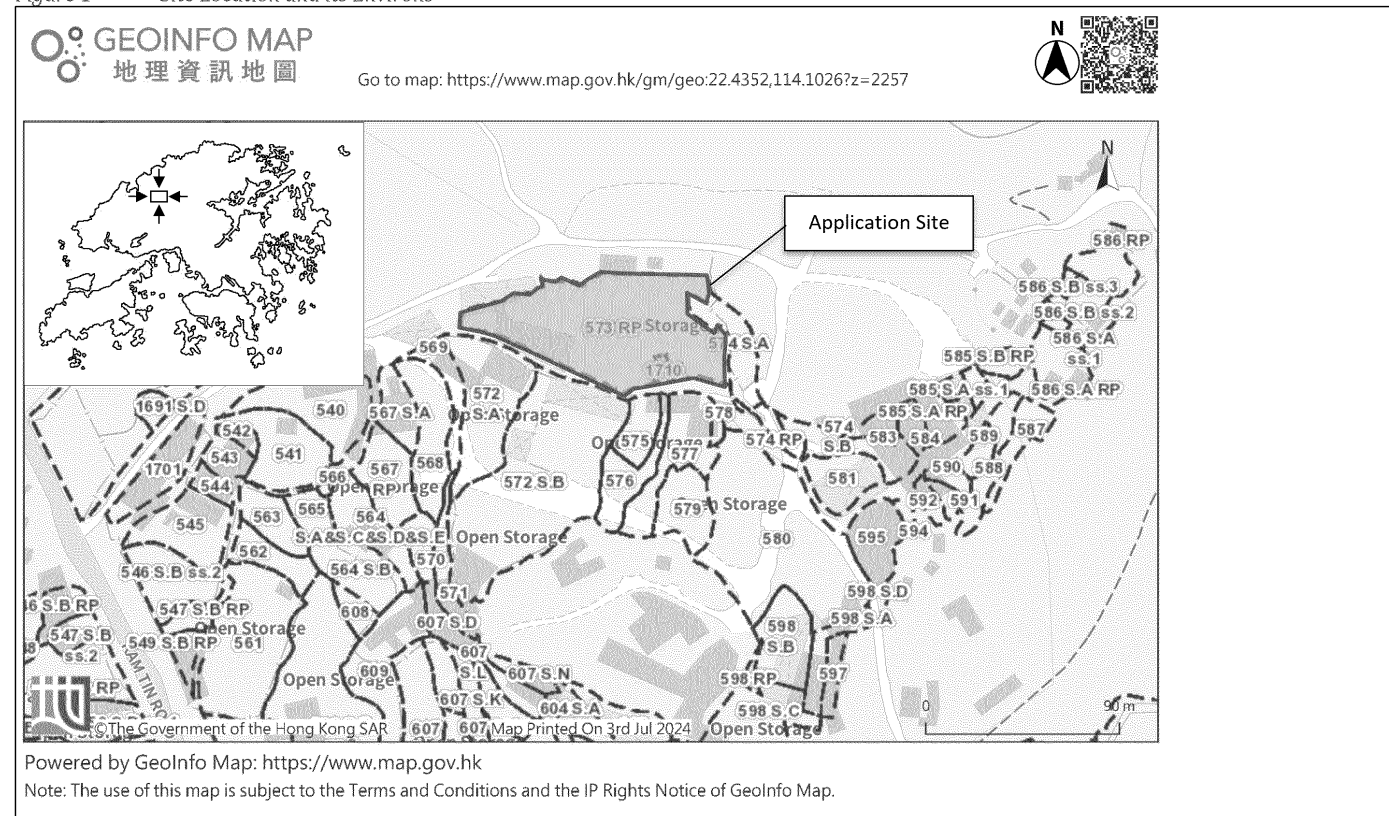


Antony WONG
Country Manager, Hong Kong



Section 16 Planning Application for Proposed Temporary Concrete Batching Plant with Ancillary Facilities for a Period of 5 Years at Lot 573 RP in D.D. 114, Kam Tin Environmental Assessment Report

