MPC Paper No. 4/12
For Consideration by the
Metro Planning Committee
on 24.2.2012

PROPOSED AMENDMENTS TO THE APPROVED KWUN TONG (SOUTH) OUTLINE ZONING PLAN NO. S/K14S/16

1. Introduction

This paper is to seek Member's agreement that:

(a) the proposed amendments to the approved Kwun Tong (South) Outline Zoning Plan (OZP) No. S/K14S/16 (**Appendix I**) and its Notes (**Appendix II**) are suitable for exhibition for public inspection under section 5 of the Town Planning Ordinance (the Ordinance); and

(b) the Explanatory Statement (ES) of the OZP (**Appendix III**) is an expression of the Town Planning Board (the Board)'s planning intentions and objectives for various land use zonings of the OZP, and is suitable for exhibition together with the OZP and its Notes.

2. Status of the Current OZP

On 15.7.2008, the Chief Executive in Council (CE in C) approved the draft Kwun Tong (South) OZP under section 9(1)(a) of the Town Planning Ordinance (the Ordinance). The approved Kwun Tong (South) OZP No. S/K14S/16 was gazetted on 12.9.2008. On 9.12.2011, the Board agreed to request CE in C to refer the OZP to the Board for amendment under section 12(1)(b)(ii) of the Ordinance. On 7.2.2012, the CE in C referred the approved OZP No. S/K14S/16 **(Plan 1)** to the Board for amendment under section 12(1)(b)(ii) of the Ordinance. The reference back of the OZP was notified in the Gazette on 17.2.2012 under section 12(2) of the Ordinance.

3. Background

Rezoning of the "G/IC" site at Sau Ming Road

3.1 The "Government, Institution or Community" ("G/IC") site at Sau Ming Road (**Plan 2**) has been identified as suitable for Public Rental Housing (PRH) cum Community Hall development to (i) address the shortage of land supply for public housing development; and (ii) meet the request from the Kwun Tong District Council (KTDC) and local community for reprovisioning of the existing sub-standard Sau Mau Ping (Central) Estate Community Centre (SMPCC).

3.2 The subject site, currently being used as SMPCC and a temporary open car park, is reserved for a new community hall where no definite development programme has so far been established by Home Affairs Department (HAD). The existing 6-storey SMPCC building has a community hall and activity room on the G/F. For the remaining upper floors, there are four different non-government organizations (NGO) community facilities i.e. an Integrated Children and Youth Services Centre (ICYSC) which is a subvented welfare service of Social Welfare Department (SWD) and a few other NGOs providing community services that are not subvented by SWD including a Christian service centre, a neighbour family centre and a community service centre. The existing site conditions and the adjoining areas are shown in **Plans 3 and 4**.

3.3 Since 2008, there have been repeated requests from KTDC members and local residents for an early implementation of a new community hall replacing the substandard SMPCC, and the provision of library and study area facilities to meet the local needs in Sau Mau Ping area. At the same time, there is an urgent need to find suitable sites to develop public rental housing to address the public housing demand. Housing Department (HD) has taken this opportunity to pursuit in-situ reprovisioning of SMPCC cum public housing development so as to better utilize land resources.

3.4 The subject site is located in a prominent location of the Sau Mau Ping area and is visible from the existing buildings in Sau Mau Ping Estate and Sau Mau Ping Shopping Centre **(Plan 3)**. The proposed building height will not exceed the main roof of the Annex Block of Sau Yat House at Sau Mau Ping Estate across Sau Ming Road (i.e. about 150mPD at main roof) **(Plans 12 and 13 refers)** and the proposed domestic and non-domestic plot ratios (PR) are 4.5 and 1.5 respectively to prevent massive and out-of-context development in the area.

3.5 The tentative development parameters for the PRH cum Community Hall development are summarized as follows and the conceptual layout plans and photomontages are shown in **Plans 5 to 13**:

Development Parameters	**Proposed Development**
Gross site area	2,800m² (about)
Max. Plot Ratio	6
- Domestic Plot Ratio	4.5
- Non-Domestic Plot Ratio	1.5
Max. Building Height at main roof (Note 1)	150 mPD (about)
No. of Storey	20
Number of flat	325 (about) (including 120 no. of 1-2 person units)
Design Population (approx.)	700
Green Coverage	30% of the site area
Local Open Space (Note 2)	700m²
Community Hall	1,300m² (about); 450-seat
Small Library	550m² (about)
Study Area	100m² (about)
Target Completion (Note 3)	2017/18

Notes : -

(1) Not exceeding the Annex Block of Sau Yat House at Sau Mau Ping Estate across Sau Ming Road.

(2) In accordance with Hong Kong Planning Standards and Guidelines requirement.

(3) Subject to the outcome of rezoning and availability of government funding.

(4) The exact provisions and development parameters are subject to detailed design at the implementation stage.

3.6 For the existing subvented ICYSC at the SMPCC, HD would, at the request of SWD, explore the feasibility of reprovisioning the facilities in the vicinity of Sau Mau Ping Estate. For the rest of the NGO community facilities that are not subvented by SWD, HAD advised that the feasibility of off-site reprovisoning may be explored subject to these NGO's confirmation of their own funding arrangement and requirements.

3.7 The proposed development was included as a potential PRH project for completion in 2017/18. The proposal is fully supported by KTDC at its full meeting on 8.1.2010 and its Housing Committee on 17.3.2011. To facilitate the implementation of the proposed development, rezoning of the site is required. To achieve a better planning control on the development intensity and building bulk, it is proposed to stipulate appropriate development restrictions including building height and plot ratio for the site.

3.8 All the necessary supporting assessments including Traffic Impact Assessment **(Annex I)**, Environmental Assessment Study **(Annex II)**, Visual Impact Assessment **(Annex III)** and Air Ventilation Assessment **(Annex IV)** have been conducted, which confirm that there is no adverse impact on the environment arising from the proposed development. Relevant departments including Transport Department and Environmental Protection Department have been consulted and have no objection to or no adverse comment on these assessments.

Incorporating the minor relaxation clause in "R(A)" and "R(B)"zones

3.9 To provide design/architectural flexibility, the provision for application for minor relaxation of gross floor area (GFA)/ PR restrictions has been incorporated into the Remarks of the Notes for "Commercial" ("C"), "Residential (Group A)" ("R(A)"), "Residential (Group B)" ("R(B)"), "Residential (Group C)" ("R(C)") and "Residential (Group E)" ("R(E)") zones on most of the OZPs in the Metro Area. Such provision will be included in the remaining OZPs when opportunity arises. In this regard, technical amendments to the Kwun Tong (South) OZP for incorporating the provision for minor relaxation of GFA/PR restrictions into the Notes for the "C(1)", "R(A)", "R(A)1" and "R(B)" zone is required.

4. Proposed Amendments to Matters shown on the Plan

The proposed amendments are shown on the draft Kwun Tong (South) Outline Zoning Plan No. S/K14S/16A (**Appendix I**) and detailed below:

Item A – Rezoning of a site at Sau Ming Road from "G/IC" to "R(A)2" with a maximum building height restriction of 150mPD

The site is proposed to be rezoned from "G/IC" to "R(A)2" with a maximum PR of 6 (domestic and non-domestic PR of 4.5 and 1.5 respectively) and a maximum building height restriction of 150mPD. The proposed development intensity and building height restriction are considered compatible with the surrounding areas and largely tally with the current PR restriction for "R(A)" zones in the vicinity **(Plan 2)**.

5. Proposed Amendments to the Notes of the OZP

5.1 The Remarks in the Notes for the relevant "R(A)" zone are proposed to be revised to incorporate the new "R(A)2" sub-zone with restrictions on maximum PR and building height in relation to the proposed amendment as mentioned in paragraph 4 above.

5.2 It is stipulated in the Remarks of the Notes for the "R(A)" zone that on land designated "R(A)2", no new development, or addition, alteration and/or modification to or redevelopment of an existing building shall result in a total development and/or redevelopment in excess of the maximum domestic and non-domestic PR of 4.5 and 1.5 respectively, and a maximum building height of 150 metres above Principal Datum, or the PR and height of the existing building, whichever is the greater. To allow flexibility for the PR/building height restrictions, a minor relaxation clause is proposed to be incorporated into the Notes so that application for minor relaxation of the development restrictions could be considered by the Board under section 16 of the Ordinance.

5.3 Incorporation of a minor relaxation clause for GFA/PR restrictions in "C(1)", "R(A)", "R(A)1" and "R(B)" zones.

5.4 Technical and other amendments to reflect the existing developments and latest land use proposals, if any, will also be made to the OZP.

5.5 The revised Notes (with the proposed additions highlighted in ***bold and italics*** and deletions in ~~crossed out~~) is at **Appendix II** for Members' consideration.

6. Revision of the Explanatory Statement of the OZP

The ES of the OZP has been revised to take into account the proposed amendments as mentioned in paragraph 4 in particular the provision of a community hall under the new "R(A)2" sub-zone. Opportunity has also been taken to update the general information for the various land use zones to reflect the latest status and planning circumstances of the OZP. A copy of the revised ES (with the proposed additions highlighted in ***bold and italics*** and deletions in ~~crossed out~~) is at **Appendix III** for Members' consideration.

7. Plan Number

Upon exhibition, the Plan will be re-numbered as S/K14S/17.

8. Consultation

Departmental Consultation

8.1 The proposed amendments have been circulated to relevant government bureaux/ departments for comments. Concerned government bureaux/departments have no objection to or no adverse comment on the proposed amendments. Their

comments have been taken into account, where appropriate. These Government departments include:

(a) Secretary for Education;
(b) Commissioner for Transport, Transport Department;
(c) Chief Building Surveyor/Kowloon, Buildings Department;
(d) Chief Architect/Advisory and Statutory Compliance, Architectural Services Department;
(e) Chief Engineer/Mainland South, Drainage Services Department;
(f) Chief Engineer/Development (2), Water Supplies Department;
(g) Chief Highway Engineer/Kowloon, Highways Department;
(h) Chief Town Planner/Urban Design and Landscape, Planning Department;
(i) Commissioner of Police;
(j) Director of Agriculture, Fisheries and Conservation;
(k) Director of Environmental Protection;
(l) Director of Electrical and Mechanical Services;
(m) Director of Fire Services;
(n) Director of Food and Environmental Hygiene;
(o) Director of Health;
(p) Director of Housing;
(q) Director of Leisure and Cultural Services;
(r) Director of Social Welfare;
(s) District Lands Officer/Kowloon East, Lands Department;
(t) District Officer/Kwun Tong, Home Affairs Department;
(u) Government Property Agent;
(v) Head (Geotechnical Engineering Office), Civil Engineering & Development Department;
(w) Civil Engineer/Special Duties (Works) Division, Civil Engineering & Development Department; and
(x) Project Manager/Kowloon, Civil Engineering & Development Department.

Public Consultation

8.1 Publication of the proposed amendments to the OZP will be made under section 5 of the Ordinance for public inspection, which is a statutory channel to solicit public views.

8.2 As mentioned in paragraph 3.7 above, full support on the proposal was obtained from KTDC and its Housing Committee on 8.1.2010 and 17.3.2011 respectively. Nevertheless, the KTDC will be consulted on the amendments during the exhibition period of the draft Kwun Tong (South) OZP No. S/K14S/16A (to be renumbered to S/K14S/17 upon exhibition) for public inspection under section 5 of the Ordinance.

9. Decision Sought

Members are invited to:

(a) agree to the proposed amendments to the approved Kwun Tong (South) OZP No. S/K14S/16 and that the draft Kwun Tong (South) OZP No. S/K14S/16A at **Appendix I** (to be renumbered to S/K14S/17 upon exhibition) and its Notes at **Appendix II** are suitable for exhibition under section 5 of the Ordinance; and

(b) adopt the revised ES at **Attachment III** for the draft Kwun Tong (South) OZP No. S/K14S/16A as an expression of the planning intentions and objectives of the Board for the various land use zones on the Plan and that the revised ES will be published together with the Plan under the name of the Town Planning Board.

10. Attachments

Appendix I	Draft Kwun Tong (South) Outline Zoning Plan No. S/K14S/16A
Appendix II	Revised Notes of the Draft Kwun Tong (South) Outline Zoning Plan No. S/K14S/16A
Appendix III	Revised Explanatory Statement of the Draft Kwun Tong (South) Outline Zoning Plan No. S/K14S/16A
Plan 1	Approved Kwun Tong (South) Outline Zoning Plan No. S/K14S/16 (reduced size)
Plan 2	Site Plan of Amendment Item A
Plans 3 and 4	Site Photos of Amendment Item A
Plans 5 to 13	Proposed conceptual layout plans and photomontages provided by Housing Department
Annex I	Traffic Impact Assessment
Annex II	Environmental Assessment Study
Annex III	Visual Impact Assessment
Annex IV	Air Ventilation Assessment

PLANNING DEPARTMENT
FEBRUARY 2012

KOWLOON PLANNING AREA NO. 14 (PART)

~~APPROVED~~ *DRAFT* KWUN TONG (SOUTH) OUTLINE ZONING PLAN NO. S/K14S/16*A*

(Being a ***Draft*** ~~n Approved~~ Plan for the Purposes of the Town Planning Ordinance)

NOTES

(N.B. These form part of the Plan)

(1) These Notes show the uses or developments on land falling within the boundaries of the Plan which are always permitted and which may be permitted by the Town Planning Board, with or without conditions, on application. Where permission from the Town Planning Board for a use or development is required, the application for such permission should be made in a prescribed form. The application shall be addressed to the Secretary of the Town Planning Board, from whom the prescribed application form may be obtained.

(2) Any use or development which is always permitted or may be permitted in accordance with these Notes must also conform to any other relevant legislation, the conditions of the Government lease concerned, and any other Government requirements, as may be applicable.

(3) (a) No action is required to make the existing use of any land or building conform to this Plan until there is a material change of use or the building is redeveloped.

(b) Any material change of use or any other development (except minor alteration and/or modification to the development of the land or building in respect of the existing use which is always permitted) or redevelopment must be always permitted in terms of the Plan or, if permission is required, in accordance with the permission granted by the Town Planning Board.

(c) For the purposes of subparagraph (a) above, "existing use of any land or building" means -

(i) before the publication in the Gazette of the notice of the first statutory plan covering the land or building (hereafter referred as 'the first plan'),

- a use in existence before the publication of the first plan which has continued since it came into existence; or

- a use or a change of use approved under the Buildings Ordinance which relates to an existing building; and

(ii) after the publication of the first plan,

- a use permitted under a plan which was effected during the effective period of that plan and has continued since it was effected; or

- a use or a change of use approved under the Buildings Ordinance which relates to an existing building and permitted under a plan prevailing at the time when the use or change of use was approved.

(4) Except as otherwise specified by the Town Planning Board, when a use or material change of use is effected or a development or redevelopment is undertaken, as always permitted in terms of the Plan or in accordance with a permission granted by the Town Planning Board, all permissions granted by the Town Planning Board in respect of the site of the use or material change of use or development or redevelopment shall lapse.

(5) Road junctions, alignments of roads and railway tracks, and boundaries between zones may be subject to minor adjustments as detailed planning proceeds.

(6) Temporary uses (expected to be 5 years or less) of any land or buildings are always permitted as long as they comply with any other relevant legislation, the conditions of the Government lease concerned, and any other Government requirements, and there is no need for these to conform to the zoned use or these Notes. For temporary uses expected to be over 5 years, the uses must conform to the zoned use or these Notes.

(7) The following uses or developments are always permitted on land falling within the boundaries of the Plan except where the uses or developments are specified in Column 2 of the Notes of individual zones:

(a) provision, maintenance or repair of plant nursery, amenity planting, open space, rain shelter, refreshment kiosk, road, bus/public light bus stop or lay-by, cycle track, Mass Transit Railway station entrance, Mass Transit Railway structure below ground level, taxi rank, nullah, public utility pipeline, electricity mast, lamp pole, telephone booth, telecommunications radio base station, automatic teller machine and shrine;

(b) geotechnical works, local public works, road works, sewerage works, drainage works, environmental improvement works, marine related facilities, waterworks (excluding works on service reservoir) and such other public works co-ordinated or implemented by Government; and

(c) maintenance or repair of watercourse and grave.

(8) In any area shown as 'Road', all uses or developments except those specified in paragraph (7) above and those specified below require permission from the Town Planning Board:

toll plaza, on-street vehicle park and railway track.

(9) Unless otherwise specified, all building, engineering and other operations incidental to and all uses directly related and ancillary to the permitted uses and developments within the same zone are always permitted and no separate permission is required.

(10) In these Notes, "existing building" means a building, including a structure, which is physically existing and is in compliance with any relevant legislation and the conditions of the Government lease concerned.

KOWLOON PLANNING AREA NO. 14 (PART)

~~APPROVED~~ *DRAFT* KWUN TONG (SOUTH) OUTLINE ZONING PLAN NO. S/K14S/16*A*

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COMMERCIAL (1)

Column 1 Uses always permitted	Column 2 Uses that may be permitted with or without conditions on application to the Town Planning Board
Ambulance Depot Commercial Bathhouse/Massage Establishment Eating Place Educational Institution Exhibition or Convention Hall Government Use (not elsewhere specified) Information Technology and Telecommunications Industries Institutional Use (not elsewhere specified) Library Market Off-course Betting Centre Office Place of Entertainment Place of Recreation, Sports or Culture Private Club Public Clinic Public Convenience Public Transport Terminus or Station Public Utility Installation Public Vehicle Park (excluding container vehicle) Radar, Telecommunications Electronic Microwave Repeater, Television and/or Radio Transmitter Installation Recyclable Collection Centre Religious Institution Research, Design and Development Centre School Shop and Services Social Welfare Facility (excluding those involving residential care) Training Centre Utility Installation for Private Project	Broadcasting, Television and/or Film Studio Cargo Handling and Forwarding Facility Government Refuse Collection Point Hospital Hotel Mass Transit Railway Vent Shaft and/or Other Structure above Ground Level other than Entrances Petrol Filling Station Wholesale Trade

Planning Intention

This zone is intended primarily for commercial developments, which may include shop, service, place of entertainment and eating place serving the needs of local workers.

(Please see next page)

COMMERCIAL (1) (Cont'd)

Remarks

(1) No new development, or addition, alteration and/or modification to or redevelopment of an existing building shall result in a total development and/or redevelopment in excess of a maximum plot ratio of 12.0, and the maximum building heights, in terms of metres above Principal Datum, as stipulated on the Plan, or the plot ratio and height of the existing building, whichever is the greater.

(2) In determining the maximum plot ratio for the purposes of paragraph (1) above, any floor space that is constructed or intended for use solely as car park, loading/unloading bay, plant room and caretaker's office, provided such uses and facilities are ancillary and directly related to the development or redevelopment, may be disregarded.

(3) Where the permitted plot ratio as defined in Building (Planning) Regulations is permitted to be exceeded in circumstances as set out in Regulation 22(1) or (2) of the said Regulations, the plot ratio for the building on land to which paragraph (1) applies may be increased by the additional plot ratio by which the permitted plot ratio is permitted to be exceeded under and in accordance with the said Regulation 22(1) or (2), notwithstanding that the relevant maximum plot ratio specified in paragraph (1) above may thereby be exceeded.

(4) Based on the individual merits of a development or redevelopment proposal, minor relaxation of the *plot ratio*/building height restrictions stated in paragraph (1) above may be considered by the Town Planning Board on application under section 16 of the Town Planning Ordinance.

RESIDENTIAL (GROUP A)

Column 1 Uses always permitted	Column 2 Uses that may be permitted with or without conditions on application to the Town Planning Board
Ambulance Depot Flat Government Use (not elsewhere specified) House Library Market Place of Recreation, Sports or Culture Public Clinic Public Transport Terminus or Station (excluding open-air terminus or station) Residential Institution School (in free-standing purpose-designed building only) Social Welfare Facility Utility Installation for Private Project	Commercial Bathhouse/Massage Establishment Eating Place Educational Institution Exhibition or Convention Hall Government Refuse Collection Point Hospital Hotel Institutional Use (not elsewhere specified) Mass Transit Railway Vent Shaft and/or Other Structure above Ground Level other than Entrances Office Petrol Filling Station Place of Entertainment Private Club Public Convenience Public Transport Terminus or Station (not elsewhere specified) Public Utility Installation Public Vehicle Park (excluding container vehicle) Religious Institution School (not elsewhere specified) Shop and Services Training Centre

(Please see next page)

RESIDENTIAL (GROUP A) (Cont'd)

In addition, the following uses are always permitted (a) on the lowest three floors of a building, taken to include basements; or (b) in the purpose-designed non-residential portion of an existing building, both excluding floors containing wholly or mainly car parking, loading/unloading bays and/or plant room :	

Eating Place
Educational Institution
Institutional Use (not elsewhere specified)
Off-course Betting Centre
Office
Place of Entertainment
Private Club
Public Convenience
Recyclable Collection Centre
School
Shop and Services
Training Centre

Planning Intention

This zone is intended primarily for high-density residential developments. Commercial uses are always permitted on the lowest three floors of a building or in the purpose-designed non-residential portion of an existing building.

Remarks

(1) On land designated "Residential (Group A)", no new development, or addition, alteration and/or modification to or redevelopment of an existing building shall result in the plot ratio for the building upon development and/or redevelopment in excess of 7.5 for a domestic building or 9.0 for a building that is partly domestic and partly non-domestic, or the plot ratio of the existing building, whichever is the greater. Except where the plot ratio is permitted to be exceeded under paragraphs *(8)* *and/or (9)* hereof, under no circumstances shall the plot ratio for the domestic part of any building, to which this paragraph applies, exceed 7.5.

(2) On land designated "Residential (Group A)", for a non-domestic building to be erected on the site, the maximum plot ratio shall not exceed 9.0 except where the plot ratio is permitted to be exceeded under paragraphs *(8)* *and/or (9)* hereof.

(Please see next page)

RESIDENTIAL (GROUP A) (Cont'd)

Remarks (Cont'd)

(3) On land designated "Residential (Group A)1", no new development, or addition, alteration and/or modification to or redevelopment of an existing building shall result in a total development and/or redevelopment in excess of a maximum domestic gross floor area of 134,352m^2.

(4) On land designated "Residential (Group A) 2", no new development, or addition, alteration and/or modification to or redevelopment of an existing building shall result in a total development and/or redevelopment in excess of the maximum domestic and non-domestic plot ratio of 4.5 and 1.5 respectively, and a maximum building height of 150 metres above Principal Datum, or the plot ratio and height of the existing building, whichever is the greater.

(5) For the purpose of paragraphs (1) and (4), on land designated "R(A)", "R(A)1" and "R(A)2", no addition, alteration and/or modification to or redevelopment of an existing building shall result in a total development and/or redevelopment in excess of the relevant maximum domestic and/or non-domestic plot ratio(s), or the domestic and/or non-domestic plot ratio(s) of the existing building, whichever is the greater, subject to, as applicable-

(i) the plot ratio(s) of the existing building shall apply only if any addition, alteration and/or modification to or redevelopment of an existing building is for the same type of building as the existing building, i.e. domestic, non-domestic, or partly domestic and partly non-domestic building; or

(ii) the maximum domestic and/or non-domestic plot ratio(s) stated in paragraphs (1) and (4) above shall apply if any addition, alteration and/or modification to or redevelopment of an existing building is not for the same type of building as the existing building, i.e. domestic, non-domestic, or partly domestic and partly non-domestic building.

~~(5)~~(6) In determining the relevant maximum plot ratio for the purposes of paragraphs (1), ~~and~~ (2) ***and (4) above***, area of any part of the site that is occupied or intended to be occupied by free-standing purpose-designed buildings (including both developed on ground and on podium level) solely for accommodating Government, institution or community facilities including school(s) as may be required by Government shall be deducted in calculating the relevant site area.

(7) In determining the relevant maximum plot ratio/gross floor area for the purposes of paragraphs (1), ~~(2) *and* (3)~~ to ***(4) above***, any floor space that is constructed or intended for use solely as car park, loading/unloading bay, plant room, ***and*** caretaker's office ~~and~~ ***or*** caretaker's quarters, ~~or~~ ***and*** recreational facilities for the use and benefit of all the owners or occupiers of the domestic building or domestic part of the building, provided such uses and facilities are ancillary and directly related to the development or redevelopment, may be disregarded.

(8) Where the permitted plot ratio as defined in Building (Planning) Regulations is permitted to be exceeded in circumstances as set out in Regulation 22(1) or (2) of the said Regulations, the plot ratio/gross floor area for the building on land to which paragraphs (1), (2) ~~or~~, (3) ***or (4) above*** applies may be increased by the additional plot ratio by which the permitted plot ratio is permitted to be exceeded under and in accordance with the said Regulation 22(1) or (2), notwithstanding that the relevant maximum plot ratio/gross floor area specified in paragraphs (1), ~~(2) and (3)~~ ***to (4)*** above may thereby be exceeded.

~~(8)~~***(9) Based on the individual merits of a development or redevelopment proposal, minor relaxation of the development restrictions stated in paragraphs (1) to (4) above may be considered by the Town Planning Board on application under section 16 of the Town Planning Ordinance.***

RESIDENTIAL (GROUP B)

Column 1 Uses always permitted	Column 2 Uses that may be permitted with or without conditions on application to the Town Planning Board
Flat Government Use (Police Reporting Centre, Post Office only) House Library Residential Institution School (in free-standing purpose-designed building only) Utility Installation for Private Project	Ambulance Depot Eating Place Educational Institution Government Refuse Collection Point Government Use (not elsewhere specified) Hospital Hotel Institutional Use (not elsewhere specified) Market Mass Transit Railway Vent Shaft and/or Other Structure above Ground Level other than Entrances Off-course Betting Centre Office Petrol Filling Station Place of Entertainment Place of Recreation, Sports or Culture Private Club Public Clinic Public Convenience Public Transport Terminus or Station Public Utility Installation Public Vehicle Park (excluding container vehicle) Recyclable Collection Centre Religious Institution School (not elsewhere specified) Shop and Services Social Welfare Facility Training Centre

Planning Intention

This zone is intended primarily for medium-density residential developments where commercial uses serving the residential neighbourhood may be permitted on application to the Town Planning Board.

(Please see next page)

RESIDENTIAL (GROUP B) (Cont'd)

Remarks

(1) No new development, or addition, alteration and/or modification to or redevelopment of an existing building shall result in a total development and/or redevelopment in excess of a maximum plot ratio of 5.0, or the plot ratio of the existing building, whichever is the greater.

(2) In determining the maximum plot ratio for the purposes of paragraph (1), any floor space that is constructed or intended for use solely as car park, loading/unloading bay, plant room~~,~~ ***and*** caretakers' office ~~and~~ ***or*** caretakers' quarters~~, or~~ ***and*** recreational facilities for the use and benefit of all the owners or occupiers of the domestic building or domestic part of the building, provided such uses and facilities are ancillary and directly related to the development or redevelopment, may be disregarded.

(3) Based on the individual merits of a development or redevelopment proposal, minor relaxation of the plot ratio stated in paragraph (1) above may be considered by the Town Planning Board on application under section 16 of the Town Planning Ordinance.

GOVERNMENT, INSTITUTION OR COMMUNITY

Column 1 Uses always permitted	Column 2 Uses that may be permitted with or without conditions on application to the Town Planning Board
Ambulance Depot Animal Quarantine Centre (in Government building only) Broadcasting, Television and/or Film Studio Cable Car Route and Terminal Building Eating Place (Canteen, Cooked Food Centre only) Educational Institution Exhibition or Convention Hall Field Study/Education/Visitor Centre Government Refuse Collection Point Government Use (not elsewhere specified) Hospital Institutional Use (not elsewhere specified) Library Market Place of Recreation, Sports or Culture Public Clinic Public Convenience Public Transport Terminus or Station Public Utility Installation Public Vehicle Park (excluding container vehicle) Recyclable Collection Centre Religious Institution Research, Design and Development Centre School Service Reservoir Social Welfare Facility Training Centre Wholesale Trade	Animal Boarding Establishment Animal Quarantine Centre (not elsewhere specified) Columbarium Correctional Institution Crematorium Driving School Eating Place (not elsewhere specified) Flat Funeral Facility Helicopter Landing Pad Helicopter Fuelling Station Holiday Camp Hotel House Mass Transit Railway Vent Shaft and/or Other Structure above Ground Level other than Entrances Off-course Betting Centre Office Petrol Filling Station Place of Entertainment Private Club Radar, Telecommunications Electronic Microwave Repeater, Television and/or Radio Transmitter Installation Refuse Disposal Installation (Refuse Transfer Station only) Residential Institution Sewage Treatment/Screening Plant Shop and Services Utility Installation for Private Project Zoo

Planning Intention

This zone is intended primarily for the provision of Government, institution or community facilities serving the needs of the local residents and/or a wider district, region or the territory. It is also intended to provide land for uses directly related to or in support of the work of the Government, organizations providing social services to meet community needs, and other institutional establishments.

(Please see next page)

GOVERNMENT, INSTITUTION OR COMMUNITY (Cont'd)

Remarks

(1) On land designated "Government, Institution or Community (1)", no new development, or addition, alteration and/or modification to or redevelopment of an existing building shall result in a total development and/or redevelopment in excess of the maximum building heights, in terms of metres above Principal Datum, as stipulated on the Plan, or the height of the existing building, whichever is the greater.

(2) Based on the individual merits of a development or redevelopment proposal, minor relaxation of the building height restrictions stated in paragraph (1) above may be considered by the Town Planning Board on application under section 16 of the Town Planning Ordinance.

OPEN SPACE

Column 1 Uses always permitted	Column 2 Uses that may be permitted with or without conditions on application to the Town Planning Board
Aviary Barbecue Spot Field Study/Education/Visitor Centre Park and Garden Pavilion Pedestrian Area Picnic Area Playground/Playing Field Promenade Public Convenience Sitting Out Area Zoo	Cable Car Route and Terminal Building Eating Place Government Refuse Collection Point Government Use (not elsewhere specified) Holiday Camp Mass Transit Railway Vent Shaft and/or Other Structure above Ground Level other than Entrances Place of Entertainment Place of Recreation, Sports or Culture Private Club Public Transport Terminus or Station Public Utility Installation Public Vehicle Park (excluding container vehicle) Religious Institution Service Reservoir Shop and Services Tent Camping Ground Utility Installation for Private Project

Planning Intention

This zone is intended primarily for the provision of outdoor open-air public space for active and/or passive recreational uses serving the needs of local residents as well as the general public.

OTHER SPECIFIED USES

Column 1 Uses always permitted	Column 2 Uses that may be permitted with or without conditions on application to the Town Planning Board

For "Business" only

Schedule I: for open-air development or for building other than industrial or industrial-office building[@]

Ambulance Depot
Commercial Bathhouse/Massage Establishment
Eating Place
Educational Institution
Exhibition or Convention Hall
Government Use (Police Reporting Centre, Post Office only)
Information Technology and Telecommunications Industries
Institutional Use (not elsewhere specified)
Library
Non-polluting Industrial Use (excluding industrial undertakings involving the use/storage of Dangerous Goods[△])
Off-course Betting Centre
Office
Place of Entertainment
Place of Recreation, Sports or Culture
Private Club
Public Clinic
Public Convenience
Public Transport Terminus or Station
Public Utility Installation
Public Vehicle Park (excluding container vehicle)
Radar, Telecommunications Electronic Microwave Repeater, Television and/or Radio Transmitter Installation
Recyclable Collection Centre
Religious Institution
Research, Design and Development Centre
School (excluding free-standing purpose-designed building and kindergarten)
Shop and Services
Training Centre
Utility Installation for Private Project

Broadcasting, Television and/or Film Studio
Bus Depot (on land designated "OU (Business 1)" only)
Cargo Handling and Forwarding Facility
Government Refuse Collection Point
Government Use (not elsewhere specified)
Hotel
Mass Transit Railway Vent Shaft and/or Other Structure above Ground Level other than Entrances
Non-polluting Industrial Use (not elsewhere specified)
Petrol Filling Station
School (not elsewhere specified)
Social Welfare Facility (excluding those involving residential care)
Warehouse (excluding Dangerous Goods Godown)
Wholesale Trade

(Please see next page)

OTHER SPECIFIED USES (Cont'd)

Column 1 Uses always permitted	Column 2 Uses that may be permitted with or without conditions on application to the Town Planning Board

For "Business" only (Cont'd)

Schedule II: for industrial or industrial-office building [@]

Ambulance Depot
Cargo Handling and Forwarding Facility (not elsewhere specified)
Eating Place (Canteen only)
Government Refuse Collection Point
Government Use (not elsewhere specified)
Information Technology and Telecommunications Industries
Non-polluting Industrial Use (excluding industrial undertakings involving the use/storage of Dangerous Goods[△])
Office (excluding those involving direct provision of customer services or goods)
Public Convenience
Public Transport Terminus or Station
Public Utility Installation
Public Vehicle Park (excluding container vehicle)
Radar, Telecommunications Electronic Microwave Repeater, Television and/or Radio Transmitter Installation
Recyclable Collection Centre
Research, Design and Development Centre
Shop and Services (Motor-vehicle Showroom on ground floor, Service Trades only)
Utility Installation for Private Project
Warehouse (excluding Dangerous Goods Godown)

Broadcasting, Television and/or Film Studio
Bus Depot (on land designated "OU (Business 1)" only)
Cargo Handling and Forwarding Facility (Container Freight Station, free-standing purpose-designed Logistics Centre only)
Industrial Use (not elsewhere specified)
Mass Transit Railway Vent Shaft and/or Other Structure above Ground Level other than Entrances
Off-course Betting Centre
Office (not elsewhere specified)
Petrol Filling Station
Place of Recreation, Sports or Culture
Private Club
Shop and Services (not elsewhere specified) (ground floor only except Ancillary Showroom[#] which may be permitted on any floor)
Vehicle Repair Workshop
Wholesale Trade

In addition, for building without industrial undertakings involving offensive trades or the use/storage of Dangerous Goods[△], the following use is always permitted :

Office

(Please see next page)

OTHER SPECIFIED USES (Cont'd)

For "Business" only (Cont'd)

In addition, the following uses are always permitted in the purpose-designed non-industrial portion on the lower floors (except basements and floors containing wholly or mainly car parking, loading/unloading bays and/or plant room) of an existing building, provided that the uses are separated from the industrial uses located above by a buffer floor or floors and no industrial uses are located within the non-industrial portion:	In addition, the following uses may be permitted with or without conditions on application to the Town Planning Board in the purpose-designed non-industrial portion on the lower floors (except basements and floors containing wholly or mainly car parking, loading/unloading bays and/or plant room) of an existing building, provided that the use is separated from the industrial uses located above by a buffer floor or floors and no industrial uses are located within the non-industrial portion:
Commercial Bathhouse/Massage Establishment Eating Place Educational Institution Exhibition or Convention Hall Institutional Use (not elsewhere specified) Library Off-course Betting Centre Office Place of Entertainment Place of Recreation, Sports or Culture Private Club Public Clinic Religious Institution School (excluding kindergarten) Shop and Services Training Centre	Social Welfare Facility (excluding those involving residential care)

@ An industrial or industrial-office building means a building which is constructed for or intended to be used by industrial or industrial-office purpose respectively as approved by the Building Authority.

△ Dangerous Goods refer to substances classified as Dangerous Goods and requiring a licence for their use/storage under the Dangerous Goods Ordinance (Cap. 295).

Ancillary Showroom requiring planning permission refers to showroom use of greater than 20% of the total usable floor area of an industrial firm in the same premises or building.

(Please see next page)

OTHER SPECIFIED USES (Cont'd)

For "Business" only (Cont'd)

Planning Intention

This zone is intended primarily for general business uses. A mix of information technology and telecommunications industries, non-polluting industrial, office and other commercial uses are always permitted in new "business" buildings. Less fire hazard-prone office use that would not involve direct provision of customer services or goods to the general public is always permitted in existing industrial or industrial-office buildings.

Remarks

(1) No new development, or addition, alteration and/or modification to or redevelopment of an existing building shall result in a total development and/or redevelopment in excess of a maximum plot ratio of 12.0, and the maximum building heights, in terms of metres above Principal Datum, as stipulated on the Plan, or the plot ratio and height of the existing building, whichever is the greater.

(2) In determining the maximum plot ratio for the purposes of paragraph (1) above, any floor space that is constructed or intended for use solely as car park, loading/unloading bay, plant room and caretaker's office, provided such uses and facilities are ancillary and directly related to the development or redevelopment, may be disregarded.

(3) Where the permitted plot ratio as defined in Building (Planning) Regulations is permitted to be exceeded in circumstances as set out in Regulation 22(1) or (2) of the said Regulations, the plot ratio for the building on land to which paragraph (1) applies may be increased by the additional plot ratio by which the permitted plot ratio is permitted to be exceeded under and in accordance with the said Regulation 22(1) or (2), notwithstanding that the relevant maximum plot ratio specified in paragraph (1) above may thereby be exceeded.

(4) Based on the individual merits of a development or redevelopment proposal, minor relaxation of the building height restrictions stated in paragraph (1) above may be considered by the Town Planning Board on application under section 16 of the Town Planning Ordinance.

(Please see next page)

OTHER SPECIFIED USES (Cont'd)

Column 1 Uses always permitted	Column 2 Uses that may be permitted with or without conditions on application to the Town Planning Board
For "Petrol Filling Station" only	
Petrol Filling Station	Government Use (not elsewhere specified) Utility Installation not Ancillary to the Specified Use

Planning Intention

This zone is intended primarily for the provision of petrol filling stations serving the needs of local residents as well as the general public.

(Please see next page)

OTHER SPECIFIED USES (Cont'd)

Column 1 Uses always permitted	Column 2 Uses that may be permitted with or without conditions on application to the Town Planning Board
For "Sewage Treatment Plant" only	
Sewage Treatment/Screening Plant	Government Use (not elsewhere specified) Utility Installation not Ancillary to the Specified Use

Planning Intention

This zone is intended primarily for the provision of sewage treatment/screening plant serving the needs of the general public.

Remarks

(1) No new development, or addition, alteration and/or modification to or redevelopment of an existing building shall result in a total development and/or redevelopment in excess of the maximum building height, in terms of metres above Principal Datum, as stipulated on the Plan, or the height of the existing building, whichever is the greater.

(2) Based on the individual merits of a development or redevelopment proposal, minor relaxation of the building height restrictions stated in paragraph (1) above may be considered by the Town Planning Board on application under section 16 of the Town Planning Ordinance.

GREEN BELT

Column 1 Uses always permitted	Column 2 Uses that may be permitted with or without conditions on application to the Town Planning Board
Agricultural Use Barbecue Spot Government Use (Police Reporting Centre only) Nature Reserve Nature Trail On-Farm Domestic Structure Picnic Area Public Convenience Tent Camping Ground Wild Animals Protection Area	Animal Boarding Establishment Broadcasting, Television and/or Film Studio Cable Car Route and Terminal Building Columbarium (within a Religious Institution or extension of existing Columbarium only) Crematorium (within a Religious Institution or extension of existing Crematorium only) Field Study/Education/Visitor Centre Flat Government Refuse Collection Point Government Use (not elsewhere specified) Helicopter Landing Pad Holiday Camp House Mass Transit Railway Vent Shaft and/or Other Structure above Ground Level other than Entrances Petrol Filling Station Place of Recreation, Sports or Culture Public Transport Terminus or Station Public Utility Installation Public Vehicle Park (excluding container vehicle) Radar, Telecommunications Electronic Microwave Repeater, Television and/or Radio Transmitter Installation Religious Institution Residential Institution School Service Reservoir Social Welfare Facility Utility Installation for Private Project Zoo

Planning Intention

The planning intention of this zone is primarily for the conservation of the existing natural environment amid the built-up areas/at the urban fringe, to safeguard it from encroachment by urban type development, and to provide additional outlets for passive recreational activities. There is a general presumption against development within this zone.

KOWLOON PLANNING AREA NO. 14 (PART)

~~APPROVED~~ *DRAFT* KWUN TONG (SOUTH) OUTLINE ZONING PLAN NO. S/K14S/16*A*

EXPLANATORY STATEMENT

KOWLOON PLANNING AREA NO. 14 (PART)

~~APPROVED~~ *DRAFT* KWUN TONG (SOUTH)
OUTLINE ZONING PLAN NO. S/K14S/16*A*

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KOWLOON PLANNING AREA NO. 14 (PART)

~~APPROVED~~ *DRAFT* KWUN TONG (SOUTH) OUTLINE ZONING PLAN NO. S/K14S/16*A*

(Being ~~an Approved~~ ***Draft*** Plan for the Purposes of the Town Planning Ordinance)

EXPLANATORY STATEMENT

Note: For the purposes of the Town Planning Ordinance, this statement shall not be deemed to constitute a part of the Plan.

1. INTRODUCTION

This explanatory statement is intended to assist an understanding of the ~~approved~~ ***draft*** Kwun Tong (South) Outline Zoning Plan (OZP) No. S/K14S/16*A* (the Plan). It reflects the planning intention and objectives of the Town Planning Board (the Board) for the various land use zonings of the Plan.

2. AUTHORITY FOR THE PLAN AND PROCEDURES

2.1 On 9 January 1959, the draft Ngau Tau Kok Village - Proposed Layout Plan No. LK 15/24/2, being the first statutory plan covering the western part of the Kwun Tong area, was gazetted under section 5 of the Town Planning Ordinance (the Ordinance). On 9 June 1959, the then Governor-in-Council (G in C) under the then section 8(1) of the Ordinance, approved the draft Layout Plan. In January 1964, the approved Layout Plan was referred back to the Board for amendment. On 25 September 1964, the Ngau Tau Kok Village Layout Plan No. LK 14/17, which replaced the Plan No. LK 15/24/2, was gazetted under section 5 of the Ordinance, and was subsequently approved by the then G in C on 9 March 1965 under the then section 8(1) of the Ordinance.

2.2 On 9 May 1984, the Board was directed under section 3 of the Ordinance to prepare a draft statutory plan for the Kwun Tong and Lam Tin areas. On 26 August 1986, the approved Ngau Tau Kok Village Layout Plan was referred back to the Board for amendment under section 12(1)(b)(ii) of the Ordinance. On 11 December 1987, the draft Kwun Tong OZP No. S/K14/1 was exhibited for public inspection under section 5 of the Ordinance. The OZP was subsequently amended twice and exhibited for public inspection under section 6(7) and 7 of the Ordinance. On 1 May 1990, the then G in C agreed to refer the OZP No. S/K14/4 to the Board for further consideration and amendment under section 9(1)(c) of the Ordinance.

2.3 Under the power delegated by the then Governor, the then Secretary for Planning, Environment and Lands, directed the Board on 3 February 1993, under section 3(1)(a) of the Ordinance, to prepare a separate draft OZP for the Anderson Road Quarries and the adjoining area to tie in with the rehabilitation scheme of Anderson Road Quarries. In this connection, the land north of Sau

Mau Ping Road was excised from the draft Kwun Tong OZP and the OZP was re-named as the draft Kwun Tong (South) OZP. On 21 May 1993, the draft Kwun Tong (South) OZP No. S/K14S/1 was exhibited for public inspection under section 5 of the Ordinance. The OZP was subsequently amended four times and exhibited for public inspection under section 7 of the Ordinance.

2.4 On 14 September 1999, the Chief Executive in Council (CE in C), under section 9(1)(a) of the Ordinance, approved the draft Kwun Tong (South) OZP, which was subsequently renumbered as S/K14S/6. On 19 September 2000, the CE in C referred the approved OZP No. S/K14S/6 to the Board for amendment under section 12(1)(b)(ii) of the Ordinance. The OZP was subsequently amended once and exhibited for public inspection under section 5 of the Ordinance.

2.5 On 10 July 2001, the CE in C, under section 9(1)(a) of the Ordinance, approved the draft Kwun Tong (South) OZP, which was subsequently renumbered as S/K14S/8. On 25 September 2001, the CE in C referred the approved Kwun Tong (South) OZP No. S/K14S/8 to the Board for amendment under section 12(1)(b)(ii) of the Ordinance. The OZP was subsequently amended once and exhibited for public inspection under section 5 of the Ordinance.

2.6 On 16 March 2004, the CE in C, under section 9(1)(a) of the Ordinance, approved the draft Kwun Tong (South) OZP, which was subsequently renumbered as S/K14S/10. On 5 October 2004, the CE in C referred the approved Kwun Tong (South) OZP No. S/K14S/10 to the Board for amendment under section 12(1)(b)(ii) of the Ordinance. The OZP was subsequently amended three times and exhibited for public inspection under section 5 or 7 of the Ordinance.

2.7 On 27 March 2007, the CE in C, under section 9(1)(a) of the Ordinance, approved the draft Kwun Tong (South) OZP, which was subsequently renumbered as S/K14S/14. On 5 June 2007, the CE in C referred the approved Kwun Tong (South) OZP No. S/K14S/14 to the Board for amendment under section 12(1)(b)(ii) of the Ordinance.

2.8 On 5 October 2007, the draft Kwun Tong (South) OZP No. S/K14S/15, mainly indicating two areas of the Plan replaced by the draft Urban Renewal Authority Kwun Tong Town Centre – Main Site Development Scheme Plan (DSP) No. S/K14S/URA1/1 and the draft Urban Renewal Authority Kwun Tong Town Centre – Yuet Wah Street Site DSP No. S/K14S/URA2/1, was exhibited for public inspection under section 5 of the Ordinance. During the two-month exhibition period, a total of 5 representations were received. On 14 December 2007, the representations were published for public comments. 1 comment was received during the publication period. On 14 March 2008, the Board considered the representations and comment and decided not to uphold the representations.

2.9 On 15 July 2008, the CE in C, under section 9(1) (a) of the Ordinance, approved the draft Kwun Tong (South) OZP, which was subsequently renumbered as S/K14S/16. On 12 September 2008, the approved Kwun Tong (South) OZP No. S/K14S/16 was exhibited for public inspection under section 9(5) of the Ordinance. ***On 7 February 2012, the CE in C referred the approved OZP No. S/K14S/16 (Plan 1) to the Board for amendment under***

section 12(1)(b)(ii) of the Ordinance. The reference back of the OZP was notified in the Gazette on 17 February 2012 under section 12(2) of the Ordinance.

2.10 On XX XXX 2012, the draft Kwun Tong (South) OZP No. S/K14S/17 (the Plan), incorporating amendments including the rezoning of a site at Sau Ming Road from "Government, Institution or Community" ("G/IC") to "Residential (Group A) 2" ("R(A)2") and other rezoning proposals to reflect as-built conditions and completed/planned developments, was exhibited for public inspection under section 5 of the Ordinance.

3. OBJECT OF THE PLAN

3.1 The object of the Plan is to indicate the broad land use zonings and major transport network so that development and redevelopment of land within the Planning Scheme Area (the Area) can be put under statutory planning control.

3.2 The Plan is to illustrate the broad principles of development. It is a small-scale plan and transport alignments and boundaries between land use zones may be subject to minor adjustments as detailed planning proceeds.

4. NOTES OF THE PLAN

4.1 Attached to the Plan is a set of Notes which shows the types of uses or developments which are always permitted within the Area and in particular zones and which may be permitted by the Board, with or without conditions, on application. The provision for application for planning permission under section 16 of the Ordinance allows greater flexibility in land use planning and control of development to meet changing needs.

4.2 For the guidance of the general public, a set of definitions that explains some of the terms used in the Notes may be obtained from the Technical Services Division of the Planning Department and can be downloaded from the Board's website at http://www.info.gov.hk/tpb.

5. THE PLANNING SCHEME AREA

5.1 The Area is located in East Kowloon within the Kwun Tong District. It is bounded by Hoi Bun Road, Shun Yip Street and Ngau Tau Kok Road to the west; Chun Wah Road and Sau Mau Ping Road to the north; and Lei Yue Mun Road and King Yip Street to the south. The eastern boundary largely follows the district administrative boundary for the Kwun Tong District. The boundary of the Area is shown in a heavy broken line on the Plan. It covers about 387 hectares of land.

5.2 The Area can be separated into two portions in terms of land use. The portion to the south-west of Kwun Tong Road, which was formed by reclamation in the 1950's, is a long-established industrial area. The existing industrial area is however under transformation to meet the changing needs of the industrial and

business sectors. The portion to the north-east of Kwun Tong Road and Lei Yue Mun Road is predominantly occupied by residential developments, particularly public housing estates.

6. POPULATION

According to the 2006 Population By-census, the population in the area was about 296,000 persons. If the planned uses on the OZP are developed, the planned population for the area would be about 351,900 persons. The increase in population is mainly due to the completion of major public housing projects including the comprehensive redevelopment of Lei Yue Mun Road Estate (currently known as Lei On Court), Upper Ngau Tau Kok Estate, Sau Mau Ping Estate and Lam Tin Estate in the Area.

7. BUILDING HEIGHT RESTRICTIONS IN KWUN TONG BUSINESS AREA

7.1 As revealed from the public consultations undertaken under the Study of Urban Design Guidelines for Hong Kong (2003), the community was in general support of the initiative to instigate height control in the statutory plans to protect views to the ridgelines from popular vantage points. In taking this forward, proposals for building height restriction for the Kwun Tong and Kowloon Bay Business Areas were prepared and put forward for public consultation between May and July 2004. The proposals were generally supported by the community as a means to preserve the views to the ridgelines and to enhance the urban environment.

7.2 In main, the building height restrictions are to preserve the views to the Kowloon Ridgelines from the vantage points recommended in the Urban Design Guidelines Study, taking into account the local area context and the need to maintain visually compatible building masses in the wider setting. There are four height bands – 100 metres above Principal Datum (mPD), 130mPD, 160mPD and 200mPD in the Kwun Tong Business Area, for preserving views to the ridgelines and reinforcing discernible district centre character at the main activity node of the Kwun Tong Mass Transit Railway (MTR) Station and Town Centre. These height bands help achieve a stepped height profile for visual permeability, reduce the solidness of Kwun Tong Business Area and maintain a more intertwined relationship with the Victoria Harbour edge. Sharp contrast and significant visual barrier to adjacent major residential development such as Laguna City is also avoided.

7.3 Building height restrictions for Government, institution, community and utility sites in Kwun Tong Business Area in height bands of 15mPD and 40mPD are also incorporated to provide visual relief to the high density environment of the Kwun Tong Business Area.

7.4 A minor relaxation clause in respect of the building height restrictions is incorporated into the Notes of the Plan in order to provide incentive for development/redevelopments with design merits/planning gains. Each application for minor relaxation of building height restriction will be considered

on its own merits and the relevant criteria for consideration of such relaxation are as follows:

(a) amalgamating smaller sites for achieving better urban design and local area improvements;

(b) accommodating the bonus plot ratio granted under the Buildings Ordinance in relation to surrender/dedication of land/area for use as public passage/street widening;

(a) providing better streetscape/good quality street level public urban space; and

(b) achieving green design and other design merits.

8. LAND USE ZONINGS

8.1 "Commercial (1)" ("C(1)") - Total Area 1.21 ha

8.1.1 This zone is intended primarily for commercial developments, which may include shop, service, place of entertainment and eating place serving the needs of the local workers.

8.1.2 There are a total of seven sites under "C(1)" zoning. They are located in Kwun Tong Business Area to the south of Kwun Tong Road. These commercial sites, which are either located near road junctions or major transport interchanges, have been developed to provide commercial facilities for the workers. Multi-storey car parks are incorporated in some of the developments.

8.1.3 A maximum plot ratio of 12.0 is imposed on these commercial sites so as not to aggravate the existing traffic problems in the Area. In the circumstances set out in Regulation 22 of the Building (Planning) Regulations, the above specified maximum plot ratio may be increased by what is permitted to be exceeded under Regulation 22. This is to maintain flexibility for unique circumstances such as dedication of part of a site for road widening or public uses.

8.1.4 Developments and redevelopments in the "C(1)" sites are subject to ~~a~~ maximum building height~~s~~ of 100mPD or 130mPD as stipulated on the Plan. Minor relaxation of the building height restrictions may be considered by the Board through the planning permission system pursuant to para. 7.4 above. Each application for minor relaxation of building height restriction will be considered on its own merits.

8.1.5 Minor relaxation of the plot ratio may be considered by the Board on application under section 16 of the Ordinance. Each application will be considered on its own merits.

8.2 "Residential (Group A)" ("R(A)") - Total Area 136.~~10~~ 37 ha

8.2.1 This zone is intended primarily for high-density residential developments. Commercial uses are always permitted on the lowest three floors of a building or in the purpose-designed non-residential portion of an existing building.

8.2.2 Existing public rental housing estates in the Area include Lok Wah Estate, Upper Ngau Tau Kok Estate, Garden Estate, Sau Mau Ping Estate, Wo Lok Estate, Wan Hon Estate, Tsui Ping Estate, Kai Tin Estate, Ping Tin Estate, On Tin Estate, Hing Tin Estate and Tak Tin Estate. Existing Home Ownership Scheme developments include Lok Nga Court, Lei On Court, On Kay Court, Cheung Wo Court, Hong Tin Court, Hong Yat Court, Hiu Lai Court, Po Pui Court, Hong Wah Court and Hong Ying Court. The existing Sau Mau Ping Estate, Upper Ngau Tau Kok Estate and Lam Tin Estate are being redeveloped under Housing Department's Comprehensive Redevelopment Programme.

8.2.3 A site along Sau Ming Road, which is zoned "R(A)2" is proposed for public rental housing cum community hall development. To prevent massive and out-of-context development, the site is subject to a maximum building height of 150mPD, domestic plot ratio of 4.5 and non-domestic plot ratio of 1.5. Various GIC facilities including a community hall, a small public library and a study area would be provided within the development.

8.2.~~4~~3 A wide range of Government, institution or community (GIC) facilities such as primary schools, community halls, children and youth centres, elderly centres, local open space, indoor games halls, markets and shopping centres are provided within these estates to serve the residents. Some of the community facilities are free-standing within the housing estates. They are counted as follows:

Name of Estate	No. of Free-standing Facilities
Lok Wah Estate	2 primary schools and 1 community centre
Tsui Ping Estate	1 primary school
Lam Tin Estate (adjacent to Phases 7 & 8)	1 planned municipal services building
Ping Tin Estate	2 primary schools
Sau Mau Ping Estate	3 existing and 1 planned primary schools *and 1 community hall*
Upper Ngau Tau Kok Estate	1 primary school

These school and GIC facilities, existing or planned, are zoned "R(A)" on the OZP so as to allow for flexibility in the comprehensive planning and development of these large residential sites.

8.2.~~5~~4 Existing private residential developments include those in the vicinity of the 'town centre' of the Area, between Kwun Tong Road and Ngau Tau Kok Road, as well as those at Hiu Kwong Street.

8.2.65 In the consideration of the overall transport, environmental and infrastructural constraints as well as the adequacy in the provision of community facilities envisioned in the Kowloon Density Study Review, completed in early 2002, developments or redevelopments within this zone are subject to specific control on plot ratios except otherwise specified in the Notes, i.e. a maximum plot ratio of 7.5 for a domestic building and a maximum plot ratio of 9.0 for a partly domestic and partly non-domestic building. In calculating the gross floor areas for these developments/redevelopments, the lands for free-standing purpose-designed buildings that are used solely for accommodating school or other GIC facilities, including those located on ground and on building podium, are not to be taken as parts of the site.

8.2.76 The northern part of Sceneway Garden which is a comprehensive private residential development above the public transport interchange is within the "R(A)1" zone. The southern part of the development is built on top of the Lam Tin MTR Station on the other side of Lei Yue Mun Road. A landscaped deck is built over the road linking the two parts of the development together. To ensure that the intensity of this private development is under statutory planning control, a maximum domestic gross floor area is imposed under the Notes of the Plan.

8.2.87 In the circumstances set out in Regulation 22 of the Building (Planning) Regulations, the above specified maximum plot ratios or gross floor areas may be increased by what is permitted to be exceeded under Regulation 22. This is to maintain flexibility for unique circumstances such as dedication of part of a site for road widening or public uses.

8.2.9 Minor relaxation of the development restrictions may be considered by the Board on application under section 16 of the Ordinance. Each application will be considered on its own merits.

8.3 "Residential (Group B)" ("R(B)") - Total Area 14.46 ha

8.3.1 This zone is intended primarily for medium-density residential developments where commercial uses serving the residential neighbourhood may be permitted on application to the Board. The private residential developments along Kung Lok Road and Yuet Wah Street fall within this zone.

8.3.2 Developments within this zone are subject to a maximum plot ratio of 5.0 in order to restrain traffic growth which will otherwise overload the existing and planned road network.

8.3.3 Minor relaxation of the plot ratio may be considered by the Board on application under section 16 of the Ordinance. Each application will be considered on its own merits.

8.4 "Government, Institution or Community" ("G/IC") - Total Area ~~45.43~~*45.15* ha

8.4.1 This zone is intended primarily for the provision of GIC facilities serving the needs of the local residents and/or a wider district, region or the territory. It is also intended to provide land for uses directly related to or in support of the work of the Government, organizations providing social services to meet community needs, and other institutional establishments.

8.4.2 Major existing GIC facilities include United Christian Hospital at Sau Nga Road, Ngau Tau Kok Jockey Club Clinic, Lam Tin Polyclinic at Kai Tin Road, Kwong Yam Home for the Aged at Kung Lok Road, Ngau Tau Kok Complex, two divisional police stations at Hong Ning Road and Lei Yue Mun Road, two fire stations at Hoi Yuen Road and Tseung Kwan O Road, two market complexes at Ngau Tau Kok Road and Shui Wo Street, an indoor games hall at Hiu Kwong Street, a swimming pool complex near Kwun Tong Recreation Ground, service reservoirs, and a number of primary and secondary schools.

8.4.3 Developments and redevelopments in the "G/IC(1)" sites in Kwun Tong Business Area to the south of Kwun Tong Road are subject to a maximum building height of 15mPD or 40mPD as stipulated on the Plan. Minor relaxation of the building height restrictions may be considered by the Board through the planning permission system pursuant to para. 7.4 above. Each application for minor relaxation of building height restriction will be considered on its own merits.

8.5 "Open Space" ("O") - Total Area 42.19 ha

8.5.1 This zone is intended primarily for the provision of outdoor open-air public space for active and/or passive recreational uses serving the needs of local residents as well as the general public.

8.5.2 Major existing open spaces in the Area include Kwun Tong Recreation Ground, Hong Ning Road Recreation Ground, Sau Nga Road Recreation Ground, Hoi Bun Road Park, Lam Tin Park, Hong Ning Road Park, the playgrounds at Kung Lok Road, Yuet Wah Street, Hiu Ming Street, Tsun Yip Street, and a number of smaller rest gardens at various locations. The open space site at Sau Ming Road is currently under construction. Additional sites have been reserved at Kai Tin Road and Tseung Kwan O Road.

8.5.3 Soccer pitches and play-areas are also provided on top of the decked service reservoirs and local open spaces are provided within public housing estates and comprehensive private housing developments.

8.6 "Other Specified Uses" ("OU") - Total Area 46.82 ha

8.6.1 This zoning covers land allocated for specific uses which include Business, Petrol Filling Station and Sewage Treatment Plant.

8.6.2 About 45.57 ha of land is zoned "OU" annotated "Business"

("OU(B)"). This zone is intended primarily for general business uses. A mix of information technology and telecommunications industries, non-polluting industrial, office and other commercial uses are always permitted in new "business" buildings. Less fire hazard-prone office use that would not involve direct provision of customer services or goods to the general public is always permitted in existing industrial and industrial-office (I-O) buildings. As it is not possible to phase out existing polluting and hazardous industrial uses all at once on land zoned "OU(B)", it is necessary to ensure compatibility of the uses within the same industrial or I-O building and in the Kwun Tong Business Area until the whole area is transformed to cater for the new non-polluting business uses. The setting back of buildings to cater for the future increase in traffic demand may also be required. The setback requirements are stipulated in departmental outline development plans and enforced through lease modification process where appropriate. Development within this zone is subject to a maximum plot ratio of 12.0 as specified in the Notes. Reference should be made to the relevant Town Planning Board Guidelines.

8.6.3 A site at How Ming Street to the northwest of Tsun Yip Street Playground is zoned "OU" annotated "Business 1" ("OU(B)1"). It is also for general employment uses with the same planning intention as stated in paragraph 8.6.2. However, in order to make provision for redevelopment of the existing bus depot if necessary, 'Bus Depot' use is included in Column 2 of the "OU(B)1" zone to allow the Board to scrutinise any submitted proposals to its satisfaction.

8.6.4 In the circumstances set out in Regulation 22 of the Building (Planning) Regulations, the above specified maximum plot ratio may be increased by what is permitted to be exceeded under Regulation 22. This is to maintain flexibility for unique circumstances such as dedication of part of a site for road widening or public uses.

8.6.5 The sewage treatment plant at Wing Yip Street zoned "OU" annotated "Sewage Treatment Plant" is intended primarily for the provision of sewage treatment/screening plant serving the needs of the general public.

8.6.6 Developments and redevelopments in the "OU(B)" and "OU(B)1" sites are subject to maximum building heights ranging from 100mPD to 200mPD. Development and redevelopment in the "OU" annotated "Sewage Treatment Plant" site is subject to a maximum building height of 15 mPD. Minor relaxation of the building height restrictions may be considered by the Board through the planning permission system pursuant to para. 7.4 above. Each application for minor relaxation of building height relaxation will be considered on its own merits.

8.6.7 The petrol filling station at Kwun Tong Road zoned "OU" annotated "Petrol Filling Station" is intended primarily for the provision of petrol filling stations serving the needs of local residents as well as the general public.

8.7 "Green Belt" ("GB") - Total Area 28.88 ha

8.7.1 The planning intention of this zone is primarily for the conservation of the existing natural environment amid the built-up areas/at the urban fringe, to safeguard it from encroachment by urban type development, and to provide additional outlets for passive recreational activities. There is a general presumption against development within this zone. Development within this zone will be carefully controlled and development proposals will be assessed on individual merits taking into account the relevant Town Planning Board Guidelines.

8.7.2 It includes Ma Yau Tong West and Ma Yau Tong Central landfill sites. Restoration works for recreational afteruse are currently in progress. Part of Lam Tin Park and hillslopes at various locations are also within this zone.

9. COMMUNICATIONS

9.1 Roads

9.1.1 The primary distributors in the Area include Kwun Tong By-pass and Tseung Kwan O Road. Kwun Tong By-pass along the south-western boundary of the Area links Eastern Harbour Crossing in the south-east and Tseung Kwan O Tunnel via Tseung Kwan O Road in the north-east. This By-pass also forms part of the road network connecting the Eastern Harbour Crossing to the approaches of the Tate's Cairn Tunnel portal at Diamond Hill. Tseung Kwan O Road links Tseung Kwan O New Town via Tseung Kwan O Tunnel, which forms the principal access from the main urban areas to the New Town.

9.1.2 Major district distributors in the Area include Kwun Tong Road, Lei Yue Mun Road and Wai Yip Street. These distributors, running in a north-west and south-east direction, connect the Area, in particular Kwun Tong Business Area, with Central and West Kowloon. The business area is also served by local distributors including Hung To Road, Lai Yip Street, Tsun Yip Street and Hoi Yuen Road.

9.1.3 Sau Mau Ping Road, Tsui Ping Road, Hip Wo Street and Hong Ning Road are the major local distributors in the north-eastern part of the Area. The main function of these roads is to serve the residents of the public and private housing developments in the Area. Sau Mau Ping Road at the northern edge of the Area together with Shun Lee Tsuen Road and Po Lam Road also provide external linkages to Central and West Kowloon to the west, and Sai Kung and Tseung Kwan O to the east.

9.2 Mass Transit Railway

The existing MTR Kwun Tong Line runs along Kwun Tong Road and Lei Yue Mun Road on elevated tracks. It connects Tseung Kwan O Line with

interchange at *MTR* Yau Tong ~~MTR~~ Station for harbour crossing. There are two stations in the Area, namely, *MTR* Ngau Tau Kok Station and *MTR* Kwun Tong Station.

9.3 Public Transport

Apart from the MTR, the Area is also well served by various modes of public transport including bus and public light bus. A number of bus termini are conveniently located to serve the residential and industrial developments in the Area.

10. URBAN RENEWAL AUTHORITY DEVELOPMENT SCHEME PLAN AREA

10.1 Two areas have been designated as "Urban Renewal Authority (URA) Development Scheme Plan Areas". The land use zonings of the areas are depicted on the relevant URA *Development Scheme Plans* and they will be implemented by the URA.

10.2 The DSP for Kwun Tong Town Centre - Main Site covers an area of about 4.63 ha. URA intends to redevelop this area for residential, commercial, GIC and open space uses. The draft URA Kwun Tong Town Centre - Main Site DSP No. S/K14S/URA1/1 was exhibited for public inspection under section 5 of the Ordinance on 5 October 2007.

10.3 The DSP for Kwun Tong Town Centre - Yuet Wah Street Site covers an area of about 0.43 ha. URA intends to redevelop this area for medium-density residential development with the provision of GIC facilities. The draft URA Kwun Tong Town Centre - Yuet Wah Street Site DSP No. S/K14S/URA2/1 was exhibited for public inspection under section 5 of the Ordinance on 5 October 2007.

10.4 On 15 July 2008, the CE in C, under section 9(1)(a) of the Ordinance, approved the draft URA Kwun Tong Town Centre - Main Site DSP and Yuet Wah Street Site DSP which were subsequently renumbered as S/K14S/URA1/2 and S/K14S/URA 2/2 respectively. On 12 September 2008, the approved URA Kwun Tong Town Centre - Main Site DSP No. S/K14S/URA1/2 and Yuet Wah Street Site DSP No. S/K14S/URA2/2 were exhibited for public inspection under section 9(5) of the Ordinance.

11 UTILITY SERVICES

11.1 The Area is well served with piped water supply, drainage and sewerage systems. Electricity, gas and telephone services are also available. No difficulty is envisaged in meeting the future requirements. Upgrading of the existing fresh water and salt water supply systems will be carried out to cope with the increase of water demand for the additional population while improvement works to the existing drainage and sewerage systems may be required for the possible change of stormwater flow due to topographic changes arising from development.

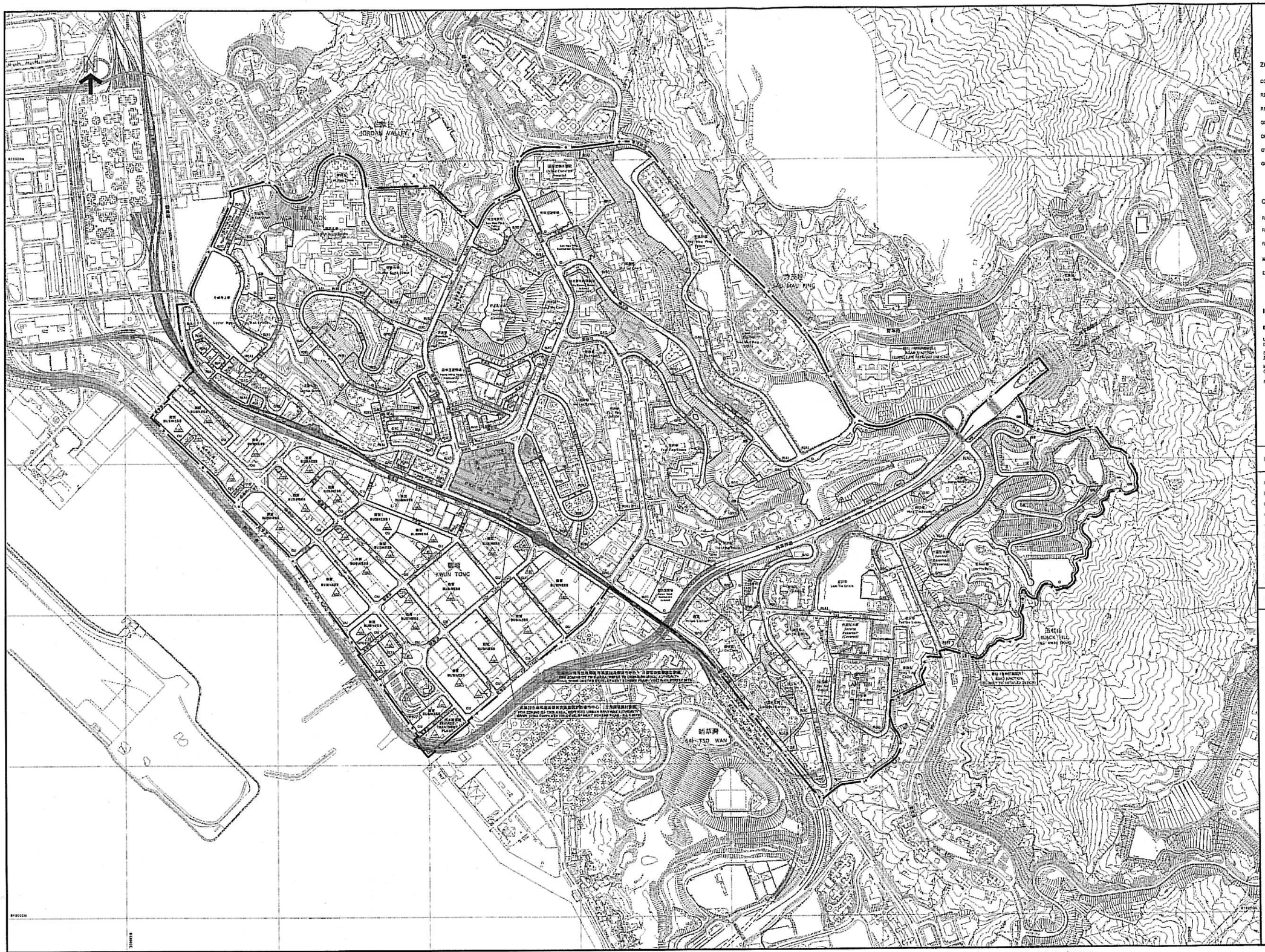
11.2 The project of "East Kowloon Sewerage Improvement and Pollution Control" undertaken by the Drainage Services Department to improve the existing sewerage system and abate the pollution problem in East Kowloon has been completed.

12. IMPLEMENTATION

12.1 Although existing uses non-conforming to the statutory zoning are tolerated, any material change of use and any other development/redevelopment must be always permitted in terms of the Plan or, if permission is required, in accordance with the permission granted by the Board. The Board has published a set of guidelines for the interpretation of existing use in the urban and new town areas. Any person who intends to claim an "existing use right" should refer to the guidelines and will need to provide sufficient evidence to support his claim. The enforcement of the zonings mainly rests with the Buildings Department, the Lands Department and the various licensing authorities.

12.2 The Plan provides a broad land use framework within which more detailed non-statutory plans for the Area are prepared by the Planning Department. These detailed plans are used as the basis for public works planning and site reservation within the Government. Disposal of sites is undertaken by the Lands Department. Public works projects are co-ordinated by the Civil Engineering and Development Department in conjunction with the client departments and the works departments, such as the Highways Department and the Architectural Services Department. In the course of implementation of the Plan, the Kwun Tong District Council would also be consulted as appropriate.

12.3 Planning applications to the Board will be assessed on individual merits. In general, the Board, in considering the planning applications will take into account all relevant planning considerations which may include departmental outline development plans and guidelines published by the Board. The outline development plans are available for public inspection at the Planning Department. Guidelines published by the Board are available from the Board's website, the Secretariat of the Board and the Technical Services Division of the Planning Department. Application forms and Guidance Notes for planning applications can be downloaded from the Board's website and are available from the Secretariat of the Board and the Technical Services Division and relevant District Planning Office of the Planning Department. Applications should be supported by such materials as the Board thinks appropriate to enable it to consider the applications.



圖例
NOTATION

ZONES		地帶
COMMERCIAL	C	商業
RESIDENTIAL (GROUP A)	R(A)	住宅（甲類）
RESIDENTIAL (GROUP B)	R(B)	住宅（乙類）
GOVERNMENT, INSTITUTION OR COMMUNITY	G/IC	政府、機構或社區
OPEN SPACE	O	休憩用地
OTHER SPECIFIED USES	OU	其他指定用途
GREEN BELT	GB	綠化地帶

COMMUNICATIONS		交通
RAILWAY AND STATION	RAIL STATION	鐵路及車站
RAILWAY AND STATION (UNDERGROUND)	RAIL STATION	鐵路及車站（地下）
RAILWAY AND STATION (ELEVATED)	RAIL STATION	鐵路及車站（高架）
MAJOR ROAD AND JUNCTION		主要道路及路口
ELEVATED ROAD		高架道路

MISCELLANEOUS		其他
BOUNDARY OF PLANNING SCHEME		規劃範圍界線
URBAN RENEWAL AUTHORITY DEVELOPMENT SCHEME PLAN AREA		市區重建局發展計劃圖範圍
BUILDING HEIGHT CONTROL ZONE BOUNDARY		建築物高度管制區界線
MAXIMUM BUILDING HEIGHT (IN METRES ABOVE PRINCIPAL DATUM)	110mPD	最高建築物高度（在主水平基準上若干米）
PETROL FILLING STATION	P F S	加油站

土地用途及面積一覽表
SCHEDULE OF USES AND AREAS

USES	APPROXIMATE AREA & % 大約面積及百分率		
	公頃 HECTARES	% 百分率	用途
COMMERCIAL	1.21	0.31	商業
RESIDENTIAL (GROUP A)	135.10	35.15	住宅（甲類）
RESIDENTIAL (GROUP B)	14.40	3.73	住宅（乙類）
GOVERNMENT, INSTITUTION OR COMMUNITY	45.43	11.73	政府、機構或社區
OPEN SPACE	42.19	10.89	休憩用地
OTHER SPECIFIED USES	46.62	12.00	其他指定用途
GREEN BELT	28.88	7.45	綠化地帶
NULLAH	0.09	0.02	明渠
MAJOR ROAD ETC.	67.18	17.34	主要道路等
URBAN RENEWAL AUTHORITY DEVELOPMENT SCHEME PLAN AREA	5.08	1.31	市區重建局發展計劃圖範圍
TOTAL PLANNING SCHEME AREA	387.40	100.00	規劃範圍總面積

夾附的《註釋》屬這份圖則的一部分
THE ATTACHED NOTES ALSO FORM PART OF THIS PLAN

行政長官會同行政會議於２００８年７月１５日 根據城市規劃條例第９（１）（ａ）條核准的圖則
APPROVED BY THE CHIEF EXECUTIVE IN COUNCIL UNDER SECTION 9(1)(a) OF THE TOWN PLANNING ORDINANCE ON 15 JULY 2008

LAM Chik-ting, Tony 林植廷
CLERK TO THE EXECUTIVE COUNCIL 行政會議秘書

香港城市規劃委員會依據城市規劃條例擬備的觀塘南部（九龍規劃區第１４區部分）分區計劃大綱圖
TOWN PLANNING ORDINANCE, HONG KONG TOWN PLANNING BOARD
KOWLOON PLANNING AREA No. 14 (PART) - KWUN TONG (SOUTH) - OUTLINE ZONING PLAN

SCALE 1:5000 比例尺

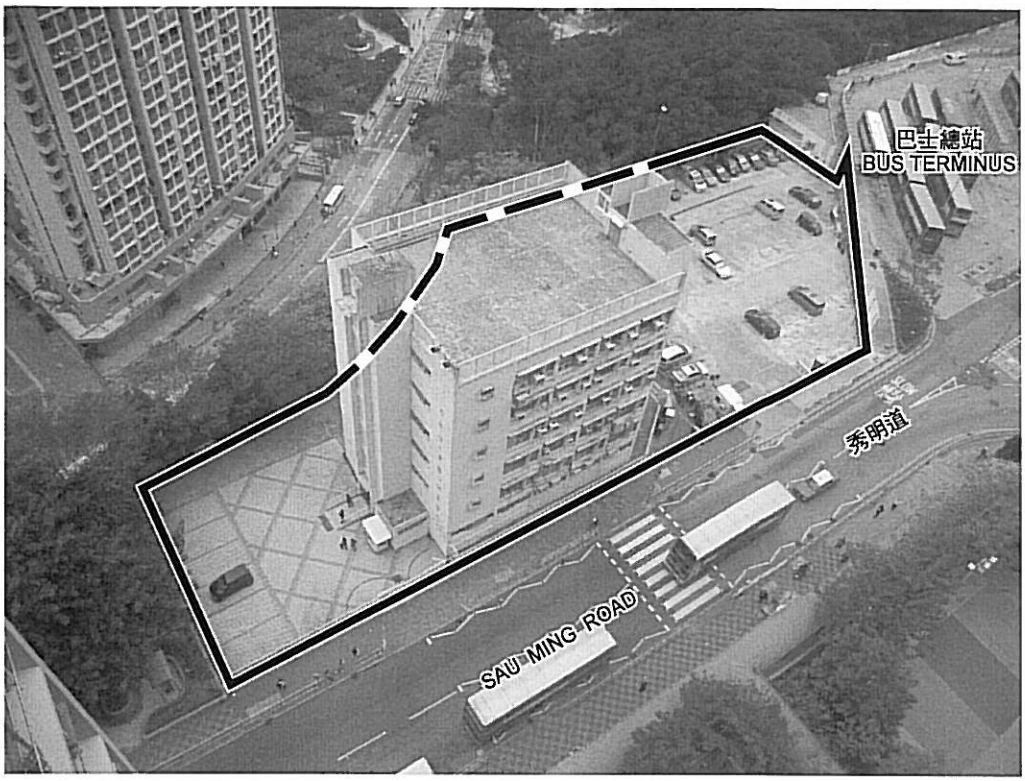
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規劃署遵照城市規劃委員會指示擬備
PREPARED BY THE PLANNING DEPARTMENT UNDER THE DIRECTION OF THE TOWN PLANNING BOARD

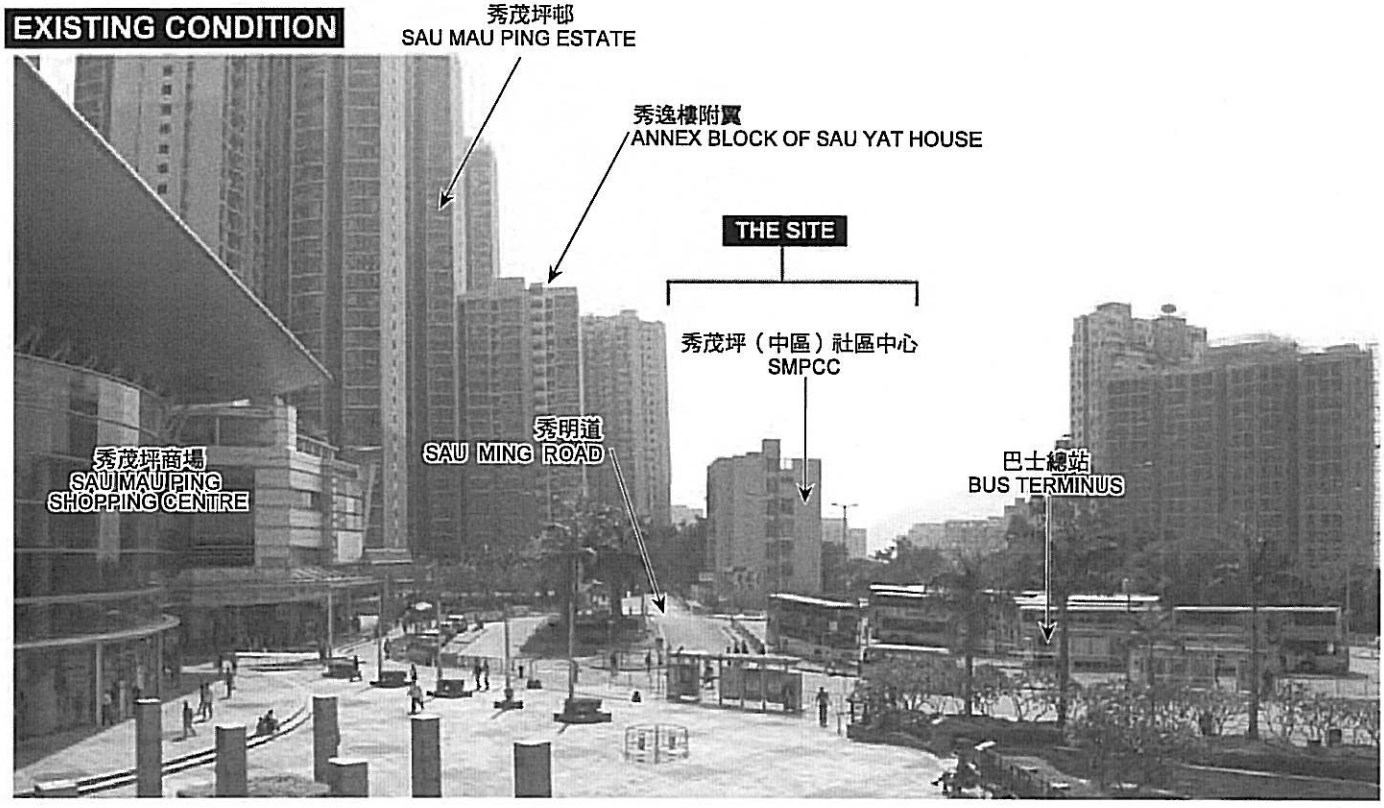
圖則編號 PLAN No. S/K14S/16

PLAN PREPARED ON 8.2.2012

REFERENCE No. M/K14S/12/11 圖 PLAN 1



有關地盤
THE SUBJECT SITE



現有景觀
EXISTING VIEW

界線只作識別用
BOUNDARY FOR IDENTIFICATION PURPOSE ONLY

本圖於2012年2月9日擬備，所根據的資料為上圖照片攝於2011年10月20日的實地照片，下圖照片由房屋署提交
PLAN PREPARED ON 10.2.2012 BASED ON UPPER SITE PHOTO TAKEN ON 20.10.2011 AND LOWER SITE PHOTO SUBMITTED BY HOUSING DEPARTMENT

實地照片 SITE PHOTOS

擬議修訂的觀塘南部
分區計劃大綱核准圖編號 S/K14S/16
PROPOSED AMENDMENT TO THE APPROVED KWUN TONG (SOUTH) OUTLINE ZONING PLAN No. S/K14S/16

規劃署
PLANNING DEPARTMENT

M/K14S/12/11

圖 PLAN 3



有關地盤
THE SUBJECT SITE

界線只作識別用
BOUNDARY FOR IDENTIFICATION PURPOSE ONLY

本圖於2012年2月9日擬備，所根據的資料為攝於2011年10月20日的實地照片
PLAN PREPARED ON 9.2.2012 BASED ON SITE PHOTO TAKEN ON 20.10.2011

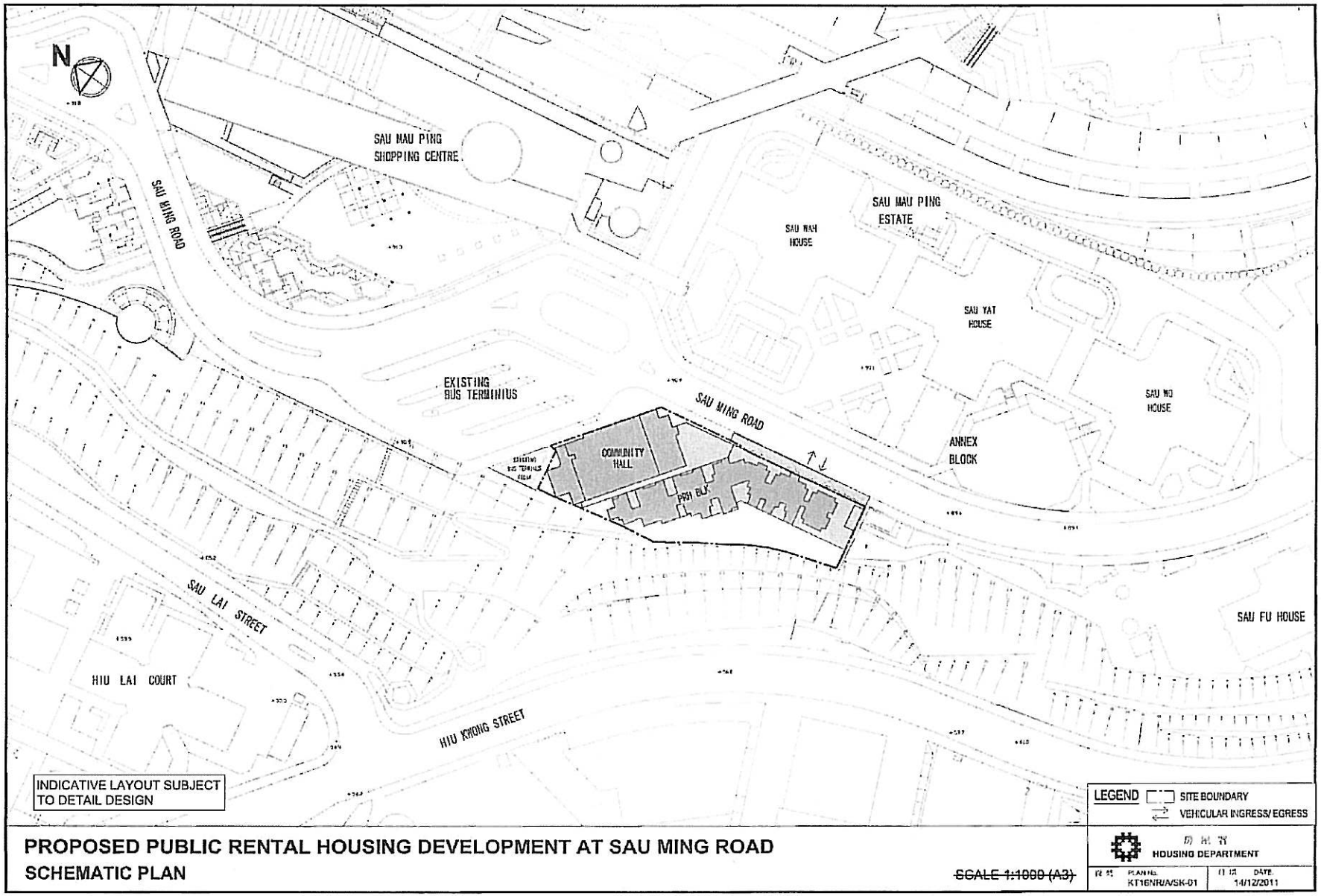
實地照片 SITE PHOTO

擬議修訂的觀塘南部
分區計劃大綱核准圖編號 S/K14S/16
PROPOSED AMENDMENT TO THE APPROVED KWUN TONG (SOUTH) OUTLINE ZONING PLAN No. S/K14S/16

規劃署
PLANNING DEPARTMENT

M/K14S/12/11

圖 PLAN 4



PROPOSED PUBLIC RENTAL HOUSING DEVELOPMENT AT SAU MING ROAD
SCHEMATIC PLAN

~~SCALE 1:1000 (A3)~~

資料來源：繪圖由房屋署提交
SOURCE : DRAWING SUBMITTED BY HOUSING DEPARTMENT

本摘要圖於2012年2月10日擬備
EXTRACT PLAN PREPARED ON 10.2.2012

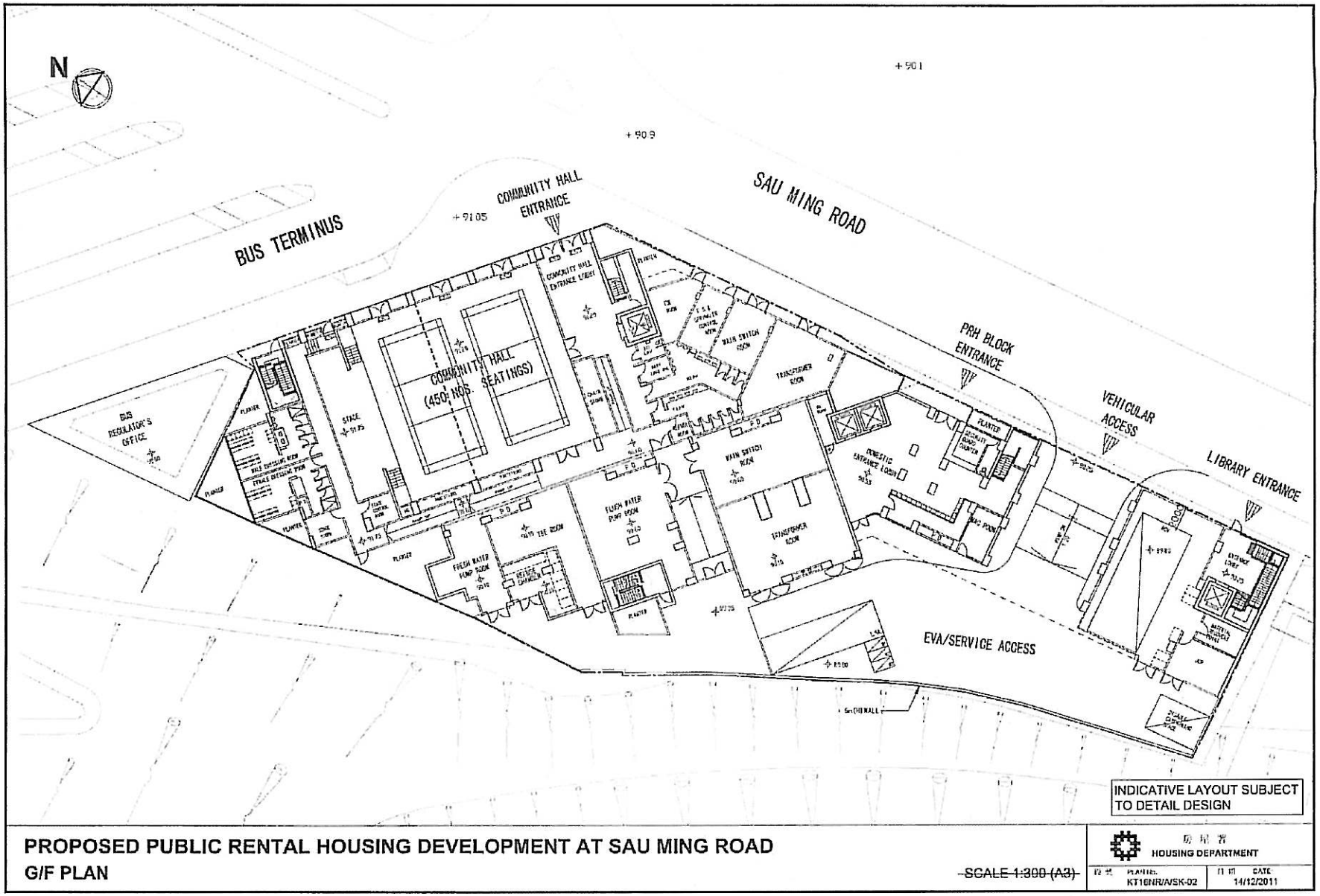
擬議概念設計圖
PROPOSED CONCEPTUAL LAYOUT PLAN

擬議修訂的觀塘南部
分區計劃大綱核准圖編號 S/K14S/16
PROPOSED AMENDMENT TO THE
APPROVED KWUN TONG (SOUTH) OUTLINE ZONING PLAN No. S/K14S/16

規劃署
PLANNING DEPARTMENT

M/K14S/12/11

圖 PLAN 5



PROPOSED PUBLIC RENTAL HOUSING DEVELOPMENT AT SAU MING ROAD
G/F PLAN

~~SCALE 1:300 (A3)~~

房屋署 HOUSING DEPARTMENT

圖號 PLAN No.	日期 DATE
KT16NR/A/SK-02	14/12/2011

資料來源：繪圖由房屋署提交
SOURCE : DRAWING SUBMITTED BY HOUSING DEPARTMENT

本摘要圖於2012年2月10日擬備
EXTRACT PLAN PREPARED ON 10.2.2012

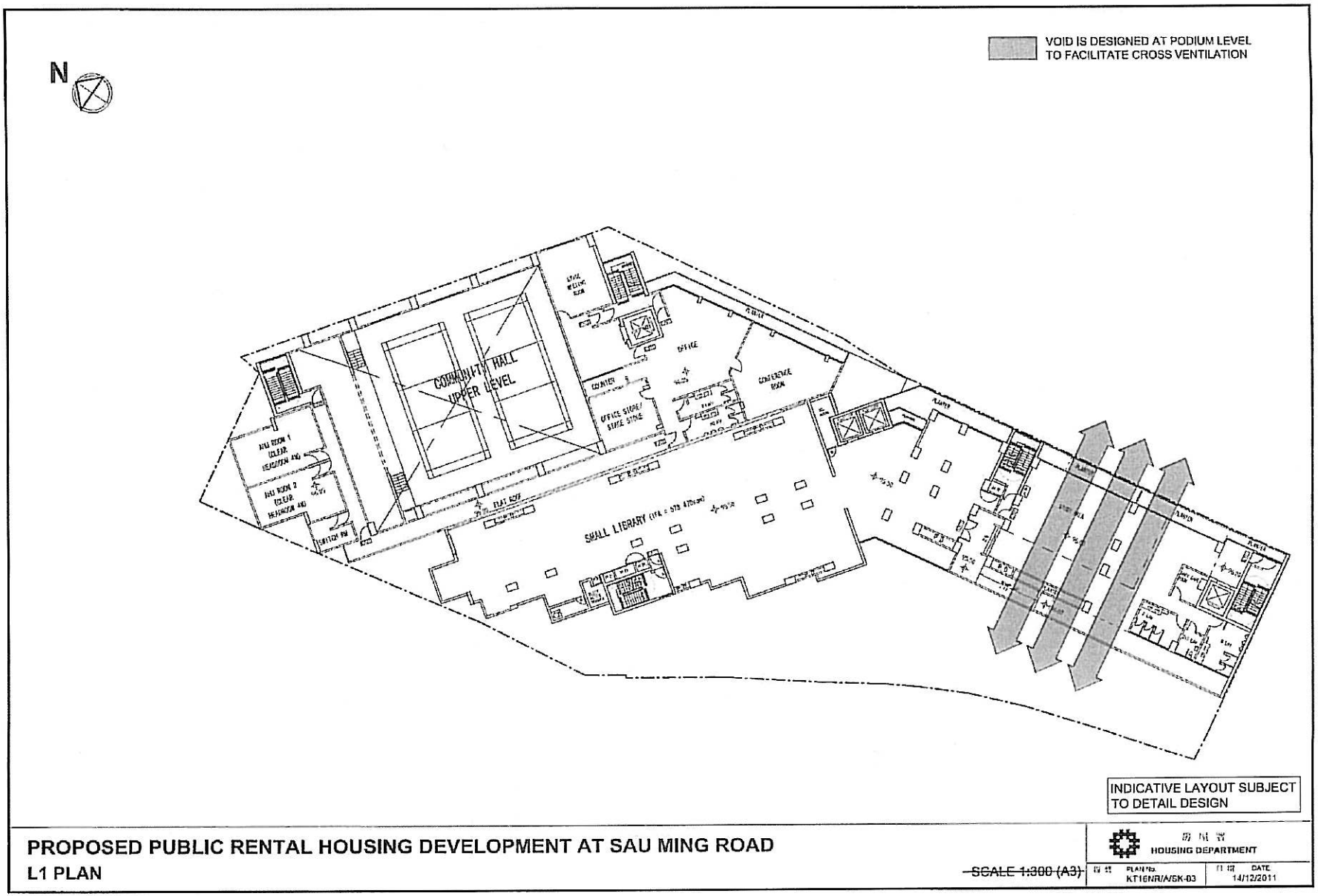
擬議概念設計圖
PROPOSED CONCEPTUAL LAYOUT PLAN

擬議修訂的觀塘南部
分區計劃大綱核准圖編號 S/K14S/16
PROPOSED AMENDMENT TO THE
APPROVED KWUN TONG (SOUTH) OUTLINE ZONING PLAN No. S/K14S/16

規劃署
PLANNING DEPARTMENT

M/K14S/12/11

圖 PLAN 6



PROPOSED PUBLIC RENTAL HOUSING DEVELOPMENT AT SAU MING ROAD

L1 PLAN

~~SCALE 1:300 (A3)~~

房屋署
HOUSING DEPARTMENT

PLAN No. KT16N/R/A/SK-03

DATE 14/12/2011

資料來源：繪圖由房屋署提交
SOURCE : DRAWING SUBMITTED BY HOUSING DEPARTMENT

本摘要圖於2012年2月10日擬備
EXTRACT PLAN PREPARED ON 10.2.2012

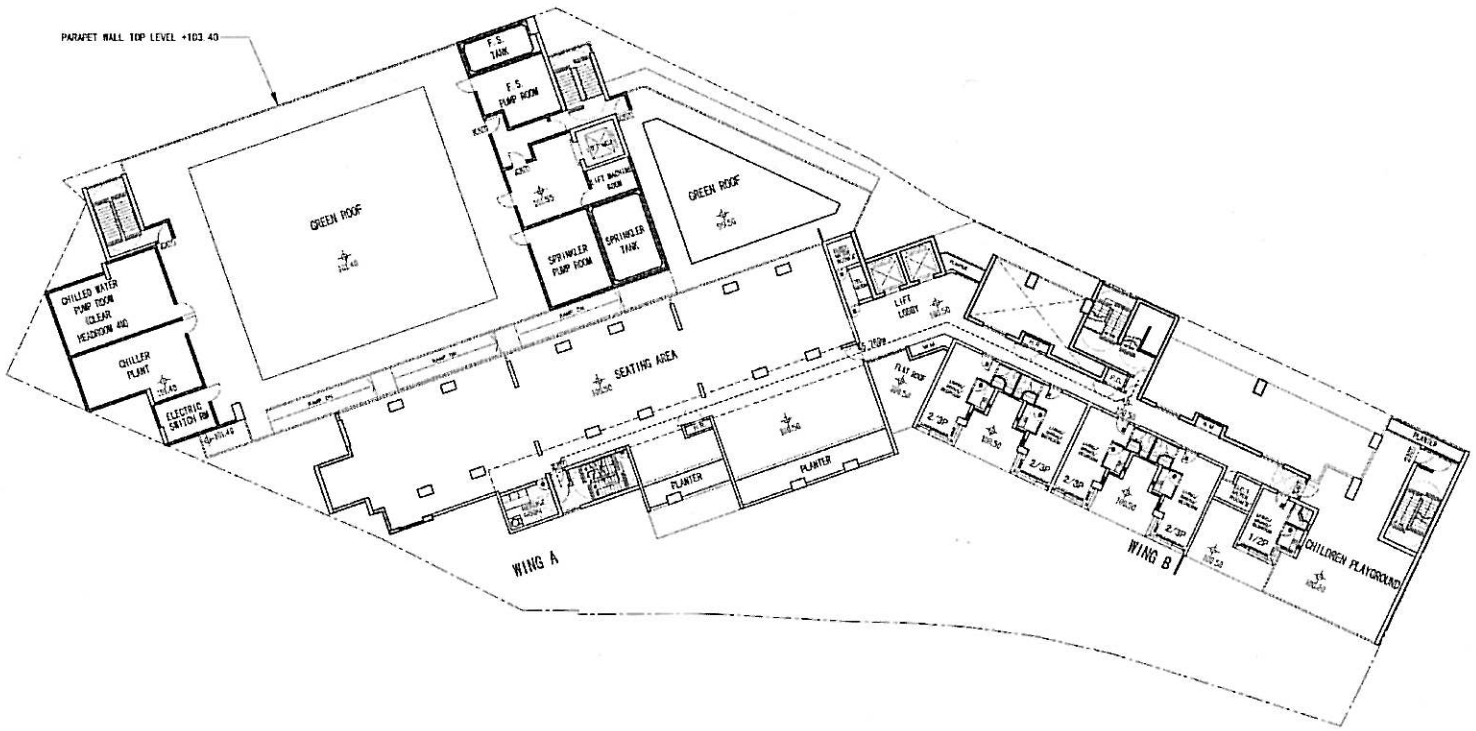
擬議概念設計圖
PROPOSED CONCEPTUAL LAYOUT PLAN

擬議修訂的觀塘南部
分區計劃大綱核准圖編號 S/K14S/16
PROPOSED AMENDMENT TO THE
APPROVED KWUN TONG (SOUTH) OUTLINE ZONING PLAN No. S/K14S/16

規劃署
PLANNING DEPARTMENT

M/K14S/12/11

圖 PLAN 7



PROPOSED PUBLIC RENTAL HOUSING DEVELOPMENT AT SAU MING ROAD

1/F PLAN

房屋署 HOUSING DEPARTMENT

圖號 PLAN No. KT16NR/A/SK-01 | 日期 DATE 1/11/2011

資料來源：繪圖由房屋署提交
SOURCE : DRAWING SUBMITTED BY HOUSING DEPARTMENT

本摘要圖於2012年2月10日擬備
EXTRACT PLAN PREPARED ON 10.2.2012

擬議概念設計圖
PROPOSED CONCEPTUAL LAYOUT PLAN

擬議修訂的觀塘南部
分區計劃大綱核准圖編號 S/K14S/16
PROPOSED AMENDMENT TO THE
APPROVED KWUN TONG (SOUTH) OUTLINE ZONING PLAN No. S/K14S/16

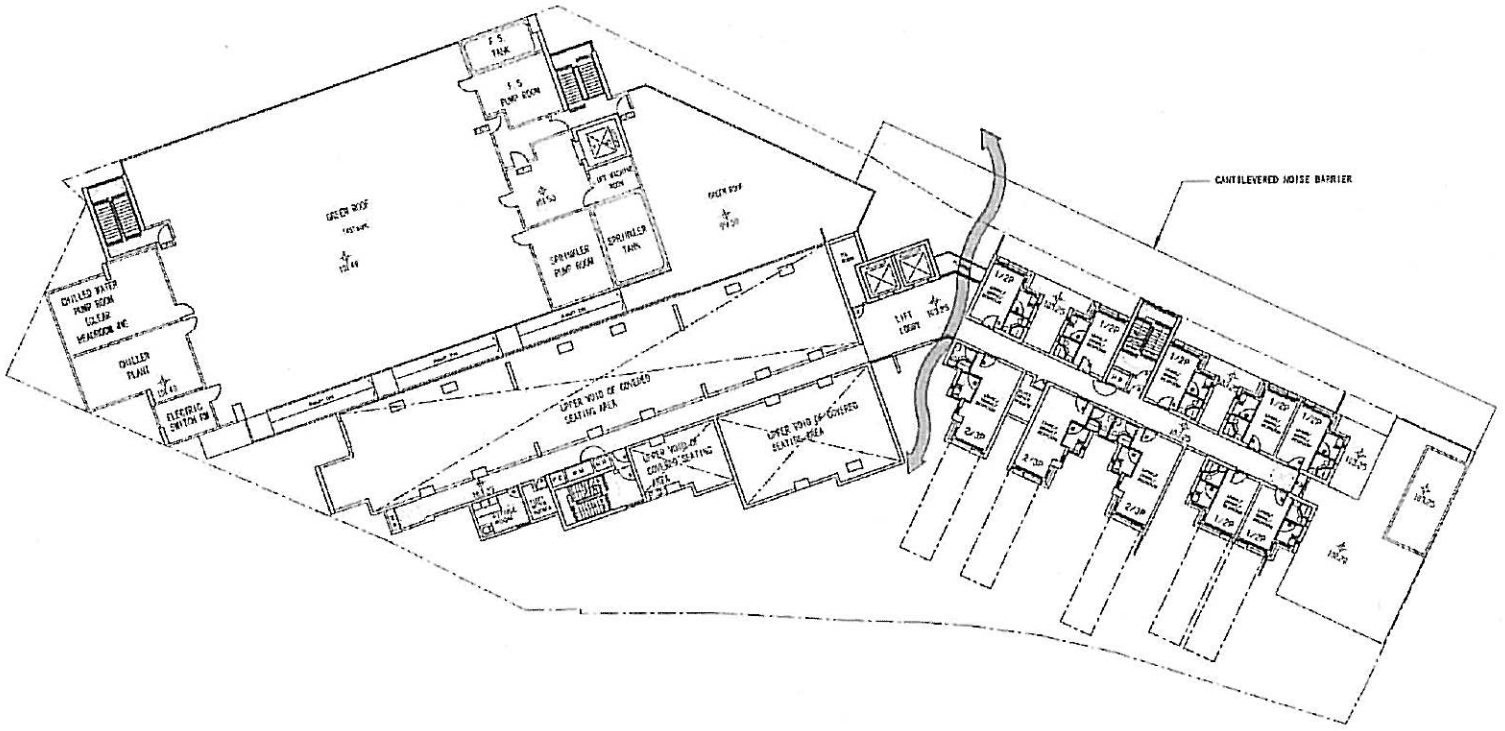
規劃署
PLANNING DEPARTMENT

M/K14S/12/11

圖 PLAN 8

N

VOID IS DESIGNED AT PODIUM LEVEL
TO FACILITATE CROSS VENTILATION



INDICATIVE LAYOUT SUBJECT
TO DETAIL DESIGN

PROPOSED PUBLIC RENTAL HOUSING DEVELOPMENT AT SAU MING ROAD

2/F PLAN

~~SCALE 1:300 (A3)~~

房屋署 HOUSING DEPARTMENT

圖號 PLAN No. KT16NR/A/SK-05

日期 DATE 14/12/2011

資料來源：繪圖由房屋署提交
SOURCE : DRAWING SUBMITTED BY HOUSING DEPARTMENT

本摘要圖於2012年2月10日擬備
EXTRACT PLAN PREPARED ON 10.2.2012

擬議概念設計圖
PROPOSED CONCEPTUAL LAYOUT PLAN

擬議修訂的觀塘南部
分區計劃大綱核准圖編號 S/K14S/16
PROPOSED AMENDMENT TO THE
APPROVED KWUN TONG (SOUTH) OUTLINE ZONING PLAN No. S/K14S/16

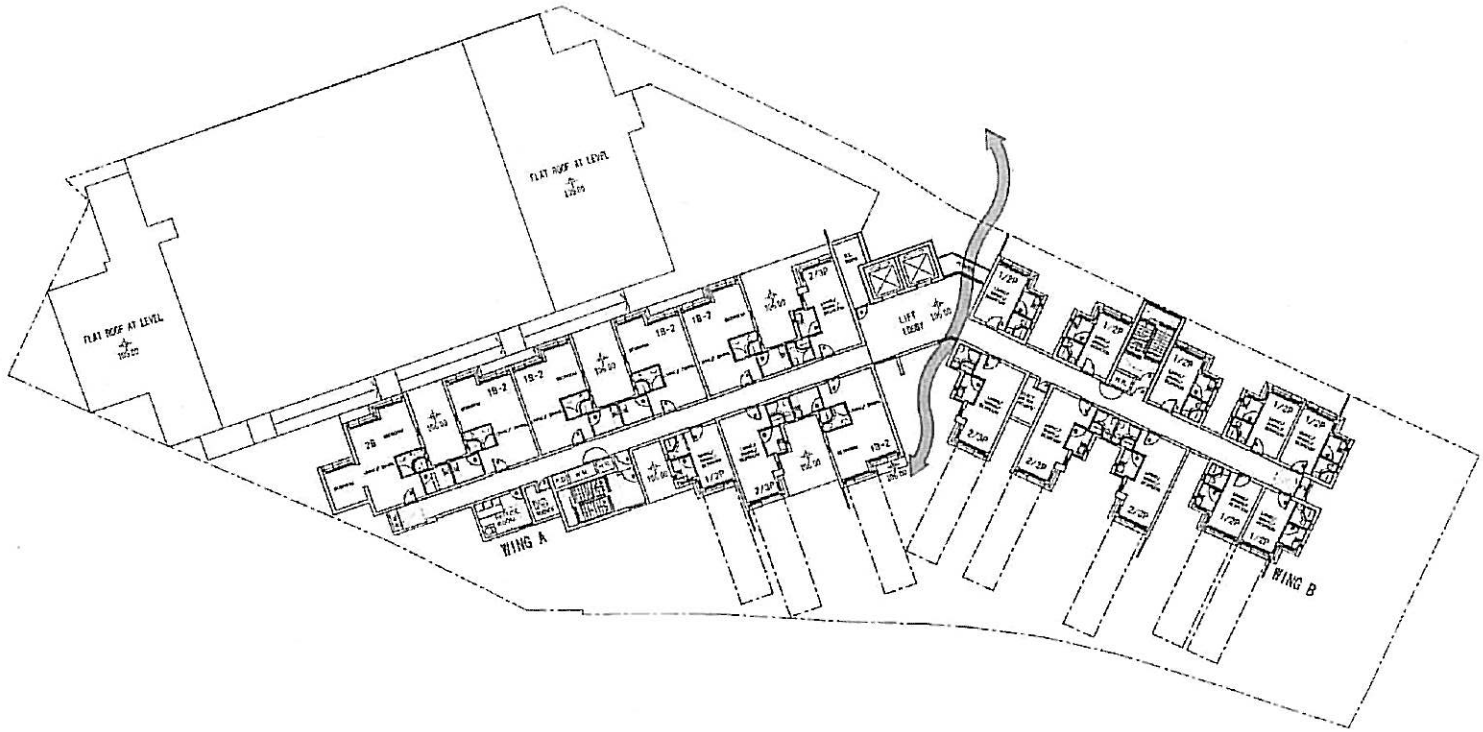
規劃署
PLANNING DEPARTMENT

M/K14S/12/11

圖 PLAN 9

N

VOID IS DESIGNED AT PODIUM LEVEL
TO FACILITATE CROSS VENTILATION



INDICATIVE LAYOUT SUBJECT
TO DETAIL DESIGN

PROPOSED PUBLIC RENTAL HOUSING DEVELOPMENT AT SAU MING ROAD

3/F - 18/F (TYPICAL FLOOR PLAN)

~~SCALE 1:300 (A3)~~

房屋署 HOUSING DEPARTMENT

PLAN No. KT16NR/ASK-06

DATE 14/12/2011

資料來源：繪圖由房屋署提交
SOURCE : DRAWING SUBMITTED BY HOUSING DEPARTMENT

本摘要圖於2012年2月10日擬備
EXTRACT PLAN PREPARED ON 10.2.2012

擬議概念設計圖
PROPOSED CONCEPTUAL LAYOUT PLAN

擬議修訂的觀塘南部
分區計劃大綱核准圖編號 S/K14S/16
PROPOSED AMENDMENT TO THE
APPROVED KWUN TONG (SOUTH) OUTLINE ZONING PLAN No. S/K14S/16

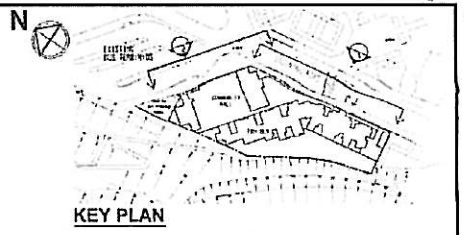
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PLANNING DEPARTMENT

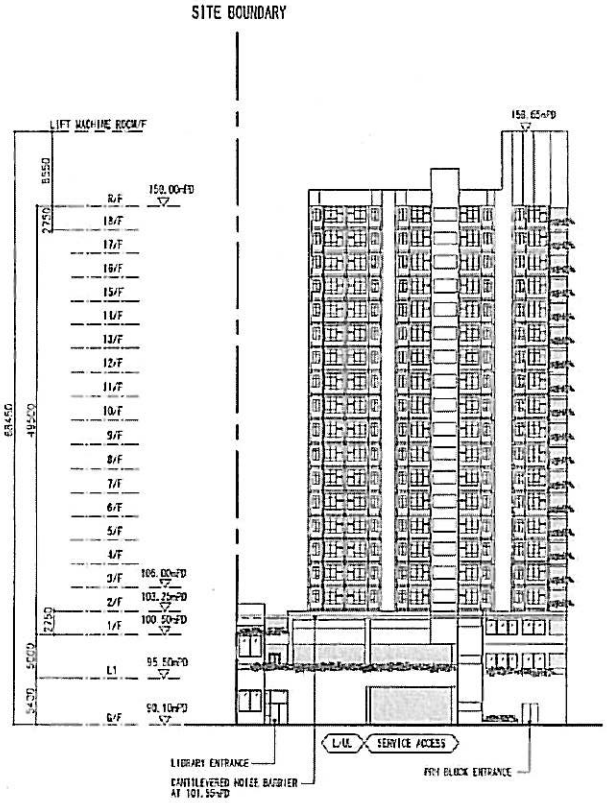
M/K14S/12/11

圖 PLAN 10

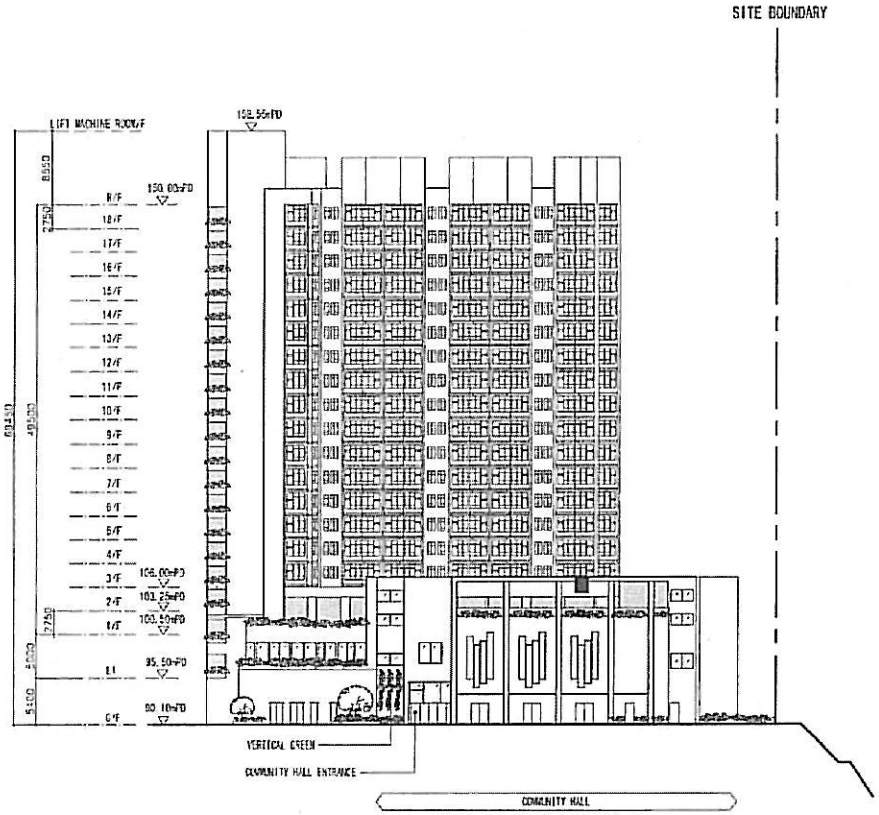
'VOIDS' AT LOWER LEVELS

'VOIDS' AT DOMESTIC TYPICAL FLOORS





SITE ELEVATION 1
(FACING SAU MAU PING ROAD)



SITE ELEVATION 2
(FACING EXISTING BUS TERMINUS)

PROPOSED PUBLIC RENTAL HOUSING DEVELOPMENT AT SAU MING ROAD
SITE ELEVATION 1 & 2

INDICATIVE LAYOUT SUBJECT TO DETAIL DESIGN

房屋署 HOUSING DEPARTMENT
圖則編號 PLAN No. KT16NR/A/SK-09
日期 DATE. 14/12/2011

資料來源：繪圖由房屋署提交
SOURCE : DRAWING SUBMITTED BY HOUSING DEPARTMENT

本摘要圖於2012年2月9日擬備
EXTRACT PLAN PREPARED ON 9.2.2012

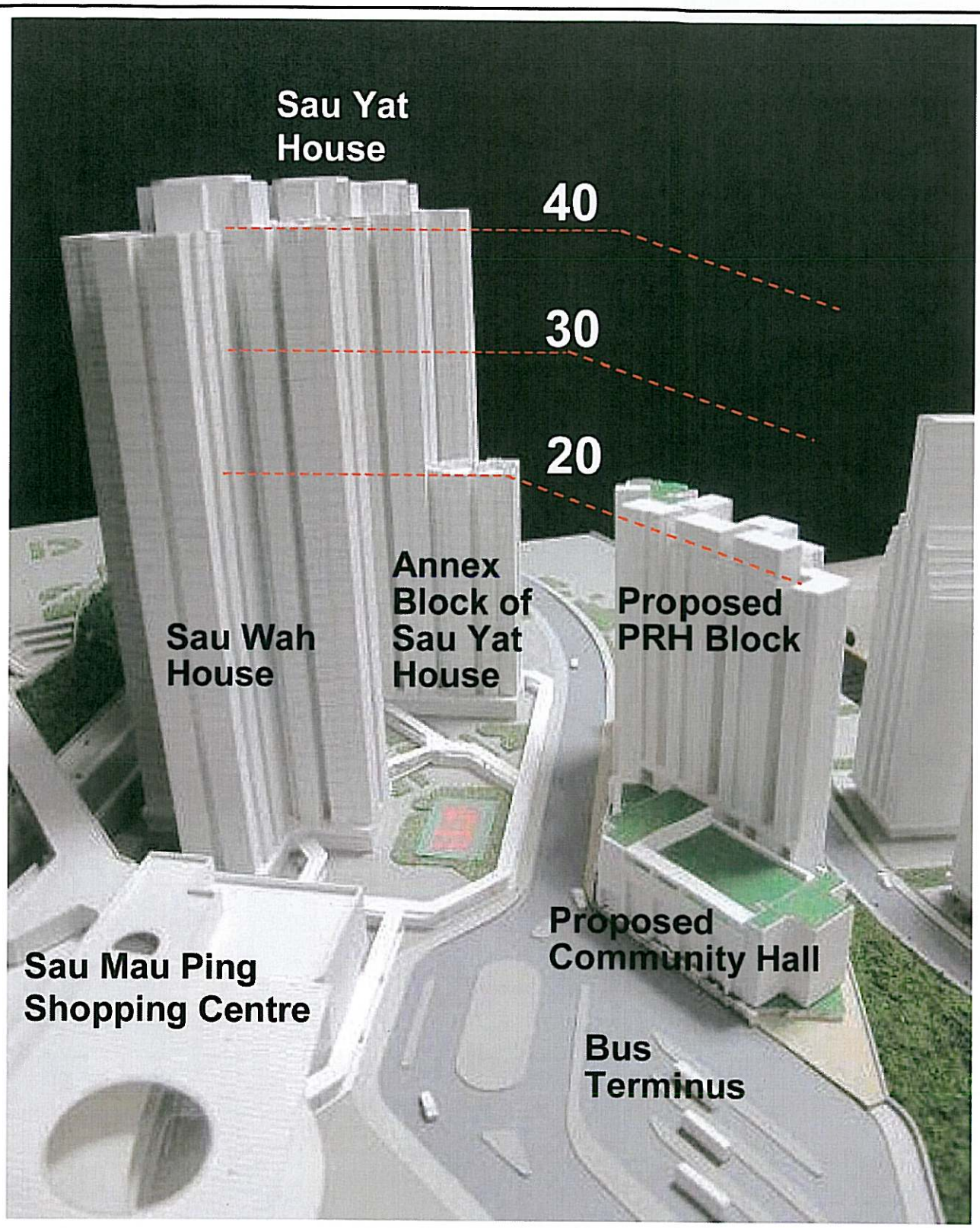
擬議概念設計圖
PROPOSED CONCEPTUAL LAYOUT PLAN

擬議修訂的觀塘南部
分區計劃大綱核准圖編號 S/K14S/16
PROPOSED AMENDMENT TO THE
APPROVED KWUN TONG (SOUTH) OUTLINE ZONING PLAN No. S/K14S/16

規劃署
PLANNING DEPARTMENT

M/K14S/12/11

圖 PLAN 11



Domestic Plot Ratio : 4.5
Non-domestic Plot Ratio : 1.5
Building Height : 20 Storeys

資料來源：繪圖由房屋署提交
SOURCE : DRAWING SUBMITTED BY HOUSING DEPARTMENT

本摘要圖於2012年2月10日擬備
EXTRACT PLAN PREPARED ON 10.2.2012

合成照片
PROPOSED PHOTOMONTAGE

擬議修訂的觀塘南部
分區計劃大綱核准圖編號 S/K14S/16
PROPOSED AMENDMENT TO THE APPROVED KWUN TONG (SOUTH) OUTLINE ZONING PLAN No. S/K14S/16

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PLANNING DEPARTMENT

M/K14S/12/11

圖 PLAN 12

EXISTING CONDITION



WITH PROPOSED DEVELOPMENT



HKHA/SMPE/2

FIGURE 7 LVP 3 : SAU MAU PING SHOPPING CENTRE

資料來源：繪圖由房屋署提交
SOURCE : DRAWING SUBMITTED BY HOUSING DEPARTMENT

本摘要圖於2012年2月10日擬備
EXTRACT PLAN PREPARED ON 10.2.2012

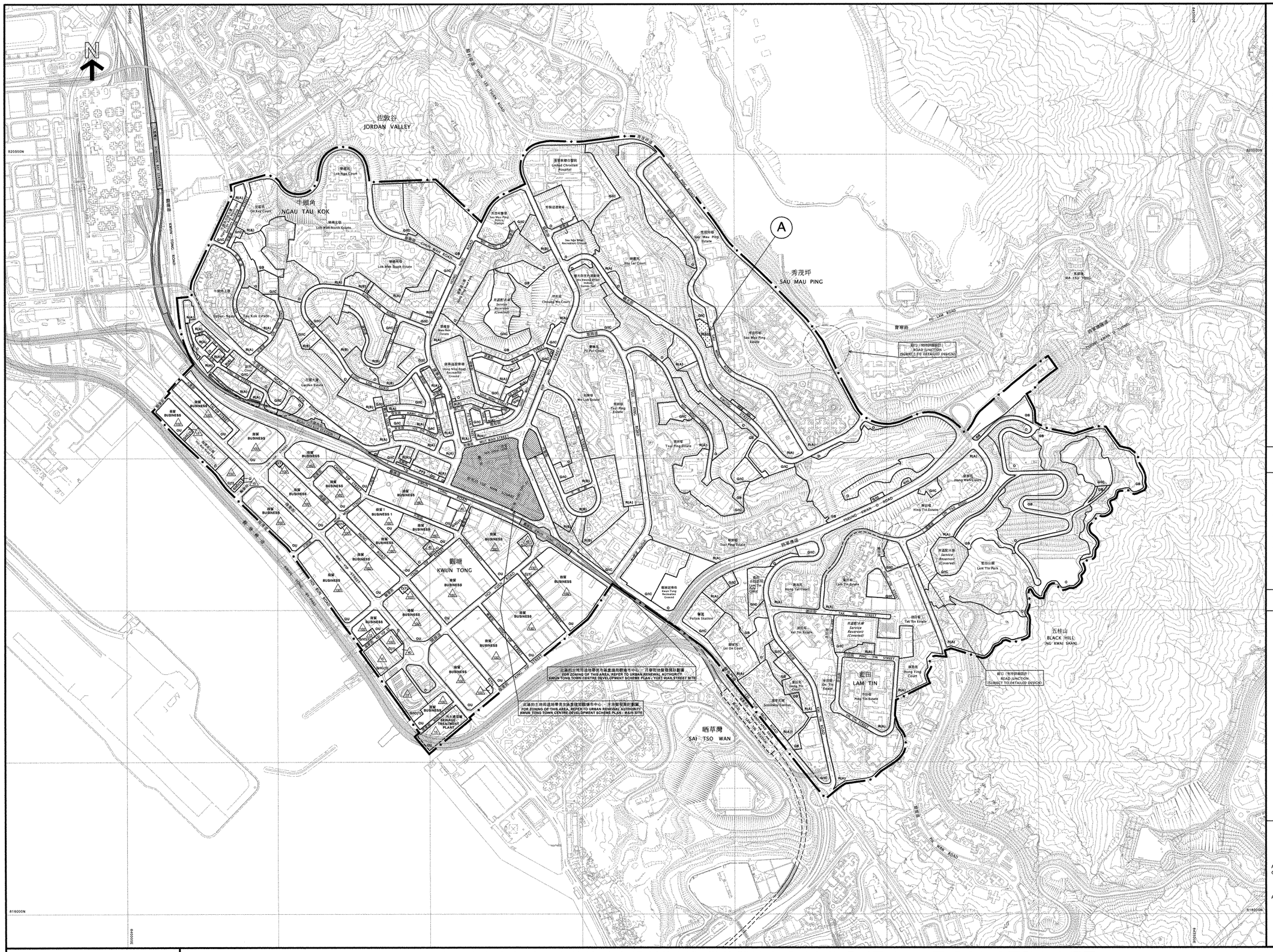
合成照片
PROPOSED PHOTOMONTAGE

擬議修訂的觀塘南部
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PROPOSED AMENDMENT TO THE APPROVED KWUN TONG (SOUTH) OUTLINE ZONING PLAN No. S/K14S/16

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圖 PLAN 13



Appendix I of
MPC Paper No. 4/12

圖例
NOTATION

ZONES		地帶
COMMERCIAL	C	商業
RESIDENTIAL (GROUP A)	R(A)	住宅（甲類）
RESIDENTIAL (GROUP B)	R(B)	住宅（乙類）
GOVERNMENT, INSTITUTION OR COMMUNITY	G/IC	政府、機構或社區
OPEN SPACE	O	休憩用地
OTHER SPECIFIED USES	OU	其他指定用途
GREEN BELT	GB	綠化地帶

COMMUNICATIONS		交通
RAILWAY AND STATION	MTR STATION	鐵路及車站
RAILWAY AND STATION (UNDERGROUND)	MTR STATION	鐵路及車站（地下）
RAILWAY AND STATION (ELEVATED)	MTR STATION	鐵路及車站（高架）
MAJOR ROAD AND JUNCTION		主要道路及路口
ELEVATED ROAD		高架道路

MISCELLANEOUS		其他
BOUNDARY OF PLANNING SCHEME		規劃範圍界線
URBAN RENEWAL AUTHORITY DEVELOPMENT SCHEME PLAN AREA		市區重建局發展計劃圖範圍
BUILDING HEIGHT CONTROL ZONE BOUNDARY		建築物高度管制區界線
MAXIMUM BUILDING HEIGHT (IN METRES ABOVE PRINCIPAL DATUM)	100	最高建築物高度（在主水平基準上若干米）
PETROL FILLING STATION	P F S	加油站

土地用途及面積一覽表
SCHEDULE OF USES AND AREAS

USES	大約面積及百分率 APPROXIMATE AREA & % 公頃 HECTARES	% 百分率	用途
COMMERCIAL	1.21	0.31	商業
RESIDENTIAL (GROUP A)	136.37	35.20	住宅（甲類）
RESIDENTIAL (GROUP B)	14.46	3.73	住宅（乙類）
GOVERNMENT, INSTITUTION OR COMMUNITY	45.15	11.65	政府、機構或社區
OPEN SPACE	42.19	10.89	休憩用地
OTHER SPECIFIED USES	46.82	12.09	其他指定用途
GREEN BELT	28.88	7.45	綠化地帶
NULLAH	0.09	0.02	明渠
MAJOR ROAD ETC.	67.17	17.35	主要道路等
URBAN RENEWAL AUTHORITY DEVELOPMENT SCHEME PLAN AREA	5.06	1.31	市區重建局發展計劃圖範圍
TOTAL PLANNING SCHEME AREA	387.40	100.00	規劃範圍總面積

夾附的《註釋》屬這份圖則的一部分，
現經修訂並按照城市規劃條例第 5 條展示。
THE ATTACHED NOTES ALSO FORM PART OF THIS PLAN AND HAVE BEEN AMENDED FOR EXHIBITION UNDER SECTION 5 OF THE TOWN PLANNING ORDINANCE

核准圖編號 S/K14S/16 的修訂
AMENDMENT TO APPROVED PLAN No. S/K14S/16

AMENDMENT EXHIBITED UNDER SECTION 5 OF THE TOWN PLANNING ORDINANCE	按照城市規劃條例第 5 條展示的修訂
AMENDMENT ITEM A	修訂項目 A 項

（參看附表）
(SEE ATTACHED SCHEDULE)

香港城市規劃委員會依據城市規劃條例擬備的觀塘南部（九龍規劃區第 14 區部分）分區計劃大綱圖
TOWN PLANNING ORDINANCE, HONG KONG TOWN PLANNING BOARD
KOWLOON PLANNING AREA No. 14 (PART) - KWUN TONG (SOUTH) - OUTLINE ZONING PLAN

SCALE 1:5000 比例尺

米 METRES 100 0 200 400 600 800 METRES 米

規劃署遵照城市規劃委員會指示擬備
PREPARED BY THE PLANNING DEPARTMENT UNDER THE DIRECTION OF THE TOWN PLANNING BOARD

圖則編號 PLAN No. **S/K14S/16A**

Annex I of
MPC Paper No. 4/12

Proposed Public Rental Housing Development at Sau Ming Road

Traffic Impact Assessment Report

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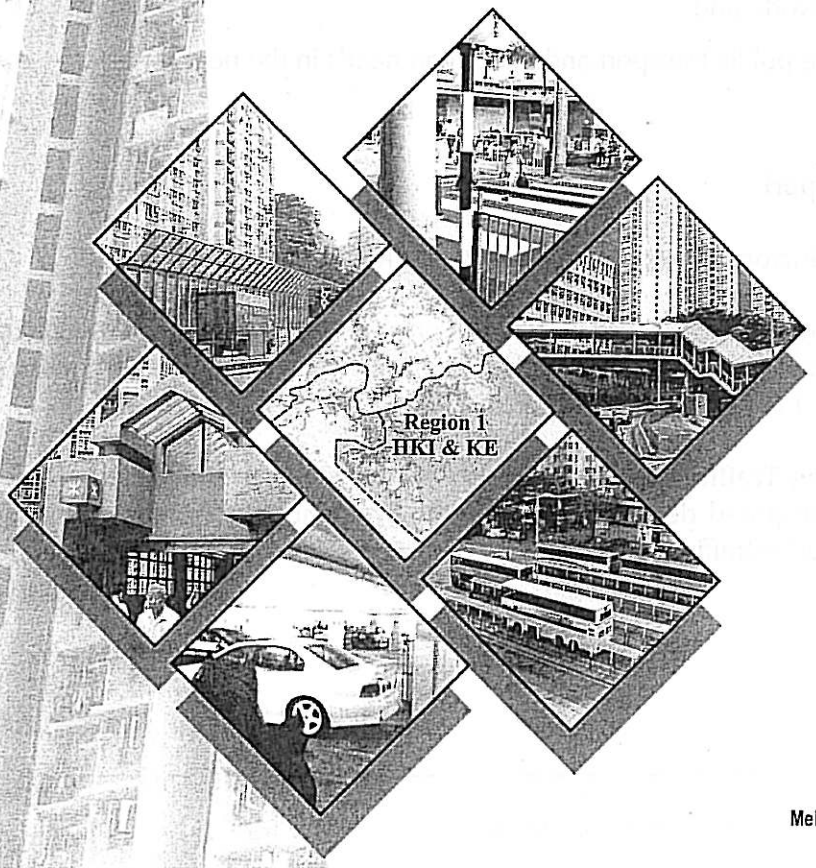
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1. INTRODUCTION

1.1 Background

1.1.1 MVA Hong Kong Limited (MVA) was commissioned by the Hong Kong Housing Authority (HKHA) in 2010 to conduct a Traffic Impact Assessment (TIA) study for the public rental housing (PRH) development at Sau Mau Ping GIC Site based on the latest development proposal. **Figure 1.1** shows the location of the development site.