Figure 1 Site Location and its Environs



Section 16 Planning Application for Proposed Temporary Concrete Batching Plant with Ancillary Facilities for a Period of 5 Years at Lot 573 RP in D.D. 114, Kam Tin Environmental Assessment Report



EnviroSolutions & Consulting Ltd
Solutions for Environment | Safety | Sustainability

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www.envirosc.com | www.simplyehs.com
enquiries@envirosc.com

Our Ref. P24.00171.HK.01/L00095/AB/AW
Your Ref.

2 May 2024

Join Bright Warehousing Limited
Flat D and E, 25/F
Billion Plaza
10 Cheung Yue Street
Cheung Sha Wan, Kowloon

By Email (paul@manfungltd.com)

Attention: Mr Paul POON

Dear Sir

Section 16 Planning Application for Proposed Temporary Concrete Batching Plant with Ancillary Facilities for a Period of 5 Years at Lot 573 RP in D.D. 114, Kam Tin Environmental Assessment and Drainage Proposal Proposal for Services

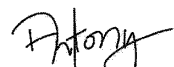
Thank you for your invitation to submit a proposal for the captioned services.

EnviroSolutions & Consulting Ltd ("ESC") is pleased to submit herewith this Technical and Fee Proposal to prepare Environmental Assessment ("EA") and Drainage Proposal for the captioned project.

We trust you find this proposal acceptable and are therefore able to send a signed copy of this proposal back to the undersigned at your earliest convenience. Alternatively, we would be pleased to receive your Works Order/Purchase Order for the Services, referencing this Proposal.

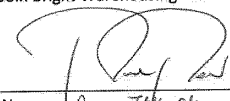
Should you have any queries regarding this proposal, please do not hesitate to contact me on 3960 7211 / 6779 2613 or at antony@envirosc.com.

Yours Faithfully
for and on behalf of ESC


Antony WONG
Country Manager, Hong Kong

Encl.

Accepted
for and on behalf of
Join Bright Warehousing Limited


Name: POON TAK CHUN PAUL

Position: DIRECTOR

Date: -3 MAY 2024



FSD's reply dated 30/07/2024

消防處
香港九龍尖沙咀東部康莊道1號
消防處總部大廈



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.** : (79) in FSD GR 6-5/4 R Pt. 54
來函檔號 **YOUR REF.** : J24.00171.HK.01/L00114/AW/JC
電子郵件 **E-mail** : hkfsdenq@hkfsd.gov.hk
圖文傳真 **FAX NO.** : 2988 1196
電話 **TEL NO.** : 2733 7570

30 July 2024

EnviroSolutions & Consulting Ltd
16/F & 17/F,
700 Nathan Road,
Mong Kok, Kowloon.
(Attn: Mr. Antony WONG, Country Manager)

Dear Mr. WONG,

**Section 16 Planning Application for
Proposed Temporary Concrete Batching Plant
with Ancillary Facilities for a Period of 5 years
at Lot 573 RP and 1710 in D.D. 114, Shek Kong, New Territories
Environmental Assessment – Information Request to FSD
Request for Information of Dangerous Goods & Incident Records**

I refer to your letter of 4.7.2024 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,



(LAI Kin-man)
for Director of Fire Service

Ref. number and date should be quoted in reference to this letter
凡提及本信時請引述編號及日期

EnviroSolutions & Consulting Ltd

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Web: www.envirosc.com | www.simplyehs.com



Accountability

We understand the importance of being accountable to each other and our clients.



Passion

We are completely passionate about providing practical solutions and outcomes that deliver for our clients.



Insight

We work in an environment that encourages and values insight as a critical quality which informs our decisions and our clients and supports practical solutions and project delivery.



Integrity

We behave with respect and honesty toward each other, our clients and our stakeholders.