1.1.2 This TIA study is to examine the impact of the traffic generated by the proposed development on the existing and planned road networks in the near vicinity. Any deficiency would be identified and improvement proposals would be recommended if necessary to resolve any foreseeable problem.

1.2 Study Objectives

1.2.1 The main objectives of the study are as follows:

- to assess the existing traffic conditions in the vicinity of the proposed development;
- to forecast traffic demands on the adjacent road network in the design year 2021;
- to estimate the likely traffic generated by the proposed development based on the updated planning parameters;
- to assess the impacts of traffic generated by the proposed development on the adjacent road network;
- to recommend improvement measures, if necessary, to alleviate any traffic problems on the road network; and
- to investigate the public transport and pedestrian needs in the near vicinity.

1.3 Structure of the Report

1.3.1 Following this introductory chapter, there are seven further chapters.

1.3.2 **Chapter 2 – The Proposed Development**, which presents the planning parameters of the proposed development. The proposed vehicular access arrangement, and parking and servicing requirement and recommended provisions will also be described.

1.3.3 **Chapter 3 – Existing Traffic Conditions**, which describes the existing road network in the vicinity of the proposed development, presents the summary of traffic count survey and assesses the existing traffic conditions.

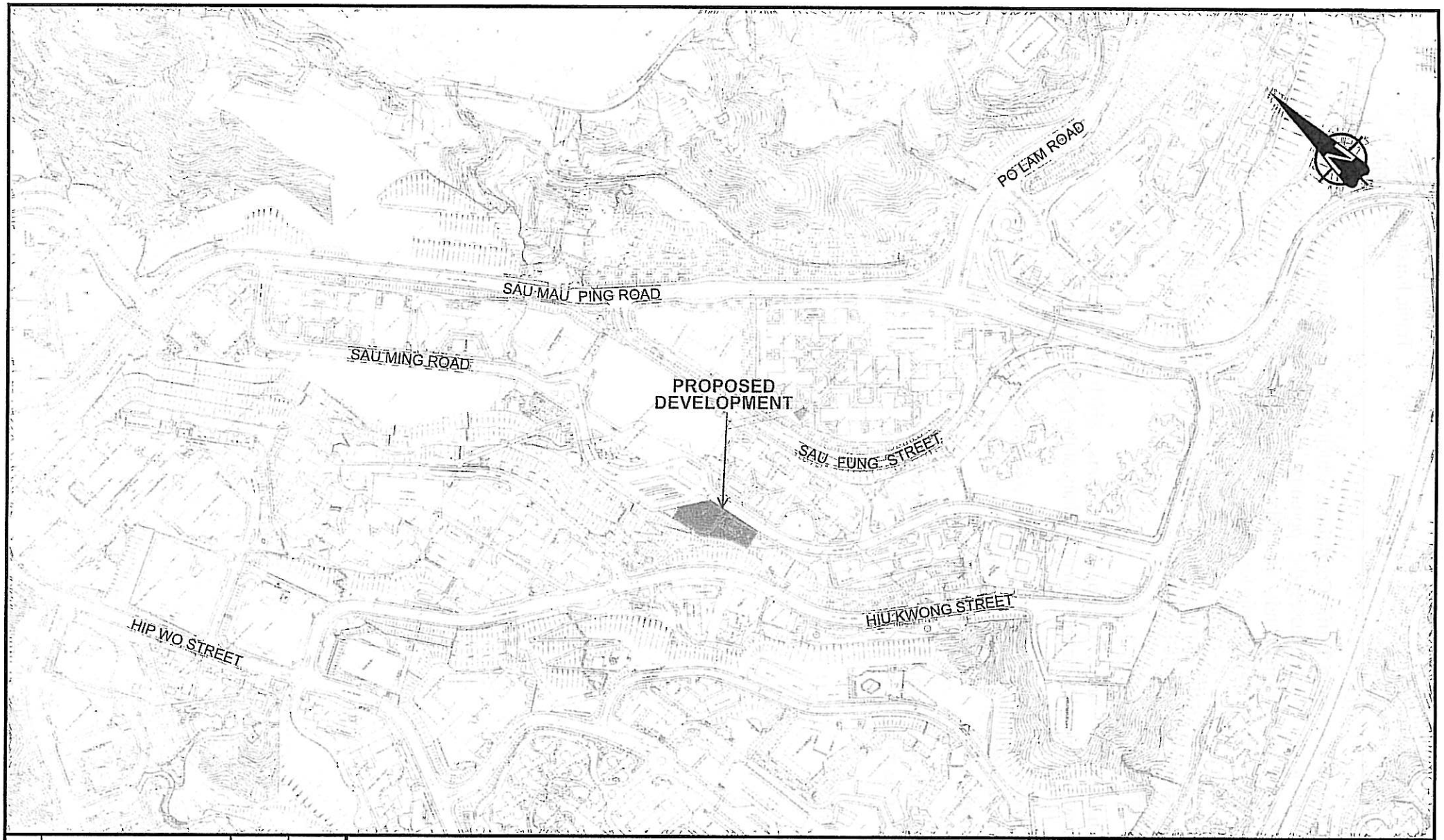
1.3.4 **Chapter 4 – Future Traffic Conditions**, which describes the future road network in the near vicinity and discusses the potential traffic generations and attractions of the proposed development under the updated development proposal. It also summarises the methodology for future traffic forecasts.

1.3.5 **Chapter 5 – Traffic Impact Assessment**, which presents the findings of the traffic impact assessment in the future design year and recommends improvement measures, if necessary.

1.3.6 **Chapter 6 - Public Transport Provisions**, which provides an examination of the provisions of public transport in the vicinity of the proposed development.

1.3.7 **Chapter 7 – Pedestrian Facilities and Assessment,** which provides an examination of the provision of existing and planned pedestrian facilities in the vicinity of the proposed development.

1.3.8 **Chapter 8 – Summary and Conclusion**, which summarizes the findings of the study and presents the conclusion regarding the traffic issues of the proposed development.



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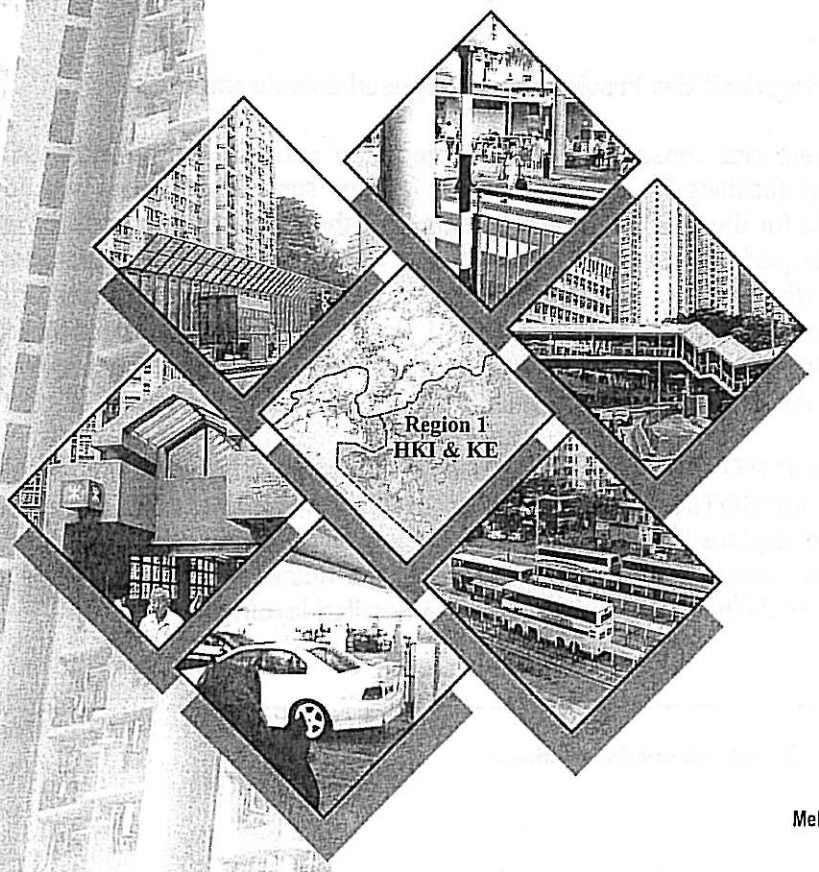
PUBLIC HOUSING DEVELOPMENT AT SAU MING ROAD
TRAFFIC IMPACT ASSESSMENT STUDY

SITE LOCATION

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2. THE PROPOSED DEVELOPMENT

2.1 Site Location

2.1.1 As shown in **Figure 1.1**, the development site is located at Sau Ming Road adjacent to the Sau Mau Ping bus terminus and Sau Mau Ping Shopping Centre, which is mainly bounded by Sau Ming Road to the east, and Hiu Kwong Street to the west.

2.2 Proposed Development

2.2.1 The proposed development consists of a 18-storey public rental housing (PRH) block and a 1-storey 450-seat community hall which is anticipated for completion by end 2017. Major development parameters of the development proposal are summarized in **Table 2.1**.

Table 2.1 Development Parameters

Component	Development Parameter
18-storey PRH block over 2-storey podium	About 350 PRH flats A small library and study area
1-storey community hall building	450-seat community hall

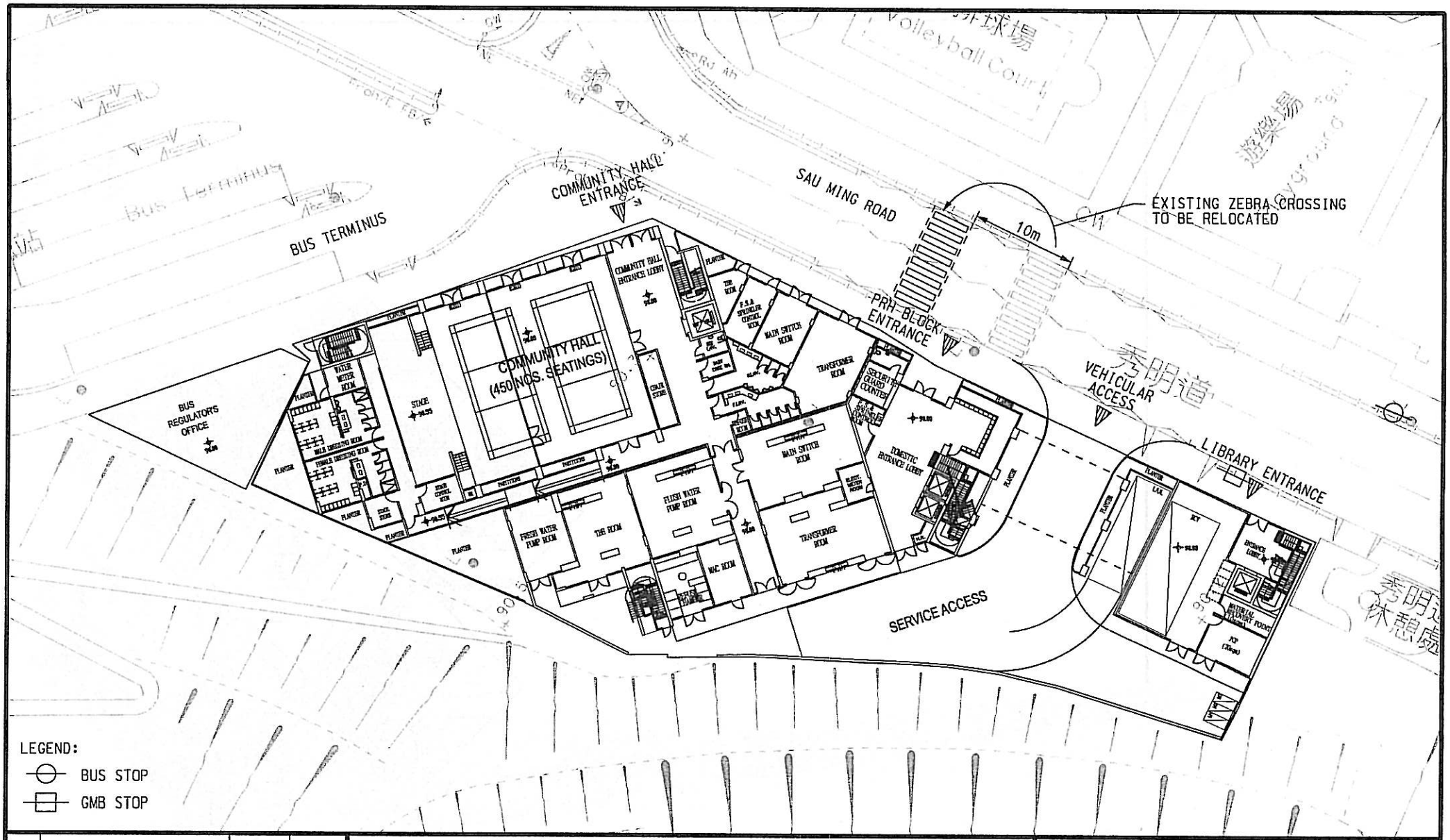
2.3 Vehicular Access of Proposed Development

2.3.1 As shown in **Figure 2.1**, the vehicular access of the proposed development will be at Sau Ming Road. In view of the vicinity of the proposed vehicular access, the existing zebra crossing is proposed to shift westwards by about 10m to minimize the impact. All movements are allowed at the proposed vehicular access and its operational performance have been assessed (see Chapter 5) and will operate with sufficient capacity.

2.4 Parking and Servicing Facilities Provisions of Proposed Development

2.4.1 In view of the severe site constraints at the Subject Site and the highly under-utilised private car parking facilities in the neighboring estate, surplus resources would be optimized as reserve for the proposed development. It is therefore recommended that no LGV and private car parking spaces will be provided within the proposed development. Nevertheless, one disable parking space will be provided. Also, to facilitate service delivery for both residential and community hall, 1 goods vehicle loading/unloading bay, 3 motor cycle parking spaces and 1 space for refuse collection vehicle will be provided at the ground floor of the proposed development.

2.4.2 Transport Department (TD) has no in-principle objection to the above parking provision [via memo ref: ( ) KR158/160-79 dated 18 Oct 2010]. In response to TD's suggestion, further study (i.e. to explore if additional motor cycle parking spaces could be provided within the proposed development) could be made in the detail design stage, however it will be subject to availability of physical space in the detailed layout.



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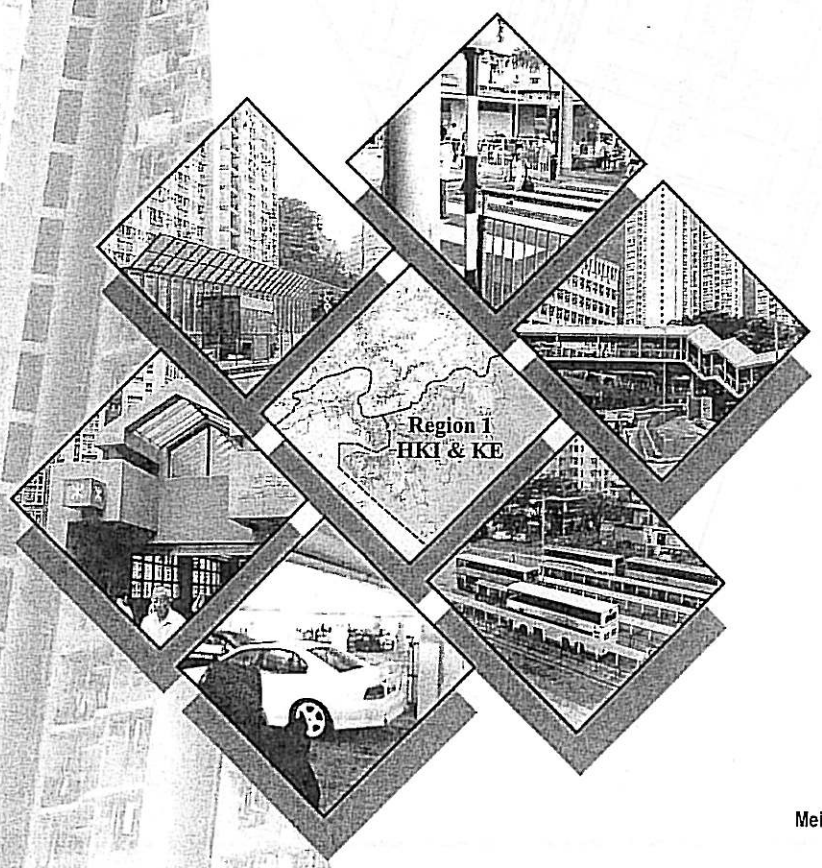
PUBLIC HOUSING DEVELOPMENT AT SAU MING ROAD
TRAFFIC IMPACT ASSESSMENT STUDY

GROUND FLOOR LAYOUT PLAN OF PROPOSED DEVELOPMENT

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3. EXISTING TRAFFIC CONDITIONS

3.1 Existing Road Network

3.1.1 **Figure 3.1** shows the existing road network that serves the proposed development. The proposed development is mainly served by Sau Ming Road, which is a district distributor connecting Sau Mau Ping Road at its northern end and Hiu Kwong Street at its southern end. It provides major accesses for Sau Mau Ping Estate and is the major public transport corridor for the residents.

3.1.2 Sau Mau Ping Road, a district distributor penetrates Sau Mau Ping area. It links with Hip Wo Street at its northern end and Tseung Kwan O Road at its southern end which could lead to Kwun Tong Town Centre and Kowloon and Hong Kong areas directly. It is also another major public transport corridor.

3.1.3 Hiu Kwong Street, also a district distributor connecting Sau Mau Ping Road at its eastern end and Hip Wo Street at its western end. It provides major accesses for Hiu Lai Court and schools at Hiu Yuk Path.

3.2 Critical Junctions

3.2.1 Nine junctions were identified to be critical for assessment of traffic impact due to the proposed development. They are listed in **Table 3.1** below.

Table 3.1 Critical Junctions for Assessment

Ref.	Junction	Type	Figure No.
A	Sau Mau Ping Road/Sau Ming Road	Signal	3.2
B	Sau Mau Ping Road/Sau Fung Street	Signal	3.3
C	Sau Mau Ping Road/Po Lam Road	Signal	3.4
D	Sau Mau Ping Road/Hiu Kwong Street	Roundabout	3.5
E	Hiu Kwong Street/Sau Ming Road	Signal	3.6
F	Sau Mau Ping Road/Lin Tak Road/Tseung Kwan O Road Slip Road	Signal	3.7
G	Shun On Road/Sau Mau Ping Road	Signal	3.8
H	Shun Lee Tsuen Road/Sau Mau Ping Road/Hip Wo Street	Signal	3.9
I	Development Access / Sau Ming Road	Priority	2.1

3.2.2 The locations of the above nine junctions are illustrated in **Figure 3.1** and their existing junction layout arrangements and method of control are shown in **Figures 2.1** and **3.2** to **3.9** respectively.

3.2.3 In order to appraise the existing traffic conditions of these junctions (except junction I), two traffic surveys in the form of manual classified count was conducted at a typical weekday in October 2010 and February 2011. Analysis of the observed traffic data indicates that the AM and PM peak hour flows occurred from 7:45 to 8:45 and from 17:00 to 18:00 respectively. The results are shown in **Figure 3.10**.

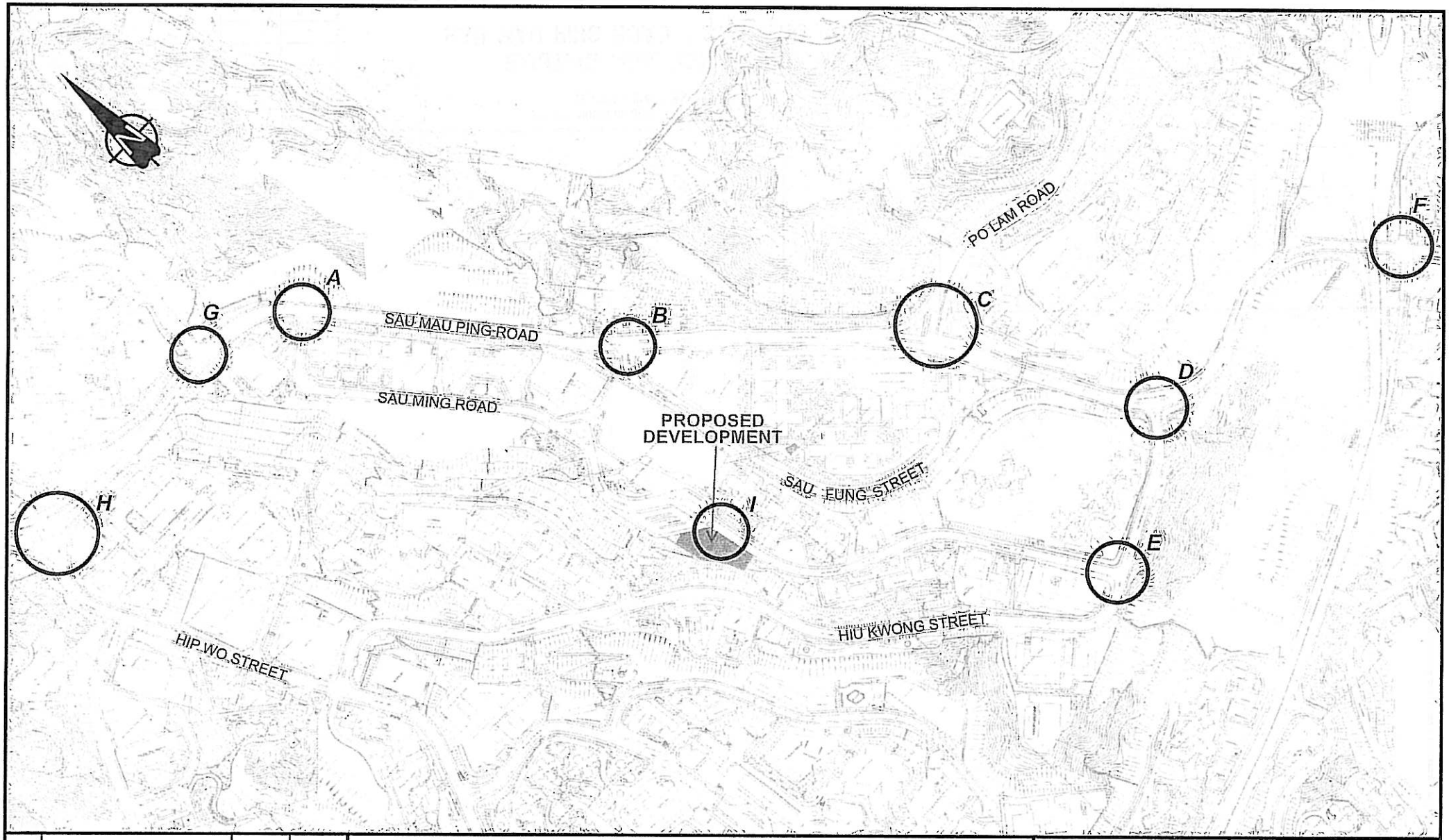
3.2.4 Existing operational performance of the surveyed junctions and the results are listed in **Table 3.2** below.

Table 3.2 Operational Performance of Critical Junctions in 2010

Ref.	Junction	Type	2010 RC / RFC	
			AM Peak	PM Peak
A	Sau Mau Ping Road/Sau Ming Road	Signal	+28%	+37%
B	Sau Mau Ping Road/Sau Fung Street	Signal	+176%	+192%
C	Sau Mau Ping Road/Po Lam Road	Signal	+71%	+34%
D	Sau Mau Ping Road/Hiu Kwong Street	Roundabout	0.43	0.38
E	Hiu Kwong Street/Sau Ming Road	Signal	+32%	+32%
F	Sau Mau Ping Road/Lin Tak Road/Tseung Kwan O Road Slip Road	Signal	+15%	+98%
G	Shun On Road/Sau Mau Ping Road	Signal	+25%	+62%
H	Shun Lee Tsuen Road/Sau Mau Ping Road/Hip Wo Street	Signal	+78%	+129%

Remark: RC = Reserve Capacity
RFC = Ratio of Flow to Capacity for roundabout.

3.2.5 The assessment results in **Table 3.2** indicate that all critical junctions are at present operating with ample capacities.



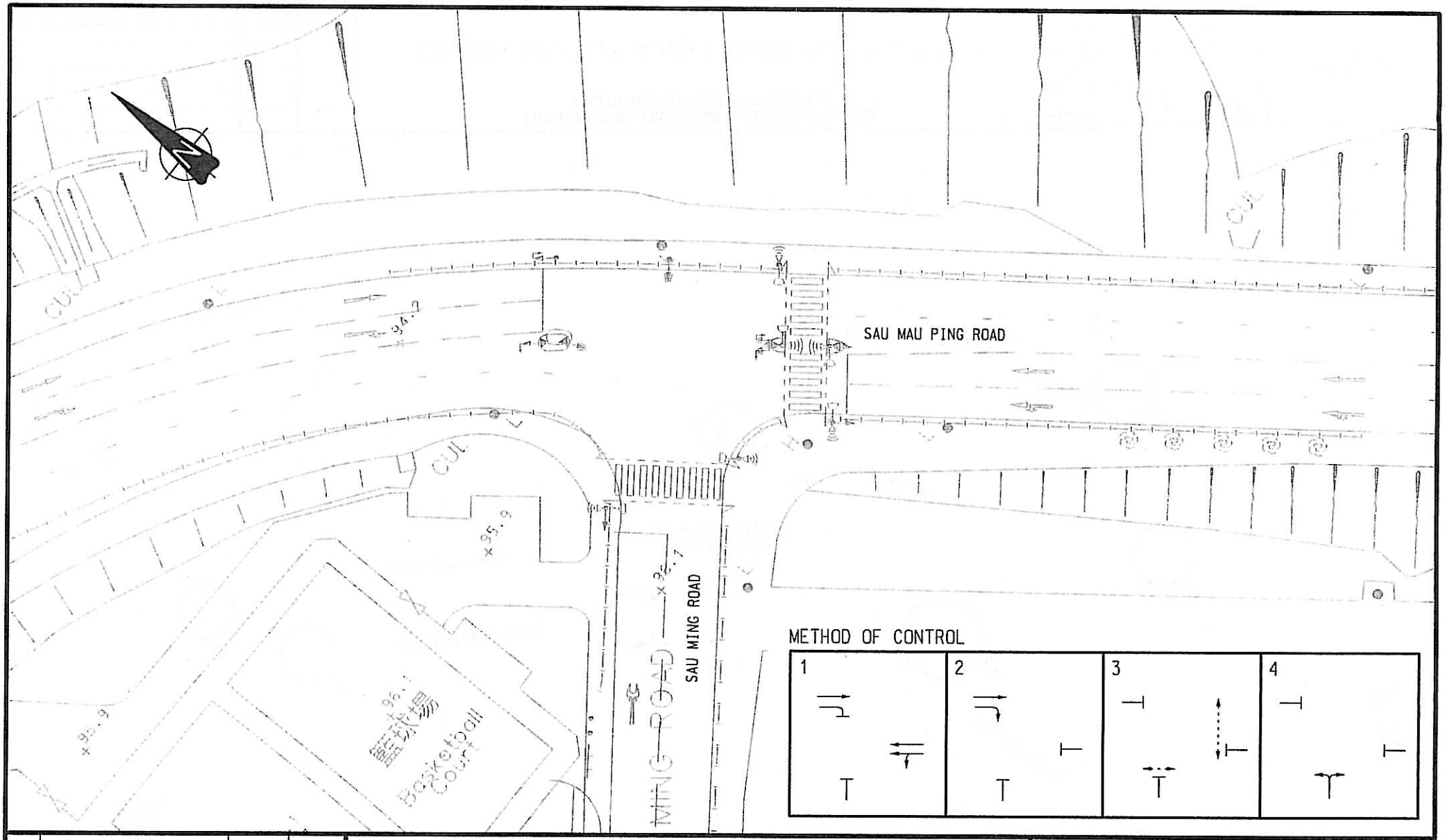
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PUBLIC HOUSING DEVELOPMENT AT SAU MING ROAD
TRAFFIC IMPACT ASSESSMENT STUDY

EXISTING ROAD NETWORK AND CRITICAL JUNCTIONS

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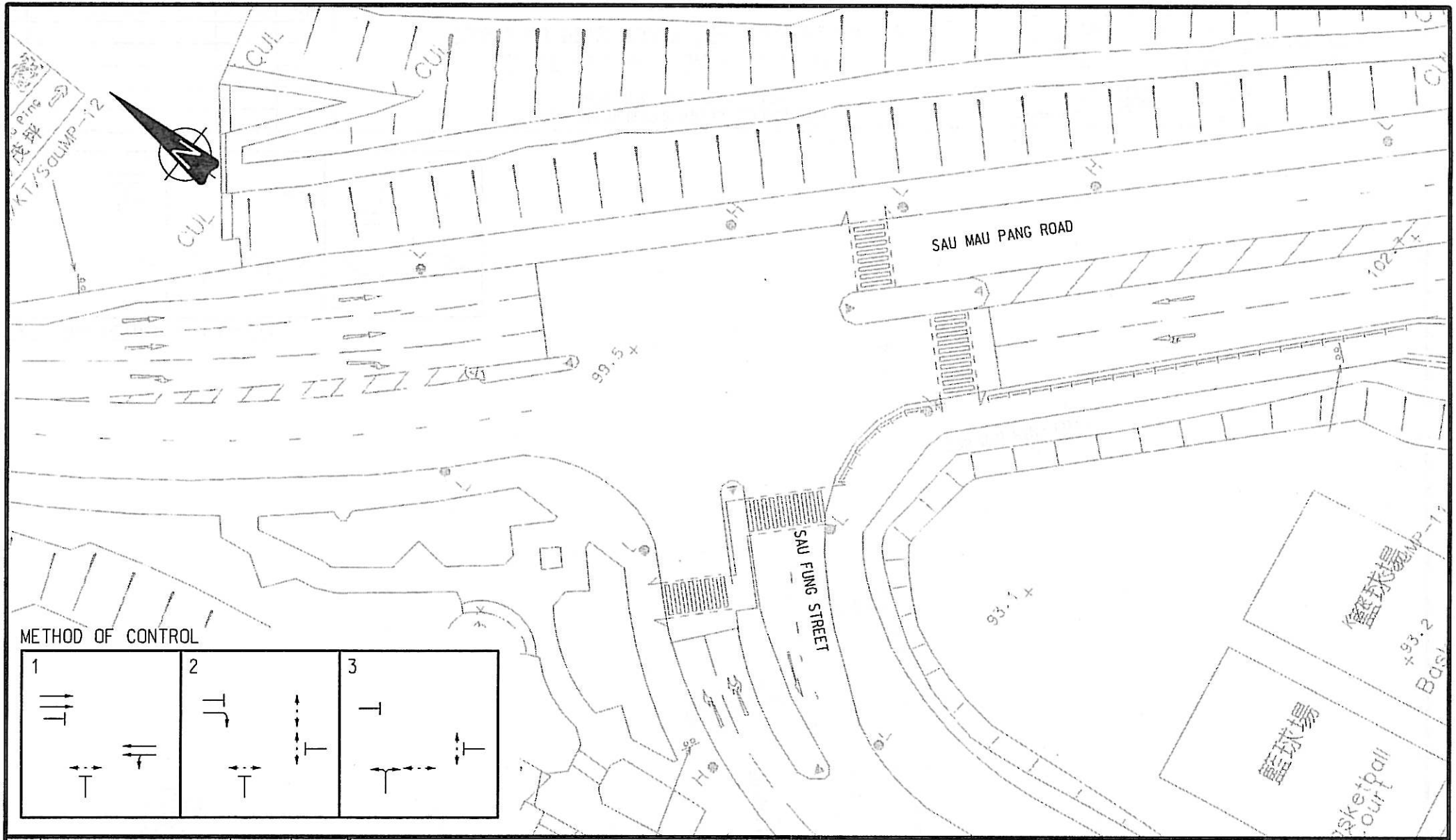
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PUBLIC HOUSING DEVELOPMENT AT SAU MING ROAD
TRAFFIC IMPACT ASSESSMENT STUDY

EXISTING JUNCTION LAYOUT OF SAU MAU PING ROAD / SAU MING ROAD (A)

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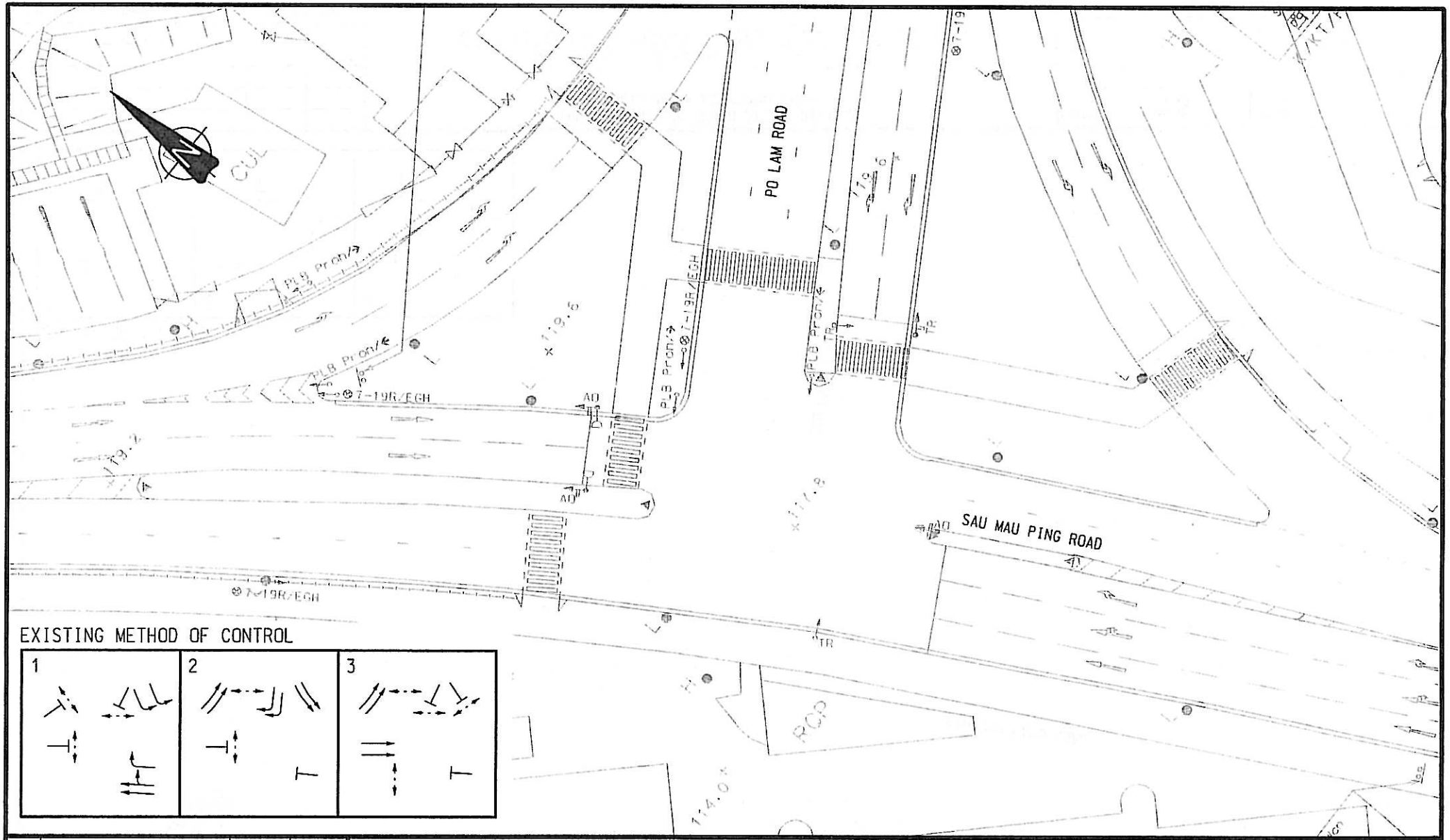
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PUBLIC HOUSING DEVELOPMENT AT SAU MING ROAD
TRAFFIC IMPACT ASSESSMENT STUDY

EXISTING JUNCTION LAYOUT OF SAU MAU PING ROAD / SAU FUNG STREET (B)

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EXISTING METHOD OF CONTROL

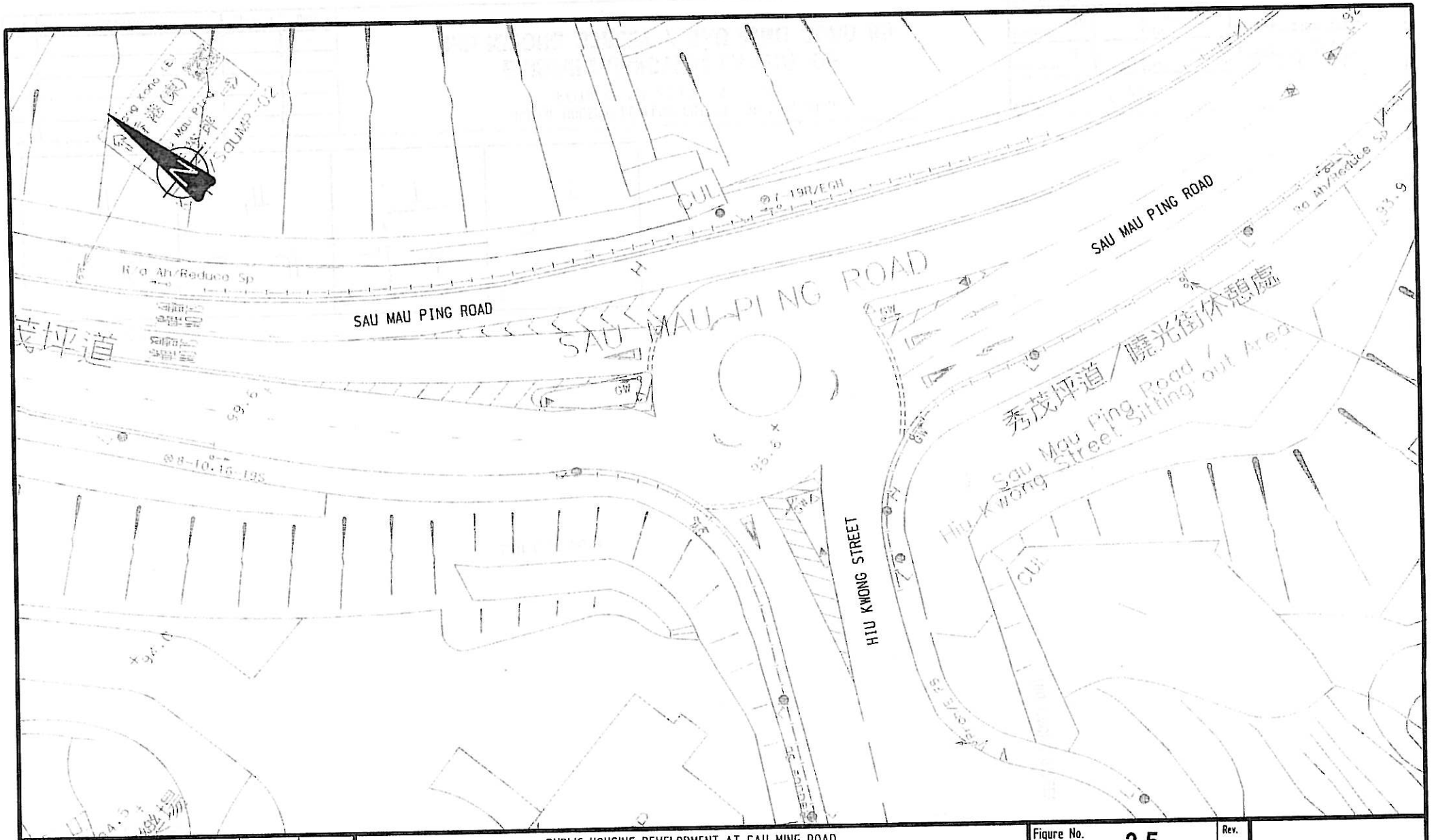
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PUBLIC HOUSING DEVELOPMENT AT SAU MING ROAD
TRAFFIC IMPACT ASSESSMENT STUDY

EXISTING JUNCTION LAYOUT OF SAU MAU PING ROAD / PO LAM ROAD (C)

Figure No.	3.4		Rev. -
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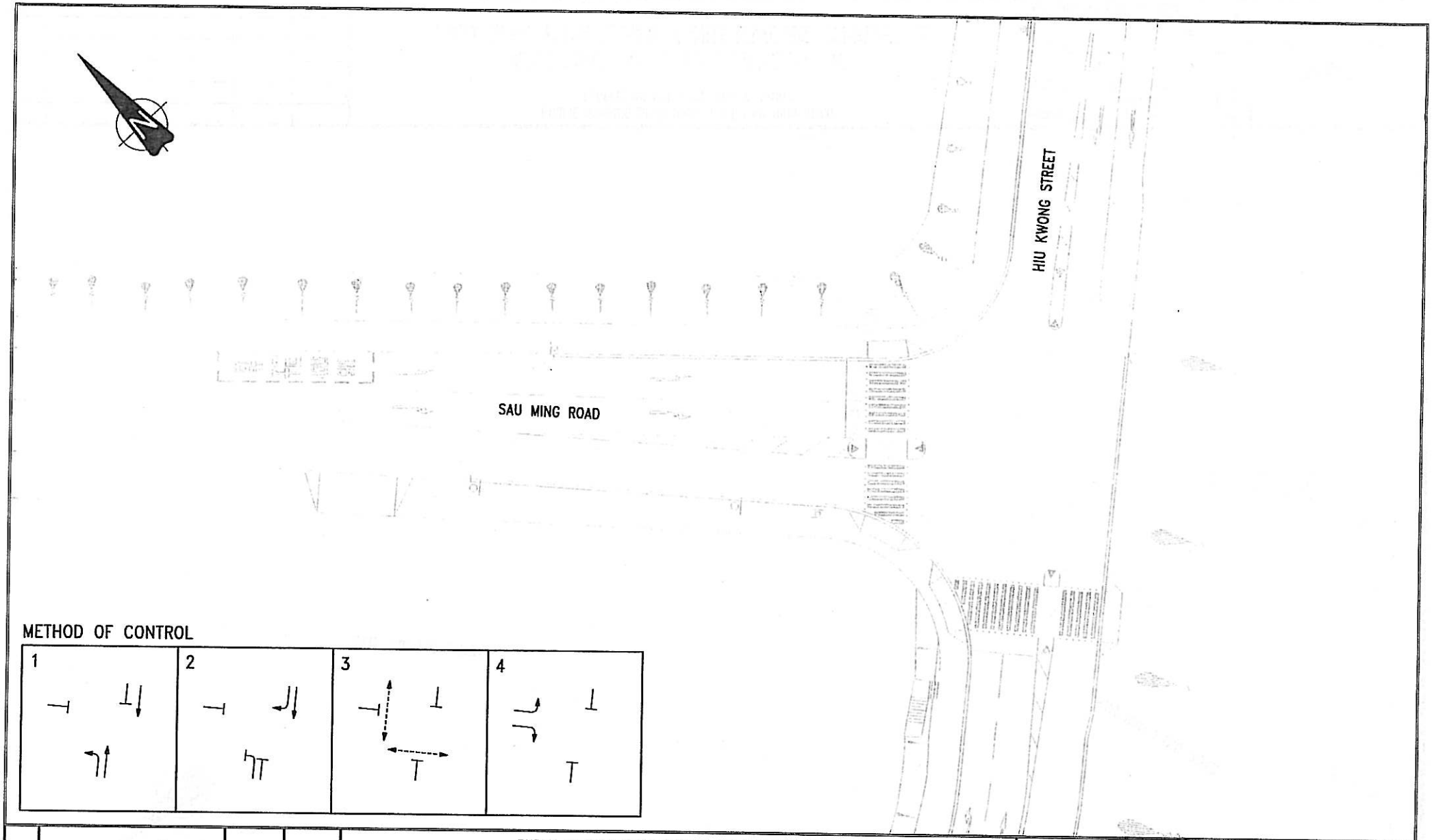
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PUBLIC HOUSING DEVELOPMENT AT SAU MING ROAD
TRAFFIC IMPACT ASSESSMENT STUDY

EXISTING JUNCTION LAYOUT OF SAU MAU PING ROAD / HIU KWONG STREET (D)

Figure No.	3.5		Rev. -
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METHOD OF CONTROL

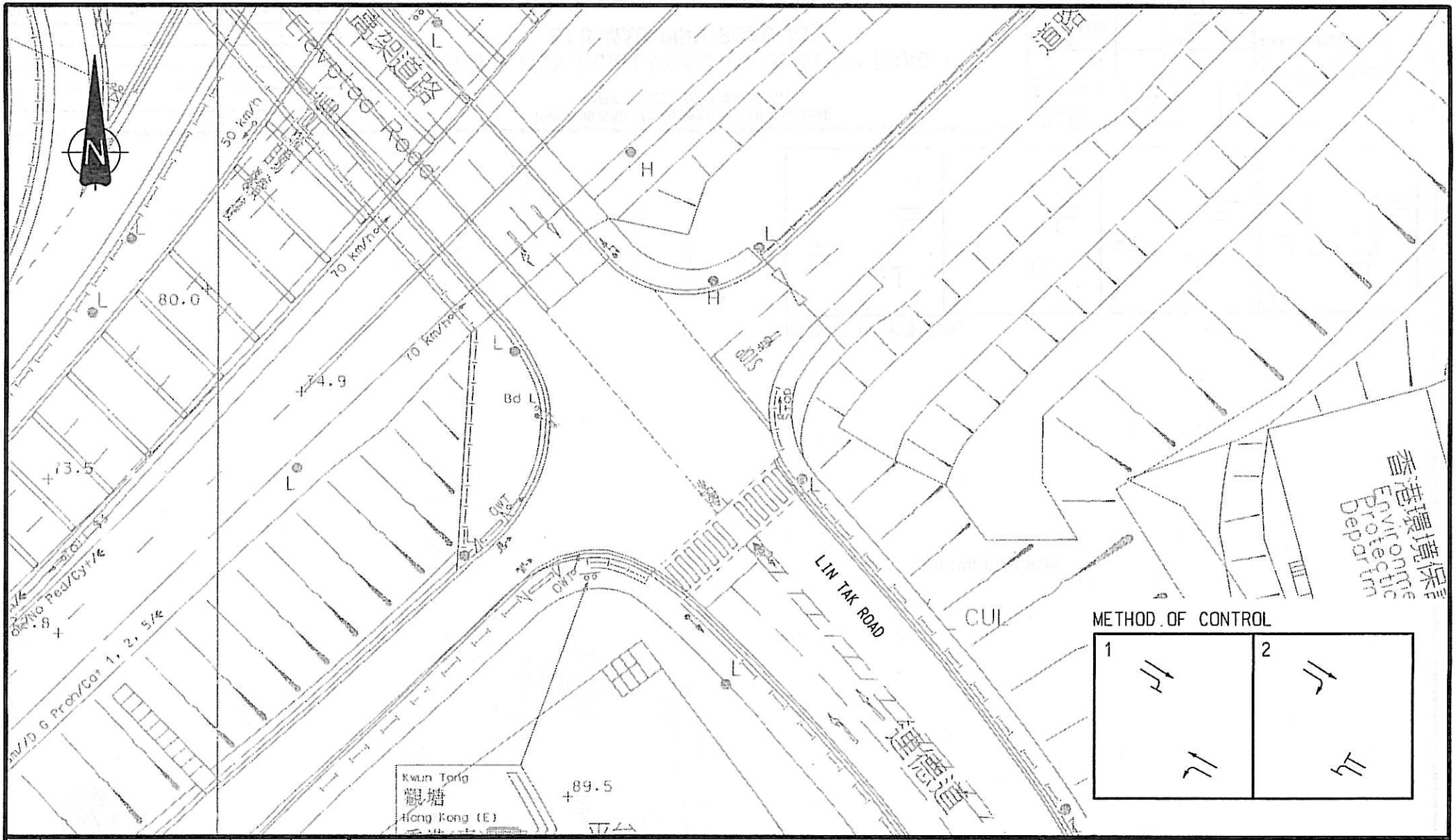
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PUBLIC HOUSING DEVELOPMENT AT SAU MING ROAD
TRAFFIC IMPACT ASSESSMENT STUDY

EXISTING JUNCTION LAYOUT OF HIU KWONG STREET / SAU MING ROAD (E)

Figure No.	3.6		Rev. -
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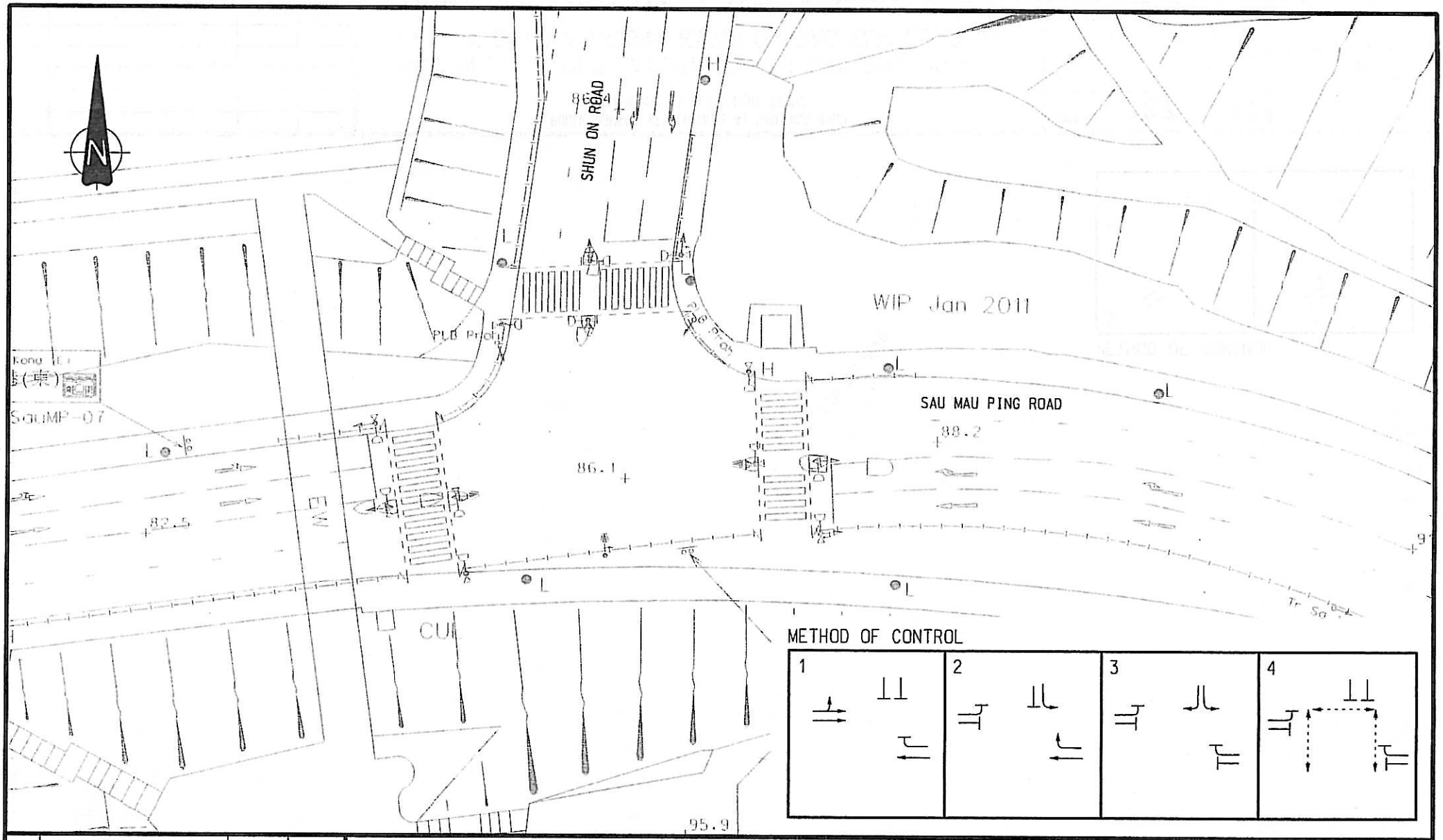
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PUBLIC HOUSING DEVELOPMENT AT SAU MING ROAD
TRAFFIC IMPACT ASSESSMENT STUDY

EXISTING JUNCTION LAYOUT OF SAU MAU PING ROAD / LIN TAK ROAD / TSEUNG KWAN O ROAD SLIP ROAD (F)

Figure No.	3.7		Rev. -
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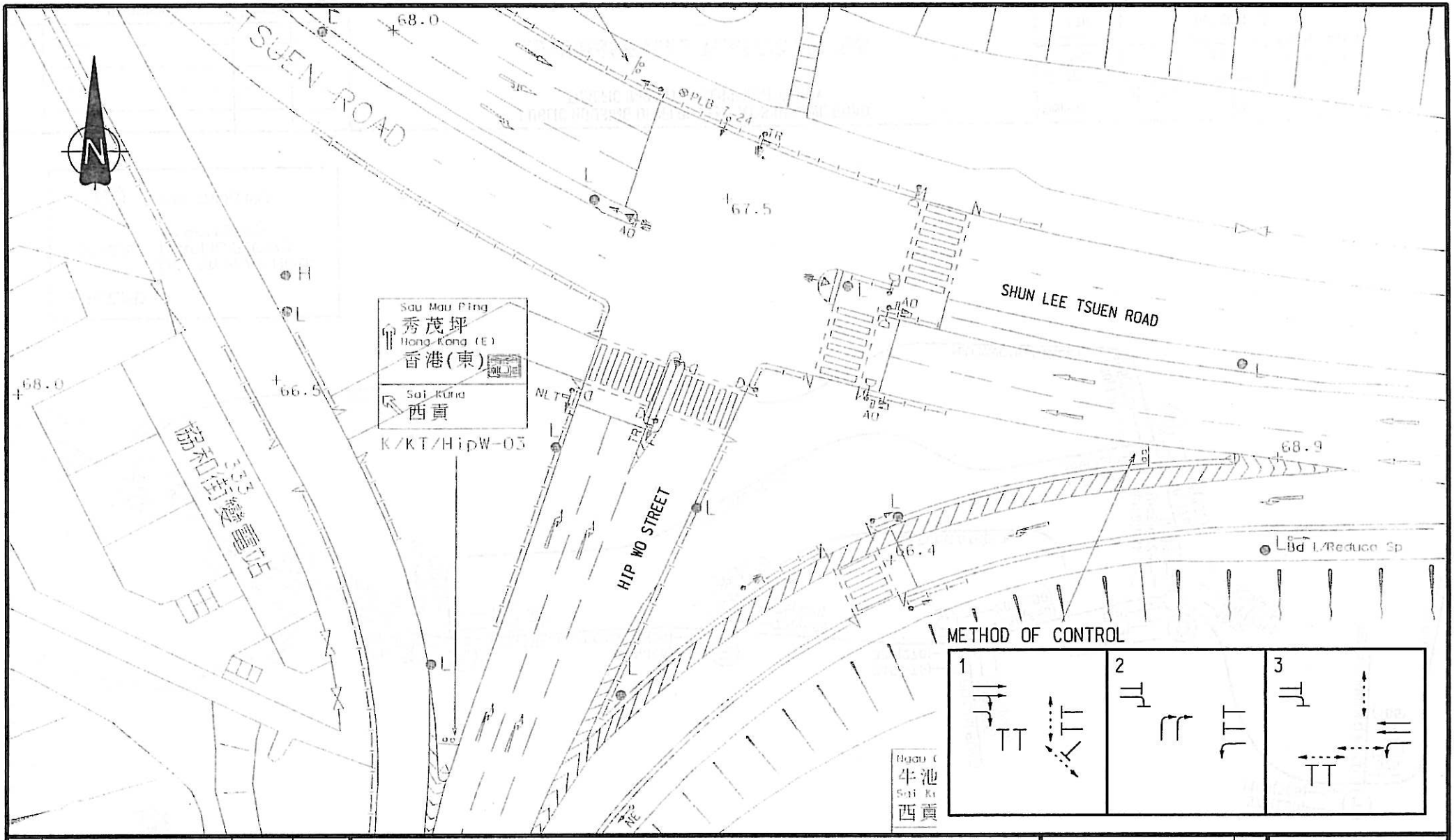
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PUBLIC HOUSING DEVELOPMENT AT SAU MING ROAD
TRAFFIC IMPACT ASSESSMENT STUDY

EXISTING JUNCTION LAYOUT OF SHUN ON ROAD / SAU MAU PING ROAD (G)

Figure No.	3.8		Rev. -
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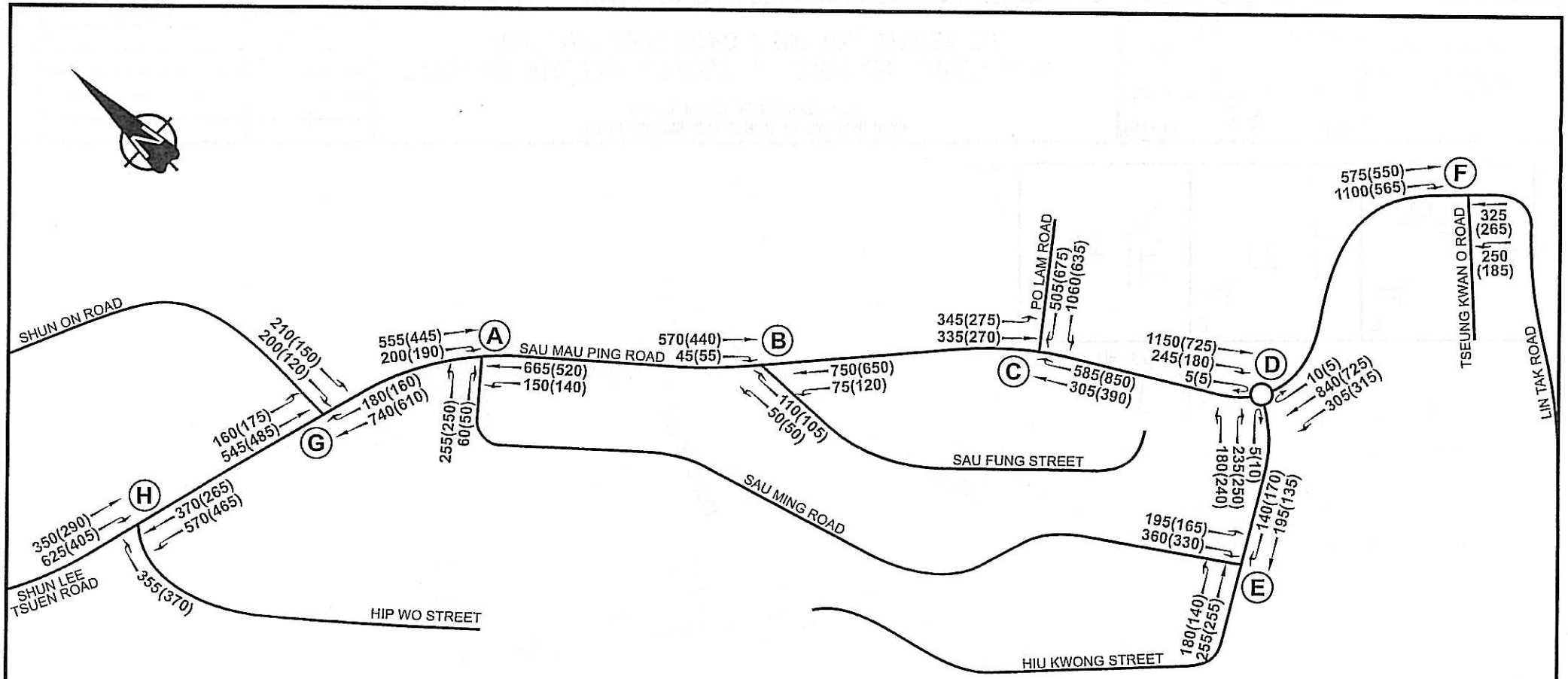
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PUBLIC HOUSING DEVELOPMENT AT SAU MING ROAD
TRAFFIC IMPACT ASSESSMENT STUDY

EXISTING JUNCTION LAYOUT OF SHUN LEE TSUEN ROAD / SAU MAU PING ROAD / HIP WO STREET (H)

Figure No.	3.9		Rev. -
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LEGEND :

255(255)	AM(PM) PEAK HOUR TRAFFIC FLOWS (IN PCUS/HR)
(A)	JUNCTION NO.

Rev.	Description	Approved	Date

PUBLIC HOUSING DEVELOPMENT AT SAU MING ROAD
TRAFFIC IMPACT ASSESSMENT STUDY

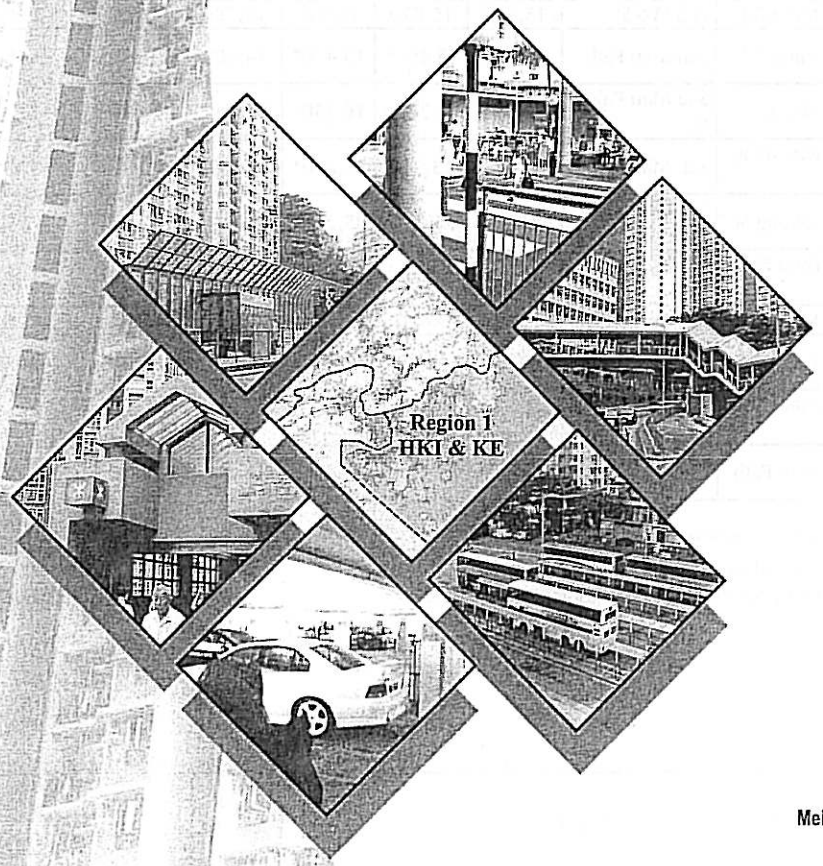
2010 OBSERVED TRAFFIC FLOWS

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4. FUTURE TRAFFIC CONDITIONS

4.1 Design Year

4.1.1 It is anticipated that the proposed development will be completed by end 2017. In order to assess the impact of the development related traffic on the local road network, it is necessary to forecast the traffic flows for 2021, the adopted design year. This is also the strategic study year currently adopted by the Hong Kong Government for the overall long term planning of Hong Kong's transport system.

4.2 Reference Traffic Flows

4.2.1 To estimate the 2021 reference traffic flows (without the proposed development) in the local road network, an appropriate growth factor has to be identified for the area in the first instance.

Historical Trend

4.2.2 The Transport Department has traffic count stations in the vicinity of the proposed development. They are located in Sau Mau Ping Road, Sau Ming Road, Hiu Kwong Street and Po Lam Road, etc. The traffic counts reported in the Annual Traffic Census (ATC) over a period of five years, between 2005 and 2009 are shown in **Table 4.1**.

Table 4.1 ATC Counting Station Records in the Local Area

Station No. (2)	Road Name	From	To	Annual Average Daily Traffic (AADT)					Growth Rate p.a. (%)
				2005	2006	2007	2008	2009	2005-2009
3018	Hiu Kwong St	Sau Ming Rd	Hip Wo St	15,960	15,820	16,230	15,780	14,100	-2.9%
3272	Sau Mau Ping Rd	Sau Ming Rd	Sau Mau Path	15,520*	15,490*	15,470*	14,600	13,190	-3.9%
3477	Sau Mau Ping Rd	Hip Wo St	Sau Mau Ping Rd	16,400	16,370*	16,350*	15,990*	17,810	+2.2%
3678	Hiu Kwong St	Sau Mau Ping Rd	Sau Ming Rd	12,850	13,910	13,890*	13,580*	13,340*	+1.0%
3679	Sau Mau Ping Rd	Hiu Kwong St	Tseung Kwan O Rd	25,580	25,310	25,280*	24,730*	24,270*	-1.3%
3680	Po Lam Rd	Sau Mau Ping Rd	Anderson Rd	18,090	18,170	18,140*	17,750*	17,420*	-0.9%
3866	Sau Ming Rd	Sau Mau Path	Hiu Kwong St	10,460*	9,030	9,030	8,830*	8,660*	-4.5%
3867	Sau Mau Ping Rd	Hiu Kwong St	Po Lam Rd	21,930*	24,720	24,560	24,020*	23,580*	+2.0%
4066	Sau Ming Rd	Sau Mau Ping Rd	Sau Mau Path	8,930*	8,910*	7,560	7,820	7,670*	-3.5%
4067	Sau Mau Ping Rd	Sau Mau Path	Po Lam Rd	15,040*	15,202*	14,260*	14,410	14,150*	-1.5%
			Total:	**160,760**	**162,932**	**160,770**	**157,510**	**154,190**	**-1.0%**

Note: (1) * AADT estimated by Growth Factor.
(2) Location of ATC Counting Stations refers to Figure 4.1.

4.2.3 As indicated in **Table 4.1**, it can be noted that over the past five years (i.e. 2005 to 2009), the average annual traffic growth pattern in the area shows a decreasing trend with negative growth rate of –1.0% per annum.

Planning Data

4.2.4 Reference has also been made to the latest 2006-Based Territorial Population and Employment Data Matrices (TPEDM) planning data published by Planning Department for years 2006 and 2021 [with and without Anderson Road Development (ARD)] in the area. The average annual growth rates in terms of population from years 2006 to 2021 are illustrated in **Table 4.2**.

Table 4.2 Population Growth in the Local Area

Zone[1]	Population			Growth Rate per annum (%)	
	2006	2021	2021 (Without ARD)	2006-2021	2006-2021 (Without ARD)
115	29,092	44,154	27,466	+2.8%	-0.4%
116	52,716	56,055	56,055	+0.4%	+0.4%
121	31,936	30,522	30,522	-0.3%	-0.3%
122	49,603	83,642	52,030	+3.5%	+0.3%
123	41,466	37,824	37,824	-0.6%	-0.6%
353	0	0	0	0%	0%
Total	**204,813**	**252,197**	**203,897**	**+1.4%**	**0%**

Note: (1) Please refer to Figure 4.2 for TPEDM Zone Map.

4.2.5 From **Table 4.2**, it can be seen that the average annual growth rate of population in the area from year 2006 to 2021 is +1.4% per annum. However, the significant increase in population in zones 115 and 122 is mainly due to Anderson Road Development (population ~48,300). If the population increase due to Anderson Road Development (ARD) is discounted, the annual growth rate between 2006 and 2021 ranges from -0.6% p.a. to +0.4% p.a

Base District Traffic Model (BDTM)

4.2.6 Based on the latest released BDTM, the maximum traffic growth (exclude Anderson Road Development Traffic) at Sau Mau Ping Road is 0.7% p.a. from year 2008 to 2016 and 1.17% p.a. from year 2016 to year 2021. (i.e. overall annual growth for years 2010 to 2021 is about 0.91% p.a.).

Anderson Road Development Traffic

4.2.7 Based on updated development parameters of Anderson Road Development and the latest trip rates extracted from TPDM, **Table 4.3** summarises the volume of traffic generated by the Anderson Road Development.

Table 4.3 Traffic Generations of Anderson Road Development (pcu/hr)

Development Parameters	AM Peak		PM Peak	
	Generation	Attraction	Generation	Attraction
3,257 Flats (1/2 person type)[1]	79	73	58	65
14,399 Flats (Other) [2]	622	469	342	433
Total	**701**	**542**	**400**	**498**

Remark: (1) Based on the latest trip generation rates as stipulated in Volume 1 Chapter 3 Appendix D Table 1 of TPDM (2009) for public housing of average flat size 30m².
(2) Based on the latest trip generation rates as stipulated in Volume 1 Chapter 3 Appendix D Table 1 of TPDM (2009) for public housing of average flat size 40m².

Growth Rate

4.2.8 Taken into consideration the above, the growth rates derived from BDTM would be referenced and the additional traffic generated by Anderson Road Development would be added separately to provide the future 2021 traffic forecasts.

4.2.9 For conservative, an annual growth rate of 1% p.a. was adopted to project the 2010 observed flows to 2021 traffic flows. The development flow generated by Anderson Road Development as given in **Table 4.3** was then assigned to the above 2021 projected traffic flows to give the 2021 reference traffic flows as shown in **Figure 4.3**.

4.2.10 2021 Reference Flows =2010 Observed Flows x Growth Factor (+1% p.a. for 11 years) + Anderson Road Development Traffic

4.3 Development Traffic Generation

4.3.1 In order to estimate the traffic generation and attraction of the proposed development, reference has been made to the trip generation rates as stipulated in Volume 1 Chapter 3 Appendix D Table 1 of the latest Transport Planning and Design Manual (TPDM) and the adopted trip rates are summarised in **Table 4.4**.

Table 4.4 Adopted Trip Rates

	AM Peak		PM Peak	
	Generation	Attraction	Generation	Attraction
Public Housing (pcu/hr/flat)	0.0432	0.0326	0.0237	0.0301
Community Hall (pcu/hr) [1]	10	10	10	10

Note: (1) Nominal figure assumed.

4.3.2 Based on the development parameters given in **Table 2.1** and the adopted trip rates given in **Table 4.4**, the total trips generated by the proposed development are computed and shown in **Table 4.5**.

Table 4.5 Traffic Generations of Proposed Development (pcu/hr)

Development Parameters	AM Peak		PM Peak	
	Generation	Attraction	Generation	Attraction
About 350 PRH Flats	15	11	8	11
Community Hall	10	10	10	10
Total	25	21	18	21

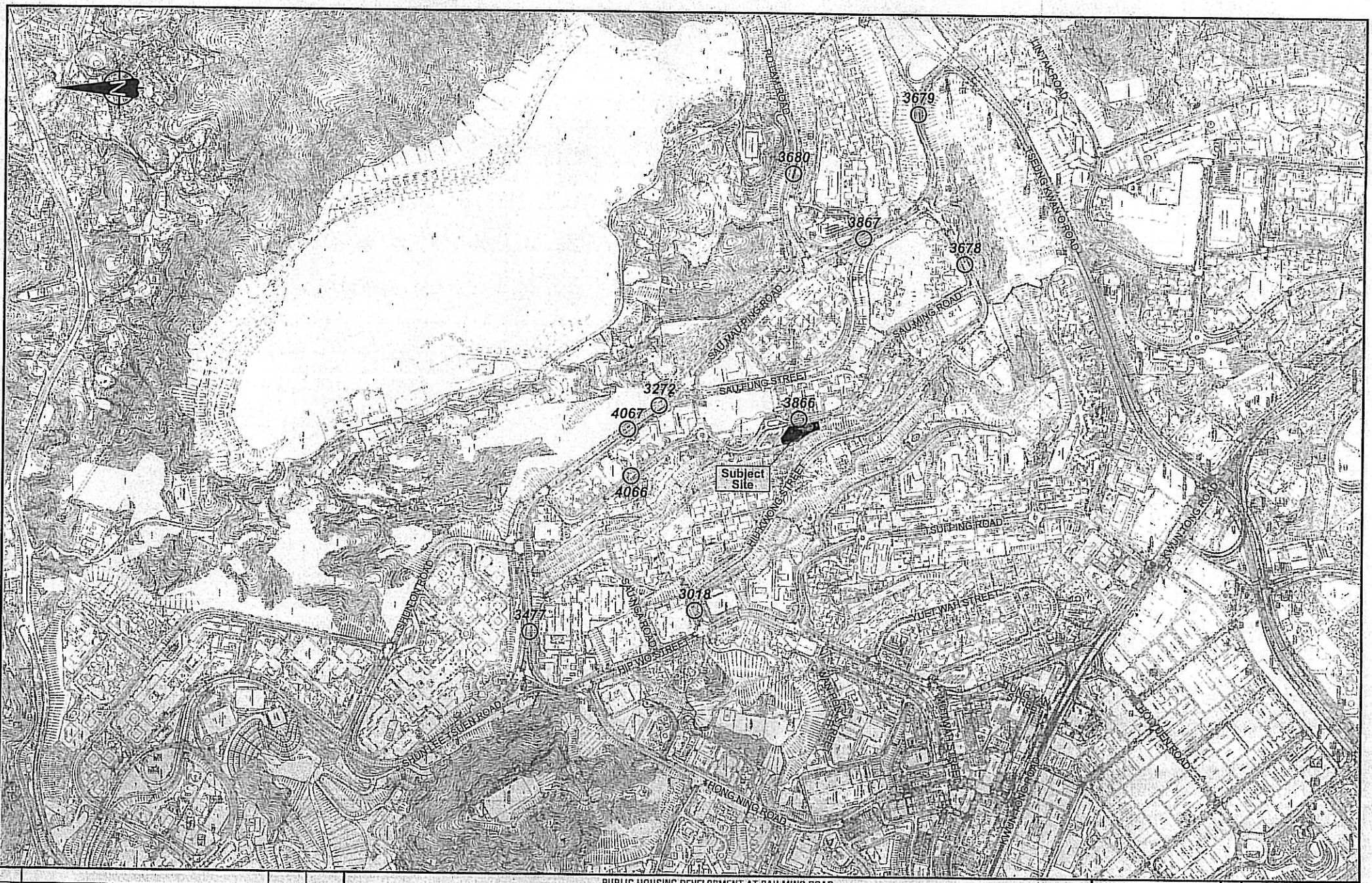
4.3.3 It is estimated that the proposed development will generate and attract about 25pcu/hr and 21pcu/hr in the AM peak hour, and generate and attract about 18pcu/hr and 21pcu/hr in the PM peak hour respectively.

4.4 Design Traffic Forecasts

4.4.1 The traffic generated from the proposed development were finally superimposed onto the 2021 reference traffic flows (without development) as shown in **Figure 4.3** to derive the 2021 design traffic forecasts (with development).

4.4.2 2021 Design Flows = 2021 Reference Flows + Proposed Development Traffic

4.4.3 The 2021 AM and PM peak design traffic forecasts (with development) are shown in **Figure 4.4**.



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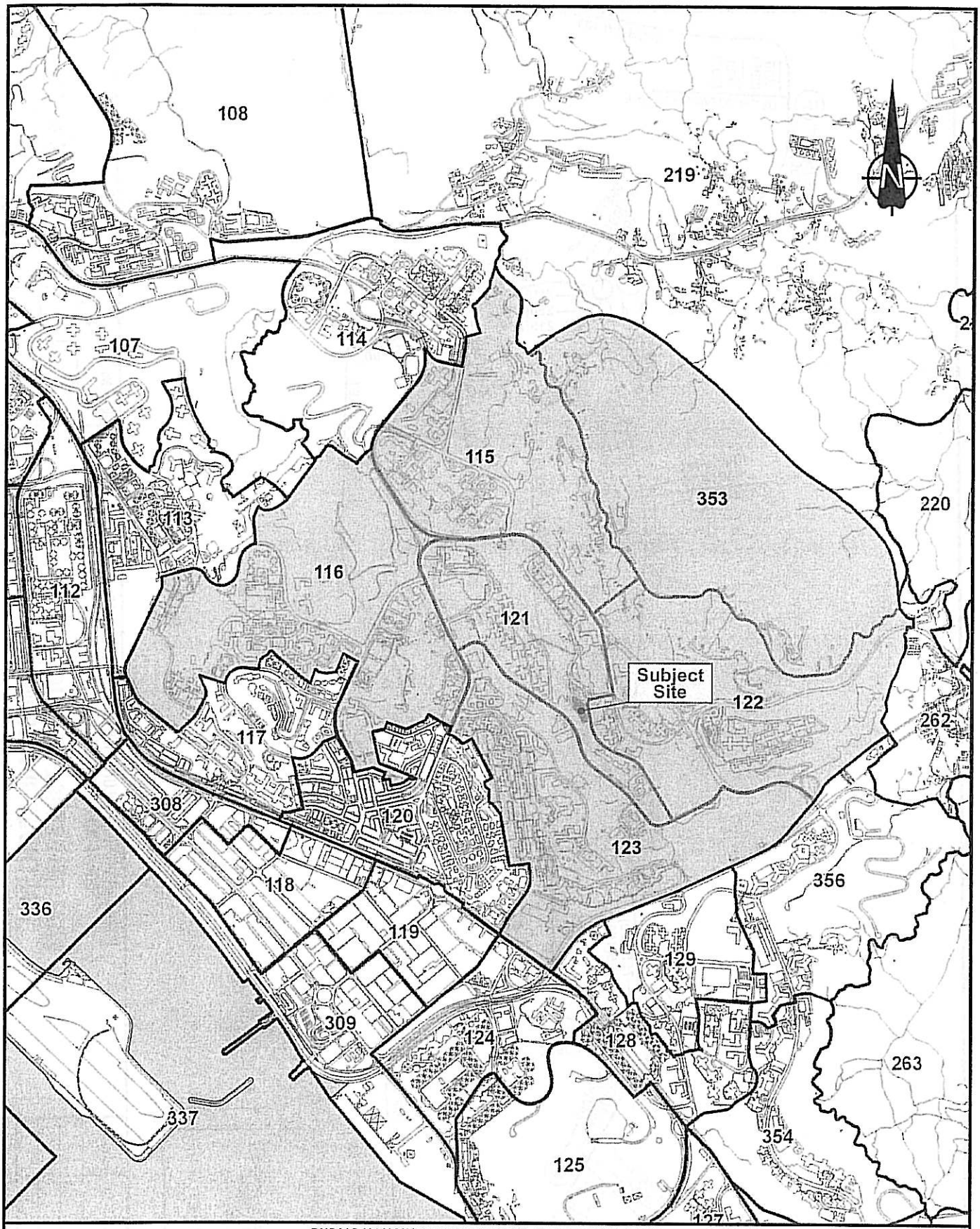
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TRAFFIC IMPACT ASSESSMENT STUDY

LOCATION OF ATC COUNTING STATIONS

Figure No.	4.1		Rev.
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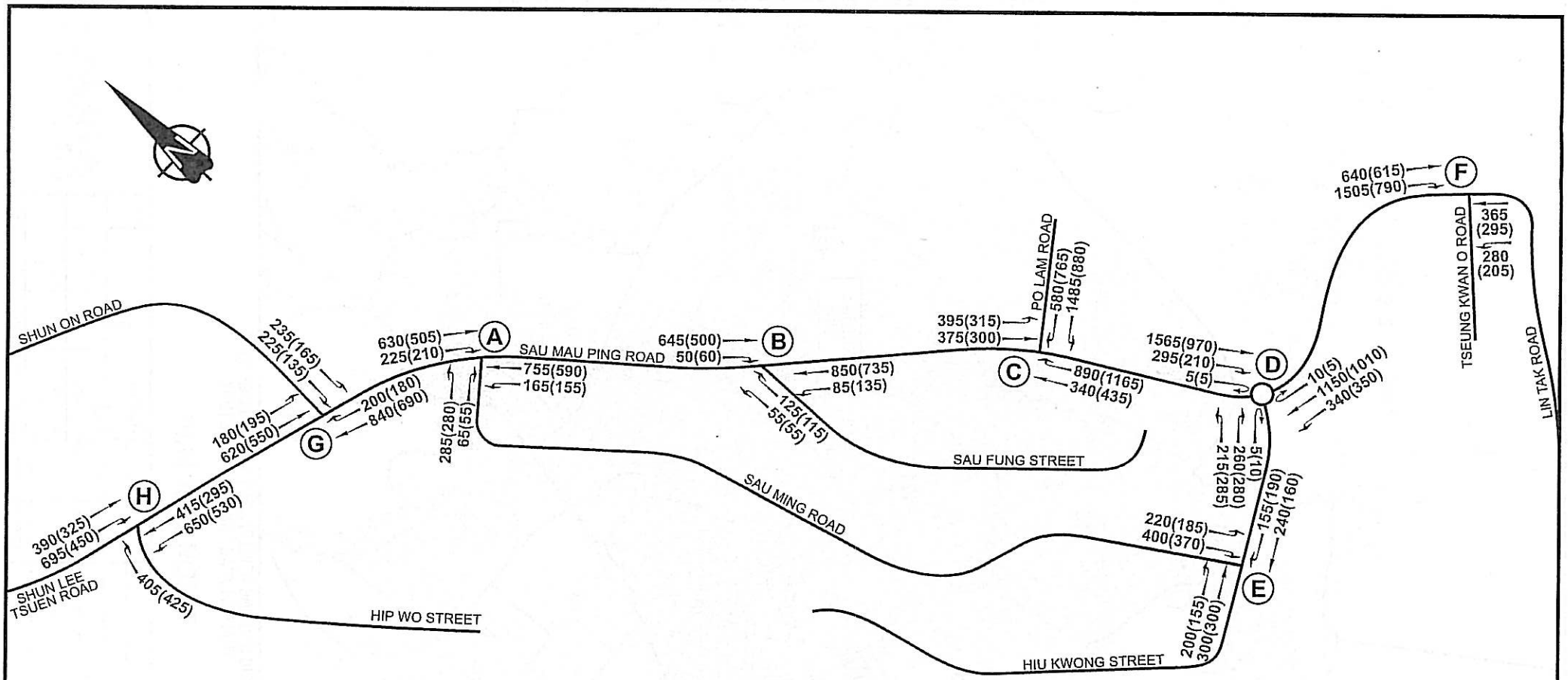
PUBLIC HOUSING DEVELOPMENT AT SAU MING ROAD
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TPEDM ZONE MAP

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LEGEND :

295(295)	AM(PM) PEAK HOUR TRAFFIC FLOWS (IN PCUS/HR)
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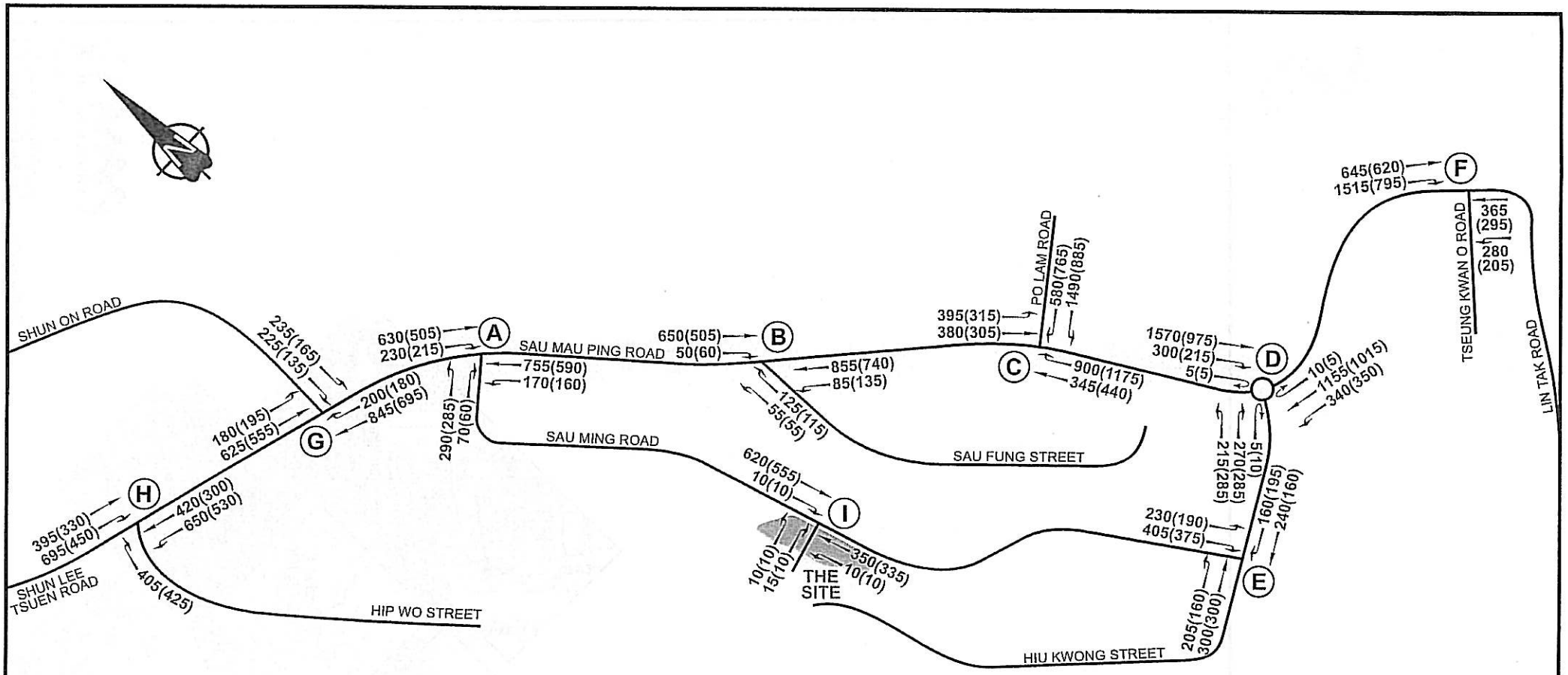
PUBLIC HOUSING DEVELOPMENT AT SAU MING ROAD
TRAFFIC IMPACT ASSESSMENT STUDY

2021 REFERENCE TRAFFIC FLOWS (WITHOUT DEVELOPMENT)

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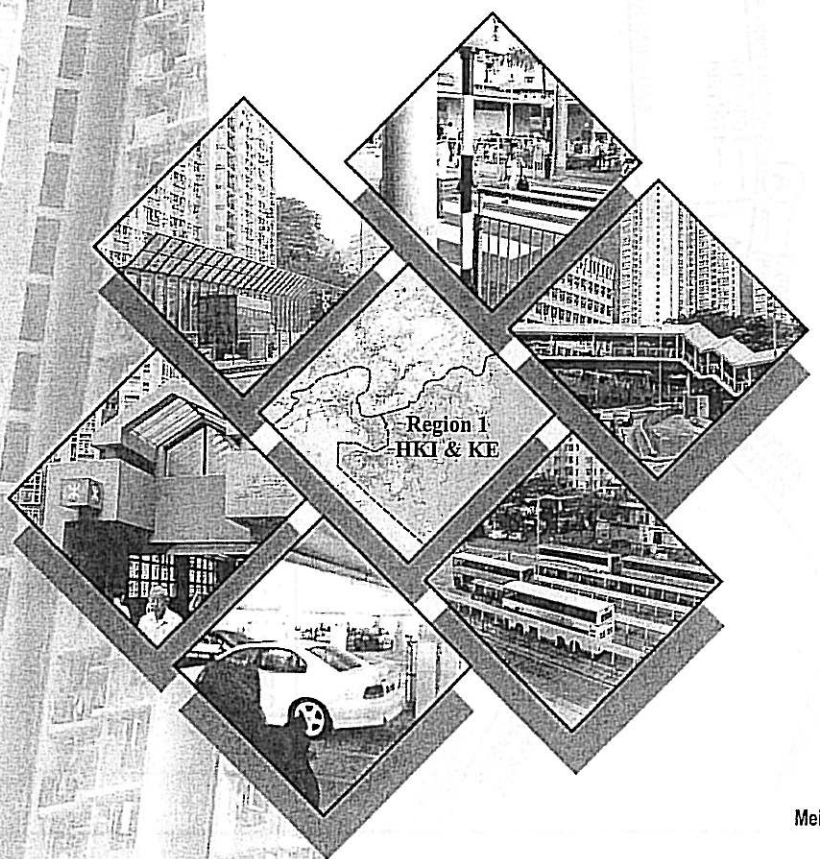
PUBLIC HOUSING DEVELOPMENT AT SAU MING ROAD
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2021 DESIGN TRAFFIC FLOWS (WITH DEVELOPMENT)

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5. TRAFFIC IMPACT ASSESSMENT

5.1 Operational Assessment

5.1.1 It is understood that there will be some changes on the junction layout and method of control of the critical junctions adjacent to the proposed development in the future. The existing / planned layouts in design year 2021 adopted for the operational assessments of the critical junctions were summarised in **Table 5.1**.

Table 5.1 Detailed Layout Arrangement of Critical Junctions in 2021

Ref.	Junction	Type	Layout	Figure No.
A	Sau Mau Ping Road/Sau Ming Road	Signal	Planned	5.1
B	Sau Mau Ping Road/Sau Fung Street	Signal	Existing	3.3
C	Sau Mau Ping Road/Po Lam Road	Signal	Existing	3.4
D	Sau Mau Ping Road/Hiu Kwong Street	Roundabout	Existing	3.5
E	Hiu Kwong Street/Sau Ming Road	Signal	Existing	3.6
F	Sau Mau Ping Road/Lin Tak Road/Tseung Kwan O Road Slip Road	Signal	Existing	3.7
G	Shun On Road/Sau Mau Ping Road	Signal	Planned	5.2
H	Shun Lee Tsuen Road/Sau Mau Ping Road/Hip Wo Street	Signal	Planned	5.3
I	Development Access / Sau Ming Road	Priority	Planned	2.1

5.1.2 The assessment of the junctions Sau Mau Ping Road / Sau Fung Street (B), Sau Mau Ping Road / Po Lam Road (C), Sau Mau Ping Road / Hiu Kwong Street (D) and Hiu Kwong Street / Sau Ming Road (E), Sau Mau Ping Road & Lin Tak Road / Tseung Kwan O Road Slip Road (F) was basically based on their existing layout arrangements and method of control as shown in **Figures 3.3** to **3.7**. The assessment of junctions Sau Mau Ping Road/Sau Ming Road (A), Shun On Road/Sau Mau Ping Road (G), Shun Lee Tsuen Road / Sau Mau Ping Road/Hip Wo Street (H), Development Access / Sau Ming Road (I) was based on its planned junction layout and method of control and further elaborations are given in the following paragraphs.

Sau Mau Ping Road / Sau Ming Road (A)

5.1.3 As identified in "Agreement No. CE55/2005 Design and Construction of Development at Anderson Road Traffic Impact Assessment Study" by CEDD, junction Sau Mau Ping Road / Sau Ming Road (A) will be modified such that two traffic lanes will be provided at Sau Ming Road. The planned junction layout arrangement and method of control are illustrated in **Figure 5.1**.

Shun On Road/Sau Mau Ping Road (G)

5.1.4 As identified in "Agreement No. CE55/2005 Design and Construction of Development at Anderson Road Traffic Impact Assessment Study" by CEDD, junction Shun On Road/Sau Mau Ping Road (G) will be modified such that three traffic lanes will be provided at Sau Mau Ping Road. The planned junction layout arrangement and method of control are illustrated in **Figure 5.2**.

Shun Lee Tsuen Road/Sau Mau Ping Road/Hip Wo Street (H)

5.1.5 As identified in "Agreement No. CE55/2005 Design and Construction of Development at Anderson Road Traffic Impact Assessment Study" by CEDD, junction Shun Lee Tsuen Road/Sau Mau Ping Road/Hip Wo Street (H) will be modified such that the alignment of Hip Wo Street will be shifted westwards. The planned junction layout arrangement and method of control are illustrated in **Figure 5.3**.

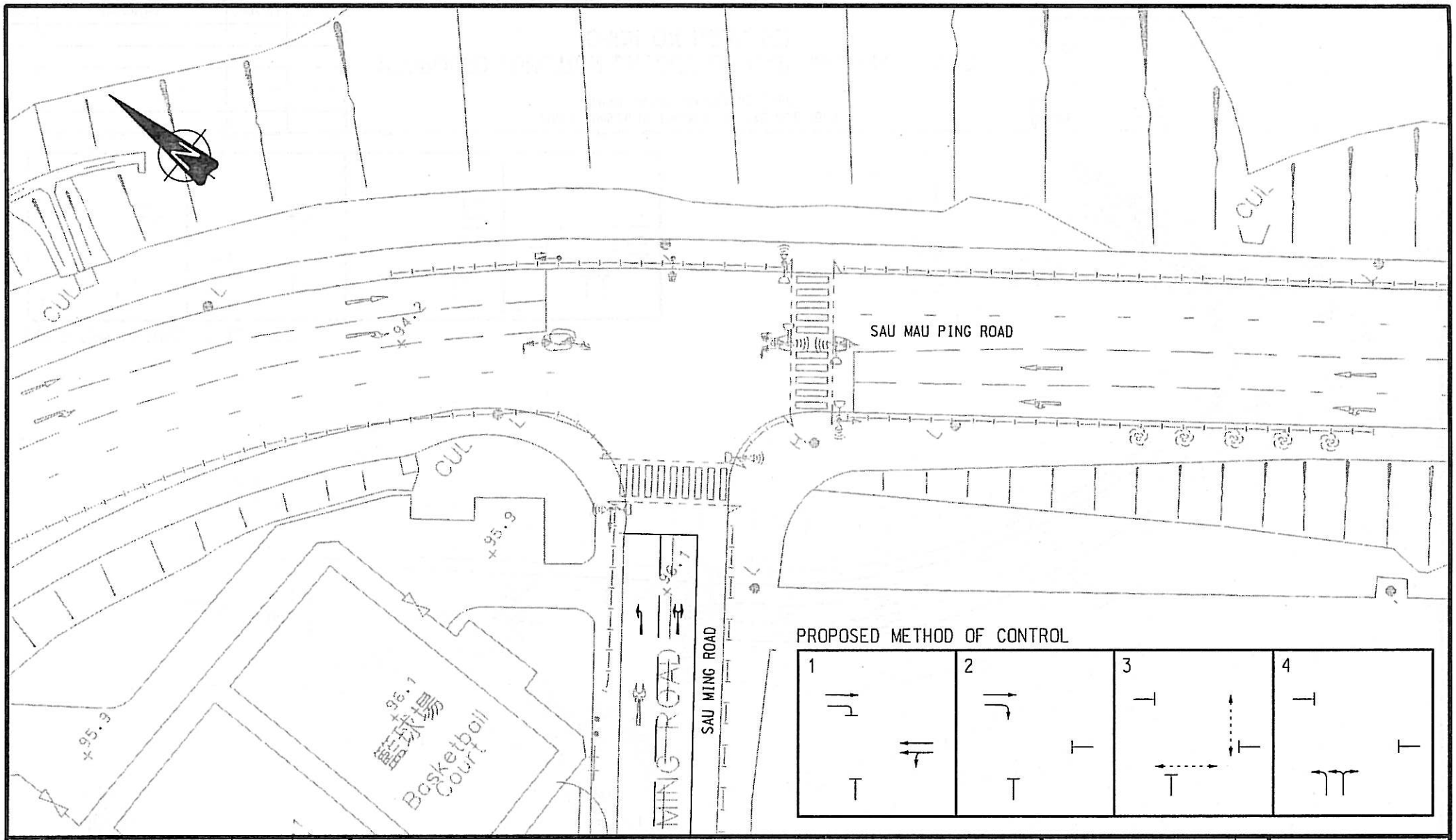
5.1.6 To assess the traffic impact due to the proposed development, capacity analysis of the identified critical junctions in the study area for both reference and design scenarios in year 2021 has been carried out. The results are summarised and presented in **Table 5.2**.

Table 5.2 Operational Performance of Critical Junctions in 2021

Ref.	Junction	Type	2021 RC / RFC			
			Reference Scenario (Without Development)		Design Scenario (With Development)	
			AM Peak	PM Peak	AM Peak	PM Peak
A	Sau Mau Ping Road/Sau Ming Road	Signal	36%	48%	34%	46%
B	Sau Mau Ping Road/Sau Fung Street	Signal	143%	161%	142%	160%
C	Sau Mau Ping Road/Po Lam Road	Signal	37%	10%	36%	10%
D	Sau Mau Ping Road/Hiu Kwong Street	Roundabout	0.56	0.53	0.56	0.54
E	Hiu Kwong Street/Sau Ming Road	Signal	17%	16%	16%	15%
F	Sau Mau Ping Road/Lin Tak Road/Tseung Kwan O Road Slip Road	Signal	-13%	51%	-13%	50%
G	Shun On Road/Sau Mau Ping Road	Signal	34%	60%	33%	59%
H	Shun Lee Tsuen Road/Sau Mau Ping Road/Hip Wo Street	Signal	58%	102%	57%	102%
I	Development Access/Sau Ming Road	Priority	N.A.	N.A.	0.68	0.53

Remark: RC = Reserve Capacity
RFC = Ratio of Flow to Capacity for roundabout.

5.1.7 The assessment results in **Table 5.1** revealed that all critical junctions (except Junction F – Sau Mau Ping Road/Lin Tak Road/Tseung Kwan O Road Slip Road in AM peak period) would still operate within their capacities in design year 2021. For Junction F, the impact by the development traffic to the junction is minimal (i.e. no change in reserve capacity).



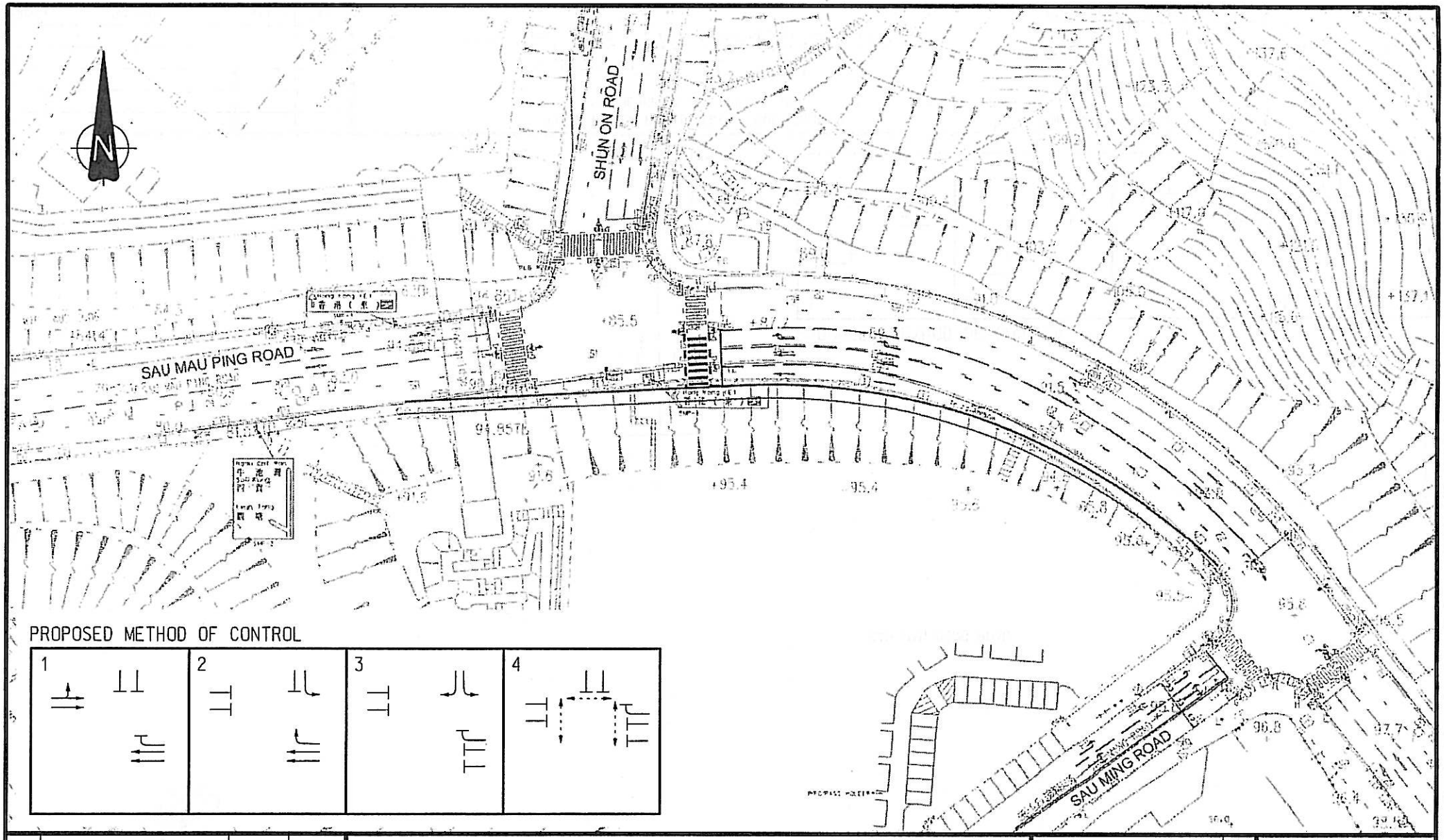
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PUBLIC HOUSING DEVELOPMENT AT SAU MING ROAD
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PLANNED JUNCTION LAYOUT OF SAU MAU PING ROAD / SAU MING ROAD (A)

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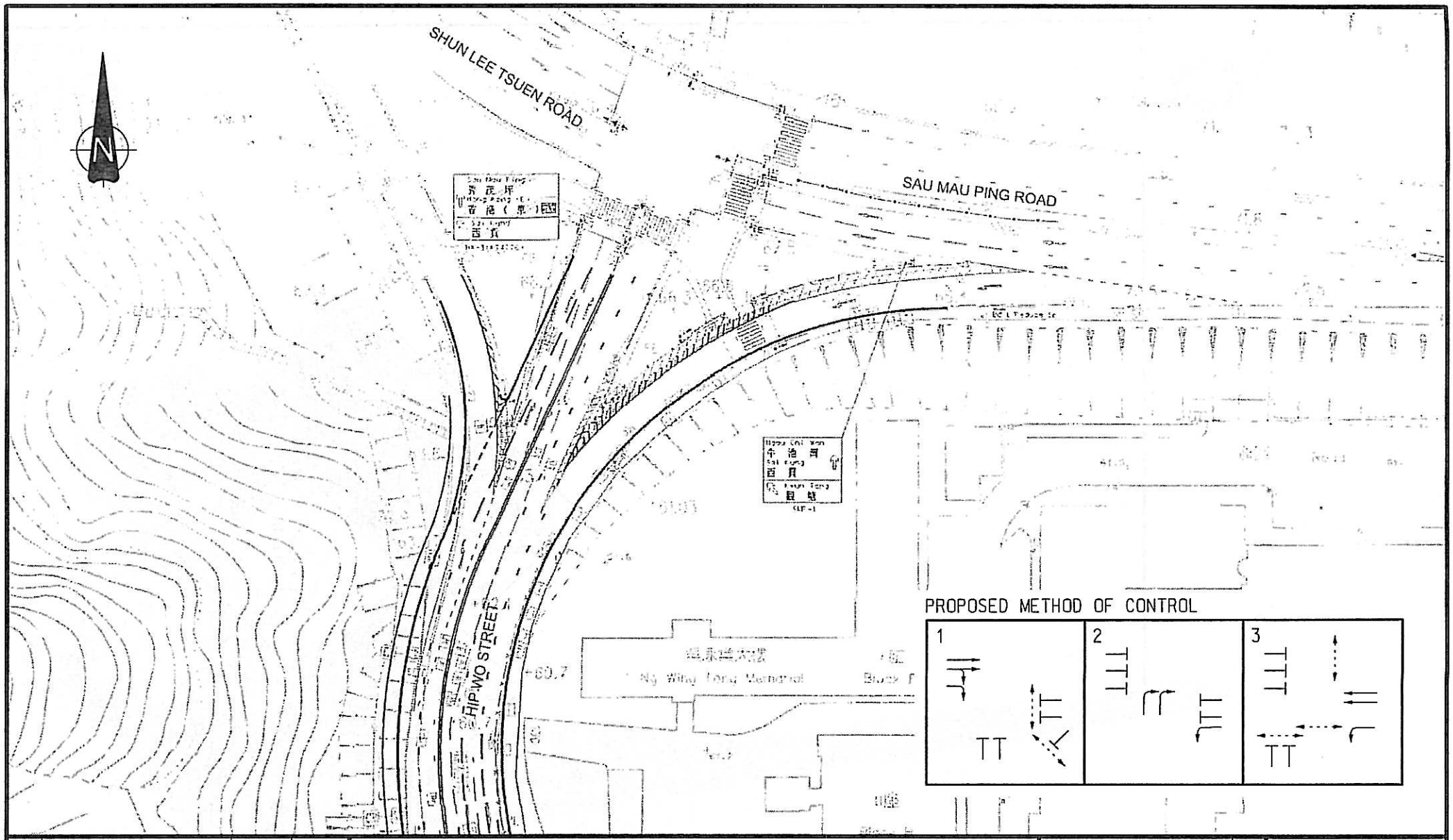
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TRAFFIC IMPACT ASSESSMENT STUDY

PROPOSED JUNCTION LAYOUT OF SAU MAU PING ROAD / SHUN ON ROAD (G)

Figure No. 5.2 Rev. -

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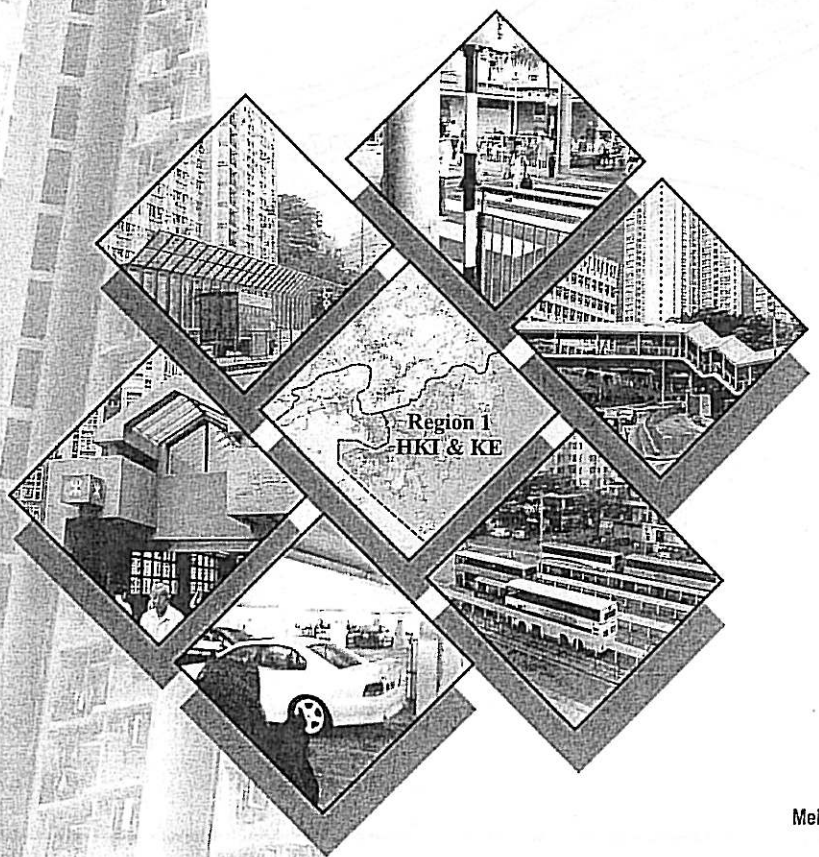
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PROPOSED JUNCTION LAYOUT OF SHUN LEE TSUEN ROAD / SAU MAU PING ROAD / HIP WO STREET (H)

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Ref. : 27702-29/TIA2/F53.DGN/ATC/20OCT11			

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6. PUBLIC TRANSPORT PROVISIONS

6.1 Public Transport Services

6.1.1 At present, there are 16 bus routes and 4 GMB routes operating near Sau Mau Ping GIC Site and Sau Mau Ping bus terminus are just located to the west of the proposed development. Details of these bus and GMB services are summarised in **Table 6.1**.

Table 6.1 Existing Public Transport Services

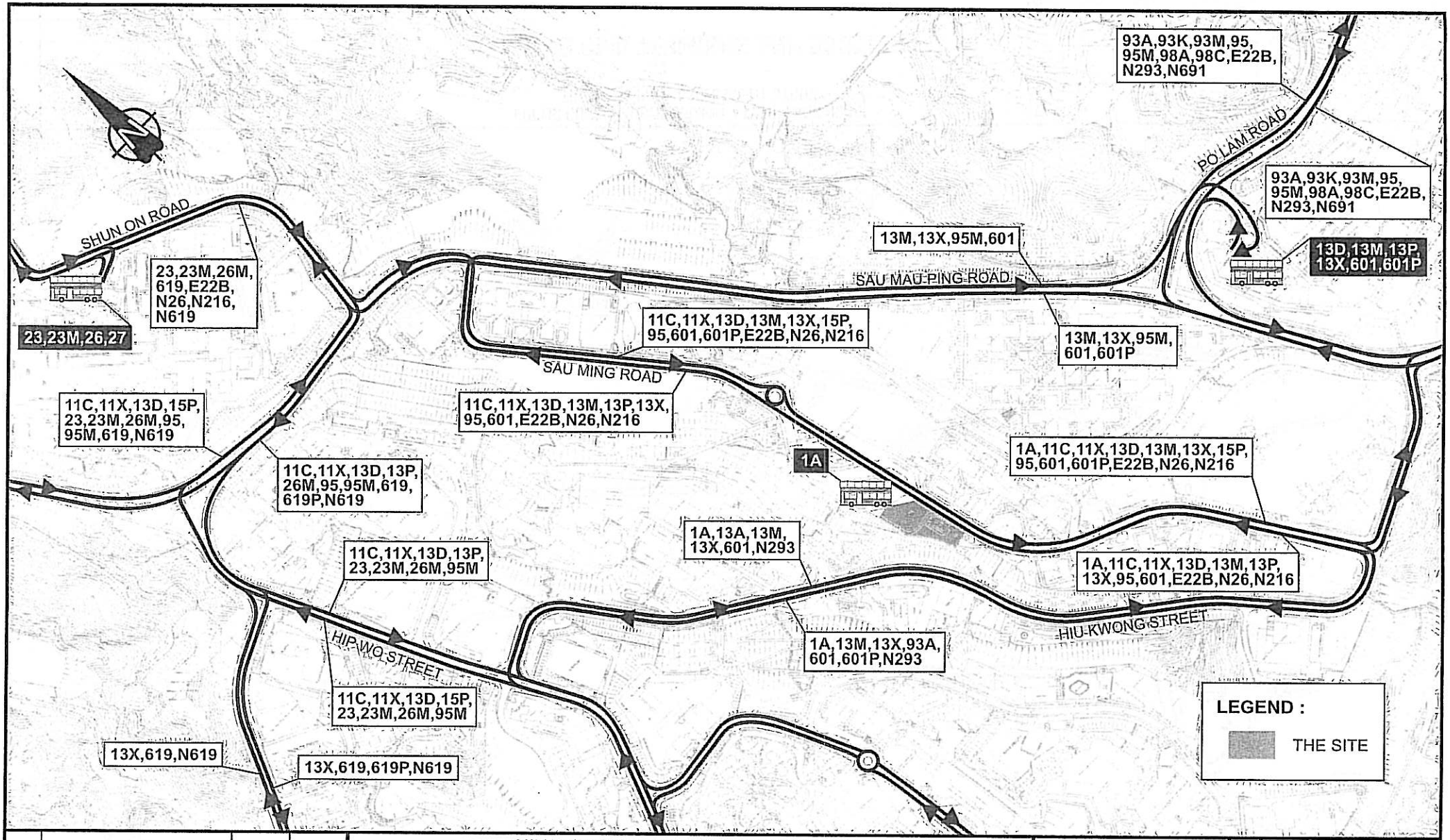
Route	Service Type	Origin/Destination	Frequency (minutes)
Bus			
1A	KMB	Sau Mau Ping (Central) B/T – Star Ferry B/T	5-10
13D	KMB	Po Tat Estate –Island Harbour View	13-20
13M	KMB	Po Tat Estate – Kwun Tong (Elegance Rd) (Circular)	13-20
13P[(1)]	KMB	Po Tat Estate – Lai Kok B/T	-
13X	KMB	Po Tat Estate – Tsim Sha Tsui East	10-15
15P[(2)]	KMB	Kai Yip B/T – Ping Tin	-
23	KMB	Kwun Tong Ferry B/T – Shun Lee (Circular)	9-12
23M	KMB	Lok Wah – Shun Lee (Circular)	11-18
26	KMB	Shun Tin B/T – Tsim Sha Tsui East	6-12
27	KMB	Shun Tin B/T – Mong Kok (Circular)	5-12
95	KMB	Tsui Lam B/T – Jordan (To Wah Road)	12-20
601	KMB	Po Tat Estate – Admiralty (Drake Street) B/T	4-13
601P[(3)]	KMB	Po Tat Estate – Sheung Wan	-
N216[(4)]	KMB	Yau Tong B/T – Hung Hom Railway Station B/T	10-15
E22B[(5)]	Citybus	Tseung Kwan O (Po Lam PTB) – Asia World-Expo	-
N26[(6)]	Citybus	Yau Tong – Tung Chung B/T	-
GMB			
34M	GMB	Hiu Lai Court – Kwun Tong (Yue Man Square)	5-8
60	GMB	Lam Tin (Kai Tin Estate) – Shun Lee Estate (Circular)	3-4
71B	GMB	Sau Mau Ping Estate (Phase 5) – Lam Tin Station	6-10
76B	GMB	United Christian Hospital – Yau Tong (Yan Wing Street) (Circular)	12-15

Notes:
(1) Monday to Saturday 07:30 and 07:50 from Po Tat only.
(2) Monday to Friday 07:15 from Kai Yip B/T only.
(3) Monday to Saturday (06:58 - 08:20) from Po Tat only.
Monday to Friday (17:50 – 18:35) from Sheung Wan only.
(4) Night services (00:00 – 05:45) from Hong Hum only.
Night services (00:00-05:20) from Yau Tong only.
(5) Monday to Friday 07:00 and 07:30 from Po Lam only.
Monday to Friday 17:45 and 18:15 from Asiaworld Expo only.
(6) Night services 04:30, 05:00 and 05:25 from Yau Tong only.
Night services 00:20 from Tung Chung Station only.

6.1.2 For ease of reference, the routings of these existing bus and GMB services, and the location of the terminus are shown in **Figures 6.1** and **6.2** respectively.

6.1.3 In addition to the above-mentioned scheduled services, there are also some PLB routes providing services to Mong Kok and Kwun Tong, etc. which have no fixed routing and schedule.

6.1.4 In view of the comprehensive coverage of the public transport services and the available different choices on transport modes, the proposed development is considered to have very good accessibility via the pubic transport.



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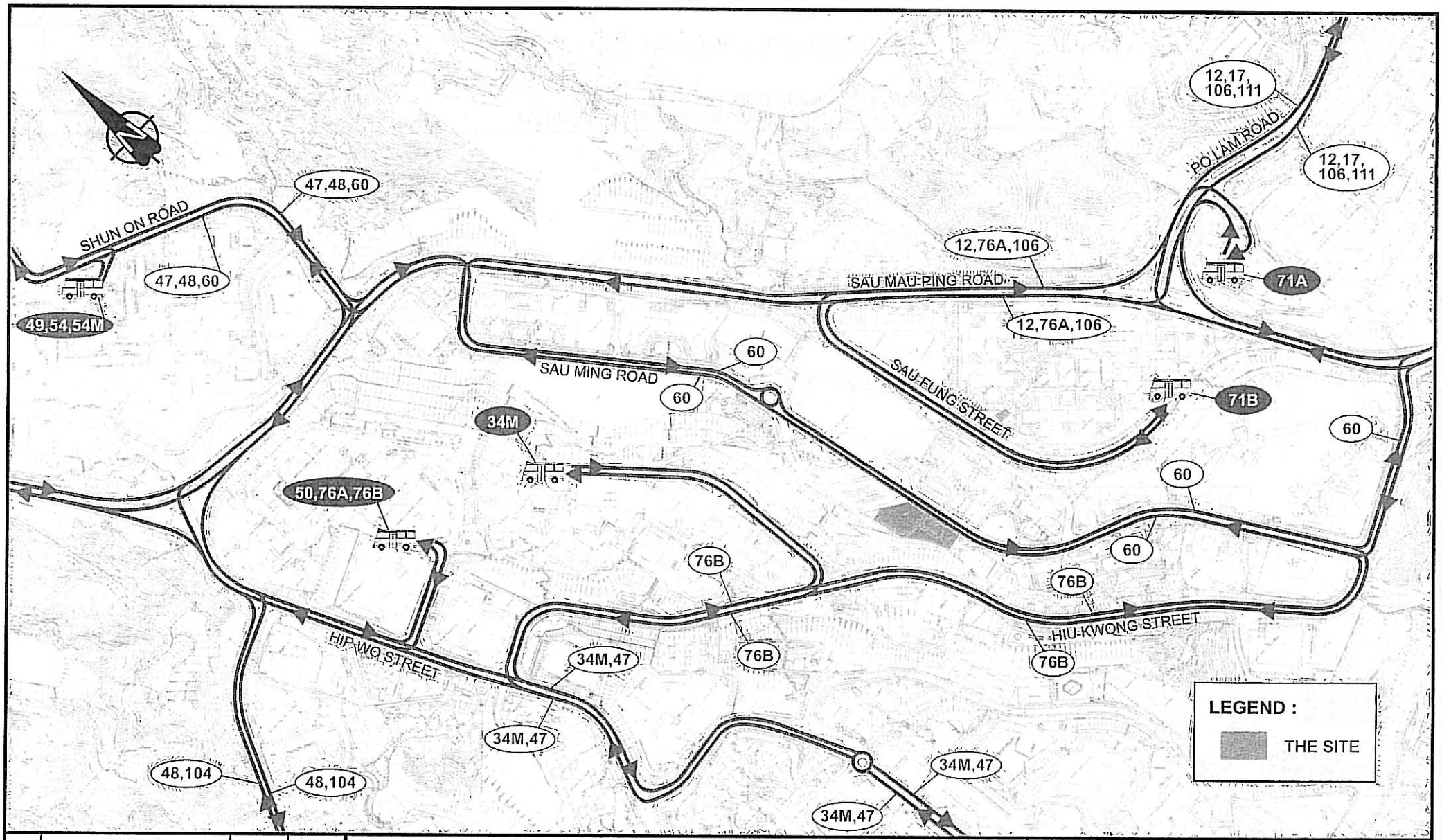
PUBLIC HOUSING DEVELOPMENT AT SAU MING ROAD
TRAFFIC IMPACT ASSESSMENT STUDY

EXISTING BUS TERMINUS AND ROUTING

Figure No.		Rev.
6.1		
Designed By: TON		Scale: NTS
Checked By: STH		Date: OCT 2011

CAD Ref. : 27702-29/TIA2/F61.CDR/LLH/20OCT11

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Rev.	Description	Approved	Date

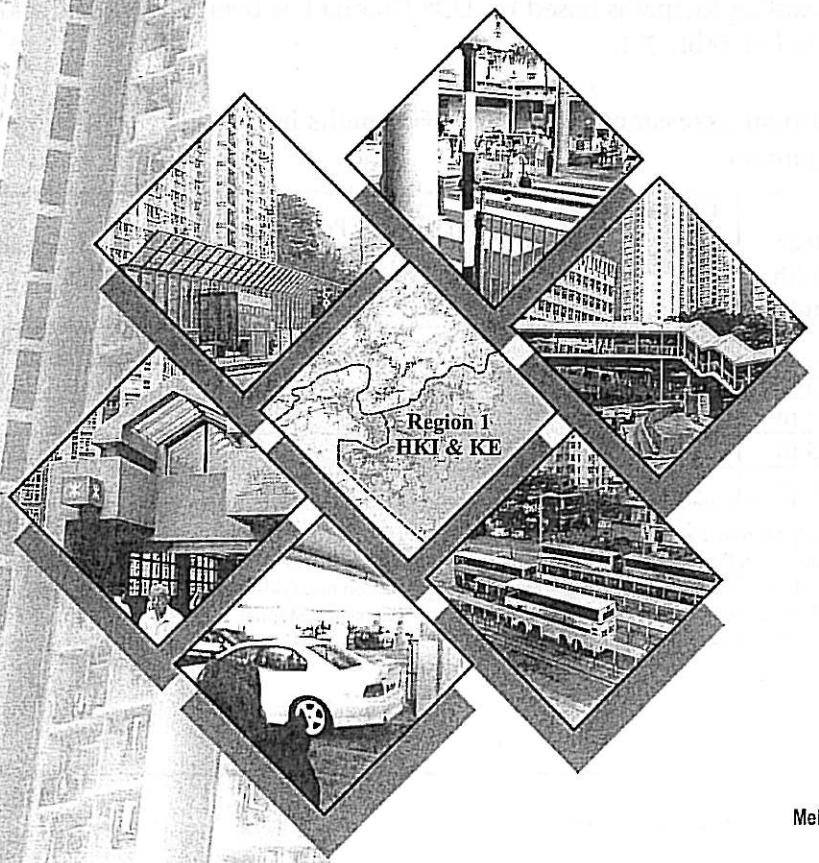
PUBLIC HOUSING DEVELOPMENT AT SAU MING ROAD
TRAFFIC IMPACT ASSESSMENT STUDY

EXISTING GMB TERMINUS AND ROUTING

Figure No.	6.2		Rev.
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7. EXISTING PEDESTRIAN CONDITION AND ASSESSMENT

7.1 Existing Pedestrian Condition

Existing Pedestrian Facilities

7.1.1 At present, footpath and numerous pedestrian crossings are provided in the vicinity and at the nearby junctions to connect the proposed development and the surrounding housing developments and shopping centre. The locations of the cautionary pedestrian crossing and zebra crossings in the vicinity of the proposed development are shown in **Figure 7.1**.

Observed Pedestrian Demand & Operational Assessment

7.1.2 In order to determine the existing pedestrian circulation patterns and demands, pedestrian surveys in form of manual head count survey was conducted on a typical weekday in October 2010 at the footpaths and pedestrian crossings in the vicinity of the proposed development.

7.1.3 The observed pedestrian count data indicates that the highest peak hour pedestrian demands occur at 7:40a.m. to 8:40a.m. and 17:05p.m. to 18:05p.m. in the AM and PM peaks respectively. The observed peak hour pedestrian flows are shown in **Figure 7.2**.

7.1.4 To investigate the serviceability level of the footpath in front of the proposed development, the concept of Level-of-Service (LOS) as stipulated in Highway Capacity Manual 2000 and T.P.D.M. Volume 6 Chapter 10 Section 10.4.2 have been applied. The concept of Level-of-Service (LOS) defines the serviceability level of walkway in terms of several parameters such as flow rate, pedestrian space, walking speed, etc. Operational assessment on the existing footpaths based on LOS Criteria has been conducted and the results are summarized in **Table 7.1**.

Table 7.1 Operational Assessment of Existing Footpaths in the Vicinity of Proposed Development

Location of Footpath [1]	Clear Width (m)	Observed Two-way Hourly Pedestrian Flows (in ped/hr)		Two-way Pedestrian Flow Rate (in ped/min/m) [2]		Level of Service (LOS)[3]	
		AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
A	2.5 m	540	520	6	5.8	A	A
B	2.5 m	160	90	1.8	1.0	A	A
C	5.5 m	1,500	1,510	5.6	5.6	A	A
D	6.0 m	1,970	1,910	6.6	6.4	A	A

Note: (1) Locations footpath refer to Figure 7.2.
(2) Two-way pedestrian flow rate = Two-way Hourly pedestrian flows / 60 min / effective footpath width. Effective Width = Clear Footpath Width – Dead Width (0.5m on each side of the footpath).
(3) Details of Pedestrian Walkway LOS refer to Highways Capacity Manual 2000 or T.P.D.M. Volume 6 Chapter 10 Section 10.4.2.

7.1.5 To investigate the serviceability level of the pedestrian crossing in the vicinity of the proposed development, the capacity of pedestrian crossings as stipulated in T.P.D.M. Volume 2 Chapter 3 Section 3.7.2 have been checked and the results are summarized in **Table 7.2**.

Table 7.2 Operational Assessment of Existing Pedestrian Crossings in the Vicinity of Proposed Development

Location of Crossing[1]	Crossing Width (m)	Observed Two-way Hourly Pedestrian Flows (in ped/hr) (P)		Observed Two-way Hourly Traffic Flows (in veh/hr) (V)		Appropriateness Of Crossing [2] (PV^2)		Pedestrians Per Hour Both Directions [3]
		AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	
1	4.0 m	650	560	480	495	1.5×10^8	1.4×10^8	2,400 – 4,800

Note: (1) Location of pedestrian crossing refers to Figure 7.2.
(2) According to T.P.D.M. Volume 2 Chapter 3 Para. 3.7.3.5, criteria for zebra crossing without central refuge, should be $PV^2 > 10^8$.
(3) Based on T.P.D.M. Volume 2 Chapter 3 Section 3.7.2 Table 3.7.2.1.

7.1.6 The results in **Tables 7.1** and **7.2** indicate that both existing footpaths and pedestrian crossings at Sau Ming Road in the vicinity of the proposed development are now operating with adequate level of services and capacities to cater for the existing pedestrian demand.

7.2 Future Pedestrian Conditions

7.2.1 As mention in Section 2.3, taken into consideration the proposed vehicular access, the existing zebra crossing is proposed to shift westwards by about 10m to minimize the impact.

Pedestrian Forecasts

7.2.2 It is anticipated that the proposed development will be completed and occupied by end 2017 tentatively under the latest programme. For the purpose of this pedestrian study, year 2021 will also be adopted as the design year.

7.2.3 There are two main factors being considered to derive the pedestrian demand forecasting including:

- General growth of pedestrian in the area; and
- Pedestrian generations from proposed development.

General Growth

7.2.4 Similarly, reference has been made to the planning data of the 2006-based Territorial Population and Employment Data Matrices (TPEDM) prepared by Planning Department for the CTS zones in the vicinity of the proposed development and is already summarized in **Table 4.2**.

7.2.5 As a conservative approach, an annual growth rate (i.e. +1.4%) has been adopted for applying onto the existing pedestrian flows to produce the 2021 pedestrian demand.

Pedestrian Generation from Proposed Development

7.2.6 In order to estimate the potential pedestrian trip generations of the proposed development, manual head count survey was also conducted at the entrances of Tat Fu House and Sau Ching House in Po Tat Estate and Sau Mau Ping Estate respectively which have similar characteristics of the proposed development and therefore is considered appropriate for deriving the pedestrian trip generation rates of the proposed development. The surveyed trip rates are summarized in **Table 7.3**.

Table 7.3 Surveyed Pedestrian Trip Rates

Location	Pedestrian Trip Generations (peds/hr)				Pedestrian Trip Rates (pcu/flat/hr)			
	AM Peak		PM Peak		AM Peak		PM Peak	
	Gen.	Att.	Gen.	Att.	Gen.	Att.	Gen.	Att.
Tat Fu House [1]	650	100	160	360	0.82	0.13	0.20	0.46
Sau Ching House [2]	690	90	160	420	1.07	0.14	0.25	0.66
Adopted [3] :					**1.07**	**0.14**	**0.25**	**0.66**

Note: (1) Based on 800 PRH flats.
(2) Based on 641 PRH flats.
(3) The highest trip rates have been adopted.

7.2.7 Regarding pedestrian generation of the community hall and library in the proposed development, trip generation surveys were also conducted at Lai Chi Kok Community Hall and Kwun Tong Library with similar size and facilities on a typical weekday. The surveyed and adopted trip rates for the the community hall and library of the proposed development are summarized in **Table 7.4**.

Table 7.4 Adopted Pedestrian Trip Rates for Proposed Community Hall and Library in the Proposed Development

Use	AM Peak		PM Peak	
	Gen.	Att.	Gen.	Att.
Community Hall (ped/hr/seat)	0.044	0.038	0.064	0.060
Library (ped/hr/100m²GFA)	17.83	22.17	20.43	22.00

7.2.8 Based on the development parameters given in **Table 2.1** and the adopted pedestrian trip rates given in **Tables 7.3** and **7.4**, the total pedestrian trips generated by the proposed development under the latest development proposals are computed and shown in **Table 7.5**.

Table 7.5 Pedestrian Generations of Proposed Development

Use	Development Parameters	Pedestrian Generation (ped/hr)			
		AM Peak		PM Peak	
		Gen.	Att.	Gen.	Att.
Public Rental Housing	About 350 Flats	375	49	88	231
Community Hall	450 Seats	20	17	29	27
Library	550 m²	98	122	112	121
	Total:	**493**	**188**	**229**	**379**

7.2.9 The anticipated 2021 peak hour pedestrian flows are derived by applying the adopted +1.4% annual growth rate onto the observed pedestrian flows. The likely pedestrian generations of the proposed development have then been added and assigned onto the footpath in accordance with the observed pedestrian distribution of Sau Ching House (see **Figure 7.3**). The anticipated 2021 pedestrian flows are produced and shown in **Figure 7.4**.

Operational Assessment

7.2.10 Operational assessment in terms of average flow LOS criteria has been assessed for the adjacent footpaths based on the anticipated 2021 pedestrian flows and the results are summarized in **Table 7.6**.

Table 7.6 Level of Service Assessment of Existing Footpaths in the Vicinity of Proposed Development in 2021 (With Proposed Development)

Location of Footpath/ Crossing (1)	Clear Width (m)	2021 Anticipated Two-way Hourly Pedestrian Flows (in ped/hr)		2021 Two-way Pedestrian Flow Rate (in ped/min/m) (2)		Level of Service (LOS)(3)	
		AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
A	2.5 m	840	800	9.3	8.9	A	A
B	2.5 m	400	330	4.4	3.7	A	A
C	5.5 m	1,810	1,810	6.7	6.7	A	A
D	6.0 m	2,510	2,360	8.4	7.9	A	A

Note: (1) Locations of footpath sections refer to Figure 7.4.
(2) Two-way pedestrian flow rate = Two-way Hourly pedestrian flows / 60 min / effective width. Effective Width = Clear Width – Dead Width (0.5m on each side of the footpath).
(3) Details of Pedestrian Walkway LOS refer to Highways Capacity Manual 2000 or T.P.D.M Volume 6 Chapter 10 Section 10.4.2.

7.2.11 The capacity of pedestrian crossings has been assessed for the adjacent pedestrian crossings based on the anticipated 2021 pedestrian flows and the results are summarized in **Table 7.7**.

Table 7.7 Operational Assessment of Existing Pedestrian Crossings in the Vicinity of Proposed Development in2021 (With Proposed Development)

Location of Crossing[1]	Crossing Width (m)	2021 Two-way Hourly Pedestrian Flows (in ped/hr) (P)		2021 Two-way Hourly Traffic Flows (in veh/hr) (V)		Appropriateness Of Crossing [2] (PV^2)		Pedestrians Per Hour Both Directions [3]
		AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	
1	4.0 m	1,030	830	585	610	3.5×10^8	3.1×10^8	2,400 – 4,800

Note: (1) Location of pedestrian crossing refers to Figure 2.1.
(2) According to T.P.D.M. Volume 2 Chapter 3 Para. 3.7.3.5, criteria for zebra crossing without central refuge, should be $PV^2 > 10^8$.
(3) Based on T.P.D.M. Volume 2 Chapter 3 Section 3.7.2 Table 3.7.2.1.

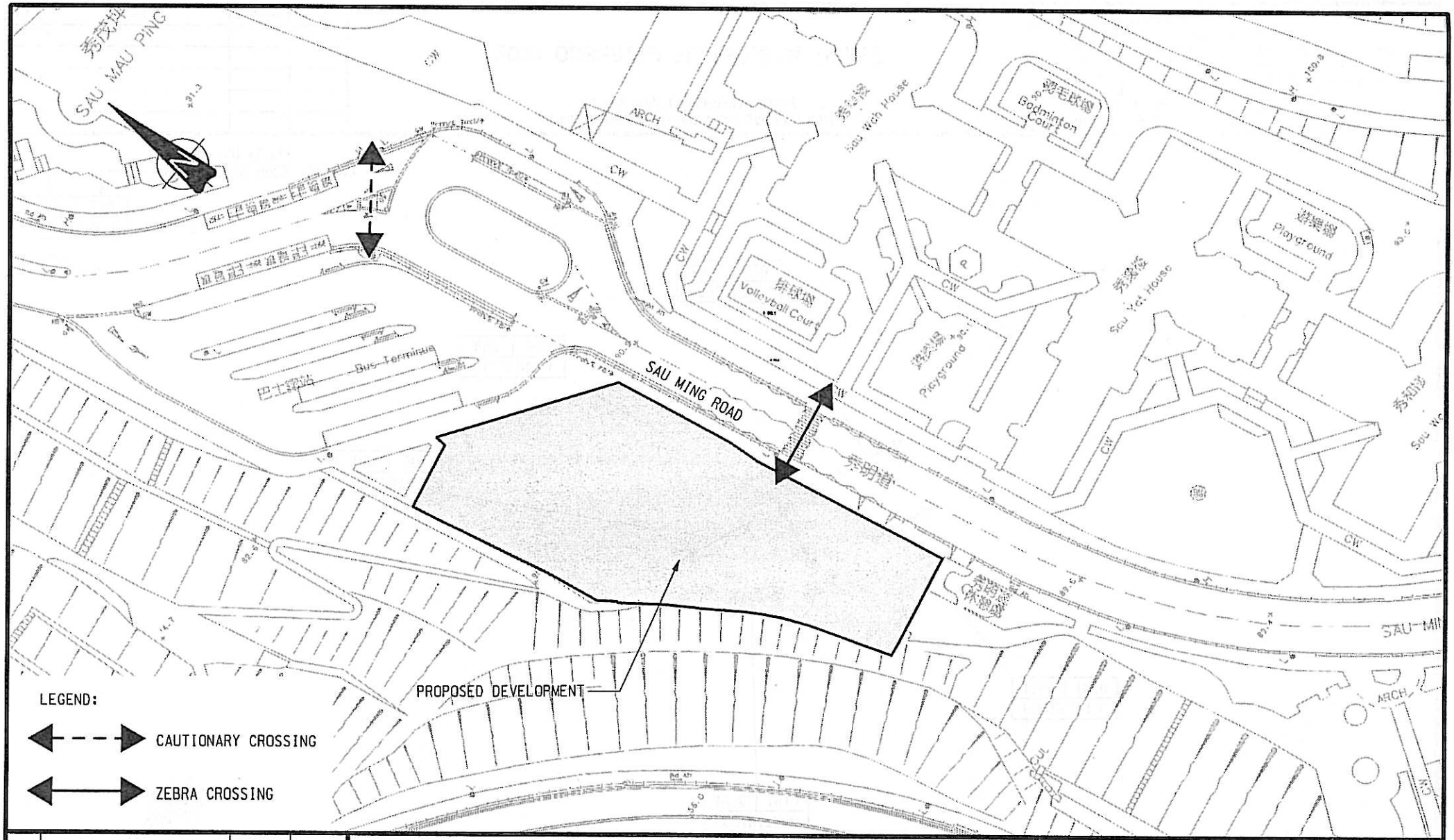
7.2.12 As indicated in **Tables 7.6** and **7.7**, both footpaths and pedestrian crossings at Sau Ming Road in the vicinity of the proposed development will still operate with ample level of services (both LOS A in the AM and PM peak hours respectively) and capacities in year 2021 after the population intake of the proposed development.

7.3 Summary

7.3.1 In view of the vicinity of the proposed vehicular access, the existing zebra crossing is proposed to shift westwards by about 10m to minimize the impact.

7.3.2 In view of the existing pedestrian facilities provision (i.e. footpath and pedestrian crossings) and the scale of the proposed development, it is not expected that there will be significant impact on the pedestrian facilities.

7.3.3 Although proposal was suggested to provide a footbridge linking the proposed development and the open area outside the Sau Mau Ping Plaza, it is revealed that the existing pedestrian crossing facilities already provide the most convenient and direct means for pedestrians to cross Sau Ming Road, and have sufficient capacity to cater for the anticipated pedestrian demands with the proposed development such that the footbridge proposal is considered not be required.



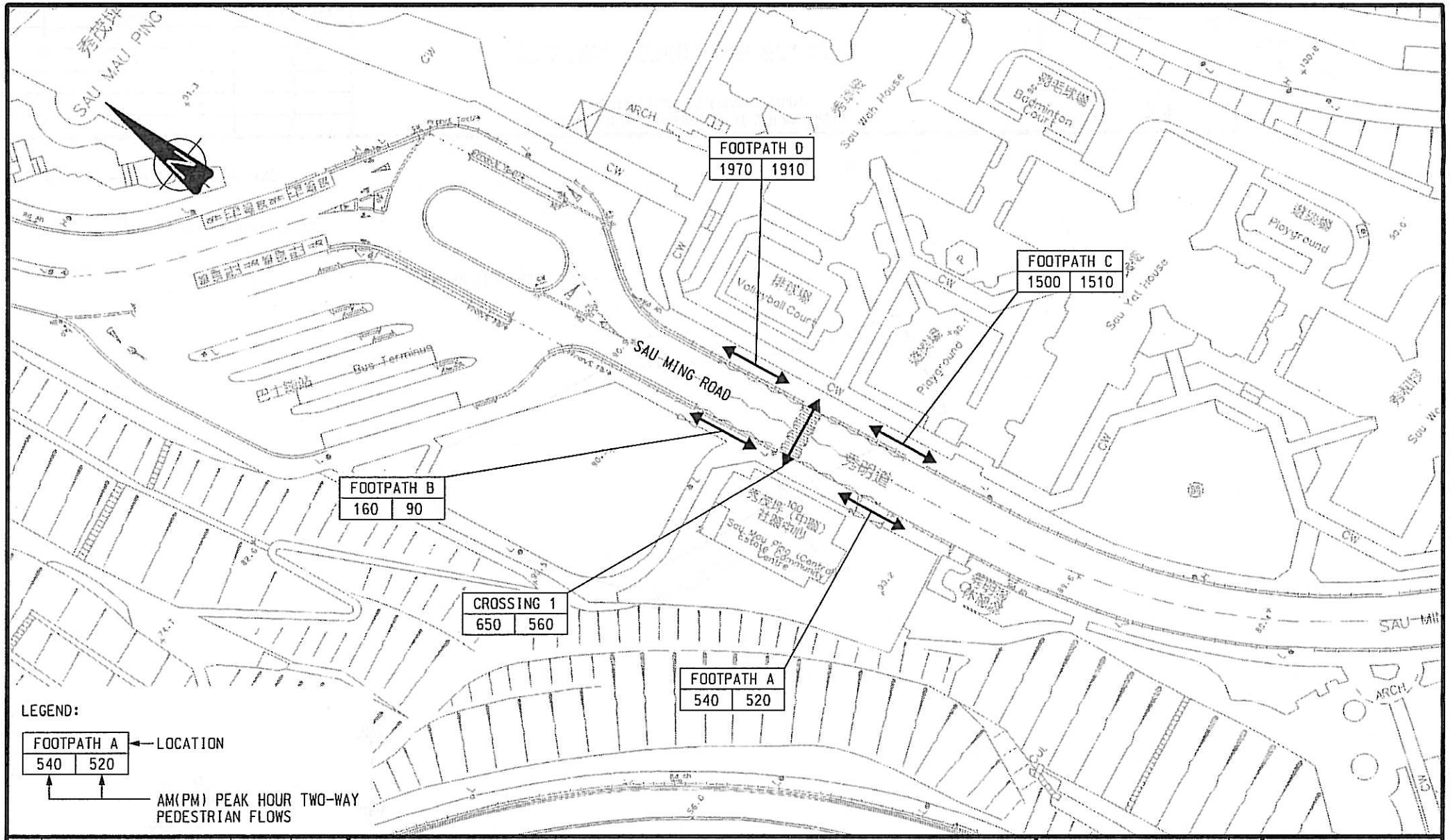
Rev.	Description	Approved	Date
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PUBLIC HOUSING DEVELOPMENT AT SAU MING ROAD
TRAFFIC IMPACT ASSESSMENT STUDY

EXISTING PEDESTRIAN FACILITIES

Figure No.	7.1		Rev. -
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Checked By : STH		Date : OCT. 2011	
Ref. : 27702-29/TIA2/F71.DGN/ATC/20OCT11			

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Rev.	Description	Approved	Date
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PUBLIC HOUSING DEVELOPMENT AT SAU MING ROAD
TRAFFIC IMPACT ASSESSMENT STUDY

2010 OBSERVED PEDESTRIAN FLOWS

Figure No. 7.2 Rev. -

Designed By : SLL

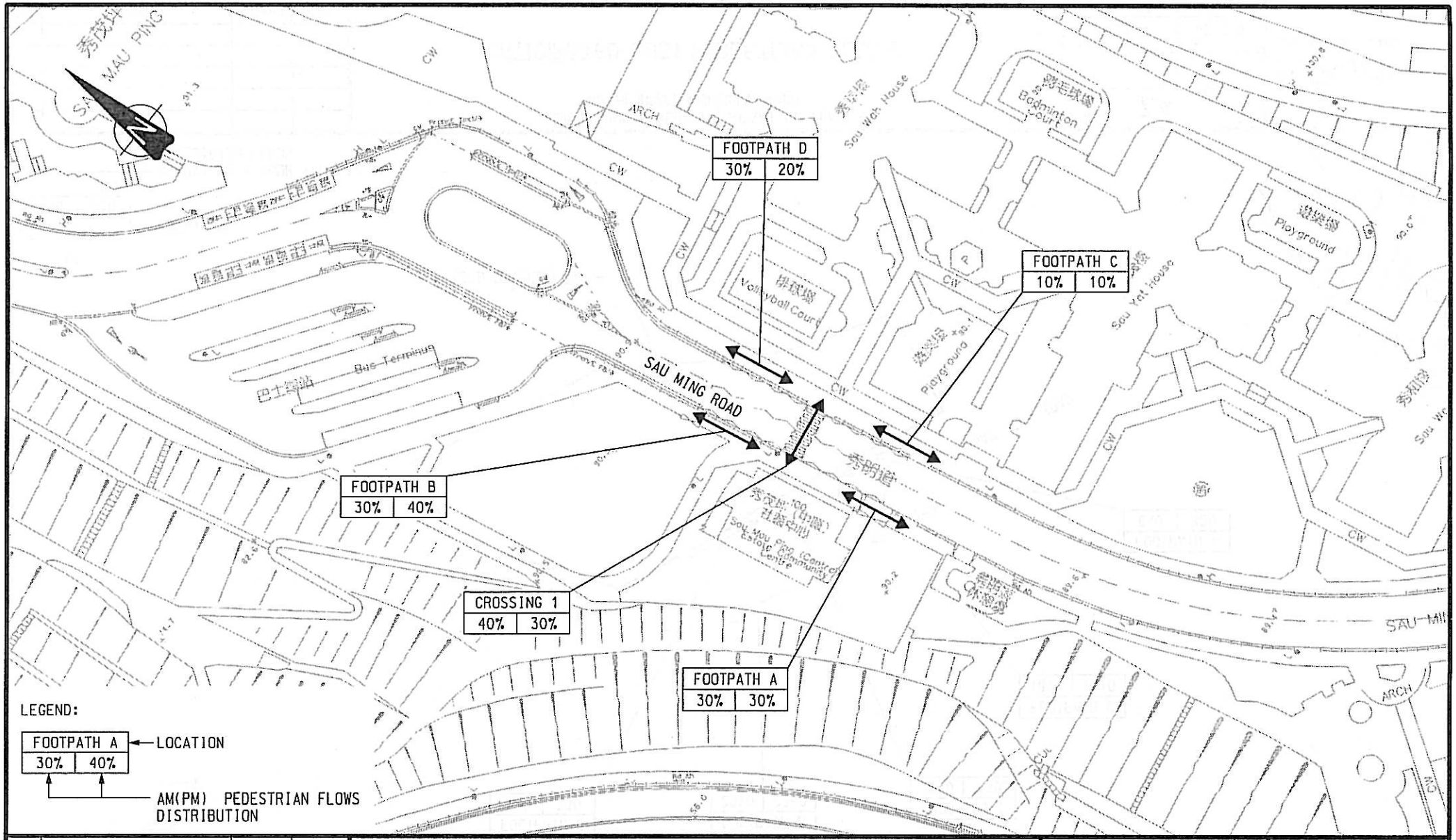
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Date : OCT. 2011

Ref. : 27702-29/TIA2/F72.DGN/ATC/20OCT11

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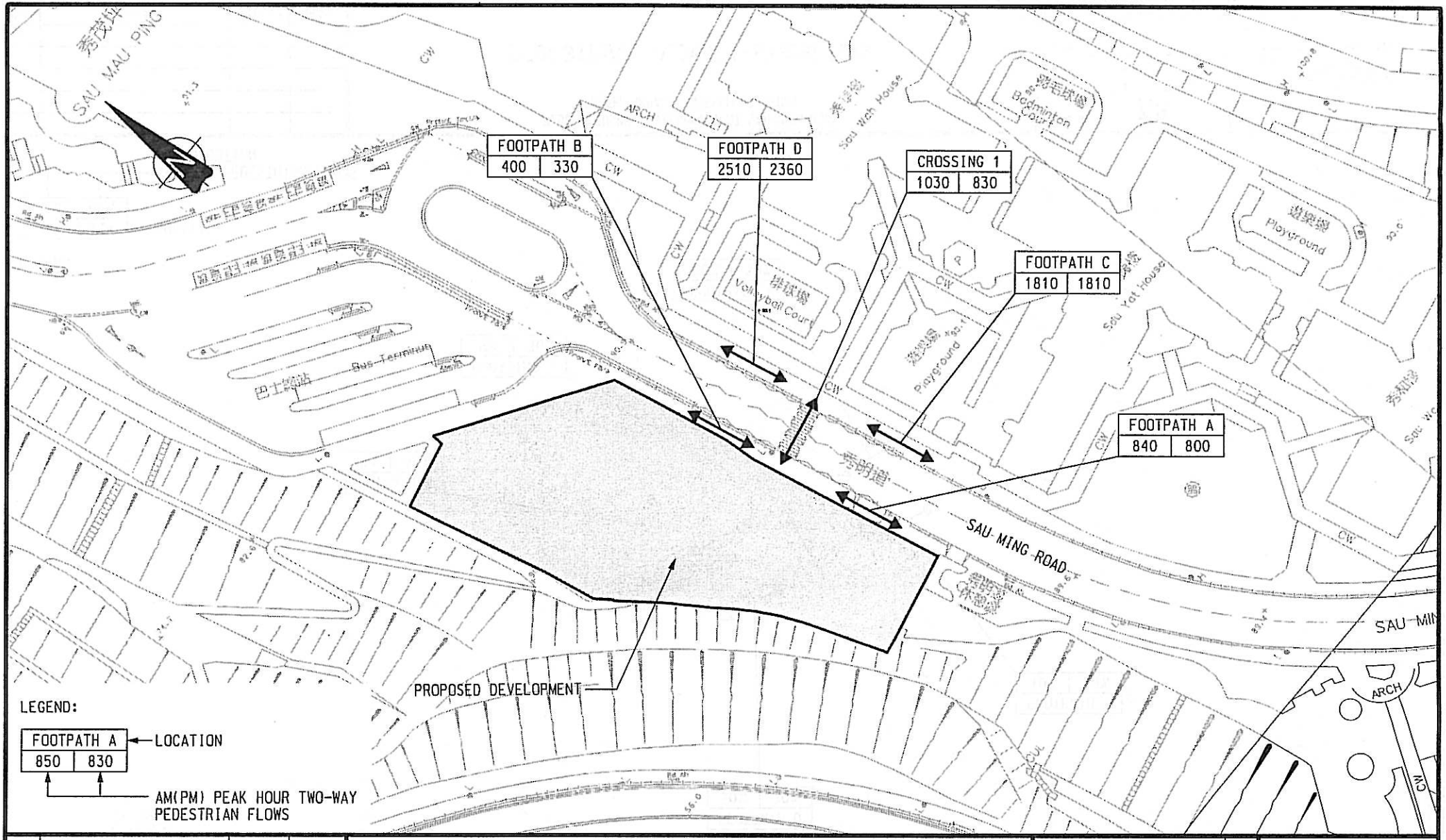
Rev.	Description	Approved	Date
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PUBLIC HOUSING DEVELOPMENT AT SAU MING ROAD
TRAFFIC IMPACT ASSESSMENT STUDY

PEDESTRIAN FLOWS DISTRIBUTION

Figure No.	7.3		Rev. -
Designed By : SLL		Scale : 1 : 1000	
Checked By : STH		Date : OCT. 2011	
Ref. : 27702-29/TIA2/F73.DGN/ATC/280CT11			

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Rev.	Description	Approved	Date
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PUBLIC HOUSING DEVELOPMENT AT SAU MING ROAD
TRAFFIC IMPACT ASSESSMENT STUDY

ANTICIPATED 2021 PEDESTRIAN FLOWS

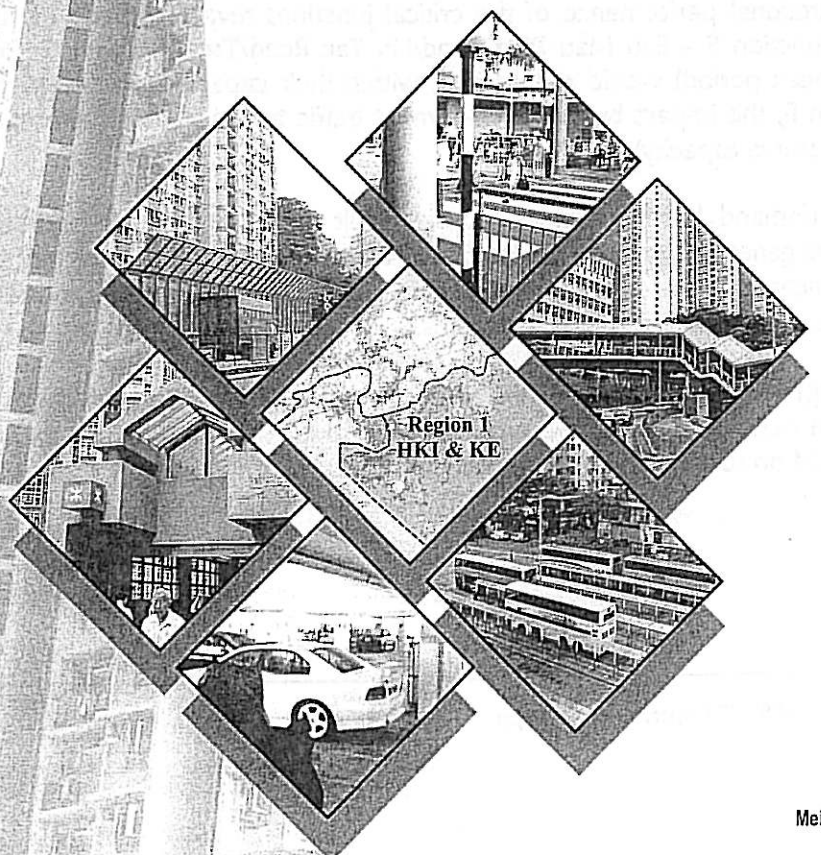
Figure No. 7.4 Rev. -

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8. SUMMARY AND CONCLUSION

8.1 Summary

8.1.1 MVA Hong Kong Limited (MVA) was commissioned by the Hong Kong Housing Authority (HKHA) to carry out a traffic impact assessment study for the proposed public rental housing cum community hall development at Sau Mau Ping GIC Site.

8.1.2 The proposed development will comprise about 350 PRH flats, a 450-seat community hall, a small library and a study area which is anticipated to be completed by end 2017.

8.1.3 The vehicular access of the proposed vehicular is located at Sau Ming Road. In view of the vicinity of the proposed vehicular access, the existing zebra crossing is proposed to shift westwards by about 10m to minimize the impact.

8.1.4 To appraise the existing traffic condition, traffic count surveys were conducted in the surrounding road network of the proposed development. Moreover, current operational performance of the critical junctions was assessed with the observed traffic flows in 2010. The operational assessment results revealed that all critical junctions are at present operating with ample capacities.

8.1.5 The 2021 design year reference traffic forecasts were derived by applying an annual growth rate of +1% onto the 2010 observed traffic flows plus additional traffic generation from Anderson Road Development.

8.1.6 Traffic generation from the proposed development has been assessed. It is estimated that the 18-storey PRH blocks, community hall and library will generate and attract about 25pcu/hr and 21pcu/hr in the AM peak hour, and generate and attract about 18pcu/hr and 21pcu/hr in the PM peak hour respectively.

8.1.7 Assessment of operational performance of the critical junctions revealed that all critical junctions (except Junction F – Sau Mau Ping Road/Lin Tak Road/Tseung Kwan O Road Slip Road in AM peak period) would still operate within their capacities in design year 2021. For Junction F, the impact by the development traffic to the junction is minimal (i.e. no change in reserve capacity).

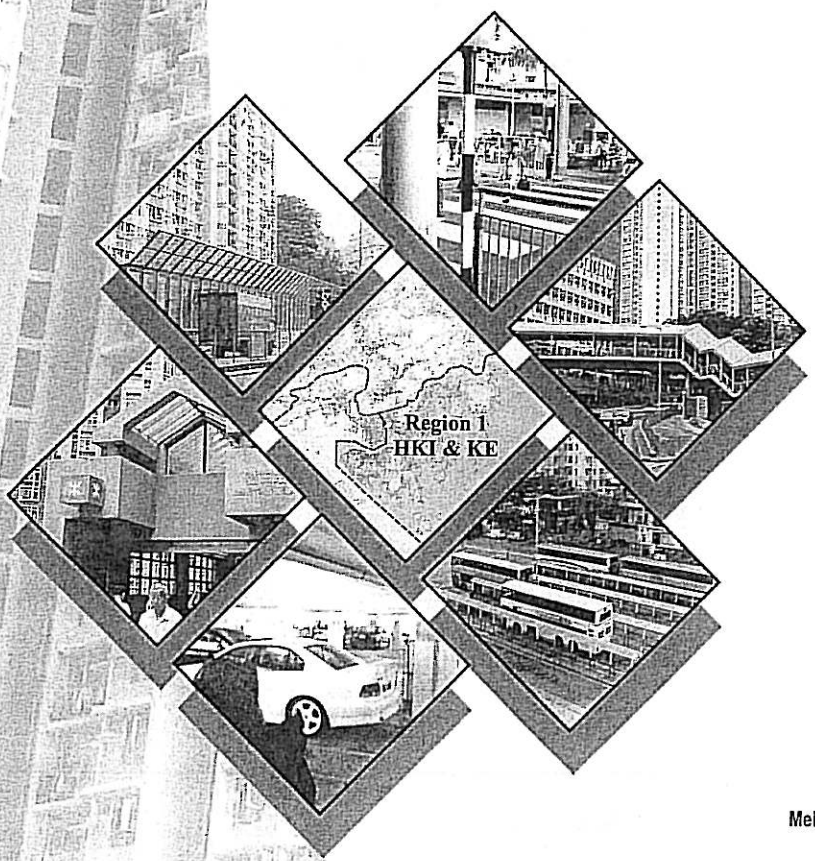
8.1.8 Future pedestrian demand has been assessed, the result indicates that the additional pedestrian demands generated to/from the proposed development, community hall and library are not significant and the existing pedestrian facilities along Sau Ming Road will be able to cater for the anticipated pedestrian demands.

8.1.9 In view of the comprehensive coverage of the public transport services and the available different choices on transport modes, the proposed development is considered to have good accessibility and no substantial problem was predicted.

8.2 Conclusion

8.2.1 In conclusion, the traffic impact assessment has demonstrated that the traffic generated by the proposed development would not cause any significant traffic impact. In view of the minimal traffic generated by the proposed development, it can be concluded that the proposed development is acceptable in traffic terms.

Appendix A



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Junction Calculation Sheets

2010 Observed Traffic Flows

TRAFFIC SIGNALS CALCULATION

Job No.: 27702-29 MVA HONG KONG LIMITED

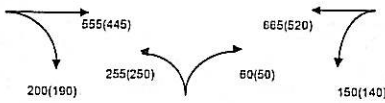
Junction: Sau Mau Ping Rd / Sau Ming Rd Design Year: 2010

Description: Existing Designed By: CHY Checked By: LYT

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Sau Mau Ping Rd	←	B	1	3.000						2055	2055	430	0.209	0.209	349	0.170	0.170
(WB)	↰	B	1	3.000	15			39%	45%	1845	1835	385	0.209		311	0.169	
Sau Ming Rd (NB)	↰↑	D	4	4.500	15	20		81% / 19%	83% / 17%	1885	1885	315	0.167	0.167	300	0.159	0.159
Sau Mau Ping Rd	→	A	1,2	3.000						1915	1915	555	0.290		445	0.232	
(EB)	↴	C	2	3.000		20				1910	1910	200	0.105	0.105	190	0.099	0.099
PED CROSSING	5	Ep	3	MIN GREEN + FLASH =			7	+	10	=	17			*			*

Notes:

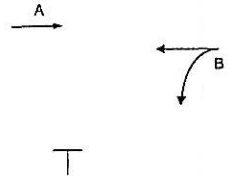
Traffic Flow (pcu/hr)



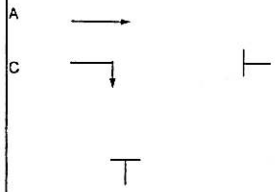
Group	A,Ep,D	B,C,Ep,D	Group	A,Ep,D	B,C,Ep,D
y	0.457	0.481	y	0.392	0.428
L (sec)	31	35	L (sec)	31	35
C (sec)	110	110	C (sec)	100	100
y pract.	0.646	0.614	y pract.	0.621	0.585
R.C. (%)	41%	28%	R.C. (%)	59%	37%

Stage / Phase Diagrams

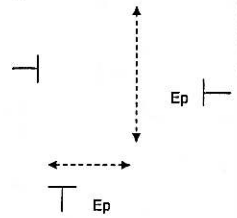
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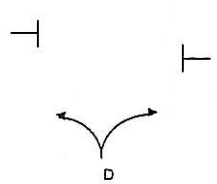
2.



3.



4.



5.

I/G= 5		I/G= 5		I/G= 8	17	I/G= 3		I/G=	
I/G= 5		I/G= 5		I/G= 8	17	I/G= 3		I/G=	

Date: Mar-11 Junction: Sau Mau Ping Rd / Sau Ming Rd (A)

TRAFFIC SIGNALS CALCULATION

Job No.: 27702-29 MVA HONG KONG LIMITED

Junction: Sau Mau Ping Rd / Sau Fung Rd

Design Year: 2010

Description: Existing

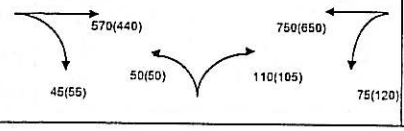
Designed By: CHY

Checked By: LYT

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Sau Mau Ping Rd	←	B	1	4.000						2155	2155	429	0.199		403	0.187	0.187
(WB)	↰	B	1	4.000	20			19%	33%	1985	1965	396	0.199	0.199	367	0.187	
Sau Fung St	↑	C	3	3.000	22.5					1795	1795	50	0.028		50	0.028	
(NB)	↱	C	3	3.000	25	30		0% / 100%	0% / 100%	1955	1955	110	0.056	0.056	105	0.054	0.054
Sau Mau Ping Rd	→	A	1	3.000						1915	1915	272	0.142		210	0.110	
(EB)	→	A	1	3.500						2105	2105	298	0.142		230	0.109	
	↘	D	2	2.500		25				1890	1890	45	0.024		55	0.029	0.029
PED CROSSING	5	Ep	1,2	MIN GREEN + FLASH =			5	+	7	=	12						
	6	Fp	2	MIN GREEN + FLASH =			5	+	6	=	11						
	7	Gp	2,3	MIN GREEN + FLASH =			5	+	8	=	13						
	8	Hp	3	MIN GREEN + FLASH =			5	+	7	=	12						

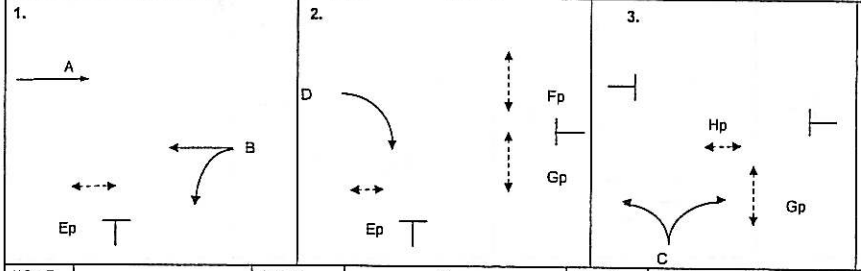
Notes:

Traffic Flow (pcu/hr)



Group	B,D,C	B,Fp,C	Group	B,Fp,C	B,D,C
y	0.280	0.256	y	0.241	0.270
L (sec)	15	26	L (sec)	26	15
C (sec)	120	120	C (sec)	120	120
y pract.	0.788	0.705	y pract.	0.705	0.788
R.C. (%)	182%	176%	R.C. (%)	193%	192%

Stage / Phase Diagrams



I/G= 7		I/G= 8	11	I/G= 2		I/G=		I/G=	
I/G= 7		I/G= 5		I/G= 6		I/G=		I/G=	

Date: Mar-11

Junction: Sau Mau Ping Rd / Sau Fung Rd

B

TRAFFIC SIGNALS CALCULATION

Job No.: 27702-29 MVA HONG KONG LIMITED

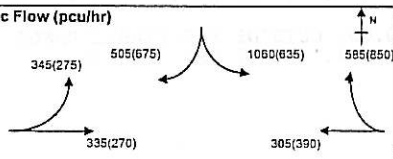
Junction: Sau Mau Ping Rd / Po Lam Rd Design Year: 2010

Description: Existing Designed By: CHY Checked By: LYT

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Sau Mau Ping Rd (WB)	↰	A	1	3.500		25		96%	100%	1990	1985	298	0.150	0.150	424	0.214	0.214
	↰→	A	1	3.500		27.5				1995	1995	298	0.149		426	0.214	
	←	A	1	3.500						1965	1965	294	0.150		390	0.198	
Po Lam Rd (SB)	↳	E	1,2	4.000	37.5					1940	1940	512	0.264		307	0.158	
	↳	E	1,2	4.000	40					2075	2075	548	0.264		328	0.158	
	↲	D	2	4.000		25				2070	2070	505	0.244	0.244	675	0.326	0.326
Sau Mau Ping Rd (EB)	→↑	C	2,3	3.500	37.5					1890	1890	164	0.087		131	0.069	
	→↑	C	2,3	4.000	40					2075	2075	181	0.087		144	0.069	
	→	B	3	3.500						2105	2105	168	0.080	0.080	135	0.064	0.064
	→	B	3	3.500						2105	2105	167	0.079		135	0.064	
PED CROSSING	6	Fp	1,2	MIN GREEN + FLASH =			5	+	6	=	11						
	7	Gp	1,3	MIN GREEN + FLASH =			5	+	6	=	11						
	8	Hp	1	MIN GREEN + FLASH =			5	+	7	=	12						
	9	Ip	2,3	MIN GREEN + FLASH =			5	+	10	=	15						
	10	Jp	3	MIN GREEN + FLASH =			5	+	7	=	12						
	11	Kp	3	MIN GREEN + FLASH =			5	+	7	=	12						

Notes:

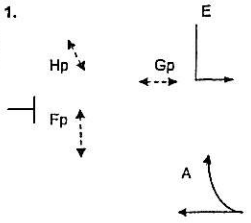
Traffic Flow (pcu/hr)



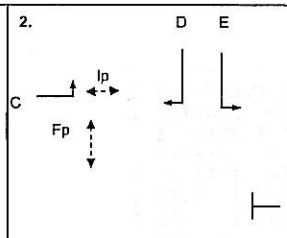
Group	A,D,Jp	A,D,B	Group	A,D,Jp	A,D,B
y	0.394	0.474	y	0.540	0.604
L (sec)	22	12	L (sec)	22	12
C (sec)	120	120	C (sec)	120	120
y pract.	0.735	0.810	y pract.	0.735	0.810
R.C. (%)	87%	71%	R.C. (%)	36%	34%

Stage / Phase Diagrams

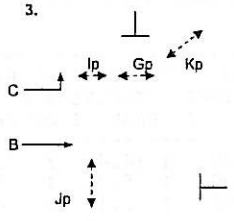
1.



2.



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4.

5.

I/G= 5		I/G= 5		I/G= 5		I/G=	
I/G= 5		I/G= 5		I/G= 5		I/G=	
						Date: Mar-11	Junction: Sau Mau Ping Rd / Po Lam Rd (C)

TRANSPORT RESEARCH LABORATORY

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CAPACITIES, QUEUES AND DELAYS AT ROUNDABOUTS

Visual ARCADY/4 ANALYSIS PROGRAM
RELEASE 1.0 (FEB 1997)

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.ROUNDABOUT CAPACITY AND DELAY
****

RUN TITLE
****
SAU MAU PING ROAD- HIU KWONG STREET Roundabout(AM)

.INPUT DATA
****
ARM A - SAU MAU PING ROAD (WB)
ARM B - HIU KWONG STREET (NB)
ARM C - SAU MAU PING ROAD (EB)

.GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	10.50	10.50	0.01 *	20.00	30.00	22.5	0.986	54.405
ARM B	6.50	6.50	0.01 *	17.50	30.00	22.5	0.727	33.450
ARM C	5.00	6.50	40.00	100.00	30.00	60.0	0.657	29.933

WARNING ARM A - INPUT VALUE OF L (0.00) OUTSIDE ACCEPTABLE RANGE - HAS BEEN RESET AS INDICATED ABOVE (*). (AG17 REF. 6.3.1).

WARNING ARM B - INPUT VALUE OF L (0.00) OUTSIDE ACCEPTABLE RANGE - HAS BEEN RESET AS INDICATED ABOVE (*). (AG17 REF. 6.3.1).

.TRAFFIC DEMAND DATA

.TIME PERIOD BEGINS 07.30 AND ENDS 09.00
.LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS IFALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	14.44	21.66	14.44
ARM B	15.00	45.00	75.00	5.31	7.97	5.31
ARM C	15.00	45.00	75.00	3.13	4.69	3.13

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C
07.30 - 09.00	ARM A	0.009	0.264	0.727
		10.0	305.0	840.0
		(0.0)	(0.0)	(0.0)

ARM B	0.424	0.024	0.553
	180.0	10.0	235.0
	(0.0)	(0.0)	(0.0)
ARM C	0.000	0.980	0.020
	0.0	245.0	5.0
	(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME		DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
07.30-07.45									
	ARM A	14.44	51.21	0.282		0.0	0.4	5.8	
	ARM B	5.31	25.70	0.207		0.0	0.3	3.8	
	ARM C	3.13	28.29	0.110		0.0	0.1	1.8	
07.45-08.00									
	ARM A	17.24	50.58	0.341		0.4	0.5	7.7	
	ARM B	6.34	24.18	0.262		0.3	0.4	5.2	
	ARM C	3.73	27.97	0.133		0.1	0.2	2.3	
08.00-08.15									
	ARM A	21.11	49.72	0.425		0.5	0.7	10.9	
	ARM B	7.77	22.10	0.352		0.4	0.5	7.9	
	ARM C	4.57	27.53	0.166		0.2	0.2	2.9	
08.15-08.30									
	ARM A	21.11	49.72	0.425		0.7	0.7	11.0	
	ARM B	7.77	22.09	0.352		0.5	0.5	8.1	
	ARM C	4.57	27.53	0.166		0.2	0.2	3.0	
08.30-08.45									
	ARM A	17.24	50.58	0.341		0.7	0.5	7.9	
	ARM B	6.34	24.17	0.262		0.5	0.4	5.5	
	ARM C	3.73	27.97	0.133		0.2	0.2	2.3	
08.45-09.00									
	ARM A	14.44	51.20	0.282		0.5	0.4	6.0	
	ARM B	5.31	25.68	0.207		0.4	0.3	4.0	
	ARM C	3.13	28.29	0.110		0.2	0.1	1.9	

.QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.45	0.4	
08.00	0.5	*
08.15	0.7	*
08.30	0.7	*
08.45	0.5	*
09.00	0.4	

.QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE

07.45	0.3	
08.00	0.4	
08.15	0.5	*
08.30	0.5	*
08.45	0.4	
09.00	0.3	

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
07.45	0.1
08.00	0.2
08.15	0.2
08.30	0.2
08.45	0.2
09.00	0.1

. QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1583.7	1055.8	49.2	0.03	49.2	0.03
B	582.8	388.5	34.5	0.06	34.5	0.06
C	342.8	228.5	14.3	0.04	14.3	0.04
ALL	2509.3	1672.9	98.0	0.04	98.0	0.04

* DELAY IS THAT OCCURRING ONLY,24H WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

TRANSPORT RESEARCH LABORATORY

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CAPACITIES, QUEUES AND DELAYS AT ROUNDABOUTS

Visual ARCADY/4 ANALYSIS PROGRAM
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.ROUNDABOUT CAPACITY AND DELAY

RUN TITLE

SAU MAU PING ROAD- HIU KWONG STREET Roundabout(PM)

.INPUT DATA

ARM A - SAU MAU PING ROAD (WB)
ARM B - HIU KWONG STREET (NB)
ARM C - SAU MAU PING ROAD (EB)

.GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	10.50	10.50	0.01 *	20.00	30.00	22.5	0.986	54.405
ARM B	6.50	6.50	0.01 *	17.50	30.00	22.5	0.727	33.450
ARM C	5.00	6.50	40.00	100.00	30.00	60.0	0.657	29.933

WARNING ARM A - INPUT VALUE OF L (0.00) OUTSIDE ACCEPTABLE RANGE - HAS BEEN RESET AS INDICATED ABOVE (*). (AG17 REF. 6.3.1).

WARNING ARM B - INPUT VALUE OF L (0.00) OUTSIDE ACCEPTABLE RANGE - HAS BEEN RESET AS INDICATED ABOVE (*). (AG17 REF. 6.3.1).

.TRAFFIC DEMAND DATA

.TIME PERIOD BEGINS 17.30 AND ENDS 19.00
.LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	13.06	19.59	13.06
ARM B	15.00	45.00	75.00	6.19	9.28	6.19
ARM C	15.00	45.00	75.00	2.31	3.47	2.31

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C
17.30 - 19.00	ARM A	0.005	0.301	0.694
		5.0	315.0	725.0
		(0.0)	(0.0)	(0.0)

ARM B	0.505	0.010	0.485	
	250.0	5.0	240.0	
	(0.0)	(0.0)	(0.0)	
ARM C	0.000	0.973	0.027	
	0.0	180.0	5.0	
	(0.0)	(0.0)	(0.0)	

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
17.30-17.45								
ARM A	13.06	52.07	0.251		0.0	0.3	5.0	
ARM B	6.19	26.79	0.231		0.0	0.3	4.4	
ARM C	2.31	27.80	0.083		0.0	0.1	1.3	
17.45-18.00								
ARM A	15.60	51.61	0.302		0.3	0.4	6.4	
ARM B	7.39	25.48	0.290		0.3	0.4	6.0	
ARM C	2.76	27.38	0.101		0.1	0.1	1.7	
18.00-18.15								
ARM A	19.10	50.98	0.375		0.4	0.6	8.9	
ARM B	9.05	23.69	0.382		0.4	0.6	9.0	
ARM C	3.38	26.81	0.126		0.1	0.1	2.1	
18.15-18.30								
ARM A	19.10	50.98	0.375		0.6	0.6	9.0	
ARM B	9.05	23.69	0.382		0.6	0.6	9.2	
ARM C	3.38	26.81	0.126		0.1	0.1	2.2	
18.30-18.45								
ARM A	15.60	51.61	0.302		0.6	0.4	6.6	
ARM B	7.39	25.47	0.290		0.6	0.4	6.3	
ARM C	2.76	27.38	0.101		0.1	0.1	1.7	
18.45-19.00								
ARM A	13.06	52.06	0.251		0.4	0.3	5.1	
ARM B	6.19	26.77	0.231		0.4	0.3	4.6	
ARM C	2.31	27.79	0.083		0.1	0.1	1.4	

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.45	0.3	
18.00	0.4	
18.15	0.6	*
18.30	0.6	*
18.45	0.4	
19.00	0.3	

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE

17.45	0.3	
18.00	0.4	
18.15	0.6	*
18.30	0.6	*
18.45	0.4	
19.00	0.3	

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.45	0.1
18.00	0.1
18.15	0.1
18.30	0.1
18.45	0.1
19.00	0.1

. QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1432.9	955.3	40.9	0.03	40.9	0.03
B	678.7	452.5	39.5	0.06	39.5	0.06
C	253.7	169.1	10.4	0.04	10.4	0.04
ALL	2365.3	1576.9	90.7	0.04	90.7	0.04

* DELAY IS THAT OCCURRING ONLY,24H WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

TRAFFIC SIGNALS CALCULATION

Job No.: 27702-29 MVA HONG KONG LIMITED

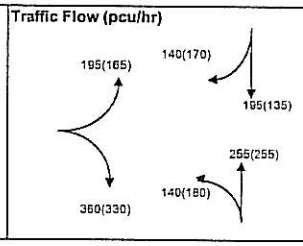
Junction: Hiu Kwong Street/ Sau Ming Road Design Year: 2010

Description: Existing Designed By: CHY Checked By: LYT

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Hiu Kwong Street (SB)	↲	C	2	3.100		18				1905	1905	140	0.073	0.073	170	0.089	0.089
	↓	B	1,2	3.100						1925	1925	195	0.101		135	0.070	
Hiu Kwong Street (NB)	↰	A	1	3.000	18					1770	1770	140	0.079		180	0.102	
	↑	A	1	3.000						2055	2055	255	0.124	0.124	255	0.124	0.124
Sau Ming Road (EB)	⇀	F	4	3.500	15					1785	1785	195	0.109		165	0.092	
	↴	F	4	3.500		18				1945	1945	360	0.185	0.185	330	0.170	0.170
PED CROSSING		Dp	3	MIN GREEN + FLASH =			7	+	13	=	20						
		Ep	3	MIN GREEN + FLASH =			7	+	13	=	20			*			*

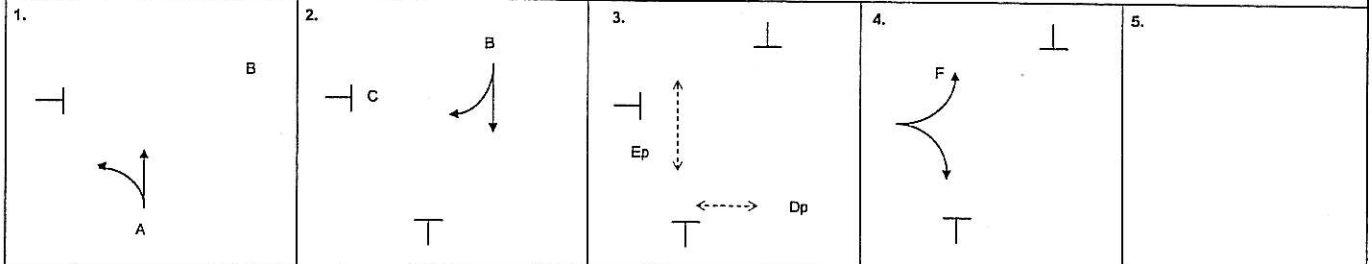
Notes:

Traffic Flow (pcu/hr)



Group	A,C,Dp,F	A,C,Ep,F	Group	A,C,Dp,F	A,C,Ep,F
y	0.383	0.383	y	0.383	0.383
L (sec)	32	35	L (sec)	32	35
C (sec)	80	80	C (sec)	80	80
y pract.	0.540	0.506	y pract.	0.540	0.506
R.C. (%)	41%	32%	R.C. (%)	41%	32%

Stage / Phase Diagrams



I/G= 5		I/G= 5		I/G= 6	20	I/G= 2	I/G=
I/G= 5		I/G= 5		I/G= 6	20	I/G= 2	I/G=

Date: Mar-11 Junction: Hiu Kwong Street/ Sau Ming Road (E)

TRAFFIC SIGNALS CALCULATION

Job No.: 29192-00 MVA HONG KONG LIMITED

Junction: Sau Mau Ping Rd / Tseung Kwan O Rd Slip Rd Design Year: 2010

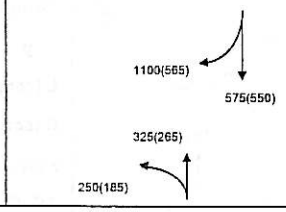
Description: 2010 Observed Designed By: SLL Checked By: STH

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) A.M.	Pro. Turning (%) P.M.	Revised Saturation Flow (pcu/hr) A.M.	Revised Saturation Flow (pcu/hr) P.M.	A.M. Peak Flow (pcu/hr)	A.M. Peak y Value	A.M. Peak Critical y	P.M. Peak Flow (pcu/hr)	P.M. Peak y Value	P.M. Peak Critical y
Lin Tak Rd NB	↰ ↑	B	1	3.500	15					1785	1785	250	0.140		185	0.104	
	↑	B	1	3.500						2105	2105	325	0.154	0.154	265	0.126	0.126
Sau Mau Ping Rd SB	↓	A	1,2	3.500						1965	1965	575	0.293		550	0.280	
	↲	C	2	3.500		18				1945	1945	1100	0.566	0.566	565	0.290	0.290

LRT/Pedestrian

Notes:

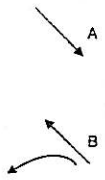
Traffic Flow (pcu/hr)



Group		BC	Group		BC
y		0.720	y		0.416
L (sec)		10	L (sec)		10
C (sec)		120	C (sec)		120
y pract.		0.825	y pract.		0.825
R.C. (%)		15%	R.C. (%)		98%

Stage / Phase Diagrams

1.



2.



3.

4.

5.

I/G= 5		I/G= 7		I/G=		I/G=	
I/G= 5		I/G= 7		I/G=		I/G=	

Date: 25/2/2011 8:56:19 Junction: Sau Mau Ping Rd / Tseung Kwan O Rd F

TRAFFIC SIGNALS CALCULATION

Job No.: 29192-00 MVA HONG KONG LIMITED

Junction: Sau Mau Ping Rd / Shun On Rd Design Year: 2010

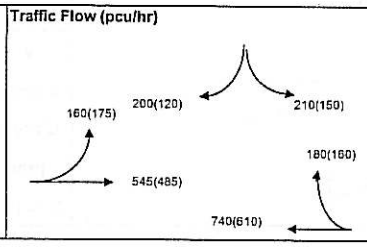
Description: 2010 Observed Designed By: SLL Checked By: STH

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) A.M.	Pro. Turning (%) P.M.	Revised Saturation Flow (pcu/hr) A.M.	Revised Saturation Flow (pcu/hr) P.M.	A.M. Peak Flow (pcu/hr)	A.M. Peak y Value	A.M. Peak Critical y	P.M. Peak Flow (pcu/hr)	P.M. Peak y Value	P.M. Peak Critical y
Sau Mau Ping Rd	←	B	1,2	3.300						1945	1945	740	0.380	0.380	610	0.314	0.314
WB	↖	C	2	3.000		15				1870	1870	180	0.096		160	0.086	
Sau Mau Ping Rd	↗	A	1	3.500	15			48%	56%	1875	1860	332	0.177		310	0.167	
EB	→	A	1	3.500						2105	2105	373	0.177		350	0.166	
Shun On Rd	↳	D	2,3	3.500	15					1785	1785	210	0.118		150	0.084	
SB	↲	E	3	3.500		20				1960	1960	200	0.102	0.102	120	0.061	0.061

	PH	ST	GM		FG				
LRT/Pedestrian	Fp	4	9	+	9	=	18		
	Gp	4	9	+	9	=	18	*	*
	Hp	4	9	+	9	=	18		

Notes:

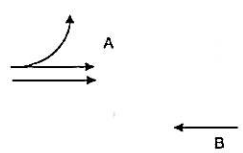
Traffic Flow (pcu/hr)



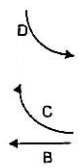
Group		BEGp	Group		BEGp
y		0.483	y		0.375
L (sec)		36	L (sec)		36
C (sec)		110	C (sec)		110
y pract.		0.605	y pract.		0.605
R.C. (%)		25%	R.C. (%)		62%

Stage / Phase Diagrams

1.



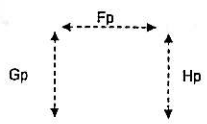
2.



3.



4.



5.

I/G= 12		I/G=		I/G= 6		I/G= 11			
I/G= 12		I/G=		I/G= 6		I/G= 11			

Date: 40819.4179166667 Junction: Sau Mau Ping Rd / Shun On Rd (G)

TRAFFIC SIGNALS CALCULATION

Job No.: 29192-00 MVA HONG KONG LIMITED

Junction: Sau Mau Ping Rd / Hip Wo St Design Year: 2010

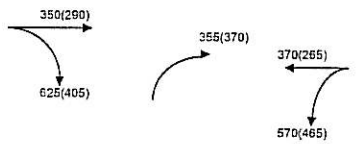
Description: 2010 Observed Designed By: SLL Checked By: STH

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) A.M.	Pro. Turning (%) P.M.	Revised Saturation Flow (pcu/hr) A.M.	Revised Saturation Flow (pcu/hr) P.M.	A.M. Peak Flow (pcu/hr)	A.M. Peak y Value	A.M. Peak Critical y	P.M. Peak Flow (pcu/hr)	P.M. Peak y Value	P.M. Peak Critical y
Sau Mau Ping Rd	↰	C	2,3	3.500	70					1925	1925	570	0.296	0.296	465	0.242	0.242
WB	←	D	3	3.500						1965	1965	179	0.091		128	0.065	
	←	D	3	3.500						2105	2105	191	0.091		137	0.065	
Hip Wo St	↱	B	2	3.500		20				1830	1830	173	0.095		181	0.099	
NB	↱	B	2	3.500		15				1915	1915	182	0.095		189	0.099	
Shun Lee Tsuen Rd	→	A	1	3.500						1965	1965	328	0.167	0.167	233	0.119	0.119
EB	⇄	A	1	3.500		20		93%	76%	1965	1990	328	0.167		235	0.118	
	↘	A	1	3.500		15				1915	1915	319	0.167		227	0.119	

	PH	ST	GM		FG		
LRT/Pedestrian	Ep	1	6	+	6	=	12
	Fp	3	5	+	8	=	13

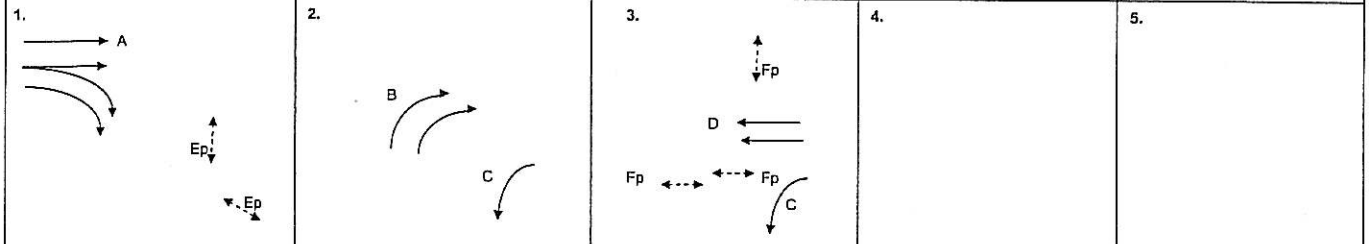
Notes:

Traffic Flow (pcu/hr)



Group		AC	Group		AC
y		0.463	y		0.360
L (sec)		10	L (sec)		10
C (sec)		120	C (sec)		120
y pract.		0.825	y pract.		0.825
R.C. (%)		78%	R.C. (%)		129%

Stage / Phase Diagrams



I/G= 6		I/G= 6		I/G=		I/G=	
I/G= 6		I/G= 6		I/G=		I/G=	

Date: 25/2/2011 11:11:15 Junction: Sau Mau Ping Rd / Hip Wo St (H)

2021 Reference Traffic Flows (Without Development)

TRAFFIC SIGNALS CALCULATION

Job No.: 27702-29 MVA HONG KONG LIMITED

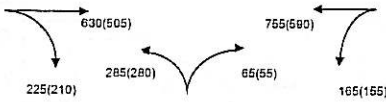
Junction: Sau Mau Ping Rd / Sau Ming Rd (With Planned Junction Improvement) Design Year: 2021

Description: Reference Flow (Without Development) Designed By: SLL Checked By: STH

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Sau Mau Ping Rd	←	B	1	3.000						2055	2055	485	0.236	0.236	394	0.192	0.192
(WB)	↰	B	1	3.000	15			38%	44%	1845	1835	435	0.236		351	0.191	
Sau Ming Rd	↰	D	4	3.500	15					1785	1785	173	0.097		166	0.093	0.093
(NB)	↱	D	4	3.500	17.5	22.5		63% / 37%	67% / 33%	1820	1820	177	0.097	0.097	169	0.093	
Sau Mau Ping Rd	→	A	1,2	3.000						1915	1915	630	0.329		505	0.264	
(EB)	→	C	2	3.000		20				1910	1910	225	0.118	0.118	210	0.110	0.110
PED CROSSING	5	Ep	3	MIN GREEN + FLASH =			7	+	10	=	17			*			*

Notes:

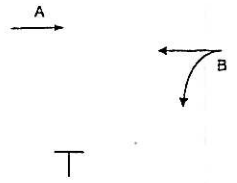
Traffic Flow (pcu/hr)



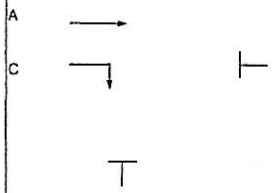
Group	A,Ep,D	B,C,Ep,D	Group	A,Ep,D	B,C,Ep,D
y	0.426	0.451	y	0.357	0.395
L (sec)	31	35	L (sec)	31	35
C (sec)	110	110	C (sec)	100	100
y pract.	0.646	0.614	y pract.	0.621	0.585
R.C. (%)	52%	36%	R.C. (%)	74%	48%

Stage / Phase Diagrams

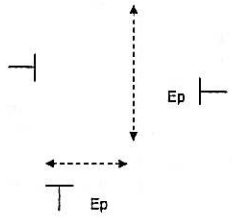
1.



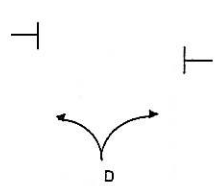
2.



3.



4.



5.

I/G= 5		I/G= 5		I/G= 8	17	I/G= 3		I/G=	
I/G= 5		I/G= 5		I/G= 8	17	I/G= 3		I/G=	

Date: Mar-11 Junction: Sau Mau Ping Rd / Sau Ming Rd (With F A

TRAFFIC SIGNALS CALCULATION

Job No.: 27702-29 MVA HONG KONG LIMITED

Junction: Sau Mau Ping Rd / Sau Fung Rd

Design Year: 2021

Description: Reference Flow (Without Development)

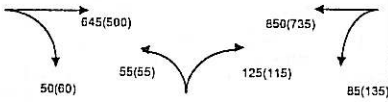
Designed By: SLL

Checked By: STH

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Sau Mau Ping Rd (WB)	←	B	1	4.000						2155	2155	486	0.226		455	0.211	
	↖↑	B	1	4.000	20			19%	33%	1985	1965	449	0.226	0.226	415	0.211	0.211
Sau Fung St (NB)	↰	C	3	3.000	22.5					1795	1795	55	0.031		55	0.031	
	↑↱	C	3	3.000	25	30		0% / 100%	0% / 100%	1955	1955	125	0.064	0.064	115	0.059	0.059
Sau Mau Ping Rd (EB)	→	A	1	3.000						1915	1915	307	0.160		238	0.124	
	→	A	1	3.500						2105	2105	338	0.161		262	0.124	
	↴	D	2	2.500		25				1890	1890	50	0.026		60	0.032	0.032
PED CROSSING	5	Ep	1,2	MIN GREEN + FLASH =			5	+	7	=	12						
	6	Fp	2	MIN GREEN + FLASH =			5	+	6	=	11						
	7	Gp	2,3	MIN GREEN + FLASH =			5	+	8	=	13						
	8	Hp	3	MIN GREEN + FLASH =			5	+	7	=	12						

Notes:

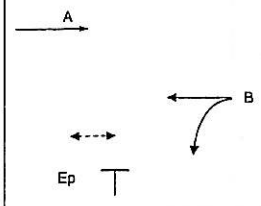
Traffic Flow (pcu/hr)



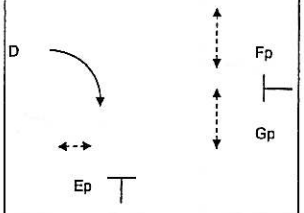
Group	B,D,C	B,Fp,C	Group	B,Fp,C	B,D,C
y	0.317	0.290	y	0.270	0.302
L (sec)	15	26	L (sec)	26	15
C (sec)	120	120	C (sec)	120	120
y pract.	0.788	0.705	y pract.	0.705	0.788
R.C. (%)	149%	143%	R.C. (%)	161%	161%

Stage / Phase Diagrams

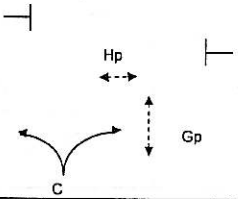
1.



2.



3.



4.

5.

I/G= 7		I/G= 8	11	I/G= 2		I/G=	I/G=
I/G= 7		I/G= 5		I/G= 6		I/G=	I/G=

Date: Mar-11

Junction: Sau Mau Ping Rd / Sau Fung Rd (B)

TRAFFIC SIGNALS CALCULATION

Job No.: 27702-29 MVA HONG KONG LIMITED

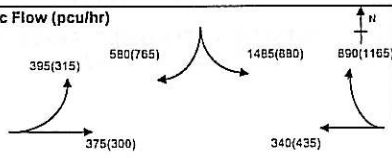
Junction: Sau Mau Ping Rd / Po Lam Rd Design Year: 2021

Description: Reference Flow (Without Development) Designed By: SLL Checked By: STH

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Sau Mau Ping Rd (WB)	↰	A	1	3.500		25		100%	100%	1985	1985	444	0.224	0.224	581	0.293	
	↰	A	1	3.500		27.5				1995	1995	446	0.224		584	0.293	0.293
	←	A	1	3.500						1965	1965	340	0.173		435	0.221	
Po Lam Rd (SB)	↳	E	1,2	4.000	37.5					1940	1940	718	0.370		425	0.219	
	↳	E	1,2	4.000	40					2075	2075	767	0.370		455	0.219	
	↲	D	2	4.000		25				2070	2070	580	0.280	0.280	765	0.370	0.370
Sau Mau Ping Rd (EB)	↱	C	2,3	3.500	37.5					1890	1890	188	0.099		150	0.079	
	↱	C	2,3	4.000	40					2075	2075	207	0.100		165	0.080	
	→	B	3	3.500						2105	2105	188	0.089	0.089	150	0.071	0.071
	→	B	3	3.500						2105	2105	187	0.089		150	0.071	
PED CROSSING	6	Fp	1,2	MIN GREEN + FLASH =			5	+	6	=	11						
	7	Gp	1,3	MIN GREEN + FLASH =			5	+	6	=	11						
	8	Hp	1	MIN GREEN + FLASH =			5	+	7	=	12						
	9	Ip	2,3	MIN GREEN + FLASH =			5	+	10	=	15						
	10	Jp	3	MIN GREEN + FLASH =			5	+	7	=	12						
	11	Kp	3	MIN GREEN + FLASH =			5	+	7	=	12						

Notes:

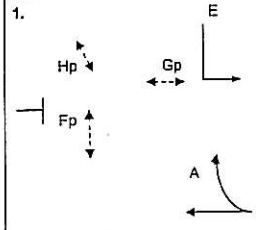
Traffic Flow (pcu/hr)



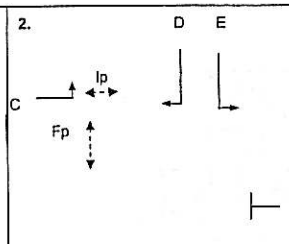
Group	A,D,Jp	A,D,B	Group	A,D,Jp	A,D,B
y	0.504	0.593	y	0.662	0.734
L (sec)	22	12	L (sec)	22	12
C (sec)	120	120	C (sec)	120	120
y pract.	0.735	0.810	y pract.	0.735	0.810
R.C. (%)	46%	37%	R.C. (%)	11%	10%

Stage / Phase Diagrams

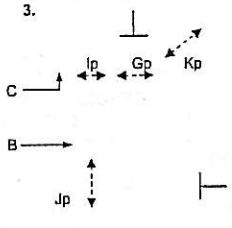
1.



2.



3.



4.

5.

I/G= 5		I/G= 5		I/G= 5		I/G=	
I/G= 5		I/G= 5		I/G= 5		I/G=	

Date: Mar-11 Junction: Sau Mau Ping Rd / Po Lam Rd (C)

TRANSPORT RESEARCH LABORATORY

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CAPACITIES, QUEUES AND DELAYS AT ROUNDABOUTS

Visual ARCADY/4 ANALYSIS PROGRAM
RELEASE 1.0 (FEB 1997)

FOR SALES AND DISTRIBUTION INFORMATION,
PROGRAM ADVICE AND MAINTENANCE CONTACT:
TRL LTD
TEL: CROWTHORNE (01344) 770018, FAX: 770864

THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS IN NO WAY RELIEVED OF HIS RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

.ROUNDABOUT CAPACITY AND DELAY
****

RUN TITLE
****
SAU MAU PING ROAD- HIU KWONG STREET Roundabout(Ref AM)

.INPUT DATA
****
ARM A - SAU MAU PING ROAD (WB)
ARM B - HIU KWONG STREET (NB)
ARM C - SAU MAU PING ROAD (EB)

.GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	10.50	10.50	0.01 *	20.00	30.00	22.5	0.986	54.405
ARM B	6.50	6.50	0.01 *	17.50	30.00	22.5	0.727	33.450
ARM C	5.00	6.50	40.00	100.00	30.00	60.0	0.657	29.933

WARNING ARM A - INPUT VALUE OF L (0.00) OUTSIDE ACCEPTABLE RANGE - HAS BEEN RESET AS INDICATED ABOVE (*). (AG17 REF. 6.3.1).

WARNING ARM B - INPUT VALUE OF L (0.00) OUTSIDE ACCEPTABLE RANGE - HAS BEEN RESET AS INDICATED ABOVE (*). (AG17 REF. 6.3.1).

.TRAFFIC DEMAND DATA

.TIME PERIOD BEGINS 07.30 AND ENDS 09.00
.LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK	NUMBER OF MINUTES FROM START WHEN FLOW STOPS	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
	TO RISE	IS REACHED	FALLING			
ARM A	15.00	45.00	75.00	18.75	28.13	18.75
ARM B	15.00	45.00	75.00	6.00	9.00	6.00
ARM C	15.00	45.00	75.00	3.75	5.63	3.75

TIME	FROM/TO	ARM A	ARM B	ARM C
07.30 - 09.00				
	ARM A	0.007	0.227	0.767
		10.0	340.0	1150.0
		(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

ARM B	0.542	0.010	0.448
	260.0	5.0	215.0
	(0.0)	(0.0)	(0.0)
ARM C	0.000	0.983	0.017
	0.0	295.0	5.0
	(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
07.30-07.45								
ARM A	18.75	50.66	0.370		0.0	0.6	8.7	
ARM B	6.00	22.89	0.262		0.0	0.4	5.2	
ARM C	3.75	27.68	0.135		0.0	0.2	2.3	

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
07.45-08.00								
ARM A	22.39	49.92	0.449		0.6	0.8	12.0	
ARM B	7.16	20.82	0.344		0.4	0.5	7.6	
ARM C	4.48	27.24	0.164		0.2	0.2	2.9	

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
08.00-08.15								
ARM A	27.42	48.91	0.561		0.8	1.3	18.6	
ARM B	8.77	17.99	0.488		0.5	0.9	13.6	
ARM C	5.48	26.64	0.206		0.2	0.3	3.8	

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
08.15-08.30								
ARM A	27.42	48.91	0.561		1.3	1.3	19.0	
ARM B	8.77	17.98	0.488		0.9	0.9	14.2	
ARM C	5.48	26.63	0.206		0.3	0.3	3.9	

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
08.30-08.45								
ARM A	22.39	49.91	0.449		1.3	0.8	12.5	
ARM B	7.16	20.80	0.344		0.9	0.5	8.2	
ARM C	4.48	27.22	0.164		0.3	0.2	3.0	

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
08.45-09.00								
ARM A	18.75	50.64	0.370		0.8	0.6	9.0	
ARM B	6.00	22.86	0.262		0.5	0.4	5.5	
ARM C	3.75	27.67	0.136		0.2	0.2	2.4	

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.45	0.6	*
08.00	0.8	*
08.15	1.3	*
08.30	1.3	*
08.45	0.8	*
09.00	0.6	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE

07.45	0.4	
08.00	0.5	*
08.15	0.9	*
08.30	0.9	*
08.45	0.5	*
09.00	0.4	

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
07.45	0.2
08.00	0.2
08.15	0.3
08.30	0.3
08.45	0.2
09.00	0.2

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	2056.8	1371.2	79.7	0.04	79.7	0.04
B	658.2	438.8	54.2	0.08	54.2	0.08
C	411.4	274.2	18.3	0.04	18.3	0.04
ALL	3126.4	2084.2	152.2	0.05	152.2	0.05

* DELAY IS THAT OCCURRING ONLY,24H WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

TRANSPORT RESEARCH LABORATORY

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CAPACITIES, QUEUES AND DELAYS AT ROUNDABOUTS

Visual ARCADY/4 ANALYSIS PROGRAM
RELEASE 1.0 (FEB 1997)

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.ROUNDABOUT CAPACITY AND DELAY
****

RUN TITLE
****
SAU MAU PING ROAD- HIU KWONG STREET Roundabout(Ref PM)

.INPUT DATA
****
ARM A - SAU MAU PING ROAD (WB)
ARM B - HIU KWONG STREET (NB)
ARM C - SAU MAU PING ROAD (EB)

.GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	10.50	10.50	0.01 *	20.00	30.00	22.5	0.986	54.405
ARM B	6.50	6.50	0.01 *	17.50	30.00	22.5	0.727	33.450
ARM C	5.00	6.50	40.00	100.00	30.00	60.0	0.657	29.933

WARNING ARM A - INPUT VALUE OF L (0.00) OUTSIDE ACCEPTABLE RANGE - HAS BEEN RESET AS INDICATED ABOVE (*). (AG17 REF. 6.3.1).

WARNING ARM B - INPUT VALUE OF L (0.00) OUTSIDE ACCEPTABLE RANGE - HAS BEEN RESET AS INDICATED ABOVE (*). (AG17 REF. 6.3.1).

.TRAFFIC DEMAND DATA

.TIME PERIOD BEGINS 17.30 AND ENDS 19.00
.LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	17.06	25.59	17.06
ARM B	15.00	45.00	75.00	7.19	10.78	7.19
ARM C	15.00	45.00	75.00	2.69	4.03	2.69

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C
17.30 - 19.00	ARM A	0.004	0.256	0.740
		5.0	350.0	1010.0
		(0.0)	(0.0)	(0.0)

	ARM B	0.487	0.017	0.496
		280.0	10.0	285.0
		(0.0)	(0.0)	(0.0)
	ARM C	0.000	0.977	0.023
		0.0	210.0	5.0
		(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
17.30-17.45								
ARM A	17.06	51.64	0.330		0.0	0.5	7.3	
ARM B	7.19	24.20	0.297		0.0	0.4	6.2	
ARM C	2.69	27.52	0.098		0.0	0.1	1.6	
17.45-18.00								
ARM A	20.37	51.10	0.399		0.5	0.7	9.8	
ARM B	8.58	22.39	0.383		0.4	0.6	9.0	
ARM C	3.21	27.04	0.119		0.1	0.1	2.0	
18.00-18.15								
ARM A	24.95	50.35	0.496		0.7	1.0	14.4	
ARM B	10.51	19.91	0.528		0.6	1.1	15.9	
ARM C	3.93	26.40	0.149		0.1	0.2	2.6	
18.15-18.30								
ARM A	24.95	50.35	0.496		1.0	1.0	14.7	
ARM B	10.51	19.90	0.528		1.1	1.1	16.6	
ARM C	3.93	26.39	0.149		0.2	0.2	2.6	
18.30-18.45								
ARM A	20.37	51.09	0.399		1.0	0.7	10.1	
ARM B	8.58	22.38	0.384		1.1	0.6	9.7	
ARM C	3.21	27.03	0.119		0.2	0.1	2.1	
18.45-19.00								
ARM A	17.06	51.63	0.330		0.7	0.5	7.5	
ARM B	7.19	24.18	0.297		0.6	0.4	6.5	
ARM C	2.69	27.50	0.098		0.1	0.1	1.6	

.QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.45	0.5	
18.00	0.7	*
18.15	1.0	*
18.30	1.0	*
18.45	0.7	*
19.00	0.5	

.QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE

17.45	0.4	
18.00	0.6	*
18.15	1.1	*
18.30	1.1	*
18.45	0.6	*
19.00	0.4	

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.45	0.1
18.00	0.1
18.15	0.2
18.30	0.2
18.45	0.1
19.00	0.1

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1871.7	1247.8	63.8	0.03	63.8	0.03
B	788.4	525.6	63.9	0.08	63.9	0.08
C	294.8	196.5	12.5	0.04	12.5	0.04
ALL	2955.0	1970.0	140.2	0.05	140.2	0.05

* DELAY IS THAT OCCURRING ONLY,24H WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

TRAFFIC SIGNALS CALCULATION

Job No.: 27702-29 — MVA HONG KONG LIMITED

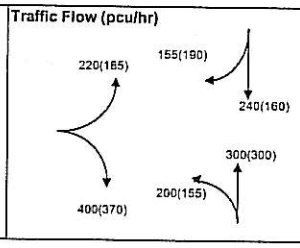
Junction: Hiu Kwong Street/ Sau Ming Road — Design Year: 2021

Description: Reference Flow (Without Development) — Designed By: SLL — Checked By: STH

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Hiu Kwong Street (SB)	↲	C	2	3.100		18				1905	1905	155	0.081	0.081	190	0.100	0.100
	↓	B	1,2	3.100						1925	1925	240	0.125		160	0.083	
Hiu Kwong Street (NB)	↰	A	1	3.000	18					1770	1770	200	0.113		155	0.088	
	↑	A	1	3.000						2055	2055	300	0.146	0.146	300	0.146	0.146
Sau Ming Road (EB)	⇀	F	4	3.500	15					1785	1785	220	0.123		185	0.104	
	↴	F	4	3.500		18				1945	1945	400	0.206	0.206	370	0.190	0.190
PED CROSSING		Dp	3	MIN GREEN + FLASH =			7	+	13	=	20						
		Ep	3	MIN GREEN + FLASH =			7	+	13	=	20			*			*

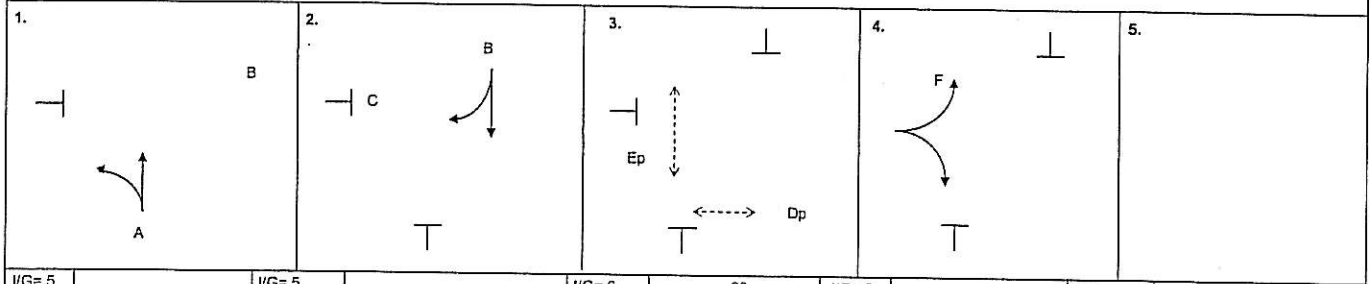
Notes:

Traffic Flow (pcu/hr)



Group	A,C,Dp,F	A,C,Ep,F	Group	A,C,Dp,F	A,C,Ep,F
y	0.433	0.433	y	0.436	0.436
L (sec)	32	35	L (sec)	32	35
C (sec)	80	80	C (sec)	80	80
y pract.	0.540	0.506	y pract.	0.540	0.506
R.C. (%)	25%	17%	R.C. (%)	24%	16%

Stage / Phase Diagrams



I/G= 5		I/G= 5		I/G= 6	20	I/G= 2	I/G=
I/G= 5		I/G= 5		I/G= 6	20	I/G= 2	I/G=

Date: Mar-11 — Junction: Hiu Kwong Street/ Sau Ming Road — E

TRAFFIC SIGNALS CALCULATION

Job No.: 29192-00 MVA HONG KONG LIMITED

Junction: Sau Mau Ping Rd / Tseung Kwan O Rd Slip Rd Design Year: 2021

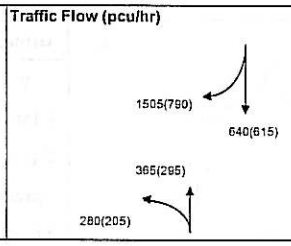
Description: 2021 Reference Designed By: SLL Checked By: STH

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) A.M.	Pro. Turning (%) P.M.	Revised Saturation Flow (pcu/hr) A.M.	Revised Saturation Flow (pcu/hr) P.M.	A.M. Peak Flow (pcu/hr)	A.M. Peak y Value	A.M. Peak Critical y	P.M. Peak Flow (pcu/hr)	P.M. Peak y Value	P.M. Peak Critical y
Lin Tak Rd NB	↰	B	1	3.500	15					1785	1785	280	0.157		205	0.115	
	↑	B	1	3.500						2105	2105	365	0.173	0.173	295	0.140	0.140
Sau Mau Ping Rd SB	↓	A	1,2	3.500						1965	1965	640	0.326		615	0.313	
	↲	C	2	3.500		18				1945	1945	1505	0.774	0.774	790	0.406	0.406

LRT/Pedestrian

Notes:

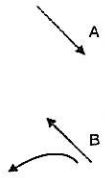
Traffic Flow (pcu/hr)



Group		BC	Group		BC
y		0.947	y		0.546
L (sec)		10	L (sec)		10
C (sec)		120	C (sec)		120
y pract.		0.825	y pract.		0.825
R.C. (%)		-13%	R.C. (%)		51%

Stage / Phase Diagrams

1.



2.



3.

4.

5.

I/G= 5		I/G= 7		I/G=		I/G=	
I/G= 5		I/G= 7		I/G=		I/G=	

Date: 40850.4737847222 Junction: Sau Mau Ping Rd / Tseung Kwan O Rd F

TRAFFIC SIGNALS CALCULATION

Job No.: 29192-00 MVA HONG KONG LIMITED

Junction: Sau Mau Ping Rd / Shun On Rd

Design Year: 2021

Description: 2021 Reference (with planned improvement)

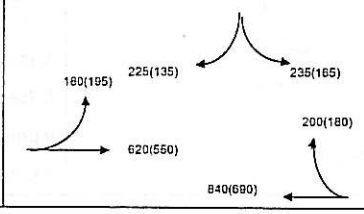
Designed By: SLL Checked By: STH

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) A.M.	Pro. Turning (%) P.M.	Revised Saturation Flow (pcu/hr) A.M.	Revised Saturation Flow (pcu/hr) P.M.	A.M. Peak Flow (pcu/hr)	A.M. Peak y Value	A.M. Peak Critical y	P.M. Peak Flow (pcu/hr)	P.M. Peak y Value	P.M. Peak Critical y
Sau Mau Ping Rd	←	B	1,2	3.300						1945	1945	405	0.208		333	0.171	
WB	←	B	1,2	3.300						2085	2085	435	0.209		357	0.171	
	↖	C	2	3.000		15				1870	1870	200	0.107	0.107	180	0.096	0.096
Sau Mau Ping Rd	↗	A	1	3.500	15			48%	56%	1875	1860	377	0.201	0.201	350	0.188	0.188
EB	→	A	1	3.500						2105	2105	423	0.201		395	0.188	
Shun On Rd	↳	D	2,3	3.300	15					1770	1770	235	0.133		165	0.093	
SB	↲	E	3	3.500		20				1960	1960	225	0.115	0.115	135	0.069	0.069

	PH	ST	GM		FG			
LRT/Pedestrian	Fp	4	9	+	9	=	18	
	Gp	4	9	+	9	=	18	*
	Hp	4	9	+	9	=	18	

Notes:

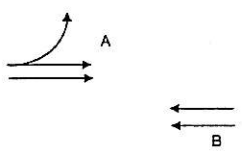
Traffic Flow (pcu/hr)



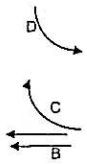
Group		ACEGp	Group		ACEGp
y		0.423	y		0.353
L (sec)		41	L (sec)		41
C (sec)		110	C (sec)		110
y pract.		0.565	y pract.		0.565
R.C. (%)		34%	R.C. (%)		60%

Stage / Phase Diagrams

1.



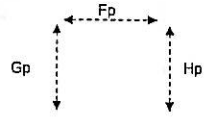
2.



3.



4.



5.

I/G= 12		I/G= 6		I/G= 6		I/G= 11					
I/G= 12		I/G= 6		I/G= 6		I/G= 11					

Date: 40850.4815162037

Junction: Sau Mau Ping Rd / Shun On Rd (G)

TRAFFIC SIGNALS CALCULATION

Job No.: 29192-00 MVA HONG KONG LIMITED

Junction: Sau Mau Ping Rd / Hip Wo St Design Year: 2021

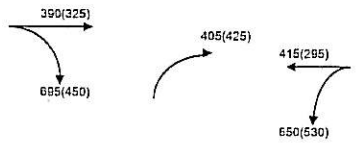
Description: 2021 Reference Designed By: SLL Checked By: STH

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) A.M.	Pro. Turning (%) P.M.	Revised Saturation Flow (pcu/hr) A.M.	Revised Saturation Flow (pcu/hr) P.M.	A.M. Peak Flow (pcu/hr)	A.M. Peak y Value	A.M. Peak Critical y	P.M. Peak Flow (pcu/hr)	P.M. Peak y Value	P.M. Peak Critical y
Sau Mau Ping Rd	↰	C	2,3	3.500	70					1925	1925	650	0.338	0.338	530	0.275	0.275
WB	←	D	3	3.500						1965	1965	200	0.102		142	0.072	
	←	D	3	3.500						2105	2105	215	0.102		153	0.073	
Hip Wo St	↱	B	2	3.500		20				1830	1830	198	0.108		208	0.114	
NB	↱	B	2	3.500		15				1915	1915	207	0.108		217	0.113	
Shun Lee Tsuen Rd	→	A	1	3.500						1965	1965	365	0.186	0.186	259	0.132	
EB	⇉	A	1	3.500		20		93%	75%	1970	1995	365	0.185		263	0.132	
	↘	A	1	3.500		15				1915	1915	355	0.185		253	0.132	0.132

	PH	ST	GM		FG		
LRT/Pedestrian	Ep	1	6	+	6	=	12
	Fp	3	5	+	8	=	13

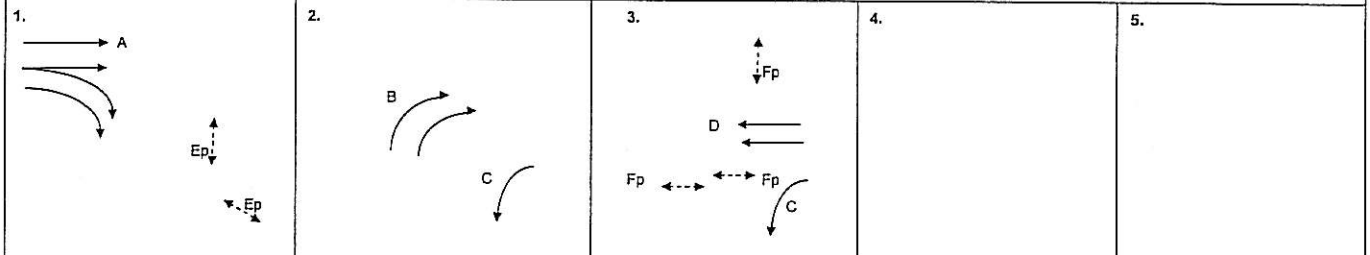
Notes:

Traffic Flow (pcu/hr)



Group		AC	Group		AC
y		0.523	y		0.407
L (sec)		10	L (sec)		10
C (sec)		120	C (sec)		120
y pract.		0.825	y pract.		0.825
R.C. (%)		58%	R.C. (%)		102%

Stage / Phase Diagrams



I/G= 6		I/G= 6		I/G=		I/G=	
I/G= 6		I/G= 6		I/G=		I/G=	

Date: 40850.4875694444 Junction: Sau Mau Ping Rd / Hip Wo St H

2021 Design Traffic Flows
(With Development)

TRAFFIC SIGNALS CALCULATION

Job No.: 27702-29 MVA HONG KONG LIMITED

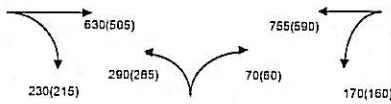
Junction: Sau Mau Ping Rd / Sau Ming Rd (With Planned Junction Improvement) Design Year: 2021

Description: Design Flow (With Development) Designed By: SLL Checked By: STH

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Sau Mau Ping Rd	←	B	1	3.000						2055	2055	488	0.237	0.237	397	0.193	0.193
(WB)	⇜	B	1	3.000	15			39%	45%	1845	1830	437	0.237		353	0.193	
Sau Ming Rd	↰	D	4	3.500	15					1785	1785	178	0.100		171	0.096	0.096
(NB)	⇖	D	4	3.500	17.5	22.5		62% / 38%	66% / 34%	1820	1820	182	0.100	0.100	174	0.096	
Sau Mau Ping Rd	→	A	1,2	3.000						1915	1915	630	0.329		505	0.264	
(EB)	⇁	C	2	3.000		20				1910	1910	230	0.120	0.120	215	0.113	0.113
PED CROSSING	5	Ep	3	MIN GREEN + FLASH =			7	+	10	=	17			*			*

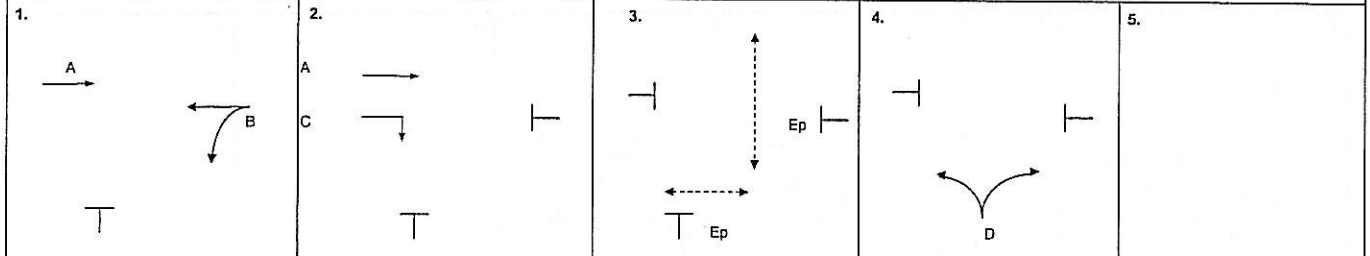
Notes:

Traffic Flow (pcu/hr)



Group	A,Ep,D	B,C,Ep,D	Group	A,Ep,D	B,C,Ep,D
y	0.429	0.458	y	0.360	0.402
L (sec)	31	35	L (sec)	31	35
C (sec)	110	110	C (sec)	100	100
y pract.	0.646	0.614	y pract.	0.621	0.585
R.C. (%)	51%	34%	R.C. (%)	73%	46%

Stage / Phase Diagrams



I/G= 5		I/G= 5		I/G= 8	17	I/G= 3		I/G=	
I/G= 5		I/G= 5		I/G= 8	17	I/G= 3		I/G=	

Date: Mar-11 Junction: Sau Mau Ping Rd / Sau Ming Rd (With P A

TRAFFIC SIGNALS CALCULATION

Job No.: 27702-29 MVA HONG KONG LIMITED

Junction: Sau Mau Ping Rd / Sau Fung Rd

Design Year: 2021

Description: Design Flow (With Development)

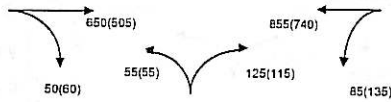
Designed By: SLL

Checked By: STH

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Sau Mau Ping Rd	←	B	1	4.000						2155	2155	489	0.227		457	0.212	
(WB)	⇇	B	1	4.000	20			19%	32%	1985	1965	451	0.227	0.227	418	0.213	0.213
Sau Fung St	↰	C	3	3.000	22.5					1795	1795	55	0.031		55	0.031	
(NB)	↰↑	C	3	3.000	25	30		0% / 100%	0% / 100%	1955	1955	125	0.064	0.064	115	0.059	0.059
Sau Mau Ping Rd	→	A	1	3.000						1915	1915	310	0.162		241	0.126	
(EB)	→	A	1	3.500						2105	2105	340	0.162		264	0.125	
	⇉	D	2	2.500		25				1890	1890	50	0.026		60	0.032	
PED CROSSING	5	Ep	1,2	MIN GREEN + FLASH =			5	+	7	=	12						
	6	Fp	2	MIN GREEN + FLASH =			5	+	6	=	11						
	7	Gp	2,3	MIN GREEN + FLASH =			5	+	8	=	13						
	8	Hp	3	MIN GREEN + FLASH =			5	+	7	=	12						

Notes:

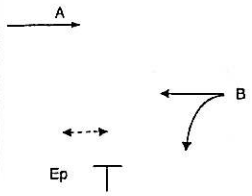
Traffic Flow (pcu/hr)



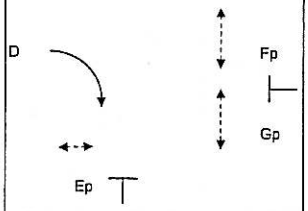
Group	B,D,C	B,Fp,C	Group	B,D,C	B,Fp,C
y	0.318	0.291	y	0.303	0.272
L (sec)	15	26	L (sec)	15	26
C (sec)	120	120	C (sec)	120	120
y pract.	0.788	0.705	y pract.	0.788	0.705
R.C. (%)	148%	142%	R.C. (%)	160%	160%

Stage / Phase Diagrams

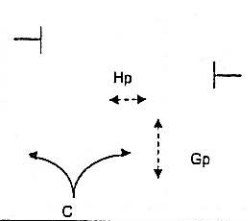
1.



2.



3.



4.

5.

I/G= 7		I/G= 8	11	I/G= 2		I/G=	I/G=
I/G= 7		I/G= 8	11	I/G= 2		I/G=	I/G=
						Date: Mar-11	Junction: Sau Mau Ping Rd / Sau Fung Rd (B)

TRAFFIC SIGNALS CALCULATION

Job No.: 27702-29 MVA HONG KONG LIMITED

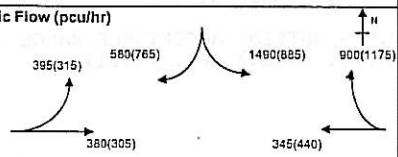
Junction: Sau Mau Ping Rd / Po Lam Rd Design Year: 2021

Description: Design Flow (With Development) Designed By: SLL Checked By: STH

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Sau Mau Ping Rd (WB)	↑←	A	1	3.500		25		100%	100%	1985	1985	449	0.226	0.226	586	0.295	
	↖	A	1	3.500		27.5				1995	1995	451	0.226		589	0.295	0.295
	←	A	1	3.500						1965	1965	345	0.176		440	0.224	
Po Lam Rd (SB)	↳	E	1,2	4.000	37.5					1940	1940	720	0.371		428	0.221	
	↳	E	1,2	4.000	40					2075	2075	770	0.371		457	0.220	
	↲	D	2	4.000		25				2070	2070	580	0.280	0.280	765	0.370	0.370
Sau Mau Ping Rd (EB)	↗	C	2,3	3.500	37.5					1890	1890	188	0.099		150	0.079	
	↗	C	2,3	4.000	40					2075	2075	207	0.100		165	0.080	
	→	B	3	3.500						2105	2105	190	0.090	0.090	153	0.073	0.073
	→	B	3	3.500						2105	2105	190	0.090		152	0.072	
PED CROSSING	6	Fp	1,2	MIN GREEN + FLASH =			5	+	6	=	11						
	7	Gp	1,3	MIN GREEN + FLASH =			5	+	6	=	11						
	8	Hp	1	MIN GREEN + FLASH =			5	+	7	=	12						
	9	Ip	2,3	MIN GREEN + FLASH =			5	+	10	=	15						
	10	Jp	3	MIN GREEN + FLASH =			5	+	7	=	12						
	11	Kp	3	MIN GREEN + FLASH =			5	+	7	=	12						

Notes:

Traffic Flow (pcu/hr)



Group	A,D,Jp	A,D,B	Group	A,D,Jp	A,D,B
y	0.506	0.597	y	0.665	0.737
L (sec)	22	12	L (sec)	22	12
C (sec)	120	120	C (sec)	120	120
y pract.	0.735	0.810	y pract.	0.735	0.810
R.C. (%)	45%	36%	R.C. (%)	11%	10%

Stage / Phase Diagrams

1. E, Hp, Gp, Fp, A
2. D, E, C, Ip, Fp
3. C, Ip, Gp, Kp, B, Jp
4.
5.

I/G= 5		I/G= 5		I/G= 5		I/G=	
I/G= 5		I/G= 5		I/G= 5		I/G=	

Date: Mar-11 Junction: Sau Mau Ping Rd / Po Lam Rd (C)

TRANSPORT RESEARCH LABORATORY

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CAPACITIES, QUEUES AND DELAYS AT ROUNDABOUTS

Visual ARCADY/4 ANALYSIS PROGRAM
RELEASE 1.0 (FEB 1997)

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.ROUNDABOUT CAPACITY AND DELAY

RUN TITLE

SAU MAU PING ROAD- HIU KWONG STREET Roundabout(Dgn AM)

.INPUT DATA

ARM A - SAU MAU PING ROAD (WB)
ARM B - HIU KWONG STREET (NB)
ARM C - SAU MAU PING ROAD (EB)

.GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	10.50	10.50	0.01 *	20.00	30.00	22.5	0.986	54.405
ARM B	6.50	6.50	0.01 *	17.50	30.00	22.5	0.727	33.450
ARM C	5.00	6.50	40.00	100.00	30.00	60.0	0.657	29.933

WARNING ARM A - INPUT VALUE OF L (0.00) OUTSIDE ACCEPTABLE RANGE - HAS BEEN RESET AS INDICATED ABOVE (*). (AG17 REF. 6.3.1).

WARNING ARM B - INPUT VALUE OF L (0.00) OUTSIDE ACCEPTABLE RANGE - HAS BEEN RESET AS INDICATED ABOVE (*). (AG17 REF. 6.3.1).

.TRAFFIC DEMAND DATA

.TIME PERIOD BEGINS 07.30 AND ENDS 09.00
.LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	18.81	28.22	18.81
ARM B	15.00	45.00	75.00	6.13	9.19	6.13
ARM C	15.00	45.00	75.00	3.81	5.72	3.81

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C
07.30 - 09.00	ARM A	0.007	0.226	0.767
		10.0	340.0	1155.0
		(0.0)	(0.0)	(0.0)

ARM B	0.551	0.010	0.439
	270.0	5.0	215.0
	(0.0)	(0.0)	(0.0)
ARM C	0.000	0.984	0.016
	0.0	300.0	5.0
	(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
07.30-07.45								
ARM A	18.81	50.59	0.372		0.0	0.6	8.7	
ARM B	6.13	22.85	0.268		0.0	0.4	5.3	
ARM C	3.81	27.60	0.138		0.0	0.2	2.4	
07.45-08.00								
ARM A	22.46	49.85	0.451		0.6	0.8	12.1	
ARM B	7.31	20.77	0.352		0.4	0.5	7.9	
ARM C	4.55	27.14	0.168		0.2	0.2	3.0	
08.00-08.15								
ARM A	27.51	48.82	0.564		0.8	1.3	18.8	
ARM B	8.96	17.93	0.500		0.5	1.0	14.2	
ARM C	5.58	26.52	0.210		0.2	0.3	3.9	
08.15-08.30								
ARM A	27.51	48.82	0.564		1.3	1.3	19.3	
ARM B	8.96	17.91	0.500		1.0	1.0	14.8	
ARM C	5.58	26.51	0.210		0.3	0.3	4.0	
08.30-08.45								
ARM A	22.46	49.84	0.451		1.3	0.8	12.6	
ARM B	7.31	20.74	0.353		1.0	0.5	8.5	
ARM C	4.55	27.13	0.168		0.3	0.2	3.1	
08.45-09.00								
ARM A	18.81	50.58	0.372		0.8	0.6	9.0	
ARM B	6.13	22.81	0.268		0.5	0.4	5.6	
ARM C	3.81	27.59	0.138		0.2	0.2	2.4	

.QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.45	0.6	*
08.00	0.8	*
08.15	1.3	*
08.30	1.3	*
08.45	0.8	*
09.00	0.6	*

.QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE

07.45	0.4	
08.00	0.5	*
08.15	1.0	*
08.30	1.0	*
08.45	0.5	*
09.00	0.4	

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
07.45	0.2
08.00	0.2
08.15	0.3
08.30	0.3
08.45	0.2
09.00	0.2

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	2063.7	1375.8	80.5	0.04	80.5	0.04
B	671.9	447.9	56.4	0.08	56.4	0.08
C	418.2	278.8	18.8	0.04	18.8	0.04
ALL	3153.8	2102.5	155.7	0.05	155.7	0.05

* DELAY IS THAT OCCURRING ONLY,24H WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

TRANSPORT RESEARCH LABORATORY

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CAPACITIES, QUEUES AND DELAYS AT ROUNDABOUTS

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.ROUNDABOUT CAPACITY AND DELAY
****

RUN TITLE
****
SAU MAU PING ROAD- HIU KWONG STREET Roundabout(Dgn PM)

.INPUT DATA
****
ARM A - SAU MAU PING ROAD (WB)
ARM B - HIU KWONG STREET (NB)
ARM C - SAU MAU PING ROAD (EB)

.GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	10.50	10.50	0.01 *	20.00	30.00	22.5	0.986	54.405
ARM B	6.50	6.50	0.01 *	17.50	30.00	22.5	0.727	33.450
ARM C	5.00	6.50	40.00	100.00	30.00	60.0	0.657	29.933

WARNING ARM A - INPUT VALUE OF L (0.00) OUTSIDE ACCEPTABLE RANGE - HAS BEEN RESET AS INDICATED ABOVE (*). (AG17 REF. 6.3.1).

WARNING ARM B - INPUT VALUE OF L (0.00) OUTSIDE ACCEPTABLE RANGE - HAS BEEN RESET AS INDICATED ABOVE (*). (AG17 REF. 6.3.1).

.TRAFFIC DEMAND DATA

.TIME PERIOD BEGINS 17.30 AND ENDS 19.00
.LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	17.13	25.69	17.13
ARM B	15.00	45.00	75.00	7.25	10.88	7.25
ARM C	15.00	45.00	75.00	2.75	4.13	2.75

TIME	TURNING PROPORTIONS (PERCENTAGE OF H.V.S) FROM/TO	ARM A	ARM B	ARM C
17.30 - 19.00	ARM A	0.004	0.255	0.741
		5.0	350.0	1015.0
		(0.0)	(0.0)	(0.0)

ARM B	0.491	0.017	0.491	
	285.0	10.0	285.0	
	(0.0)	(0.0)	(0.0)	
ARM C	0.000	0.977	0.023	
	0.0	215.0	5.0	
	(0.0)	(0.0)	(0.0)	

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
17.30-17.45								
ARM A	17.13	51.58	0.332		0.0	0.5	7.3	
ARM B	7.25	24.16	0.300		0.0	0.4	6.2	
ARM C	2.75	27.48	0.100		0.0	0.1	1.6	
17.45-18.00								
ARM A	20.45	51.02	0.401		0.5	0.7	9.9	
ARM B	8.66	22.34	0.388		0.4	0.6	9.2	
ARM C	3.28	26.99	0.122		0.1	0.1	2.0	
18.00-18.15								
ARM A	25.04	50.26	0.498		0.7	1.0	14.6	
ARM B	10.60	19.85	0.534		0.6	1.1	16.3	
ARM C	4.02	26.34	0.153		0.1	0.2	2.7	
18.15-18.30								
ARM A	25.04	50.26	0.498		1.0	1.0	14.8	
ARM B	10.60	19.83	0.535		1.1	1.1	17.0	
ARM C	4.02	26.33	0.153		0.2	0.2	2.7	
18.30-18.45								
ARM A	20.45	51.02	0.401		1.0	0.7	10.2	
ARM B	8.66	22.32	0.388		1.1	0.6	9.8	
ARM C	3.28	26.98	0.122		0.2	0.1	2.1	
18.45-19.00								
ARM A	17.13	51.57	0.332		0.7	0.5	7.6	
ARM B	7.25	24.13	0.300		0.6	0.4	6.6	
ARM C	2.75	27.46	0.100		0.1	0.1	1.7	

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.45	0.5	
18.00	0.7	*
18.15	1.0	*
18.30	1.0	*
18.45	0.7	*
19.00	0.5	

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE

17.45	0.4	
18.00	0.6	*
18.15	1.1	*
18.30	1.1	*
18.45	0.6	*
19.00	0.4	

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.45	0.1
18.00	0.1
18.15	0.2
18.30	0.2
18.45	0.1
19.00	0.1

. QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1878.6	1252.4	64.4	0.03	64.4	0.03
B	795.3	530.2	65.3	0.08	65.3	0.08
C	301.7	201.1	12.8	0.04	12.9	0.04
ALL	2975.5	1983.7	142.5	0.05	142.5	0.05

* DELAY IS THAT OCCURRING ONLY,24H WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

TRAFFIC SIGNALS CALCULATION

Job No.: 27702-29 MVA HONG KONG LIMITED

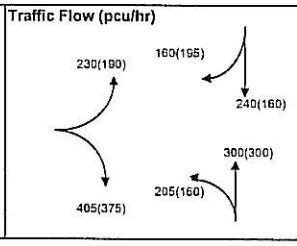
Junction: Hiu Kwong Street/ Sau Ming Road Design Year: 2021

Description: Design Flow (With Development) Designed By: SLL Checked By: STH

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Hiu Kwong Street (SB)	↲	C	2	3.100		18				1905	1905	160	0.084	0.084	195	0.102	0.102
	↓	B	1,2	3.100						1925	1925	240	0.125		160	0.083	
Hiu Kwong Street (NB)	↰	A	1	3.000	18					1770	1770	205	0.116		160	0.090	
	↑	A	1	3.000						2055	2055	300	0.146	0.146	300	0.146	0.146
Sau Ming Road (EB)	⇀	F	4	3.500	15					1785	1785	230	0.129		190	0.106	
	↴	F	4	3.500		18				1945	1945	405	0.208	0.208	375	0.193	0.193
PED CROSSING		Dp	3	MIN GREEN + FLASH =			7	+	13	=	20						
		Ep	3	MIN GREEN + FLASH =			7	+	13	=	20			•			•

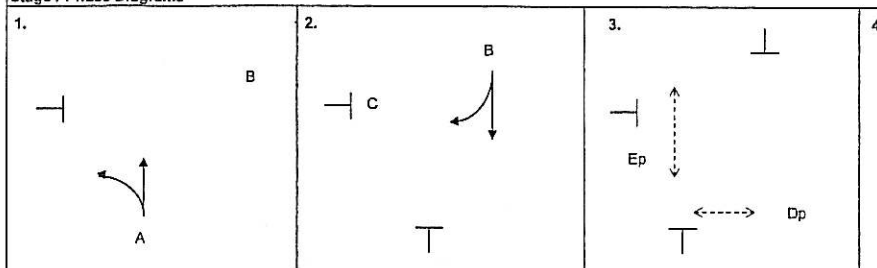
Notes:

Traffic Flow (pcu/hr)



Group	A,C,Dp,F	A,C,Ep,F	Group	A,C,Dp,F	A,C,Ep,F
y	0.438	0.438	y	0.441	0.441
L (sec)	32	35	L (sec)	32	35
C (sec)	80	80	C (sec)	80	80
y pract.	0.540	0.506	y pract.	0.540	0.506
R.C. (%)	23%	16%	R.C. (%)	22%	15%

Stage / Phase Diagrams



I/G= 5		I/G= 5		I/G= 6	20	I/G= 2	
I/G= 5		I/G= 5		I/G= 6	20	I/G= 2	

I/G=	
I/G=	

Date: Mar-11 Junction: Hiu Kwong Street/ Sau Ming Road (E)

TRAFFIC SIGNALS CALCULATION

Job No.: 29192-00 MVA HONG KONG LIMITED

Junction: Sau Mau Ping Rd / Tseung Kwan O Rd Slip Rd Design Year: 2021

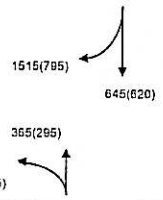
Description: 2021 Design Designed By: SLL Checked By: STH

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) A.M.	Pro. Turning (%) P.M.	Revised Saturation Flow (pcu/hr) A.M.	Revised Saturation Flow (pcu/hr) P.M.	A.M. Peak Flow (pcu/hr)	A.M. Peak y Value	A.M. Peak Critical y	P.M. Peak Flow (pcu/hr)	P.M. Peak y Value	P.M. Peak Critical y
Lin Tak Rd	↰	B	1	3.500	15					1785	1785	280	0.157		205	0.115	
NB	↑	B	1	3.500						2105	2105	365	0.173	0.173	295	0.140	0.140
Sau Mau Ping Rd	↓	A	1,2	3.500						1965	1965	645	0.328		620	0.316	
SB	↲	C	2	3.500		18				1945	1945	1515	0.779	0.779	795	0.409	0.409

LRT/Pedestrian

Notes:

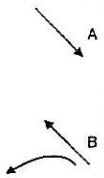
Traffic Flow (pcu/hr)



Group		BC	Group		BC
y		0.952	y		0.549
L (sec)		10	L (sec)		10
C (sec)		120	C (sec)		120
y pract.		0.825	y pract.		0.825
R.C. (%)		-13%	R.C. (%)		50%

Stage / Phase Diagrams

1.



2.



3.

4.

5.

I/G= 5		I/G= 7		I/G=		I/G=			
I/G= 5		I/G= 7		I/G=		I/G=			

Date: 14/3/2011 17:26:17 Junction: Sau Mau Ping Rd / Tseung Kwan O Rd (F)

TRAFFIC SIGNALS CALCULATION

Job No.: 29192-00 MVA HONG KONG LIMITED

Junction: Sau Mau Ping Rd / Shun On Rd Design Year: 2021

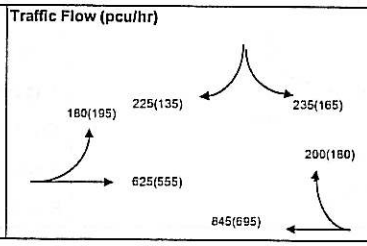
Description: 2021 Design (with planned improvement) Designed By: SLL Checked By: STH

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) A.M.	Pro. Turning (%) P.M.	Revised Saturation Flow (pcu/hr) A.M.	Revised Saturation Flow (pcu/hr) P.M.	A.M. Peak Flow (pcu/hr)	A.M. Peak y Value	A.M. Peak Critical y	P.M. Peak Flow (pcu/hr)	P.M. Peak y Value	P.M. Peak Critical y
Sau Mau Ping Rd	←	B	1,2	3.300						1945	1945	408	0.210		335	0.172	
WB	←	B	1,2	3.300						2085	2085	437	0.210		360	0.173	
	↰	C	2	3.000		15				1870	1870	200	0.107	0.107	180	0.096	0.096
Sau Mau Ping Rd	⇗	A	1	3.500	15			47%	55%	1875	1860	379	0.202		352	0.189	0.189
EB	→	A	1	3.500						2105	2105	426	0.202	0.202	398	0.189	
Shun On Rd	↳	D	2,3	3.300	15					1770	1770	235	0.133		165	0.093	
SB	↲	E	3	3.500		20				1960	1960	225	0.115	0.115	135	0.069	0.069

	PH	ST	GM		FG					
LRT/Pedestrian	Fp	4	9	+	9	=	18			
	Gp	4	9	+	9	=	18	*		*
	Hp	4	9	+	9	=	18			

Notes:

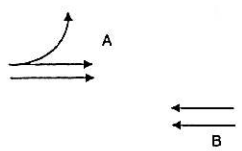
Traffic Flow (pcu/hr)



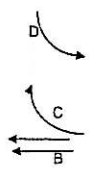
Group		ACEGp	Group		ACEGp
y		0.424	y		0.354
L (sec)		41	L (sec)		41
C (sec)		110	C (sec)		110
y pract.		0.565	y pract.		0.565
R.C. (%)		33%	R.C. (%)		59%

Stage / Phase Diagrams

1.



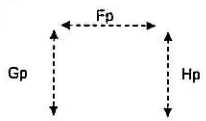
2.



3.



4.



5.

I/G= 12		I/G= 6		I/G= 6		I/G= 11			
I/G= 12		I/G= 6		I/G= 6		I/G= 11			

Date: 40850.4815625 Junction: Sau Mau Ping Rd / Shun On Rd (G)

TRAFFIC SIGNALS CALCULATION

Job No.: 29192-00 | MVA HONG KONG LIMITED

Junction: Sau Mau Ping Rd / Hip Wo St | Design Year: 2021

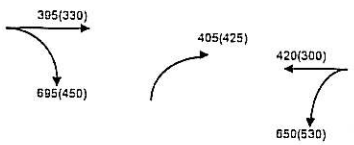
Description: 2021 Design | Designed By: SLL | Checked By: STH

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) A.M.	Pro. Turning (%) P.M.	Revised Saturation Flow (pcu/hr) A.M.	Revised Saturation Flow (pcu/hr) P.M.	A.M. Peak Flow (pcu/hr)	A.M. Peak y Value	A.M. Peak Critical y	P.M. Peak Flow (pcu/hr)	P.M. Peak y Value	P.M. Peak Critical y
Sau Mau Ping Rd	↰	C	2,3	3.500	70					1925	1925	650	0.338	0.338	530	0.275	0.275
WB	←	D	3	3.500						1965	1965	203	0.103		145	0.074	
	←	D	3	3.500						2105	2105	217	0.103		155	0.074	
Hip Wo St	↱	B	2	3.500		20				1830	1830	198	0.108		208	0.114	
NB	↱	B	2	3.500		15				1915	1915	207	0.108		217	0.113	
Shun Lee Tsuen Rd	→	A	1	3.500						1965	1965	366	0.186		261	0.133	
EB	⇉	A	1	3.500		20		92%	74%	1970	1995	367	0.186		265	0.133	0.133
	↘	A	1	3.500		15				1915	1915	357	0.186	0.186	254	0.133	

	PH	ST	GM		FG		
LRT/Pedestrian	Ep	1	6	+	6	=	12
	Fp	3	5	+	8	=	13

Notes:

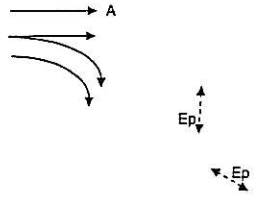
Traffic Flow (pcu/hr)



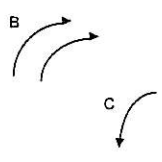
Group		AC	Group		AC
y		0.524	y		0.408
L (sec)		10	L (sec)		10
C (sec)		120	C (sec)		120
y pract.		0.825	y pract.		0.825
R.C. (%)		57%	R.C. (%)		102%

Stage / Phase Diagrams

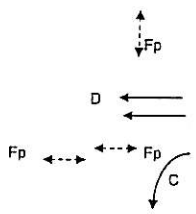
1.



2.



3.



4.

5.

I/G= 6		I/G= 6		I/G=		I/G=	
I/G= 6		I/G= 6		I/G=		I/G=	

Date: 40850.4875347222 | Junction: Sau Mau Ping Rd / Hip Wo St (H)

Proposed Public Rental Housing Development at Sau Ming Road

Environmental Assessment Study Report

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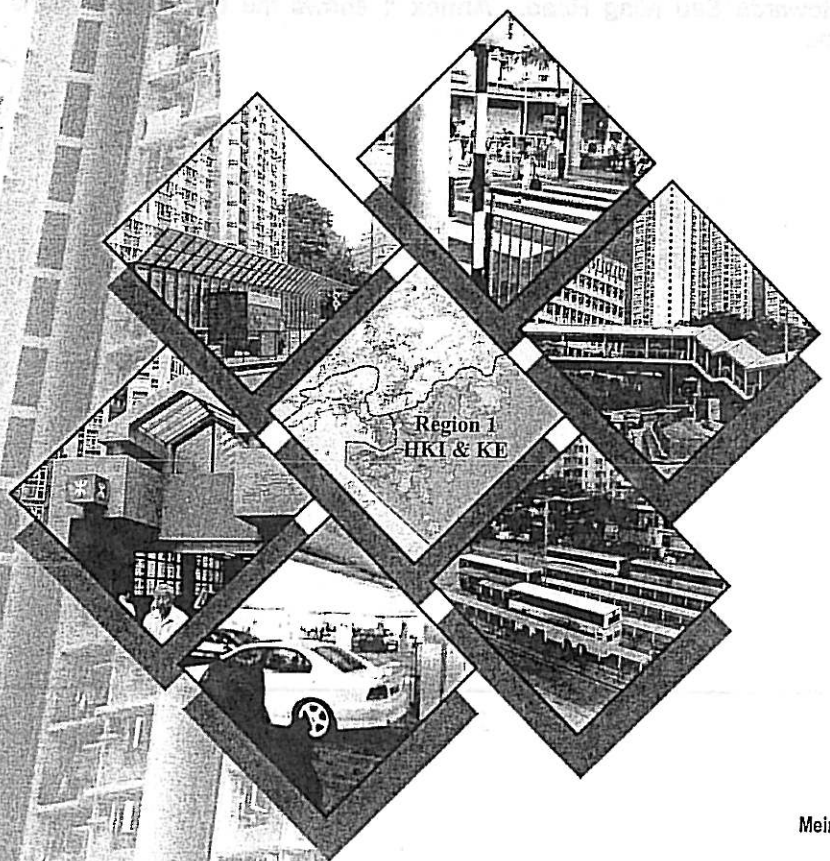
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1



MVA HONG KONG LTD.

in association with

ENVIRON Hong Kong Ltd.
Meinhardt Infrastructure and Environment Ltd.

1.2 Project Location and Scope

The Subject Site is bounded by Sau Ming Road to the east and Hiu Kwong Street to the west. Figure 1 show the location of the Subject Site and its environs.

1.3 Proposed Development

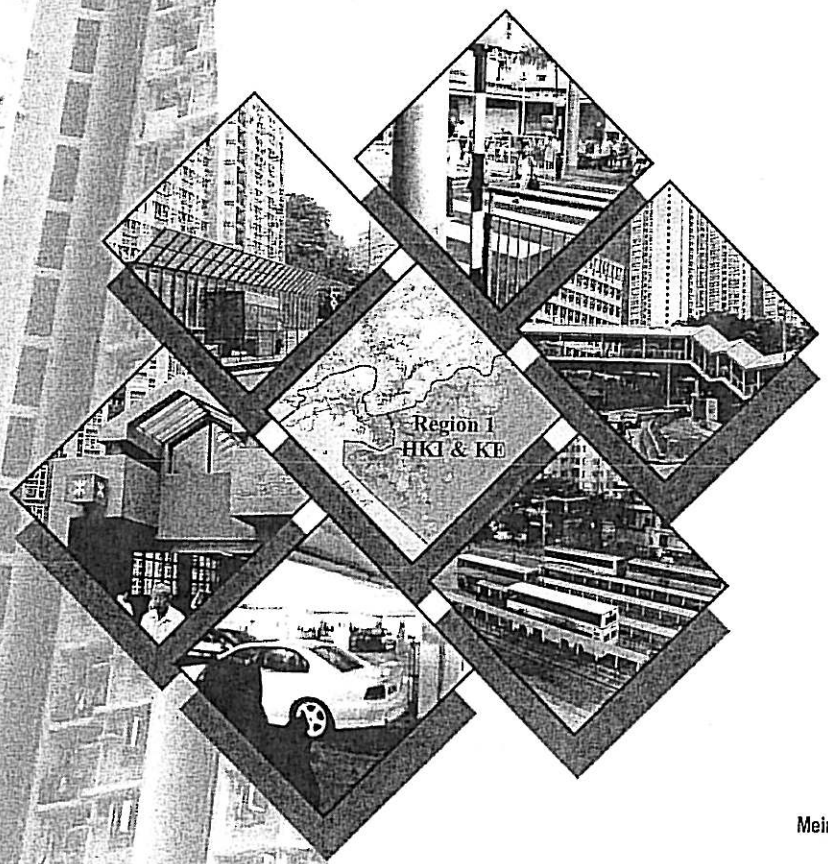
The proposed development at the Subject Site consists of a 1-storey community hall block (about 10.8 metres high) and one 18-storey PRH block on top of a 2-storey accommodation where library and E&M facilities are located. The PRH block will be located behind the community hall of which provide a shielding for the Sau Mui Ping (Central) Bus Terminus. The PRH block is located behind the community hall which could provide the shielding for the PRH from the bus terminus to the north. The bus terminus is located about 25m north of the PRH block. It must be noted that there is currently only one bus lane using the bus terminus as terminal station; and its location is located at the most inner lane. With the location of the non-noise sensitive use (10m tall community hall with 2m tall solid edge parapet wall) in between and provision of buffer distance (~ 25m), it is expected that the potential noise impact from the bus terminus to the proposed PRH block should be minimized.

It must be noted that the PRH block is set back from the adjoining slope facing Hiu Kwong Street in order to comply with the requirements of the rectangular horizontal plane of prescribed windows projected to the boundary of the Subject Site under Building (Planning) Regulations. Similarly, there are prescribe window requirements under the Building Ordinance such that the building block layout cannot be located further southwards.

Figure 2 shows the proposed layout plan and Figure 3 shows the section plan of the proposed development.

The total number of public housing flats is about 350 (with 18 domestic floors); but there will be no units at the 1st and 2nd floor of Wing A facing the community hall and no units at the 1st floor of Wing B facing towards Sau Ming Road. Annex 1 shows the typical floor plans of the proposed PRH block.

2



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2.0 Traffic Noise Impact Assessment

2.1 Assessment Criteria

Noise standards are recommended in Chapter 9, "Environment", of the Hong Kong Planning Standards and Guidelines (HKPSG) for planning against possible noise impact from road traffic, railway and aircrafts. According to the guidelines, the maximum allowed road traffic noise level, measured in terms of L10(1-hr.), at typical facades of new dwellings like the proposed development is recommended to be 70 dB(A).

Putting the criteria in the present scenario, the maximum noise levels due to traffic on the surrounding roads in terms of hourly average (L10) should not exceed 70 dB(A) at the facades of the proposed development.

For the community centre and podium, central air conditioning system will be provided, i.e. they will not rely on the openable window for ventilation. Well gasketted window will be available ant they will only be openable when emergency. As such, the user within the community centre will not be subjected to unacceptable traffic noise impact.

2.2 Assessment Methodology

The assessment concerns the prediction of the maximum hourly L10 traffic noise level at noise sensitive receivers (NSRs) of the proposed development due to the projected traffic data on the adjacent major road networks for year 2032, which is considered as the worst case scenario within 15 years upon completion of the proposed development in end of 2017. Traffic data was predicted by the project traffic consultant – MVA Hong Kong Limited.

The U.K. Department of Transport's procedure "Calculation of Road Traffic Noise" was applied to predict the hourly L10 noise level generated from road traffic at selected representative facades (NSRs) of the proposed development. The predicted noise levels were then compared with the HKPSG noise criterion for assessing the impact.

2.3 Road Characteristics

Sau Ming Road and Hiu Kwong Street are considered to be the dominant sources contributing to traffic noise impact on the NSRs. The information on traffic volume and percentage of heavy vehicle using these roads was attached in **Annex 2**.

2.4 Noise Sensitive Receivers

Noise Sensitive Receivers (NSRs) likely to be subject to higher traffic noise level have been identified in this assessment. Their locations within the site are shown in **Figure 4**. The assessment points are taken at 1.2 m above the floors of the selected storey and 1m away from the facades of openable windows.

2.5 Assessment Results and Proposed Environmental Mitigation Measures

2.5.1 Traffic Noise Mitigation Measure considered

Sau Ming Road runs along from south to the north of the eastern side of the Subject Site; where the Hiu Kwong Street is located west of the Subject Site with a slope located in between. Due to close proximity, it is expected that the proposed public housing block would be subject to relative high traffic noise. In order to minimise the potential traffic noise impact, the following measures have been incorporated or considered.

Building Setback

The site is in linear and narrow shape with area only about 0.3 hectare. Given that at least doubling the setback distance is required to reduce the noise level by 3dB(A), building setback is considered not an effective and practical solution to the potential traffic noise problem for this site. Due to the same site constraint, alternative building forms and disposition to minimize the angle of views are also not practical.

The PRH block is set back from the adjoining slope facing Hiu Kwong Street in order to comply with the requirements of the rectangular horizontal plane of prescribed windows projected to the boundary of the Subject Site under Building (Planning) Regulations. Similarly, there are prescribe window requirements under the Building Ordinance such that the building block layout cannot be located further southwards.

Increase of Buffer Distance

The proposed 18 storeys public housing block (PHB) sits on top of public library to increase the buffer distance from the residential floors to the nearby traffic noise source.

Provision of Non-noise Sensitive Use as Noise Barrier

The PRH block will be located behind the community hall of which provide a shielding for the Sau Mui Ping (Central) Bus Terminus. Non-noise sensitive Community hall block is located between the proposed public housing block and part of the Sau Ming Road to the north.

The PRH block is located behind the community hall which is expected to provide the shielding for the PRH from the bus terminus to the north. The bus terminus is located about 25m north of the PRH block. It must be noted that there is currently only one bus lane using the bus terminus as terminal station; and its location is located at the most inner lane. With the location of the non-noise sensitive use (10m tall community hall with 2m tall solid edge parapet wall) in between and provision of buffer distance (~ 25m), it is expected that the potential noise impact from the bus terminus to the proposed PRH block should be minimized.

Site Boundary Noise Barrier

In considering the site constraints, 6m high noise barrier is proposed at the western boundary along the slope crest facing Hiu Kwong Street. Cantilevered noise barrier with top level at 101.55 mPD is proposed at the eastern boundary of the PHB along Sau Ming Road and it will be projected not exceeding the kerbline of the Sau Ming Road (see Figure 4).

Gable End Wall

In view of the small and elongated area from north to south, it is considered that gable end wall is not effective for the current layout.

Architectural Fin

1.0m architectural fin is proposed to project from the external wall at NSR N10, and 1.5m architectural fin is proposed at NSR N11, N15, N16, N17, N22, N23 and N24 (see Figure 4). Textured spray paint would be applied on the fins surface to create a non-smooth surface which can provide certain degree of noise diffraction effect in order to minimize the potential reverberant noise at the architectural fin.

2.5.2 Assessment Result

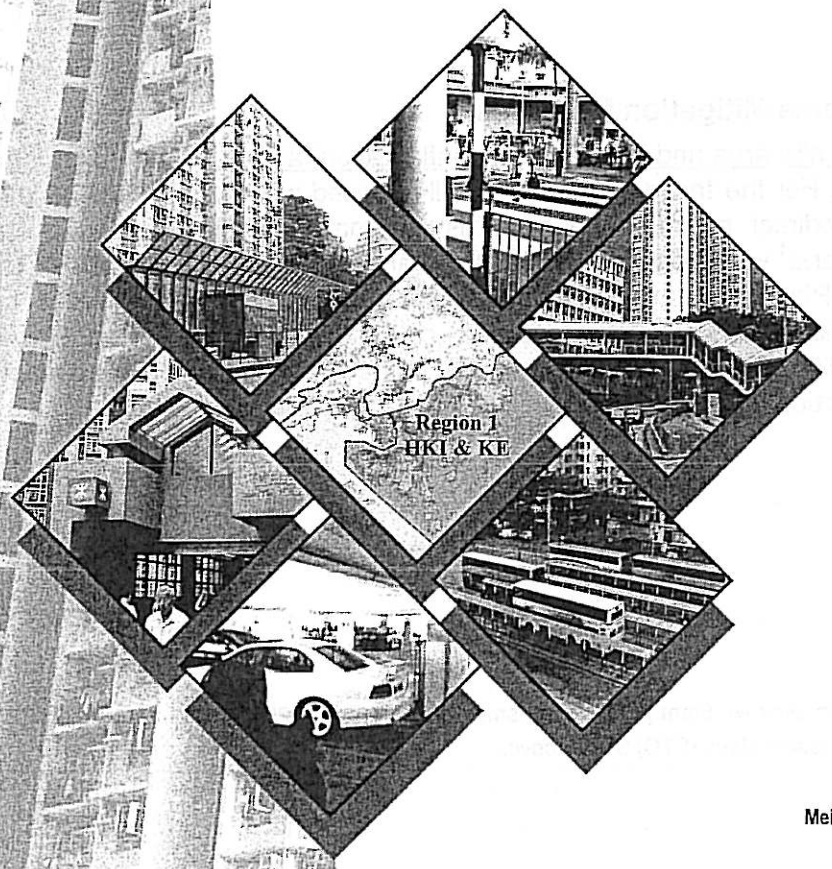
The modelled results at the representative NSRs are shown in **Annex 3**. With the implementation of all effective and practical traffic noise mitigation measures after considering the small and irregular site area, there are about 33 out of 325 public housing units exceeding the relevant traffic noise standard by 1 dB(A). The compliance rate is about 90% with maximum noise level of 71dBA at the affected units.

2.5.2.1 Indirect Noise Mitigation Measures

In view of the limited site area and irregular site configuration, all practical mitigation measures have been explored. For the facades which are still exposed with noise levels exceeding the 70 dB(A) criteria, indirect mitigation measure is recommended. Openable well-gasketted window with 6 mm pane[1] would be provided in accordance with the Appendix 4.4 of Chapter 9 of the Hong Kong Planning Standard and Guidelines (Suitable Window Types for Noise Insulation) to those flats with noise level in excess of 70dB(A) as a last resort. However, the provision of air conditioning units is subject to HKHA's prevailing policy. A/C window hoods and electricity connections are provided for rental flats to facilitate A/C installation.

[1] Openable well-gasketted window, 6mm pane, or transmission loss (TL) of 28 dB(A) or above in 250 Hz octave-band and sound transmission class (STC) 31 or above.

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3.0 Vehicular Emission Impact Assessment

3.1 Scope of Work

This assessment is to quantify the potential air quality impact due to the traffic emissions from the surrounding roads upon the sensitive receivers of the proposed public housing development on the Subject Site through computer modelling. Air pollutants including Nitrogen Dioxide (NO_2) and Respirable Suspended Particulate (RSP) are considered as criteria pollutant and taken into account in this assessment. The predicted air pollutants concentrations at sensitive receivers will then be compared with the relevant Air Quality Objectives (AQOs). Appropriate mitigation measures, if required, will be recommended if there is predicted exceedance in AQOs.

The emission model EMFAC-HK version 1.2 dated June 2005 (the EMFAC-HK Model) is adopted to calculate the vehicle emission factors of the air pollutants.

3.2 Assessment Criteria

Assessment criteria are based on the Hong Kong Air Quality Objectives (AQO) for air pollutants given in Chapter 9, "Environment", of the Hong Kong Planning Standards and Guidelines (HKPSG) for air pollution control. They are listed in **Table 1**.

Table 1 Hong Kong Air Quality Objectives

Pollutant	Pollutants Concentration (µg/m3) Averaging Time			
	1 hour (i)	8 hours (ii)	24 hours (ii)	1 year (iii)
NO_2	300	--	150	80
RSP	--	--	180	55

(i) Not to be exceeded more than 3 times per year
(ii) Not to be exceeded more than once per year
(iii) Arithmetic means
N.B. Concentrations to be measured at 298 K and 101.325 kPa (one atmospheric pressure).

3.3 Ambient Air Quality

The background concentrations of NO_2 and RSP in the Study Area (within 500 meters from the Subject Site) have been assumed based on a 5-year (from 2006 to 2010 for NO_2 and RSP) annual average concentrations from Kwun Tong Station. The background concentrations of NO_2 and RSP for the purpose of calculation of the cumulative air quality impact are summarized in **Table 2**.

Table 2 Background Air Pollutant Levels assumed in the Study Area

Pollutant	5-year annual average concentration
NO_2	60 µg/m^3
RSP	50 µg/m^3

3.4 Air Sensitive Receivers

Air Sensitive Receivers (ASRs) scattered around the Subject Site as shown in **Figure 6** have been identified for this assessment as a sensitive testing with the emission factor calculated by the EMFAC-HK model. The assessment heights for the ASRs are taken from the ground level beginning from breathing zone (1.5m above ground, mAG) with increment of 5m. The elevation of ASRs is taken up to 26.5mAG.

3.5 Source Types and Emission Strength

As the proposed development is scheduled for completion by end of 2017, the traffic forecast at the design year 2032 with emission factors calculated by the EMFAC-HK model is taken into account in this assessment. The 2032 traffic forecast for the carriageways surrounding the Subject Site is shown in **Annex 2**. All roads situated within 500m radius from the Subject Site have been taken into account in the assessment.

3.6 EMFAC-HK Model

3.6.1 Fleet Average Emission Factors

The emission model EMFAC-HK version 1.2 dated June 2005 is adopted to calculate the vehicle emission factors of NO_2 and RSP of the roadway network within 500m Study Area of the Subject Site.

The traffic data used for the assessment are provided by the Traffic Consultant. The vehicle type distributions obtained from traffic count survey, in 10 vehicle classes, were collated. The 3 types of vehicles in the traffic forecast were first sectored to 10-class according to surveyed vehicle distribution. The vehicle classification defined in the EMFAC-HK Model is available from the vehicle population in the following document (the EPD Document) available from the website of Environmental Protection Department (EPD). The latest version for year 2008 was provided by EPD and adopted for this study. The estimated 16-class distribution for the current exercise was then derived by further sectoring the relevant classes in the 10-class surveyed vehicle distribution in proportion to this recorded distribution in the EPD Document.

EPD Document:
2008 Vehicle Licensed Number by Age and Technology Group Fractions.xls

The traffic forecast data has been submitted to the Transport Department (TD) for review and TD has made no adverse comment on the traffic data.

Vehicular Emission Rate Estimation

Vehicle emission rates are estimated following the methodology stipulated in "Guideline on Modelling Vehicle Emissions" issued by EPD (the EPD Guideline). The EPD Guideline is available from the following EPD EMFAC-HK website (the EPD Website).

http://www.epd.gov.hk/epd/english/environmentinhk/air/guide_ref/emfac.html

Project specific traffic data for year 2032 (**Annex 2**) is incorporated into the EMFAC-HK model to estimate the vehicular emission rate;

Vehicle Classes

Classification of the EMFAC-HK vehicle is based on the most recent data in the following EPD document (the EPD Document) which is available from the abovementioned EPD website. A listing of the EMFAC-HK vehicle classes is provided below in **Table 3**.

Table 3 EMFAC-HK Vehicle Classes

Description	Fuel Type	Gross Vehicle Weight	Vehicle Class	Symbol
Motor Cycles	Petrol	All	MC	MC11
Taxi	LPG, Diesel	All	Taxi	TAXI3
Public Light Buses	LPG, Diesel	All	PLB	MC5
Private Light Buses	LPG, Petrol, Diesel	<=3.5 tonne	PrLB(4)	TAXI4
Private Light Buses	LPG, Petrol, Diesel	>3.5 tonne	PrLB(5)	TAXI5
Petrol Private Cars & Light Goods Vehicles	Petrol	All	PC+LGV(1)	MC1
Diesel Private Cars & Light Goods Vehicles	Diesel	<=2.5 tonne	PC+LGV(3)	MC3
Light Goods Vehicles	Diesel	2.5-3.5 tonne	LGV(4)	MC4
Light Goods Vehicles	Diesel	>3.5 tonne	LGV(6)	MC6
Medium Goods Vehicles	Diesel	<15 tonne	HGV(7)	MC7
Medium & Heavy Goods Vehicles	Diesel	>=15 tonne	HGV(8)	MC8
Non-franchised Buses	Diesel	<=6.4 tonne	NFB(6)	TAXI6
Non-franchised Buses	Diesel	6.4-15 tonne	NFB(7)	TAXI7
Non-franchised Buses	Diesel	>=15 tonne	NFB(8)	TAXI8
Single Deck Franchised Buses	Diesel	All	FBSD	TAXI10
Double Deck Franchised Buses	Diesel	All	FBDD	MC10

Model Year

Calendar year 2017, which is the completion year of the proposed development, is chosen to be the final Model Year in EMFAC-HK model to represent the worst case scenario emissions. Over time the vehicle fleet is becoming cleaner as the fleet incorporates newer vehicles adhering to more stringent emission standards (see the Appendix II – "Implementation Schedule of Vehicle Emission Standards in Hong Kong (Updated as of June 2010)" of the EPD Guideline); therefore the year of highest emissions would occur in the completion year of the proposed development.

Road Grouping

The roadway network within the Study Area consists of 24 distinct roadway links. All concerned roadways shall be characterized into different road type in accordance with its flow pattern (continuous or interrupted flow) and design speed limits. In this study, all concerned roads are characterized into one road type for EMFAC modeling since they contain the same 50 kilometer per hour (kph) speed limit and similar flow pattern.

Modeling Modes

Per EPD guidance, the EMFAC-HK Model was run in Burden mode.

Exhaust / Evaporation Technology Fractions

Vehicle classes are grouped with different exhaust technology indexes and technology fractions. Each technology group represents a distinct emission control technologies. Exhaust

technology fractions has made reference to the EPD Document updated to year 2008. According to Appendix II of the EPD Guideline, assumptions on future emission standards are made. The technology fractions adopted for this analysis are presented in **Annex 4-1**.

Vehicle Population

According to the EPD Guideline, the vehicle population has made reference to the latest vehicle age distribution (in 2008) as provided in the EPD Document. There are available data on the overall growths of broad vehicle types (e.g. overall growth rates for the total population of private vehicles in different years). However, more specific growth rates and retention rates for vehicles of different age groups could not be identified. Due to the data limitation, the vehicle age distributions in the Model Year could not be projected, and therefore it is assumed that the vehicle age distributions in the Model Year would be the same as that in 2008. Taxis were assumed to be 100% LPG fueled due to the ban of diesel taxis in 2001. The vehicle populations used in this analysis are presented in **Annex 4-2**.

Accrual Rate

Per the EPD Guideline, default accrual rate data available from the EMFAC-HK Model is used.

Daily Variation of Vehicle Miles Traveled (VMT)

Hourly VMT is estimated based on the forecast traffic flow by hour for each link multiplied by the associated road link length (in miles). The hourly VMT for each road type is the summation of hourly VMT of all concerned roads characterized into the road type. The VMT data for the Model Year provided by Project Traffic Consultant is summarized in **Annex 4-3**.

2 options / approaches can be used to calculate the emission rate, which will be described in the following section.

For Option 1: due to the fact that the modeling emission output (in Ton) of EMFAC-HK Model contains only 4 decimal number, significant data / accuracy lost is anticipated if the VMT input to the Model is small (for example, if the abovementioned project specific VMT is inputted, insignificant or even zero emission output may be obtained). With reference to the EPD approved Environmental Impact Assessment Report for project "Improvement to Pok Oi Interchange" (the EIAR) in which a multiple factor of 1000 was first multiplied to the Site Specific VMT before input to the EMFAC Model for enhancing the accuracy of modeled pollutant emission result (in Ton); the emission result was then divided by the same factor in order to obtain the site specific pollutant emission (in Ton). It can be concluded from the EIAR adopted method that the emission factor is directly proportional to the VMT input to the EMFAC-HK Model.

For Option 2: this approach is similar to Option 1 that using the directly proportional relationship between VMT input and Emission Factor, except that the EMFAC-HK Model default VMT, which represents the VMT for the whole Hong Kong territory (in this approach, the multiple factor is the ratio of Default VMT (for territory) and Site Specific VMT), is applied for the modeling first in order to obtain a more accurate pollutant emission result, while the obtained emission result (in Ton) is divided by the same ratio to obtain site specific emission result. The following equation demonstrates the concept of the abovementioned approach:

Site Specific Pollutant Emission (in Ton)

= Pollutant Emission from model out (for HK territory) ÷ (VMT for HK territory / Site Specific VMT)

Sample EMFAC-HK Modeling results by using the abovementioned two approaches are simulated and the corresponding pollutant emission factor is calculated. It is confirmed that the

two approaches lead to the same site specific emission factor. **Annex 4-4** shows the details of the simulation. In this assessment, Option 2 is adopted.

Note: the two approaches were only applied to the VMT of vehicle type "PC+LGV"

Diurnal Variation of Daily Trips

The daily trips are used to estimate the cold start emissions of the petrol vehicles only. Therefore, trips for vehicles other than petrol type vehicles shall be assumed to be zero. As a conservative approach, the default trip data, which represent the trip for the whole Hong Kong territory, is adopted in this assessment. As worst case scenario, it is assumed that cold start occurs at all concerned road.

Hourly Temperature and Relative Humidity Profile

Hourly temperature and relative humidity data for year 2010 for King's Park Station and Hong Kong Observatory Weather Station respectively are incorporated in EMFAC-HK model inputs. The raw meteorological data files are enclosed as **Annex 4-5**.

Speed Profile

Forecast speed profile for concerned road type are available for a.m. (08:00 – 09:00) and p.m. (18:00 – 19:00) rush hour for each vehicle type is developed by the Traffic Consultant. It is assumed that the speed profile is applicable for all roads under the same road type. As a conservative approach, the a.m and p.m rush hour speed profiles are employed for hours between 00:00 and 12:00 and between 12:00 and 24:00, respectively. The hourly speed profile are implemented in the EMFAC-HK Model to derive estimates of hourly emission rates. The forecast peak-hour speed profile is shown at **Annex 4-6**.

3.6.2 Predicted Emission Factors by EMFAC-HK

As the output hourly emissions from the EMFAC-HK model are in tonnes per hour, they are firstly divided by the year 2032 VMT, which is reasonably expected to provide the highest VMT data within 15 years upon completion of the proposed development in 2017, to obtain the emission factors in grams per mile per vehicle of each hour.

The calculated hourly emission factors in g/veh-mile of each vehicle type, which is based on the worst-case final Model Year (year 2017) and the worst-case traffic data (for year 2032) (**Annex 4-7** refer), are adopted for the calculation of composite emission factor of each road for each hour. As a worst case scenario, the maximum hourly composite emission factor together with the maximum hourly traffic flow are incorporated into the air dispersion modeling. **Table 4** tabulates the maximum composite emission factors of the assessed air pollutants for each road within the Study Area.

Table 4 Maximum Composite Emission Factors of Criteria Air Pollutants for the year 2017

Road	Composite Emission Factor (g/veh-mile)	
	RSP	NO_x
7	0.17	1.30
8	0.16	1.20
9	0.12	0.99
10	0.10	0.76
13	0.18	1.09

14	0.17	1.06
15	0.16	1.09
16	0.17	1.16
17	0.16	1.09
18	0.17	1.06
19	0.16	1.06
20	0.15	1.01
25a	0.19	1.38
25b	0.20	1.59
25c	0.20	1.59
26a	0.19	1.69
26b	0.20	1.76
26c	0.16	1.17
27	0.21	1.36
28	0.19	1.11
29	0.14	0.94
30	0.12	0.72
53	0.14	0.94
54	0.12	0.72

The following assumptions were adopted throughout the study:

i. NO_X is a mixture of NO and NO_2;
ii. 20% of NO_X is assumed to be NO_2;
iii. NO is modelled as "Inert Gas", with a molecular weight of 46g;
iv. The proportion of RSP in the vehicular emission is assumed to be 100% of the particulate matter which is, in general, less than 10 μm in the aerodynamic diameter.

3.7 Vehicular Emission Dispersion Model

The dispersion model "Caline4" is used to calculate the pollutants levels at the ASRs. Typical result files containing all the control parameters, input data and the calculated pollutants concentrations are enclosed in **Annex 4-8** for reference.

The maximum hourly concentrations of NO_2 and RSP at the representative ASRs have been predicted. Since hourly AQO for RSP is not available at the meantime, the modelled peak hour RSP concentrations have been converted to daily average concentration. It is assumed that the predicted maximum peak hour traffic flow would last for 10 hours and the wind would blow at the worst direction for 24 hours. Therefore a conversion factor of 0.4 has been applied to convert 1-hour RSP level to 24-hour RSP.

Owing to the limitation of the computer model, the difference between the road elevations cannot exceed the range from -10 to +10m. For worst case scenario, the elevations of all the road segments input were assumed to be 0m. The assessment points were assumed to be 1.5m above the roads.

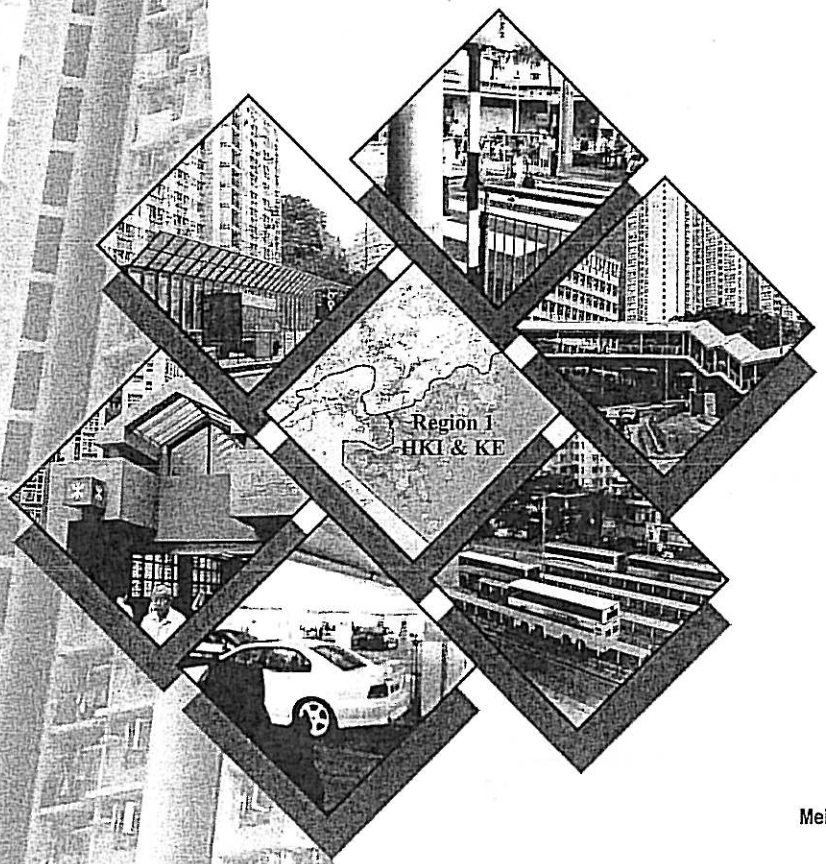
3.8 Meteorological Data and Condition

As the peak hour traffic flows occurs during daytime, neutral meteorological conditions have been assumed. The most commonly occurred Pasquill stability class **F** with a wind speed of 1m/s has been used as the day-time weather condition. An average mixing height of 500m has been used in the model. Standard derivation in wind direction of **6°** has been applied. The worst case wind direction has been predicted automatically by the model for each ASR.

3.9 Assessment Results

Air pollutant levels at the selected ASRs have been simulated based on emission factor modeled using the worst-case final Model Year (year 2017) and the worst-case traffic data (for year 2032); and presented in **Annex 4-8**. Background air quality level has been included in the modelled results. The pollutant concentrations at all the ASRs showed a decreasing trend at increasing heights and are found within the AQO Standards. Contour plots of the air pollutant modelled at 1.5m above ground are also shown on **Annex 4-8**. The assessment result confirms that adverse air quality impact arising from road traffic emissions is not anticipated.

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4.0 Industrial Air Quality Impact Assessment

4.1 Scope of work

The objective of this study is to assess the air quality impact on the proposed residential development due to industrial emissions within the Study Area. Site visit has been carried out to check the validity of the chimney data/information.

4.2 Assessment Criteria

Assessment Criteria are based on Air Quality Objectives (AQOs) for major air pollutants presented in Chapter 9, "Environment", of the Hong Kong Planning Standards and Guidelines (HKPSG) for air pollution control. Sulphur Dioxide (SO_2) and Nitrogen Dioxide (NO_2) have been chosen as the criteria pollutant for assessment of air quality impact from industrial emissions. The standards for SO_2 and NO_2 levels used throughout the assessment are given in **Table 5**.

Table 5 Hong Kong Air Quality Objectives for SO_2 & NO_2 Concentration

Averaging Time	Sulphur Dioxide Level (µg/m3)	Nitrogen Dioxide Level (µg/m3)	Remarks
1 Hour	800	300	Not to be exceeded more than three times per year
24 Hours	350	150	Not to be exceeded more than once per year
1 Year	80	80	Arithmetic means

4.3 Source Description and Emissions Inventory

Industrial operations involving the burning of solid and fossil fuel are major emission sources of anthropogenic SO_2 and NO_2. The concentration and dispersion of SO_2 and NO_2 emission are related to the type and age of the boiler, the type and quantity of fuel consumption, chimney height and size, and the exit temperature of the emission.

An onsite survey was conducted to verify the presence of chimneys within 500m from the subject site. Direct consultation with the chimney operator has been made where possible to verify whether the chimney is still in operation and the emission details (e.g. fuel consumption rate) if available. If such details cannot be obtained, it will be assumed that the chimney is in operation and previous chimney data obtained before will be referenced. A total number of **four** diesel fuel consuming chimneys have been identified close to the 500m radius of the subject site from the site visits. Characteristics of the chimneys are listed in the **Annex 5**. Location of the active chimneys identified is shown in **Figure 7**. The chimneys are belonging to the United Christian Hospital and the restaurants at Estates in the vicinity.

According to the amended Air Pollution Control (Fuel Restriction) regulation, liquid fuel having a sulphur content not exceeding 0.005% by weight are now required effective October 2008, Such restriction was applied and assumed to be followed in the calculation of the SO_2 emission strength of each stack based on maximum fuel consumption rate.

For NO_2 emission from chimneys, NOx emission factor of 0.0024kg/Litre of fuel consumption as stated in table 1.3-1 of USEPA AP42 Fifth Edition, which has also been adopted in the EIA report titled: "Agreement No. CE 16/99, Feasibility Study for Housing Development at Whitehead and Lee On in Ma On Shan, Sha Tin" and "Agreement No. CE 10/95, Tin Shui Wai

Development Engineering Investigations for Development of Areas 3, 30 & 31 of the Development Zone and the Reserved Zone", was adopted. A NO_2/NO_x factor of 30% is adopted.

4.4 Computer Modelling

The dispersion of SO_2 and NO_2 was studied and modelled using the software "Industrial Source Complex Short Term Version 3 (ISCST3)" developed by Trinity Consultants Incorporated. This model is based on the principle of Gaussian dispersion and is widely acceptable by authorities world-wide including the United States Environmental Protection Agency (USEPA) and the Hong Kong Environmental Protection Department (EPD).

4.5 Ambient Air Quality

The background concentrations of NO_2 and SO_2 in the Study Area have been assumed based on a 5-year (from 2006 to 2010 for NO_2 and SO_2) annual average concentrations from Kwun Tong Station. The background concentrations of NO_2 and SO_2 for the purpose of calculation of the cumulative air quality impact are summarized in **Table 6**.

Table 6 Background Air Pollutant Levels assumed in the Study Area

Pollutant	5-year annual average concentration
NO_2	60 $\mu g/m^3$
SO_2	15 $\mu g/m^3$

4.6 Air Sensitive Receivers

The locations of the air sensitive receivers (ASRs) were also shown in **Figure 6**. The variation of industrial emission, NO_2 and SO_2 concentration with building height were predicted at 1,500 mm (breathing zone) from ground level to the top floor with 5m interval.

4.7 Meteorological Data

As meteorological data of the year 2007 to year 2009 at Junk Bay Weather Station has less than 90% valid data, another set of meteorological data for year 2010 at King's Park Weather Station where has similar inland urban topography characteristic has been obtained from the Hong Kong Observatory and inputted into the dispersion model. Parameters used include

- Hourly wind direction;
- Hourly wind speed with minimum assumed as 1m/s;
- Hourly Pasquill stability class (A to F);
- Hourly ambient air temperature (°K);
- Morning and afternoon mixing heights (m); and
- Total sky cover, and sky cover and ceiling height of the 1^{st} - 4^{th} layer.

4.8 Results and Discussions

The predicted chimney emission concentrations (NO_2 and SO_2) from the vicinity industrial activities at the representative ASRs are shown in **Annex 5**. The modelling results showed that with the current indicative layout, none of the residential sensitive receivers will be adversely affected by industrial chimney emission. The current indicative master layout plan is

considered compatible with the chimney emission profile in avoiding the adversely affected areas.

4.9 Cumulative Impacts

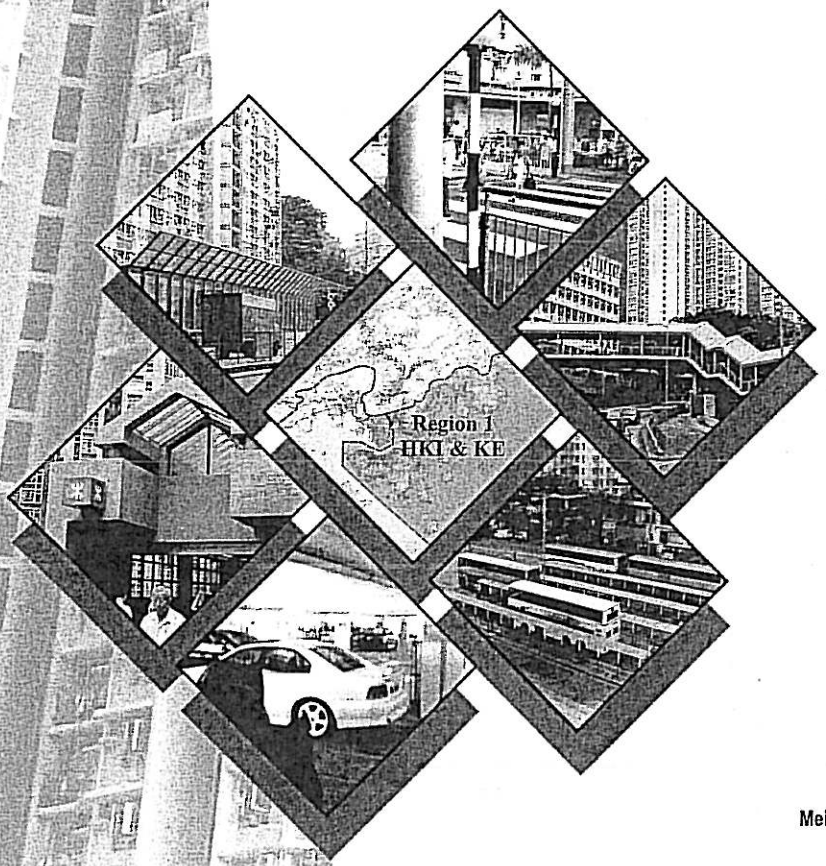
Cumulative concentration of NO_2 (rough estimation) from industrial emission and vehicular emission is also shown in **Annex 6**. The modelling results showed that the predicted cumulative NO_2 concentration at all representative residential sensitive receivers will comply with the relevant AQOs.

RSP is expected to be part of the major pollutant from vehicular emission but minor pollutant from chimney in view of the different fuel used and having a regulation on controlling dust level (Air Pollution Control (Smoke) Regulations). The predicted maximum RSP level at the Subject Site is well below from the relevant AQO with the maximum level of 55 ug/m^3. Since there is sufficient buffer distance between the air sensitive uses and road network as well as the chimney in the vicinity, it is expected that the cumulative RSP will be below form the relevant AQO.

Since ultra-low sulphur diesel fuel is using in Hong Kong, the predicted SO_2 concentration at the Air Sensitive Use is well below the relevant AQO standard (Annex 5) with the maximum value of 16 ug/m3 ; while SO_2 is minor pollutant in the vehicular emission and sufficient buffer distance between the air sensitive use and road network, it is expected that the cumulative SO2 concentration will also be well below from the relevant AQO.

The Subject Site would not be subjected to unacceptable air quality impacts.

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5.0 Overall Conclusions

Traffic noise impact, vehicular emission impact and chimney emission impact are the major environmental issues to be addressed for the Subject Site.

Environmental mitigation measures in terms of provision of non-sensitive building, increase of buffer distance, careful sitting of the PRH block, provision of boundary wall, provision of architectural fin and cantilevered noise barrier have been recommended after considering the topographical character and the compliance with the Building Ordinance in particular of prescribe window requirement. The percentage of compliance of the subject site is about 90% with the environmental protection measures in place.

For the facades which are still exposed with noise levels exceeding the 70 dB(A) criteria, indirect mitigation measure is recommended. Openable well-gasketted window with 6 mm pane[2] would be provided in accordance with the Appendix 4.4 of the Chapter 9 of the Hong Kong Planning Standard and Guidelines (Suitable Window Types for Noise Insulation) to those flats with noise level in excess of 70dB(A) as a last resort. However, the provision of air conditioning units is subject to HKHA's prevailing policy. A/C window hoods and electricity connections are provided for rental flats to facilitate A/C installation. With the provision of the direct and indirect mitigation measures, traffic noise impact to be experienced by the future residents will be minimized.

With the location of the non-noise sensitive use (10m tall community hall with 2m tall solid edge parapet wall) in between and provision of buffer distance (~ 25m), it is expected that the potential noise impact from the bus terminus to the proposed PRH block should be minimized.

Air quality impact due to vehicular emissions and chimney emissions has been addressed. Vehicular emission impact assessment results indicated that both adverse vehicular emission impact and adverse chimney emission impact upon the proposed development is not anticipated. The predicted levels of the criteria pollutants obtained based on a worst-case representative scenario are all below the relevant AQO standards at the air sensitive receivers.

The environmental assessment confirms the feasibility of the proposed PRH development adjoining the Sau Ming Road from environmental point of view.

[2] Openable well-gasketted window, 6mm pane, or transmission loss (TL) of 28 dB(A) or above in 250 Hz octave-band and sound transmission class (STC) 31 or above.

Figures

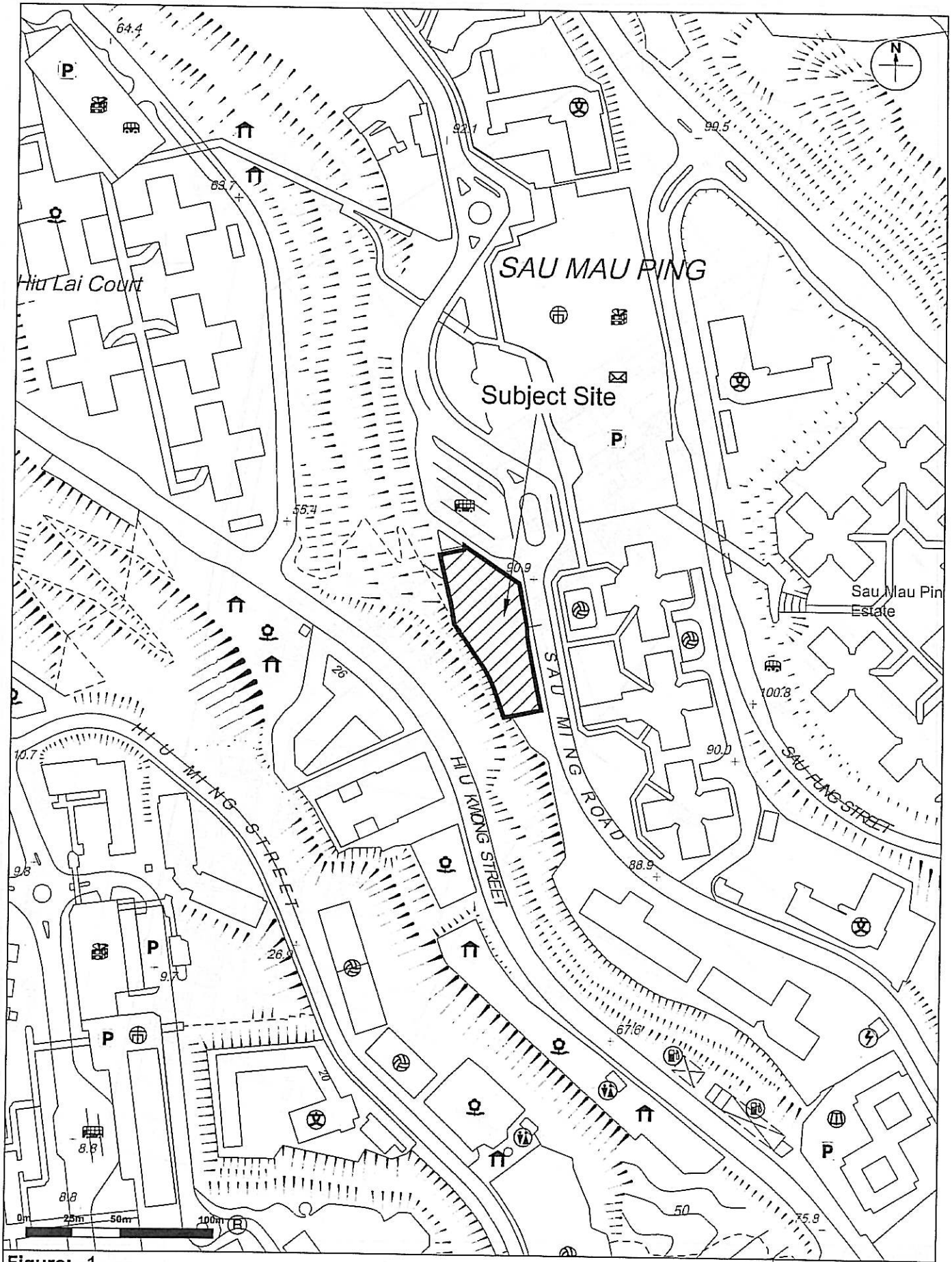


Figure: 1

Title: Location of the Subject Site and its Environs

Project: Environmental Assessment Study for Public Rental Housing Development at Sau Ming Road

ENVIRON	
Drawn by:	SL
Checked by:	TC
Rev.:	2.2
Date:	Feb 2011



Figure: 2	ENVIRON
Title: Proposed Master Layout Plan	Drawn by: EC
	Checked by: TC
Project: Environmental Assessment Study for Public Rental Housing Development at Sau Ming Road	Rev.: 2.4
	Date: May 2011

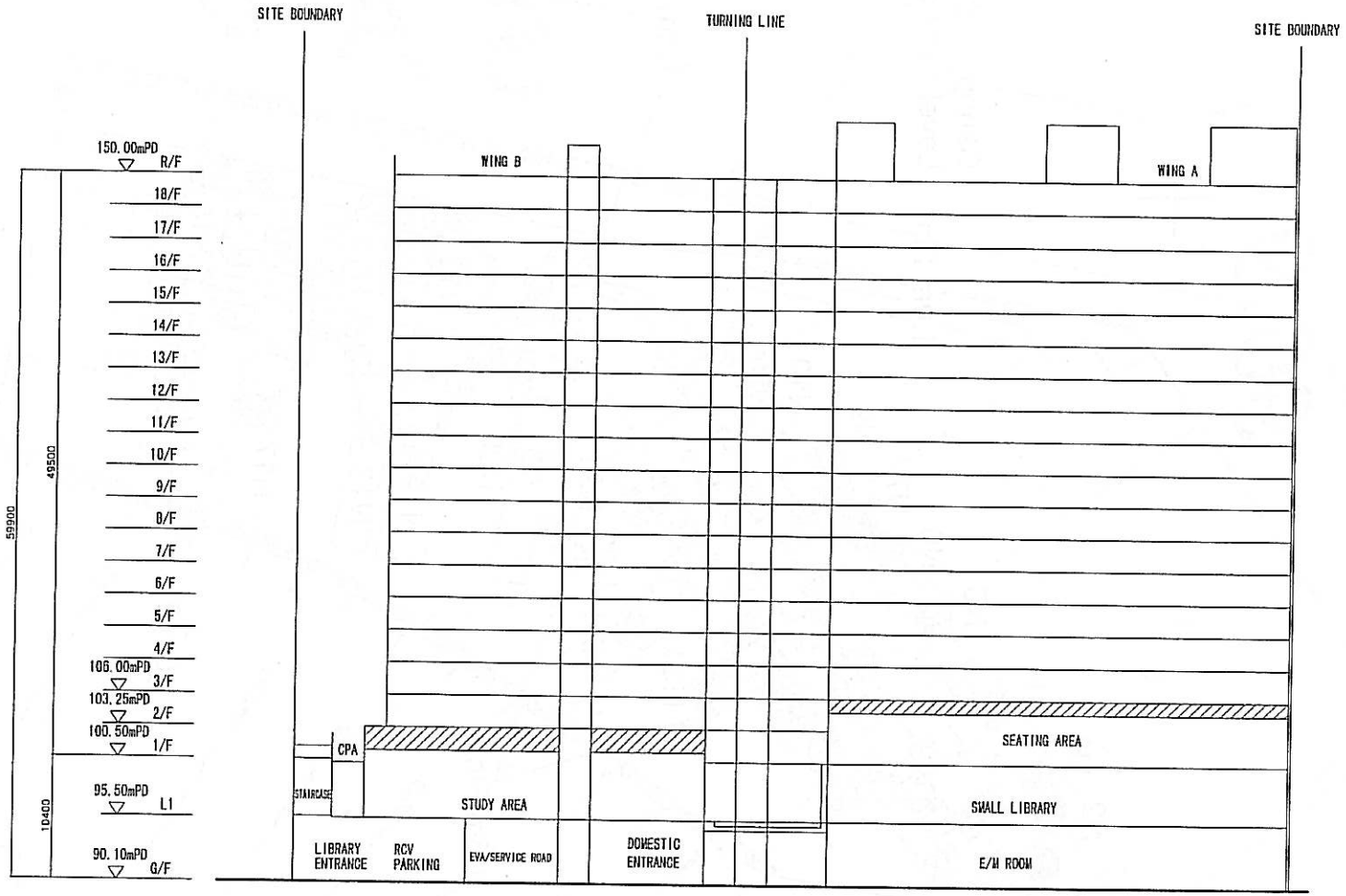


Figure: 3

Title: Section of the Proposed Public Housing Development

Project: Environmental Assessment Study for Public Rental Housing Development at Sau Ming Road

ENVIRON	
Drawn by:	EC
Checked by:	TC
Rev.:	2.4
Date:	May 2011

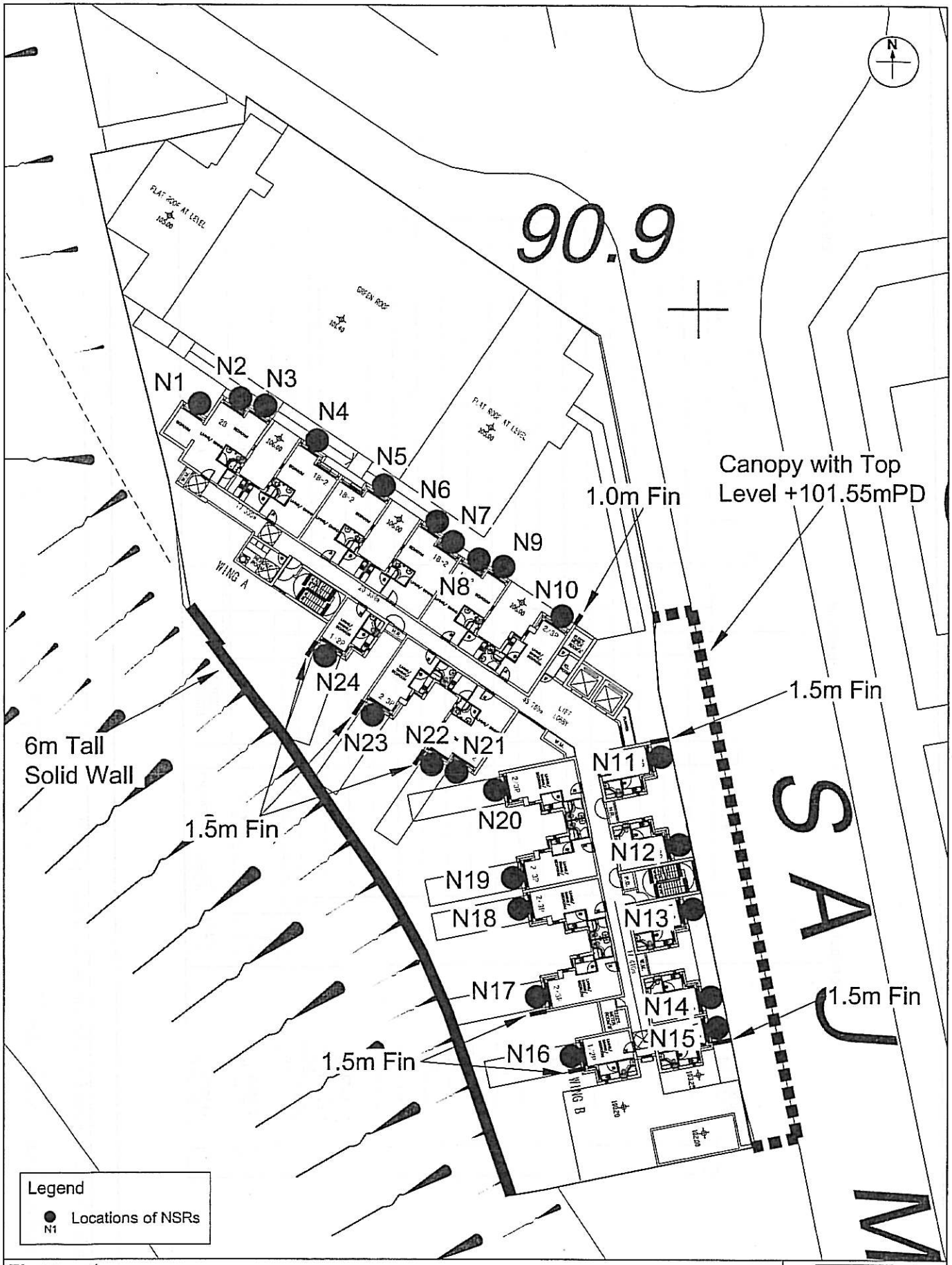


Figure: 4	ENVIRON
Title: Locations of the Representative Noise Sensitive Receivers	Drawn by: EC
	Checked by: TC
Project: Environmental Assessment Study for Public Rental Housing Development at Sau Ming Road	Rev.: 2.4
	Date: May 2011

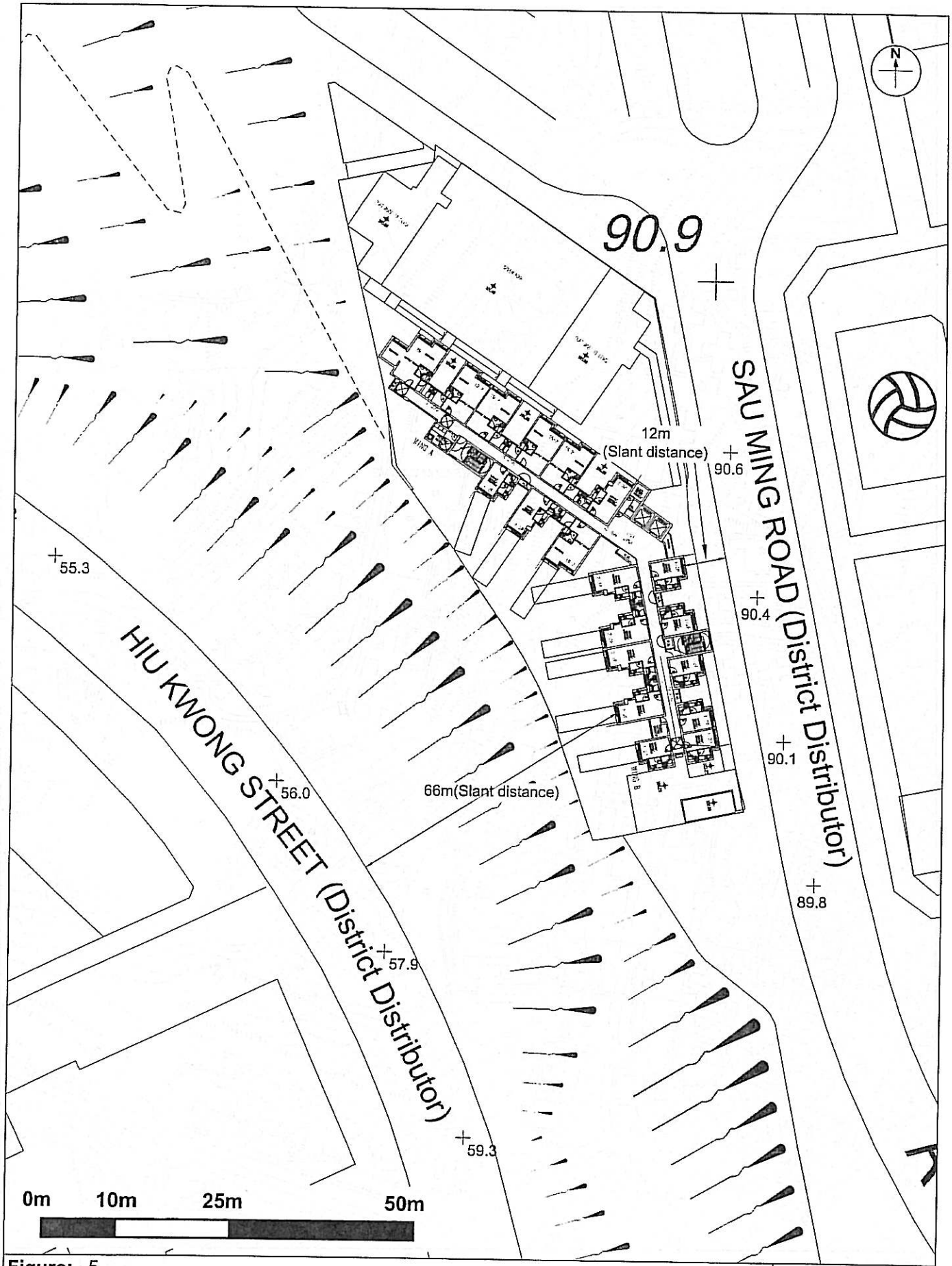


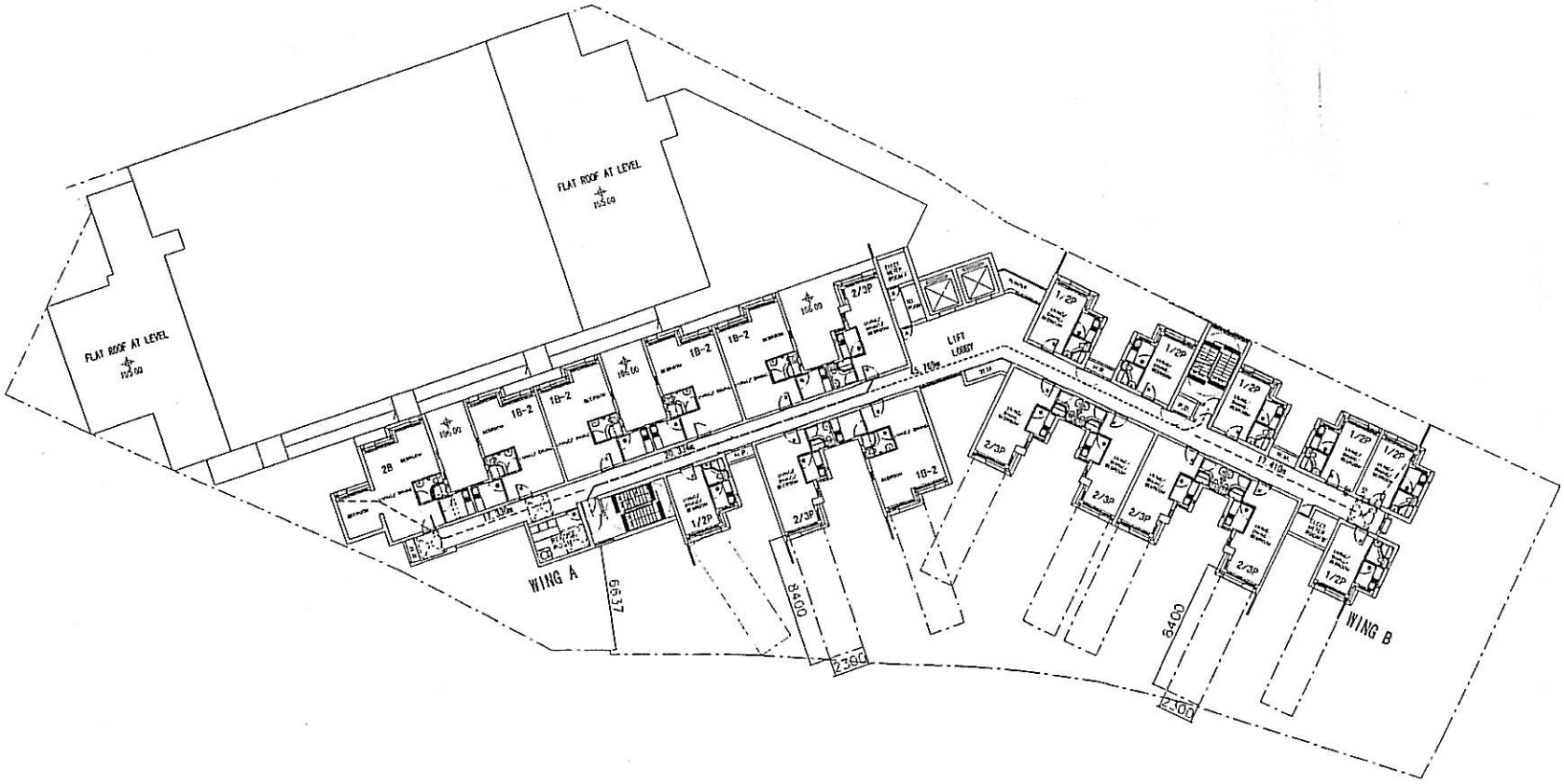
Figure: 5	ENVIRON
Title: Separation Distance between the Air Sensitive Use and nearby Road Network	Drawn by: EC
	Checked by: TC
Project: Environmental Assessment Study for Public Rental Housing Development at Sau Ming Road	Rev.: 2.0
	Date: May 2011



Figure: 6	ENVIRON
Title: Location of Active Chimney within 500m from Subject Site	Drawn by: EC
	Checked by: TC
Project: Environmental Assessment Study for Public Rental Housing Development at Sau Ming Road	Rev.: 3.0
	Date: Aug 2011

Annex 1:
Typical Floor Plans of the Proposed Development

N



PROPOSED PUBLIC RENTAL HOUSING DEVELOPMENT AT SAU MING ROAD

3/F - 18/F (TYPICAL FLOOR PLAN)

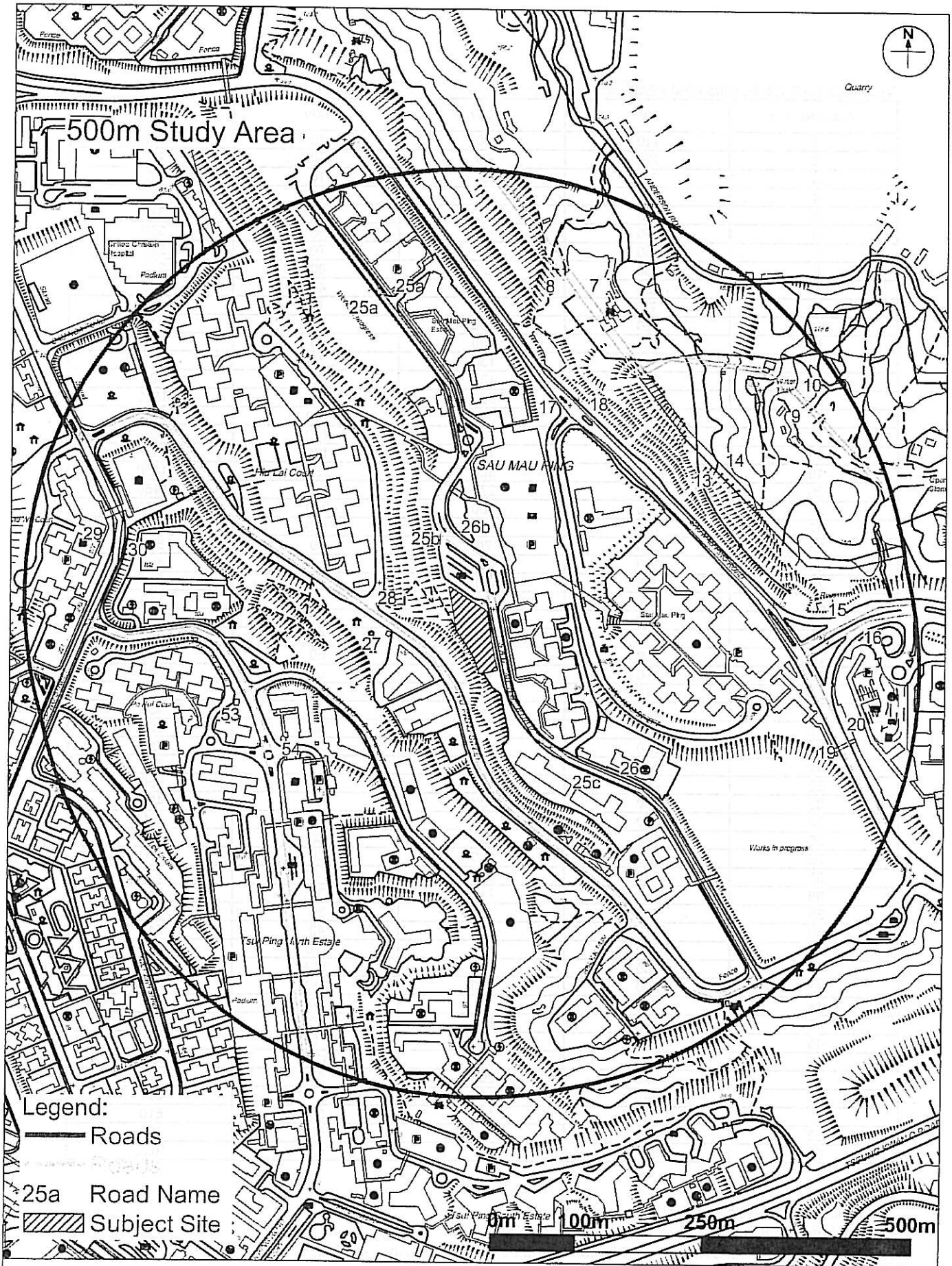
SCALE 1:300 (A3)

房屋署 HOUSING DEPARTMENT

圖號 PLAN No.

日期 DATE: 28/4/2011

Annex 2:
2032 Traffic Forecast Data



Title: Index Map	ENVIRON
	Drawn by: JY
	Checked by: CC
Project: Environmental Assessment Study for Public Rental Housing Development at Sau Ming Road	Rev.: 1.0
	Date: Oct 2011

Year 2032 EAS Traffic Data - PM PEAK

Section Number	PV	LGV	HGV	Total (Veh/hr)
1	110	60	40	210
2	120	60	40	220
3	70	0	10	80
4	40	0	10	50
5	120	130	60	310
6	160	130	60	350
7	160	60	70	290
8	230	60	80	370
9	220	0	40	260
10	70	0	10	80
11	220	130	60	410
12	360	130	90	580
13	180	130	70	380
14	200	130	70	400
15	890	360	280	1530
16	840	300	190	1330
17	550	160	110	820
18	470	180	100	750
19	870	320	260	1450
20	730	270	150	1150
21	970	330	240	1540
22	750	280	140	1170
23	380	70	50	500
24	300	100	50	450
25a	90	60	50	200
25b	80	50	50	180
25c	100	50	60	210
26a	110	70	50	230
26b	100	60	60	220
26c	200	60	60	320
27	110	130	80	320
28	170	180	80	430
29	400	110	90	600
30	810	220	60	1090
31	610	170	60	840
32	490	130	30	650
33	260	130	100	490
34	640	190	60	890
35	580	90	60	730
36	440	100	30	570
37	560	230	140	930
38	690	110	30	830
39	200	160	20	380
40	200	100	40	340
41	460	160	170	790
42	900	160	140	1200
43	560	140	340	1040
44	720	90	50	860
45	820	110	50	980
46	920	300	110	1330
47	1220	280	120	1620
48	890	290	80	1260
51	90	100	60	250
52	350	110	50	510
53	400	110	90	600
54	810	220	60	1090

Note:
PV include Private Car, Taxi and Motorcycle
LGV include Light Goods Vehicle and Public Light Bus
HGV include Heavy Goods Vehicle, Medium Goods Vehicle, Container and Bus

Traffic Forecast for Year 2032

Road No.	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
7	00:00 ~	239	33%	0%	2%	13%	1%	2%	4%	6%	4%	26%	4%	3%	1%	0%	0%	0%
	01:00 ~	184	33%	0%	2%	13%	1%	2%	4%	6%	4%	26%	4%	3%	1%	1%	1%	1%
	02:00 ~	129	33%	0%	2%	12%	2%	2%	4%	5%	4%	26%	4%	3%	1%	1%	1%	0%
	03:00 ~	133	34%	0%	2%	11%	2%	2%	4%	6%	5%	26%	4%	3%	1%	1%	1%	0%
	04:00 ~	66	35%	0%	2%	12%	2%	2%	3%	6%	5%	27%	5%	3%	0%	0%	0%	0%
	05:00 ~	68	35%	0%	1%	12%	1%	1%	3%	6%	4%	28%	4%	3%	0%	0%	0%	0%
	06:00 ~	145	34%	0%	2%	10%	1%	1%	3%	6%	5%	28%	3%	3%	1%	1%	1%	1%
	07:00 ~	293	35%	0%	2%	10%	1%	1%	3%	6%	5%	28%	4%	3%	1%	0%	0%	0%
	08:00 ~	450	36%	0%	2%	10%	1%	1%	3%	6%	5%	29%	4%	3%	0%	0%	0%	0%
	09:00 ~	363	35%	0%	2%	10%	1%	1%	3%	6%	5%	28%	4%	3%	1%	1%	0%	0%
	10:00 ~	350	35%	0%	2%	11%	1%	1%	3%	6%	5%	28%	4%	3%	1%	1%	0%	0%
	11:00 ~	334	34%	0%	2%	11%	1%	1%	4%	6%	4%	27%	4%	3%	1%	1%	0%	0%
	12:00 ~	256	34%	0%	2%	12%	1%	1%	4%	6%	4%	27%	4%	3%	1%	0%	0%	0%
	13:00 ~	245	33%	0%	2%	13%	1%	1%	4%	6%	4%	27%	4%	3%	1%	0%	0%	0%
	14:00 ~	236	33%	0%	2%	14%	1%	2%	4%	6%	4%	25%	4%	3%	1%	0%	0%	0%
	15:00 ~	281	32%	0%	2%	14%	1%	2%	5%	6%	4%	25%	4%	3%	1%	0%	0%	0%
	16:00 ~	268	31%	0%	2%	15%	1%	2%	5%	6%	3%	24%	4%	3%	1%	1%	0%	0%
	17:00 ~	306	30%	0%	2%	16%	1%	2%	6%	6%	3%	24%	5%	3%	1%	1%	1%	0%
	18:00 ~	290	30%	0%	2%	17%	1%	2%	6%	6%	3%	22%	4%	3%	1%	1%	1%	0%
	19:00 ~	302	30%	0%	2%	17%	1%	2%	6%	6%	3%	23%	4%	3%	1%	1%	1%	0%
	20:00 ~	314	31%	0%	2%	16%	1%	2%	5%	6%	4%	24%	4%	3%	1%	1%	1%	0%
	21:00 ~	271	31%	0%	2%	15%	1%	2%	5%	6%	4%	24%	4%	3%	1%	1%	1%	0%
	22:00 ~	280	32%	0%	2%	14%	1%	2%	5%	6%	4%	24%	4%	3%	1%	1%	0%	0%
	23:00 ~	232	32%	0%	2%	14%	1%	2%	4%	6%	4%	25%	4%	3%	1%	0%	0%	0%

Road No.	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
8	00:00 ~	269	35%	0%	2%	12%	1%	1%	4%	6%	4%	27%	4%	3%	1%	1%	0%	0%
	01:00 ~	221	35%	0%	2%	11%	1%	1%	4%	5%	4%	28%	4%	3%	1%	0%	0%	0%
	02:00 ~	153	35%	0%	2%	11%	1%	1%	3%	5%	5%	27%	4%	3%	1%	1%	1%	1%
	03:00 ~	157	35%	0%	2%	11%	1%	1%	3%	6%	4%	27%	4%	3%	1%	1%	1%	1%
	04:00 ~	80	35%	0%	3%	11%	1%	1%	4%	6%	5%	28%	4%	3%	0%	0%	0%	0%
	05:00 ~	82	35%	0%	2%	11%	1%	1%	4%	6%	5%	28%	4%	2%	0%	0%	0%	0%
	06:00 ~	187	35%	0%	2%	10%	1%	1%	3%	6%	5%	28%	4%	2%	1%	1%	1%	1%
	07:00 ~	337	36%	0%	2%	10%	1%	1%	3%	6%	5%	29%	4%	3%	1%	0%	0%	0%
	08:00 ~	520	36%	0%	2%	10%	1%	1%	3%	6%	5%	28%	4%	3%	1%	0%	0%	0%
	09:00 ~	422	36%	0%	2%	10%	1%	1%	3%	6%	5%	28%	4%	3%	0%	0%	0%	0%
	10:00 ~	407	35%	0%	2%	11%	1%	1%	3%	6%	5%	28%	4%	3%	0%	0%	0%	0%
	11:00 ~	397	35%	0%	2%	11%	1%	1%	3%	6%	5%	28%	4%	3%	1%	1%	0%	0%
	12:00 ~	306	35%	0%	2%	11%	1%	1%	4%	6%	4%	28%	4%	3%	1%	0%	0%	0%
	13:00 ~	296	35%	0%	2%	11%	1%	1%	4%	5%	4%	27%	4%	3%	1%	1%	0%	0%
	14:00 ~	286	35%	0%	2%	12%	1%	1%	4%	5%	4%	27%	4%	3%	1%	1%	0%	0%
	15:00 ~	345	34%	0%	2%	12%	1%	1%	4%	5%	4%	27%	4%	3%	1%	1%	0%	0%
	16:00 ~	334	34%	0%	2%	13%	1%	1%	5%	5%	4%	26%	4%	3%	1%	1%	1%	0%
	17:00 ~	382	34%	0%	2%	13%	1%	2%	5%	5%	4%	26%	4%	3%	1%	1%	1%	0%
	18:00 ~	370	33%	0%	2%	13%	1%	2%	5%	5%	4%	25%	4%	3%	1%	1%	1%	0%
	19:00 ~	378	34%	0%	2%	13%	1%	2%	5%	5%	3%	26%	4%	3%	1%	1%	1%	0%
	20:00 ~	390	34%	0%	2%	13%	1%	2%	5%	5%	4%	26%	4%	3%	1%	1%	1%	0%
	21:00 ~	335	34%	0%	2%	13%	1%	1%	4%	5%	4%	26%	4%	3%	1%	1%	1%	0%
	22:00 ~	343	34%	0%	2%	12%	1%	1%	4%	5%	4%	27%	4%	3%	1%	1%	1%	0%
	23:00 ~	282	34%	0%	2%	12%	1%	1%	4%	5%	4%	27%	4%	3%	1%	1%	0%	0%

Road No.	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
9	00:00 ~	168	44%	0%	0%	0%	0%	1%	4%	4%	5%	35%	3%	2%	1%	1%	1%	0%
	01:00 ~	124	44%	0%	0%	0%	0%	1%	3%	5%	5%	35%	3%	2%	1%	1%	0%	0%
	02:00 ~	83	45%	0%	0%	0%	0%	1%	4%	5%	5%	35%	4%	2%	0%	0%	0%	0%
	03:00 ~	80	45%	0%	0%	0%	0%	1%	3%	5%	5%	35%	4%	3%	0%	0%	0%	0%
	04:00 ~	39	46%	0%	0%	0%	0%	0%	3%	5%	5%	36%	3%	3%	0%	0%	0%	0%
	05:00 ~	39	46%	0%	0%	0%	0%	0%	3%	5%	5%	36%	3%	3%	0%	0%	0%	0%
	06:00 ~	80	44%	0%	0%	0%	0%	1%	3%	5%	6%	35%	4%	3%	0%	0%	0%	0%
	07:00 ~	163	43%	0%	0%	0%	0%	1%	2%	6%	6%	34%	4%	2%	1%	1%	1%	1%
	08:00 ~	240	43%	0%	0%	0%	0%	1%	3%	6%	6%	35%	3%	3%	0%	0%	0%	0%
	09:00 ~	202	43%	0%	0%	0%	0%	1%	2%	5%	5%	35%	3%	2%	0%	0%	0%	0%
	10:00 ~	204	43%	0%	0%	0%	0%	1%	3%	5%	5%	34%	3%	2%	0%	0%	0%	0%
	11:00 ~	206	44%	0%	0%	0%	0%	1%	3%	5%	5%	34%	3%	2%	0%	0%	0%	0%
	12:00 ~	167	44%	0%	0%	0%	0%	1%	3%	5%	5%	34%	3%	2%	1%	1%	1%	1%
	13:00 ~	168	44%	0%	0%	0%	0%	1%	3%	5%	5%	35%	3%	2%	1%	1%	1%	0%
	14:00 ~	168	45%	0%	0%	0%	0%	1%	4%	4%	5%	35%	3%	2%	1%	1%	1%	0%
	15:00 ~	212	45%	0%	0%	0%	0%	1%	3%	4%	5%	34%	3%	2%	0%	0%	0%	0%
	16:00 ~	214	45%	0%	0%	0%	0%	1%	4%	4%	5%	35%	3%	2%	0%	0%	0%	0%
	17:00 ~	260	45%	0%	0%	0%	0%	1%	4%	4%	5%	34%	3%	2%	1%	0%	0%	0%
	18:00 ~	260	45%	0%	0%	0%	0%	1%	4%	3%	5%	35%	3%	2%	1%	0%	0%	0%
	19:00 ~	259	45%	0%	0%	0%	0%	1%	4%	3%	5%	34%	3%	2%	1%	0%	0%	0%
	20:00 ~	258	45%	0%	0%	0%	0%	1%	3%	4%	5%	34%	3%	2%	1%	0%	0%	0%
	21:00 ~	214	45%	0%	0%	0%	0%	1%	4%	4%	5%	35%	3%	2%	0%	0%	0%	0%
	22:00 ~	212	45%	0%	0%	0%	0%	1%	3%	4%	5%	34%	3%	2%	0%	0%	0%	0%
	23:00 ~	168	45%	0%	0%	0%	0%	1%	4%	4%	5%	35%	3%	2%	1%	1%	1%	0%

Road No.	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
10	00:00 ~	66	48%	0%	0%	0%	0%	0%	2%	3%	6%	38%	2%	2%	0%	0%	0%	0%
	01:00 ~	52	48%	0%	0%	0%	0%	0%	2%	2%	6%	38%	2%	2%	0%	0%	0%	0%
	02:00 ~	36	47%	0%	0%	0%	0%	0%	3%	3%	6%	39%	3%	0%	0%	0%	0%	0%
	03:00 ~	37	49%	0%	0%	0%	0%	0%	3%	3%	5%	38%	3%	0%	0%	0%	0%	0%
	04:00 ~	18	50%	0%	0%	0%	0%	0%	0%	6%	6%	39%	0%	0%	0%	0%	0%	0%
	05:00 ~	19	47%	0%	0%	0%	0%	0%	0%	5%	5%	42%	0%	0%	0%	0%	0%	0%
	06:00 ~	41	46%	0%	0%	0%	0%	0%	2%	2%	7%	39%	2%	0%	0%	0%	0%	0%
	07:00 ~	82	49%	0%	0%	0%	0%	0%	1%	2%	6%	39%	1%	1%	0%	0%	0%	0%
	08:00 ~	130	48%	0%	0%	0%	0%	1%	2%	2%	6%	38%	2%	2%	0%	0%	0%	0%
	09:00 ~	104	48%	0%	0%	0%	0%	0%	1%	3%	7%	38%	2%	1%	0%	0%	0%	0%
	10:00 ~	99	48%	0%	0%	0%	0%	0%	1%	3%	6%	38%	2%	1%	0%	0%	0%	0%
	11:00 ~	97	47%	0%	0%	0%	0%	1%	2%	3%	6%	37%	2%	1%	0%	0%	0%	0%
	12:00 ~	72	49%	0%	0%	0%	0%	0%	1%	3%	6%	39%	1%	1%	0%	0%	0%	0%
	13:00 ~	68	49%	0%	0%	0%	0%	0%	1%	3%	6%	38%	1%	1%	0%	0%	0%	0%
	14:00 ~	66	48%	0%	0%	0%	0%	0%	2%	3%	6%	38%	2%	2%	0%	0%	0%	0%
	15:00 ~	78	47%	0%	0%	0%	0%	1%	3%	3%	5%	37%	3%	1%	0%	0%	0%	0%
	16:00 ~	74	47%	0%	0%	0%	0%	1%	3%	3%	5%	36%	3%	1%	0%	0%	0%	0%
	17:00 ~	83	48%	0%	0%	0%	0%	1%	2%	2%	5%	37%	2%	1%	0%	0%	0%	0%
	18:00 ~	80	48%	0%	0%	0%	0%	1%	3%	3%	5%	37%	3%	1%	0%	0%	0%	0%
	19:00 ~	81	48%	0%	0%	0%	0%	1%	2%	2%	5%	37%	2%	1%	0%	0%	0%	0%
	20:00 ~	85	48%	0%	0%	0%	0%	1%	2%	2%	5%	37%	2%	1%	0%	0%	0%	0%
	21:00 ~	76	47%	0%	0%	0%	0%	1%	2%	2%	5%	38%	2%	1%	0%	0%	0%	0%
	22:00 ~	78	47%	0%	0%	0%	0%	1%	3%	3%	5%	37%	3%	1%	0%	0%	0%	0%
	23:00 ~	64	48%	0%	0%	0%	0%	0%	2%	3%	6%	38%	2%	2%	0%	0%	0%	0%

Road No.	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
13	00:00 ~	276	27%	0%	4%	25%	3%	1%	4%	5%	3%	21%	3%	3%	1%	0%	0%	0%
	01:00 ~	207	27%	0%	4%	25%	2%	1%	3%	5%	3%	21%	3%	2%	0%	0%	0%	0%
	02:00 ~	141	27%	0%	4%	24%	3%	1%	4%	5%	4%	21%	4%	2%	1%	1%	0%	0%
	03:00 ~	141	28%	0%	4%	23%	3%	1%	3%	5%	4%	22%	4%	2%	1%	1%	0%	0%
	04:00 ~	72	28%	0%	4%	24%	3%	1%	3%	6%	4%	22%	3%	3%	0%	0%	0%	0%
	05:00 ~	71	28%	0%	4%	23%	3%	1%	3%	6%	4%	23%	3%	3%	0%	0%	0%	0%
	06:00 ~	145	28%	0%	4%	23%	3%	1%	3%	6%	3%	23%	3%	2%	1%	1%	0%	0%
	07:00 ~	295	28%	0%	4%	22%	3%	1%	2%	5%	4%	23%	3%	2%	0%	0%	0%	0%
	08:00 ~	450	29%	0%	4%	21%	3%	1%	2%	5%	4%	23%	3%	2%	0%	0%	0%	0%
	09:00 ~	368	29%	0%	4%	22%	3%	1%	2%	5%	4%	23%	3%	2%	1%	0%	0%	0%
	10:00 ~	362	28%	0%	4%	23%	3%	1%	3%	5%	4%	22%	3%	2%	1%	0%	0%	0%
	11:00 ~	359	28%	0%	4%	23%	3%	1%	3%	5%	4%	22%	3%	3%	1%	0%	0%	0%
	12:00 ~	281	27%	0%	4%	24%	2%	1%	3%	5%	4%	22%	3%	2%	1%	0%	0%	0%
	13:00 ~	276	27%	0%	4%	25%	3%	1%	3%	5%	3%	21%	3%	3%	1%	0%	0%	0%
	14:00 ~	273	27%	0%	4%	25%	3%	1%	4%	5%	3%	21%	3%	3%	1%	0%	0%	0%
	15:00 ~	333	27%	0%	4%	26%	2%	1%	4%	5%	3%	21%	3%	2%	1%	1%	0%	0%
	16:00 ~	328	26%	0%	4%	27%	2%	2%	4%	5%	3%	20%	3%	2%	1%	1%	0%	0%
	17:00 ~	389	26%	0%	3%	28%	2%	2%	4%	4%	3%	20%	3%	3%	1%	1%	1%	0%
	18:00 ~	380	25%	0%	3%	28%	2%	2%	4%	4%	3%	19%	3%	3%	1%	1%	1%	0%
	19:00 ~	385	26%	0%	3%	28%	2%	2%	4%	4%	3%	20%	3%	3%	1%	1%	1%	0%
	20:00 ~	390	26%	0%	4%	27%	2%	2%	4%	4%	3%	20%	3%	3%	1%	1%	1%	0%
	21:00 ~	329	26%	0%	4%	27%	2%	2%	4%	5%	3%	20%	3%	2%	1%	1%	0%	0%
	22:00 ~	331	27%	0%	4%	26%	2%	1%	4%	5%	3%	21%	3%	2%	1%	1%	0%	0%
	23:00 ~	269	27%	0%	4%	26%	3%	1%	4%	4%	3%	21%	3%	3%	1%	0%	0%	0%

Road No.	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
14	00:00 ~	306	28%	0%	4%	23%	2%	1%	4%	5%	3%	22%	3%	3%	1%	0%	0%	0%
	01:00 ~	234	29%	0%	3%	22%	2%	1%	3%	5%	3%	23%	3%	3%	0%	0%	0%	0%
	02:00 ~	160	29%	0%	4%	21%	3%	1%	3%	5%	4%	23%	3%	3%	1%	1%	1%	1%
	03:00 ~	162	29%	0%	4%	20%	2%	1%	3%	5%	4%	23%	4%	2%	1%	1%	1%	1%
	04:00 ~	80	30%	0%	4%	21%	3%	1%	3%	5%	4%	24%	4%	3%	0%	0%	0%	0%
	05:00 ~	82	30%	0%	4%	20%	2%	1%	2%	6%	4%	24%	4%	2%	0%	0%	0%	0%
	06:00 ~	172	30%	0%	3%	19%	2%	1%	3%	5%	4%	24%	3%	2%	1%	1%	1%	1%
	07:00 ~	346	30%	0%	4%	18%	2%	1%	3%	6%	4%	24%	3%	3%	1%	0%	0%	0%
	08:00 ~	530	30%	0%	4%	18%	2%	1%	3%	6%	4%	24%	4%	3%	1%	0%	0%	0%
	09:00 ~	430	30%	0%	4%	19%	2%	1%	3%	6%	4%	24%	3%	3%	0%	0%	0%	0%
	10:00 ~	419	30%	0%	4%	20%	2%	1%	3%	5%	4%	24%	4%	3%	0%	0%	0%	0%
	11:00 ~	407	29%	0%	4%	20%	2%	1%	3%	5%	4%	23%	3%	2%	0%	0%	0%	0%
	12:00 ~	317	29%	0%	3%	21%	2%	1%	3%	5%	3%	23%	3%	3%	1%	0%	0%	0%
	13:00 ~	311	29%	0%	4%	22%	2%	1%	3%	5%	4%	23%	4%	3%	1%	0%	0%	0%
	14:00 ~	302	28%	0%	3%	23%	2%	1%	4%	5%	3%	22%	3%	2%	1%	0%	0%	0%
	15:00 ~	366	28%	0%	3%	24%	2%	1%	4%	5%	3%	22%	3%	2%	1%	1%	0%	0%
	16:00 ~	356	28%	0%	3%	25%	2%	1%	4%	4%	3%	21%	3%	3%	1%	1%	0%	0%
	17:00 ~	413	27%	0%	3%	26%	2%	1%	4%	4%	3%	21%	3%	2%	1%	0%	0%	0%
	18:00 ~	400	27%	0%	3%	27%	2%	2%	4%	4%	3%	21%	3%	3%	1%	1%	1%	0%
	19:00 ~	410	27%	0%	3%	26%	2%	1%	4%	4%	3%	21%	3%	2%	1%	0%	0%	0%
	20:00 ~	418	28%	0%	3%	25%	2%	1%	4%	4%	3%	21%	3%	2%	1%	0%	0%	0%
	21:00 ~	357	28%	0%	3%	25%	2%	1%	4%	4%	3%	21%	3%	3%	1%	1%	0%	0%
	22:00 ~	364	28%	0%	3%	24%	2%	1%	4%	5%	3%	22%	3%	2%	1%	1%	0%	0%
	23:00 ~	298	28%	0%	3%	23%	2%	1%	4%	5%	3%	22%	3%	2%	1%	0%	0%	0%

Road No.	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
15	00:00 ~	913	30%	0%	3%	19%	2%	1%	4%	5%	3%	24%	4%	3%	1%	1%	0%	0%
	01:00 ~	668	30%	0%	3%	19%	2%	1%	4%	5%	3%	24%	4%	3%	1%	0%	0%	0%
	02:00 ~	438	30%	0%	3%	19%	2%	1%	4%	5%	3%	24%	4%	3%	1%	0%	0%	0%
	03:00 ~	428	30%	0%	3%	19%	2%	1%	4%	5%	4%	24%	4%	3%	1%	0%	0%	0%
	04:00 ~	211	30%	0%	3%	19%	2%	1%	3%	6%	4%	23%	4%	3%	0%	0%	0%	0%
	05:00 ~	208	29%	0%	3%	19%	2%	1%	3%	6%	4%	23%	4%	3%	0%	0%	0%	0%
	06:00 ~	399	30%	0%	4%	19%	2%	1%	3%	6%	4%	24%	4%	3%	1%	1%	0%	0%
	07:00 ~	784	29%	0%	4%	19%	2%	1%	3%	6%	4%	23%	4%	3%	1%	0%	0%	0%
	08:00 ~	1150	29%	0%	4%	19%	3%	1%	3%	6%	4%	23%	4%	3%	1%	0%	0%	0%
	09:00 ~	989	29%	0%	4%	19%	2%	1%	3%	6%	4%	24%	4%	3%	1%	0%	0%	0%
	10:00 ~	1022	30%	0%	4%	19%	2%	1%	3%	6%	4%	23%	4%	3%	1%	0%	0%	0%
	11:00 ~	1054	30%	0%	3%	19%	2%	1%	3%	6%	4%	24%	4%	3%	1%	0%	0%	0%
	12:00 ~	869	30%	0%	3%	19%	2%	1%	4%	5%	4%	24%	4%	3%	1%	0%	0%	0%
	13:00 ~	894	30%	0%	3%	19%	2%	1%	4%	5%	3%	24%	4%	3%	1%	1%	0%	0%
	14:00 ~	920	31%	0%	3%	19%	2%	1%	4%	5%	3%	24%	4%	3%	1%	1%	0%	0%
	15:00 ~	1179	31%	0%	3%	19%	2%	1%	4%	5%	3%	24%	4%	3%	1%	1%	0%	0%
	16:00 ~	1211	31%	0%	3%	19%	2%	1%	4%	4%	3%	24%	3%	3%	1%	1%	0%	0%
	17:00 ~	1493	31%	0%	2%	19%	2%	2%	4%	4%	3%	24%	3%	3%	1%	1%	0%	0%
	18:00 ~	1530	31%	0%	2%	20%	2%	2%	5%	4%	3%	24%	3%	2%	1%	1%	0%	0%
	19:00 ~	1502	31%	0%	2%	20%	2%	2%	4%	4%	3%	24%	3%	3%	1%	1%	0%	0%
	20:00 ~	1476	31%	0%	3%	19%	2%	1%	4%	4%	3%	24%	3%	3%	1%	1%	0%	0%
	21:00 ~	1206	31%	0%	3%	19%	2%	1%	4%	4%	3%	24%	3%	3%	1%	1%	0%	0%
	22:00 ~	1184	31%	0%	3%	19%	2%	1%	4%	5%	3%	24%	4%	3%	1%	1%	0%	0%
	23:00 ~	929	31%	0%	3%	19%	2%	1%	4%	5%	3%	24%	4%	3%	1%	1%	0%	0%

Road No.	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
16	00:00 ~	1205	30%	0%	3%	20%	2%	1%	3%	5%	3%	23%	4%	3%	1%	0%	0%	0%
	01:00 ~	944	29%	0%	3%	20%	2%	1%	3%	6%	3%	23%	4%	3%	1%	0%	0%	0%
	02:00 ~	657	29%	0%	4%	20%	2%	1%	3%	6%	4%	23%	4%	3%	1%	0%	0%	0%
	03:00 ~	684	28%	0%	4%	20%	2%	1%	3%	6%	4%	22%	4%	3%	1%	0%	0%	0%
	04:00 ~	356	28%	0%	4%	20%	3%	1%	3%	6%	4%	22%	4%	3%	1%	1%	0%	0%
	05:00 ~	388	27%	0%	4%	20%	2%	1%	3%	7%	4%	22%	4%	3%	1%	1%	0%	1%
	06:00 ~	764	27%	0%	4%	20%	3%	1%	3%	7%	4%	22%	4%	3%	1%	1%	0%	0%
	07:00 ~	1581	27%	0%	4%	20%	3%	1%	3%	7%	4%	22%	4%	3%	1%	0%	0%	0%
	08:00 ~	2450	27%	0%	4%	20%	3%	1%	3%	7%	4%	21%	4%	3%	1%	0%	0%	0%
	09:00 ~	1948	27%	0%	4%	20%	3%	1%	3%	7%	4%	22%	4%	3%	1%	0%	0%	0%
	10:00 ~	1857	27%	0%	4%	20%	3%	1%	3%	7%	4%	22%	4%	3%	1%	0%	0%	0%
	11:00 ~	1762	28%	0%	4%	20%	2%	1%	3%	6%	4%	22%	4%	3%	1%	0%	0%	0%
	12:00 ~	1335	28%	0%	4%	20%	2%	1%	3%	6%	4%	23%	4%	3%	1%	0%	0%	0%
	13:00 ~	1262	29%	0%	4%	20%	2%	1%	3%	6%	3%	23%	4%	3%	1%	0%	0%	0%
	14:00 ~	1186	30%	0%	3%	20%	2%	1%	3%	5%	4%	23%	4%	3%	1%	0%	0%	0%
	15:00 ~	1388	31%	0%	3%	20%	2%	1%	3%	5%	3%	24%	3%	3%	1%	0%	0%	0%
	16:00 ~	1297	32%	0%	3%	19%	2%	1%	3%	4%	3%	24%	3%	2%	1%	0%	0%	0%
	17:00 ~	1443	33%	0%	3%	19%	2%	1%	3%	4%	3%	25%	3%	2%	1%	0%	0%	0%
	18:00 ~	1330	34%	0%	2%	19%	1%	1%	4%	3%	3%	26%	3%	2%	1%	0%	0%	0%
	19:00 ~	1409	33%	0%	2%	19%	2%	1%	3%	4%	3%	25%	3%	2%	1%	0%	0%	0%
	20:00 ~	1492	32%	0%	3%	19%	2%	1%	3%	4%	3%	25%	3%	2%	1%	0%	0%	0%
	21:00 ~	1309	31%	0%	3%	19%	2%	1%	3%	5%	3%	24%	3%	2%	1%	0%	0%	0%
	22:00 ~	1374	31%	0%	3%	20%	2%	1%	3%	5%	3%	24%	3%	2%	1%	0%	0%	0%
	23:00 ~	1154	30%	0%	3%	20%	2%	1%	3%	5%	3%	24%	4%	3%	1%	0%	0%	0%

Road No	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
17	00:00 ~	618	32%	0%	3%	19%	2%	1%	3%	5%	4%	25%	3%	2%	0%	0%	0%	0%
	01:00 ~	471	31%	0%	3%	19%	2%	1%	3%	5%	4%	24%	3%	2%	1%	0%	0%	0%
	02:00 ~	321	30%	0%	3%	20%	2%	1%	3%	5%	4%	24%	3%	2%	1%	0%	0%	0%
	03:00 ~	327	30%	0%	4%	20%	2%	1%	3%	6%	4%	24%	3%	2%	1%	0%	0%	0%
	04:00 ~	166	29%	0%	4%	20%	2%	1%	3%	5%	4%	23%	4%	3%	1%	1%	1%	1%
	05:00 ~	170	28%	0%	4%	21%	2%	1%	3%	6%	4%	22%	4%	3%	1%	1%	1%	1%
	06:00 ~	343	28%	0%	4%	21%	3%	1%	3%	6%	3%	22%	4%	3%	1%	0%	0%	0%
	07:00 ~	701	28%	0%	4%	21%	3%	1%	3%	6%	4%	22%	4%	3%	1%	0%	0%	0%
	08:00 ~	1070	27%	0%	4%	21%	3%	1%	3%	6%	4%	22%	4%	3%	1%	0%	0%	0%
	09:00 ~	871	28%	0%	4%	21%	3%	1%	3%	6%	4%	22%	4%	3%	1%	0%	0%	0%
	10:00 ~	849	29%	0%	4%	20%	3%	1%	3%	6%	4%	23%	4%	3%	1%	0%	0%	0%
	11:00 ~	830	29%	0%	4%	20%	2%	1%	3%	6%	4%	23%	4%	3%	1%	0%	0%	0%
	12:00 ~	647	30%	0%	4%	20%	2%	1%	3%	5%	4%	24%	3%	2%	1%	0%	0%	0%
	13:00 ~	632	31%	0%	3%	19%	2%	1%	3%	5%	4%	24%	3%	2%	1%	0%	0%	0%
	14:00 ~	612	32%	0%	3%	19%	2%	1%	3%	5%	4%	25%	3%	2%	1%	0%	0%	0%
	15:00 ~	748	33%	0%	3%	18%	2%	1%	3%	4%	4%	25%	3%	2%	0%	0%	0%	0%
	16:00 ~	724	34%	0%	2%	18%	2%	1%	3%	4%	4%	26%	3%	2%	1%	0%	0%	0%
	17:00 ~	847	35%	0%	2%	17%	1%	1%	3%	3%	4%	27%	3%	2%	1%	0%	0%	0%
	18:00 ~	820	36%	0%	2%	16%	1%	1%	3%	3%	4%	27%	3%	2%	1%	0%	0%	0%
	19:00 ~	840	35%	0%	2%	17%	1%	1%	3%	3%	4%	27%	3%	2%	1%	0%	0%	0%
	20:00 ~	856	34%	0%	2%	17%	2%	1%	3%	4%	4%	26%	3%	2%	1%	0%	0%	0%
	21:00 ~	727	34%	0%	3%	18%	2%	1%	3%	4%	4%	26%	3%	2%	1%	0%	0%	0%
	22:00 ~	743	33%	0%	3%	18%	2%	1%	3%	4%	4%	25%	3%	2%	1%	0%	0%	0%
	23:00 ~	607	32%	0%	3%	18%	2%	1%	3%	4%	4%	25%	3%	2%	0%	0%	0%	0%

Road No	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
18	00:00 ~	423	30%	0%	4%	23%	2%	1%	3%	4%	3%	23%	3%	2%	0%	0%	0%	0%
	01:00 ~	306	30%	0%	4%	23%	2%	1%	3%	4%	3%	23%	3%	2%	1%	0%	0%	0%
	02:00 ~	201	29%	0%	4%	23%	2%	1%	3%	4%	3%	22%	3%	2%	0%	0%	0%	0%
	03:00 ~	193	28%	1%	4%	24%	3%	1%	3%	5%	3%	22%	3%	2%	1%	1%	1%	1%
	04:00 ~	92	28%	0%	4%	25%	3%	1%	3%	4%	3%	22%	3%	2%	0%	0%	0%	0%
	05:00 ~	88	27%	0%	5%	26%	3%	1%	2%	5%	3%	22%	3%	2%	0%	0%	0%	0%
	06:00 ~	176	25%	1%	5%	26%	3%	1%	3%	5%	3%	20%	3%	2%	1%	1%	1%	1%
	07:00 ~	333	25%	0%	5%	27%	4%	1%	3%	5%	3%	20%	3%	2%	1%	0%	0%	0%
	08:00 ~	480	24%	0%	6%	28%	4%	1%	3%	6%	3%	19%	4%	3%	0%	0%	0%	0%
	09:00 ~	421	25%	0%	5%	27%	3%	1%	3%	5%	3%	20%	3%	2%	0%	0%	0%	0%
	10:00 ~	443	27%	0%	5%	26%	3%	1%	3%	5%	3%	21%	3%	2%	0%	0%	0%	0%
	11:00 ~	466	28%	0%	5%	25%	3%	1%	3%	5%	3%	22%	3%	2%	0%	0%	0%	0%
	12:00 ~	394	29%	0%	4%	24%	3%	1%	3%	4%	3%	22%	3%	2%	1%	1%	0%	0%
	13:00 ~	410	30%	0%	4%	23%	2%	1%	3%	4%	3%	23%	3%	2%	0%	0%	0%	0%
	14:00 ~	426	31%	0%	3%	22%	2%	1%	3%	4%	3%	24%	3%	2%	0%	0%	0%	0%
	15:00 ~	558	32%	0%	3%	22%	2%	1%	3%	4%	3%	24%	3%	2%	0%	0%	0%	0%
	16:00 ~	579	33%	0%	3%	21%	2%	1%	3%	3%	3%	25%	3%	2%	1%	0%	0%	0%
	17:00 ~	724	33%	0%	3%	20%	2%	1%	3%	3%	3%	25%	3%	2%	1%	0%	0%	0%
	18:00 ~	750	34%	0%	2%	20%	1%	1%	3%	3%	3%	26%	3%	2%	1%	0%	0%	0%
	19:00 ~	731	33%	0%	2%	20%	2%	1%	3%	3%	3%	25%	3%	2%	1%	0%	0%	0%
	20:00 ~	710	33%	0%	3%	21%	2%	1%	3%	3%	3%	25%	3%	2%	1%	0%	0%	0%
	21:00 ~	575	32%	0%	3%	21%	2%	1%	3%	3%	3%	25%	3%	2%	1%	0%	0%	0%
	22:00 ~	560	32%	0%	3%	22%	2%	1%	3%	4%	3%	24%	3%	2%	1%	0%	0%	0%
	23:00 ~	436	31%	0%	3%	22%	2%	1%	3%	4%	3%	24%	3%	2%	0%	0%	0%	0%

Road No	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
19	00:00 ~	870	33%	0%	3%	17%	2%	1%	4%	4%	4%	26%	3%	2%	1%	0%	0%	0%
	01:00 ~	642	33%	0%	3%	17%	2%	1%	3%	4%	4%	26%	3%	2%	1%	0%	0%	0%
	02:00 ~	418	33%	0%	3%	17%	2%	1%	3%	4%	4%	26%	3%	2%	0%	0%	0%	0%
	03:00 ~	409	33%	0%	3%	17%	2%	1%	3%	4%	4%	26%	3%	2%	0%	0%	0%	0%
	04:00 ~	202	34%	0%	3%	16%	2%	1%	3%	4%	4%	26%	3%	2%	0%	0%	0%	0%
	05:00 ~	199	34%	0%	3%	16%	2%	1%	3%	4%	4%	27%	3%	2%	0%	0%	0%	0%
	06:00 ~	386	34%	0%	3%	16%	2%	1%	2%	4%	4%	27%	3%	2%	1%	1%	1%	1%
	07:00 ~	756	34%	0%	3%	16%	2%	1%	2%	4%	4%	27%	3%	2%	1%	0%	0%	0%
	08:00 ~	1110	34%	0%	3%	15%	2%	1%	2%	4%	5%	28%	3%	2%	0%	0%	0%	0%
	09:00 ~	952	34%	0%	3%	16%	2%	1%	2%	4%	4%	27%	3%	2%	0%	0%	0%	0%
	10:00 ~	983	34%	0%	3%	16%	2%	1%	3%	4%	4%	27%	3%	2%	1%	0%	0%	0%
	11:00 ~	1010	34%	0%	3%	16%	2%	1%	3%	4%	4%	27%	3%	2%	0%	0%	0%	0%
	12:00 ~	831	33%	0%	3%	17%	2%	1%	3%	4%	4%	26%	3%	2%	1%	0%	0%	0%
	13:00 ~	854	33%	0%	3%	17%	2%	1%	3%	4%	4%	26%	3%	2%	1%	0%	0%	0%
	14:00 ~	876	33%	0%	3%	17%	2%	1%	4%	4%	4%	26%	3%	2%	1%	0%	0%	0%
	15:00 ~	1122	33%	0%	2%	18%	2%	1%	4%	4%	4%	25%	3%	2%	1%	1%	0%	0%
	16:00 ~	1151	33%	0%	2%	18%	1%	1%	4%	4%	3%	25%	3%	2%	1%	1%	0%	0%
	17:00 ~	1417	32%	0%	2%	18%	1%	1%	4%	4%	3%	25%	3%	2%	1%	1%	0%	0%
	18:00 ~	1450	32%	0%	2%	18%	1%	2%	4%	4%	3%	24%	3%	2%	1%	1%	0%	0%
	19:00 ~	1425	32%	0%	2%	18%	1%	1%	4%	4%	3%	25%	3%	2%	1%	1%	0%	0%
	20:00 ~	1400	33%	0%	2%	18%	2%	1%	4%	4%	3%	25%	3%	2%	1%	1%	0%	0%
	21:00 ~	1148	33%	0%	2%	18%	1%	1%	4%	4%	3%	25%	3%	2%	1%	1%	0%	0%
	22:00 ~	1128	33%	0%	2%	18%	2%	1%	4%	4%	3%	25%	3%	2%	1%	1%	0%	0%
	23:00 ~	884	33%	0%	2%	17%	2%	1%	4%	4%	4%	25%	3%	2%	1%	1%	0%	0%

Road No	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
20	00:00 ~	979	32%	0%	3%	19%	2%	1%	3%	4%	4%	25%	3%	2%	1%	0%	0%	0%
	01:00 ~	760	31%	0%	3%	19%	2%	1%	3%	5%	4%	25%	3%	2%	1%	0%	0%	0%
	02:00 ~	526	31%	0%	3%	19%	2%	1%	3%	5%	4%	24%	3%	2%	1%	0%	0%	0%
	03:00 ~	542	31%	0%	4%	19%	2%	1%	3%	5%	4%	24%	3%	2%	1%	0%	0%	0%
	04:00 ~	282	30%	0%	4%	19%	2%	1%	3%	5%	4%	24%	3%	2%	0%	0%	0%	0%
	05:00 ~	288	30%	0%	4%	19%	2%	1%	3%	5%	4%	24%	3%	2%	0%	0%	0%	0%
	06:00 ~	595	30%	0%	4%	19%	3%	1%	3%	6%	4%	24%	3%	3%	1%	0%	0%	0%
	07:00 ~	1225	30%	0%	4%	19%	3%	1%	3%	6%	4%	24%	4%	3%	0%	0%	0%	0%
	08:00 ~	1890	29%	0%	4%	19%	3%	1%	3%	6%	4%	24%	4%	3%	1%	0%	0%	0%
	09:00 ~	1514	30%	0%	4%	19%	3%	1%	3%	6%	4%	24%	4%	3%	1%	0%	0%	0%
	10:00 ~	1452	30%	0%	4%	19%	2%	1%	3%	5%	4%	24%	3%	2%	0%	0%	0%	0%
	11:00 ~	1389	30%	0%	4%	19%	2%	1%	3%	5%	4%	24%	3%	2%	1%	0%	0%	0%
	12:00 ~	1061	31%	0%	3%	19%	2%	1%	3%	5%	4%	24%	3%	2%	0%	0%	0%	0%
	13:00 ~	1013	31%	0%	3%	19%	2%	1%	3%	5%	4%	25%	3%	2%	0%	0%	0%	0%
	14:00 ~	965	32%	0%	3%	19%	2%	1%	3%	4%	4%	25%	3%	2%	1%	0%	0%	0%
	15:00 ~	1143	32%	0%	3%	19%	2%	1%	3%	4%	4%	25%	3%	2%	1%	0%	0%	0%
	16:00 ~	1081	33%	0%	3%	19%	2%	1%	3%	4%	4%	25%	3%	2%	1%	0%	0%	0%
	17:00 ~	1223	33%	0%	3%	19%	2%	1%	3%	3%	4%	26%	3%	2%	1%	0%	0%	0%
	18:00 ~	1150	34%	0%	2%	20%	1%	1%	3%	3%	3%	26%	2%	2%	1%	0%	0%	0%
	19:00 ~	1201	34%	0%	2%	19%	2%	1%	3%	3%	3%	26%	3%	2%	0%	0%	0%	0%
	20:00 ~	1258	33%	0%	3%	19%	2%	1%	3%	4%	4%	25%	3%	2%	1%	0%	0%	0%
	21:00 ~	1091	33%	0%	3%	19%	2%	1%	3%	4%	4%	25%	3%	2%	1%	0%	0%	0%
	22:00 ~	1136	32%	0%	3%	19%	2%	1%	3%	4%	4%	25%	3%	2%	1%	0%	0%	0%
	23:00 ~	944	32%	0%	3%	19%	2%	1%	3%	4%	4%	25%	3%	2%	1%	0%	0%	0%

Road No.	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
25a	00:00 ~	139	26%	0%	3%	22%	2%	1%	5%	6%	3%	20%	5%	4%	1%	1%	1%	1%
	01:00 ~	106	26%	0%	3%	21%	2%	2%	5%	7%	3%	21%	5%	4%	1%	1%	1%	0%
	02:00 ~	68	28%	0%	3%	21%	1%	1%	4%	7%	3%	22%	4%	3%	1%	0%	0%	0%
	03:00 ~	69	28%	0%	3%	20%	3%	1%	4%	7%	3%	22%	4%	3%	1%	0%	0%	0%
	04:00 ~	37	27%	0%	3%	19%	3%	3%	5%	8%	3%	22%	5%	3%	0%	0%	0%	0%
	05:00 ~	36	28%	0%	3%	19%	3%	3%	3%	8%	3%	22%	6%	3%	0%	0%	0%	0%
	06:00 ~	71	28%	0%	3%	18%	3%	1%	4%	7%	4%	23%	4%	3%	1%	0%	0%	0%
	07:00 ~	146	28%	0%	3%	17%	2%	1%	3%	8%	3%	23%	5%	3%	1%	1%	1%	1%
	08:00 ~	220	28%	0%	4%	17%	2%	1%	4%	8%	4%	23%	5%	4%	0%	0%	0%	0%
	09:00 ~	181	28%	0%	3%	18%	2%	1%	4%	8%	4%	22%	5%	3%	1%	1%	1%	1%
	10:00 ~	178	28%	0%	3%	19%	2%	1%	4%	7%	3%	22%	5%	3%	1%	1%	1%	1%
	11:00 ~	178	27%	0%	3%	19%	2%	2%	4%	7%	3%	21%	4%	3%	1%	1%	1%	1%
	12:00 ~	143	27%	0%	3%	20%	2%	1%	4%	7%	3%	21%	5%	3%	1%	1%	1%	1%
	13:00 ~	141	26%	0%	4%	21%	2%	1%	5%	6%	3%	21%	5%	4%	1%	1%	1%	1%
	14:00 ~	139	26%	0%	3%	22%	2%	1%	5%	6%	3%	20%	5%	4%	1%	1%	1%	1%
	15:00 ~	171	26%	0%	3%	22%	2%	2%	5%	6%	3%	20%	5%	4%	1%	1%	1%	1%
	16:00 ~	170	25%	0%	3%	23%	2%	2%	6%	6%	3%	19%	5%	4%	1%	1%	1%	1%
	17:00 ~	203	25%	0%	3%	24%	2%	2%	6%	6%	2%	19%	5%	3%	1%	1%	0%	0%
	18:00 ~	200	24%	0%	3%	25%	2%	2%	6%	6%	3%	19%	5%	4%	1%	1%	1%	1%
	19:00 ~	201	24%	0%	3%	24%	2%	2%	6%	6%	2%	19%	4%	3%	1%	1%	0%	0%
	20:00 ~	203	25%	0%	3%	24%	2%	2%	6%	6%	2%	19%	5%	3%	1%	1%	0%	0%
	21:00 ~	170	25%	0%	3%	23%	2%	2%	6%	6%	3%	19%	5%	4%	1%	1%	1%	1%
	22:00 ~	171	26%	0%	3%	22%	2%	2%	5%	6%	3%	20%	5%	4%	1%	1%	1%	1%
	23:00 ~	138	25%	0%	3%	22%	2%	1%	5%	7%	3%	20%	5%	4%	1%	1%	1%	1%

Road No.	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
25b	00:00 ~	122	23%	0%	3%	21%	2%	2%	6%	8%	2%	18%	6%	4%	1%	1%	1%	1%
	01:00 ~	92	23%	0%	3%	22%	2%	2%	5%	9%	2%	17%	5%	4%	1%	1%	1%	1%
	02:00 ~	62	23%	0%	3%	21%	2%	2%	6%	10%	3%	18%	6%	3%	2%	0%	0%	0%
	03:00 ~	61	23%	0%	3%	21%	2%	2%	5%	10%	3%	18%	7%	5%	2%	0%	0%	0%
	04:00 ~	31	23%	0%	3%	19%	3%	3%	6%	10%	3%	19%	6%	3%	0%	0%	0%	0%
	05:00 ~	31	23%	0%	3%	19%	3%	3%	6%	10%	3%	19%	6%	3%	0%	0%	0%	0%
	06:00 ~	62	23%	0%	3%	21%	3%	2%	5%	10%	3%	18%	6%	5%	2%	0%	0%	0%
	07:00 ~	125	22%	0%	4%	20%	2%	2%	5%	10%	3%	17%	6%	5%	1%	1%	1%	1%
	08:00 ~	190	22%	1%	4%	19%	3%	2%	5%	11%	3%	17%	7%	5%	1%	1%	1%	1%
	09:00 ~	158	22%	0%	4%	20%	3%	2%	5%	10%	3%	18%	6%	4%	1%	1%	1%	1%
	10:00 ~	156	22%	0%	4%	20%	3%	2%	5%	10%	3%	18%	6%	4%	1%	1%	1%	1%
	11:00 ~	157	22%	0%	4%	20%	3%	2%	5%	10%	3%	18%	6%	4%	1%	1%	1%	1%
	12:00 ~	123	23%	0%	3%	21%	2%	2%	6%	9%	2%	18%	7%	4%	1%	1%	1%	1%
	13:00 ~	123	23%	0%	3%	21%	2%	2%	6%	9%	2%	18%	6%	4%	1%	1%	1%	1%
	14:00 ~	122	23%	0%	3%	21%	2%	2%	6%	9%	2%	18%	6%	4%	1%	1%	1%	1%
	15:00 ~	152	23%	0%	3%	22%	2%	2%	7%	8%	3%	18%	6%	4%	1%	1%	1%	1%
	16:00 ~	152	24%	0%	3%	22%	2%	2%	7%	7%	3%	18%	5%	4%	1%	1%	1%	1%
	17:00 ~	180	24%	0%	3%	23%	2%	2%	7%	7%	2%	18%	6%	4%	1%	1%	1%	1%
	18:00 ~	180	24%	0%	3%	23%	2%	2%	7%	6%	2%	18%	5%	4%	1%	1%	1%	1%
	19:00 ~	180	24%	0%	3%	23%	2%	2%	7%	7%	2%	18%	6%	4%	1%	1%	1%	1%
	20:00 ~	182	24%	0%	3%	23%	2%	2%	7%	7%	3%	18%	5%	4%	1%	1%	1%	1%
	21:00 ~	152	24%	0%	3%	22%	2%	2%	7%	7%	3%	18%	5%	4%	1%	1%	1%	1%
	22:00 ~	153	23%	0%	3%	22%	2%	2%	7%	8%	3%	18%	6%	4%	1%	1%	1%	1%
	23:00 ~	124	23%	0%	3%	22%	2%	2%	6%	8%	2%	18%	6%	4%	1%	1%	1%	1%

Road No.	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
25c	00:00 ~	134	24%	0%	3%	19%	2%	2%	6%	8%	3%	19%	6%	4%	1%	1%	1%	1%
	01:00 ~	102	24%	0%	3%	20%	2%	2%	6%	9%	3%	19%	6%	4%	1%	1%	1%	1%
	02:00 ~	66	24%	0%	3%	20%	2%	2%	6%	9%	3%	18%	6%	5%	2%	2%	0%	0%
	03:00 ~	65	23%	0%	3%	20%	2%	2%	6%	9%	3%	18%	6%	5%	2%	2%	0%	0%
	04:00 ~	31	23%	0%	3%	19%	3%	3%	6%	10%	3%	19%	6%	3%	0%	0%	0%	0%
	05:00 ~	31	23%	0%	3%	19%	3%	3%	6%	10%	3%	19%	6%	3%	0%	0%	0%	0%
	06:00 ~	62	23%	0%	3%	21%	3%	2%	5%	10%	3%	18%	6%	5%	2%	0%	0%	0%
	07:00 ~	126	22%	0%	4%	20%	2%	2%	5%	10%	3%	17%	6%	5%	1%	1%	1%	1%
	08:00 ~	190	22%	1%	4%	19%	3%	2%	5%	11%	3%	17%	7%	5%	1%	1%	1%	1%
	09:00 ~	159	22%	0%	4%	19%	3%	2%	5%	10%	3%	18%	6%	5%	1%	1%	1%	1%
	10:00 ~	161	22%	0%	4%	19%	2%	2%	6%	10%	3%	18%	6%	4%	1%	1%	1%	1%
	11:00 ~	164	23%	0%	4%	20%	2%	2%	5%	9%	3%	18%	6%	4%	1%	1%	1%	1%
	12:00 ~	133	23%	0%	3%	20%	2%	2%	6%	9%	3%	18%	6%	5%	1%	1%	1%	1%
	13:00 ~	134	24%	0%	3%	19%	2%	2%	6%	8%	3%	19%	6%	4%	1%	1%	1%	1%
	14:00 ~	134	24%	0%	3%	19%	2%	2%	6%	8%	3%	19%	6%	4%	1%	1%	1%	1%
	15:00 ~	170	25%	0%	3%	19%	2%	2%	6%	8%	3%	19%	6%	4%	1%	1%	1%	1%
	16:00 ~	173	25%	0%	3%	20%	2%	2%	6%	8%	3%	19%	6%	4%	1%	1%	1%	1%
	17:00 ~	204	25%	0%	2%	20%	1%	2%	7%	7%	2%	20%	5%	4%	1%	1%	0%	0%
	18:00 ~	210	26%	0%	2%	20%	1%	2%	7%	7%	2%	20%	5%	4%	1%	1%	1%	0%
	19:00 ~	206	26%	0%	2%	20%	1%	2%	7%	7%	2%	19%	5%	4%	1%	1%	0%	0%
	20:00 ~	205	25%	0%	2%	20%	1%	2%	7%	7%	2%	20%	5%	4%	1%	1%	0%	0%
	21:00 ~	173	25%	0%	3%	20%	2%	2%	6%	8%	3%	19%	6%	4%	1%	1%	1%	1%
	22:00 ~	171	25%	0%	3%	20%	2%	2%	6%	8%	3%	19%	6%	4%	1%	1%	1%	1%
	23:00 ~	137	24%	0%	3%	20%	2%	2%	7%	9%	3%	18%	6%	4%	1%	1%	1%	1%

Road No.	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
26a	00:00 ~	149	25%	0%	3%	21%	2%	2%	5%	8%	3%	19%	5%	4%	1%	1%	1%	1%
	01:00 ~	114	25%	0%	3%	19%	2%	2%	5%	9%	3%	19%	6%	4%	1%	1%	1%	1%
	02:00 ~	73	25%	0%	3%	19%	1%	1%	5%	10%	3%	19%	7%	4%	1%	1%	0%	0%
	03:00 ~	72	25%	0%	3%	18%	1%	1%	6%	10%	3%	19%	7%	4%	1%	1%	0%	0%
	04:00 ~	36	25%	0%	3%	17%	3%	3%	6%	11%	3%	19%	6%	6%	0%	0%	0%	0%
	05:00 ~	37	24%	0%	3%	16%	3%	3%	5%	11%	3%	19%	8%	5%	0%	0%	0%	0%
	06:00 ~	73	25%	0%	3%	15%	1%	1%	5%	11%	3%	19%	7%	5%	1%	1%	0%	1%
	07:00 ~	148	24%	0%	3%	14%	2%	2%	5%	11%	3%	19%	7%	5%	1%	1%	1%	1%
	08:00 ~	220	24%	0%	3%	13%	2%	2%	6%	12%	3%	19%	8%	6%	1%	1%	0%	1%
	09:00 ~	183	24%	0%	3%	15%	2%	2%	5%	11%	3%	19%	7%	5%	1%	1%	1%	1%
	10:00 ~	183	24%	0%	3%	16%	2%	2%	5%	11%	3%	19%	7%	5%	1%	1%	1%	1%
	11:00 ~	185	24%	0%	3%	17%	2%	2%	5%	10%	3%	19%	6%	5%	1%	1%	1%	1%
	12:00 ~	149	24%	0%	3%	18%	2%	2%	5%	9%	3%	19%	6%	5%	1%	1%	1%	1%
	13:00 ~	149	25%	0%	3%	19%	2%	2%	5%	9%	3%	19%	6%	4%	1%	1%	1%	1%
	14:00 ~	149	25%	0%	3%	21%	2%	2%	5%	8%	3%	19%	5%	4%	1%	1%	1%	1%
	15:00 ~	189	25%	0%	3%	22%	2%	2%	5%	7%	3%	20%	5%	4%	1%	1%	1%	1%
	16:00 ~	191	25%	0%	3%	23%	2%	2%	5%	6%	3%	19%	5%	4%	1%	1%	1%	1%
	17:00 ~	227	26%	0%	3%	24%	2%	2%	5%	6%	3%	20%	4%	3%	1%	1%	0%	0%
	18:00 ~	230	26%	0%	3%	25%	2%	2%	5%	5%	3%	20%	4%	3%	1%	1%	0%	0%
	19:00 ~	229	26%	0%	3%	24%	2%	2%	5%	6%	3%	20%	4%	3%	1%	1%	0%	0%
	20:00 ~	227	26%	0%	3%	24%	2%	2%	5%	6%	3%	19%	4%	4%	1%	1%	0%	0%
	21:00 ~	190	25%	0%	3%	23%	2%	2%	5%	6%	3%	19%	5%	4%	1%	1%	1%	1%
	22:00 ~	190	25%	0%	3%	22%	2%	2%	5%	7%	3%	19%	5%	4%	1%	1%	1%	1%
	23:00 ~	150	25%	0%	3%	21%	2%	2%	5%	7%	3%	19%	5%	4%	1%	1%	1%	1%

Road No	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
26b	00:00 ~	144	24%	0%	3%	19%	2%	2%	6%	9%	3%	18%	6%	5%	1%	1%	1%	1%
	01:00 ~	108	23%	0%	3%	19%	2%	2%	6%	9%	3%	19%	6%	5%	1%	1%	1%	1%
	02:00 ~	71	24%	0%	3%	18%	1%	3%	6%	10%	3%	18%	7%	4%	1%	1%	0%	0%
	03:00 ~	70	23%	0%	3%	17%	1%	3%	6%	10%	3%	19%	7%	6%	1%	1%	0%	0%
	04:00 ~	35	23%	0%	3%	17%	3%	3%	6%	11%	3%	17%	9%	6%	0%	0%	0%	0%
	05:00 ~	35	23%	0%	3%	17%	3%	3%	6%	11%	3%	17%	9%	6%	0%	0%	0%	0%
	06:00 ~	70	21%	0%	3%	16%	1%	1%	6%	11%	3%	19%	7%	6%	1%	1%	0%	1%
	07:00 ~	140	22%	0%	3%	15%	2%	2%	6%	12%	3%	18%	8%	6%	1%	1%	1%	1%
	08:00 ~	210	22%	0%	3%	14%	2%	2%	6%	13%	3%	18%	8%	6%	1%	1%	0%	1%
	09:00 ~	175	22%	0%	3%	15%	2%	2%	6%	13%	3%	18%	8%	6%	1%	1%	1%	1%
	10:00 ~	176	23%	0%	3%	16%	2%	2%	6%	11%	3%	18%	7%	5%	1%	1%	1%	1%
	11:00 ~	178	23%	0%	3%	17%	2%	2%	6%	11%	3%	18%	7%	5%	1%	1%	1%	1%
	12:00 ~	144	23%	0%	3%	17%	2%	2%	6%	10%	3%	18%	7%	5%	1%	1%	1%	1%
	13:00 ~	143	23%	0%	3%	18%	2%	2%	6%	10%	3%	18%	6%	5%	1%	1%	1%	1%
	14:00 ~	145	23%	0%	3%	19%	2%	2%	6%	9%	3%	18%	6%	5%	1%	1%	1%	1%
	15:00 ~	181	24%	0%	3%	20%	2%	2%	7%	8%	3%	18%	6%	4%	1%	1%	1%	1%
	16:00 ~	181	24%	0%	3%	21%	2%	2%	7%	8%	3%	18%	6%	4%	1%	1%	1%	1%
	17:00 ~	220	24%	0%	3%	22%	2%	2%	7%	7%	3%	18%	5%	4%	1%	1%	1%	0%
	18:00 ~	220	25%	0%	3%	23%	2%	2%	7%	6%	2%	19%	5%	4%	1%	1%	1%	0%
	19:00 ~	219	24%	0%	3%	22%	2%	2%	7%	7%	2%	19%	5%	4%	1%	1%	1%	0%
	20:00 ~	220	24%	0%	3%	21%	2%	2%	7%	7%	3%	18%	5%	4%	1%	1%	1%	0%
	21:00 ~	181	24%	0%	3%	21%	2%	2%	7%	8%	3%	18%	6%	4%	1%	1%	1%	1%
	22:00 ~	182	24%	0%	3%	20%	2%	2%	7%	8%	3%	18%	6%	4%	1%	1%	1%	1%
	23:00 ~	143	24%	0%	3%	20%	2%	2%	6%	8%	3%	18%	6%	4%	1%	1%	1%	1%

Road No	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
26c	00:00 ~	216	32%	0%	2%	15%	1%	1%	4%	6%	4%	25%	4%	3%	1%	0%	0%	0%
	01:00 ~	162	33%	0%	2%	15%	1%	1%	4%	6%	4%	25%	4%	3%	1%	1%	1%	1%
	02:00 ~	107	33%	0%	3%	15%	2%	1%	4%	6%	4%	25%	4%	3%	1%	1%	0%	0%
	03:00 ~	108	32%	0%	3%	14%	2%	1%	4%	6%	4%	26%	4%	3%	1%	1%	0%	0%
	04:00 ~	53	32%	0%	2%	15%	2%	2%	4%	6%	4%	26%	4%	4%	0%	0%	0%	0%
	05:00 ~	54	31%	0%	2%	15%	2%	2%	4%	7%	4%	26%	4%	4%	0%	0%	0%	0%
	06:00 ~	109	32%	0%	3%	14%	2%	1%	4%	6%	4%	26%	5%	3%	1%	1%	0%	0%
	07:00 ~	219	32%	0%	3%	14%	2%	1%	3%	7%	4%	25%	5%	3%	0%	0%	0%	0%
	08:00 ~	330	31%	0%	3%	13%	2%	1%	3%	7%	4%	25%	5%	3%	1%	1%	0%	1%
	09:00 ~	273	32%	0%	3%	14%	2%	1%	3%	7%	4%	25%	4%	3%	1%	0%	0%	0%
	10:00 ~	274	32%	0%	3%	14%	2%	1%	4%	7%	4%	25%	4%	3%	1%	0%	0%	0%
	11:00 ~	270	32%	0%	3%	14%	1%	1%	4%	6%	4%	26%	4%	3%	1%	0%	0%	0%
	12:00 ~	216	32%	0%	2%	14%	1%	1%	4%	6%	4%	25%	4%	3%	1%	0%	0%	0%
	13:00 ~	216	32%	0%	2%	14%	1%	1%	4%	6%	4%	25%	4%	3%	1%	0%	0%	0%
	14:00 ~	216	32%	0%	2%	15%	1%	1%	4%	6%	4%	25%	4%	3%	1%	0%	0%	0%
	15:00 ~	267	33%	0%	2%	15%	1%	1%	4%	5%	4%	25%	4%	3%	1%	0%	0%	0%
	16:00 ~	269	33%	0%	2%	15%	1%	1%	4%	5%	4%	25%	4%	3%	1%	1%	0%	0%
	17:00 ~	319	34%	0%	2%	15%	1%	2%	4%	5%	3%	26%	4%	3%	1%	1%	0%	0%
	18:00 ~	320	33%	0%	2%	16%	1%	2%	5%	4%	3%	26%	3%	3%	1%	1%	1%	0%
	19:00 ~	320	33%	0%	2%	16%	1%	2%	5%	4%	3%	26%	4%	3%	1%	1%	0%	0%
	20:00 ~	320	33%	0%	2%	15%	1%	2%	4%	5%	3%	26%	4%	3%	1%	1%	0%	0%
	21:00 ~	269	33%	0%	2%	15%	1%	1%	4%	5%	4%	25%	4%	3%	1%	1%	0%	0%
	22:00 ~	268	33%	0%	2%	15%	1%	1%	4%	5%	4%	25%	4%	3%	1%	0%	0%	0%
	23:00 ~	217	33%	0%	2%	15%	1%	1%	4%	6%	4%	25%	4%	3%	1%	0%	0%	0%

Road No	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
27	00:00 ~	219	21%	0%	4%	28%	3%	2%	5%	7%	2%	16%	5%	4%	1%	0%	0%	0%
	01:00 ~	165	21%	1%	4%	27%	3%	2%	5%	7%	2%	17%	5%	4%	1%	1%	1%	1%
	02:00 ~	110	22%	0%	5%	26%	3%	2%	5%	7%	3%	17%	5%	4%	1%	1%	1%	0%
	03:00 ~	113	22%	0%	4%	26%	3%	2%	4%	7%	3%	18%	4%	4%	1%	1%	1%	1%
	04:00 ~	55	24%	0%	4%	25%	4%	2%	4%	7%	4%	18%	5%	4%	0%	0%	0%	0%
	05:00 ~	55	24%	0%	4%	25%	4%	2%	4%	7%	4%	18%	5%	4%	0%	0%	0%	0%
	06:00 ~	113	23%	0%	4%	23%	3%	2%	4%	8%	3%	19%	5%	4%	1%	1%	1%	1%
	07:00 ~	227	24%	0%	4%	23%	3%	1%	4%	8%	3%	19%	5%	4%	1%	0%	0%	0%
	08:00 ~	340	24%	0%	4%	22%	3%	1%	4%	8%	3%	19%	5%	4%	1%	1%	0%	1%
	09:00 ~	283	24%	0%	5%	23%	3%	1%	4%	8%	3%	19%	5%	4%	1%	1%	0%	0%
	10:00 ~	279	23%	0%	4%	24%	3%	1%	4%	8%	3%	19%	5%	4%	1%	1%	0%	0%
	11:00 ~	278	23%	0%	4%	25%	3%	1%	4%	7%	3%	18%	5%	4%	1%	1%	0%	0%
	12:00 ~	223	22%	0%	4%	26%	3%	2%	4%	7%	3%	17%	5%	4%	1%	0%	0%	0%
	13:00 ~	221	21%	0%	4%	26%	3%	2%	5%	7%	3%	17%	5%	4%	1%	0%	0%	0%
	14:00 ~	219	21%	0%	4%	29%	3%	2%	5%	7%	2%	16%	5%	4%	1%	0%	0%	0%
	15:00 ~	272	20%	0%	4%	30%	3%	2%	6%	6%	2%	16%	5%	3%	1%	1%	1%	0%
	16:00 ~	270	20%	0%	4%	31%	3%	2%	6%	6%	2%	15%	5%	3%	1%	1%	1%	0%
	17:00 ~	320	19%	0%	4%	33%	3%	2%	6%	6%	2%	15%	5%	3%	1%	1%	1%	0%
	18:00 ~	320	18%	0%	4%	34%	3%	2%	6%	6%	2%	14%	5%	3%	1%	1%	1%	0%
	19:00 ~	320	19%	0%	4%	33%	3%	2%	6%	6%	2%	14%	5%	3%	1%	1%	1%	0%
	20:00 ~	321	19%	0%	4%	32%	2%	2%	6%	6%	2%	15%	5%	3%	1%	1%	1%	0%
	21:00 ~	270	20%	0%	4%	31%	3%	2%	6%	6%	2%	15%	5%	3%	1%	1%	1%	0%
	22:00 ~	272	20%	0%	4%	30%	3%	2%	6%	6%	2%	16%	5%	3%	1%	1%	1%	0%
	23:00 ~	218	21%	0%	4%	29%	3%	2%	5%	6%	2%	16%	5%	4%	1%	1%	0%	0%

Road No	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
28	00:00 ~	314	24%	0%	4%	29%	3%	1%	4%	5%	3%	19%	4%	3%	1%	0%	0%	0%
	01:00 ~	238	25%	0%	5%	28%	3%	1%	3%	5%	3%	19%	3%	3%	0%	0%	0%	0%
	02:00 ~	162	25%	1%	4%	27%	3%	1%	3%	5%	3%	20%	3%	2%	1%	1%	1%	0%
	03:00 ~	164	26%	1%	4%	26%	3%	1%	3%	5%	3%	20%	3%	2%	1%	1%	1%	1%
	04:00 ~	81	27%	0%	5%	26%	2%	1%	2%	5%	4%	21%	4%	2%	0%	0%	0%	0%
	05:00 ~	82	27%	0%	5%	26%	2%	1%	2%	5%	4%	22%	4%	2%	0%	0%	0%	0%
	06:00 ~	173	27%	1%	5%	24%	3%	1%	2%	5%	3%	21%	3%	2%	1%	1%	1%	1%
	07:00 ~	342	27%	0%	5%	23%	3%	1%	3%	5%	4%	22%	3%	2%	1%	0%	0%	0%
	08:00 ~	520	28%	0%	5%	23%	3%	1%	2%	5%	4%	22%	3%	2%	0%	0%	0%	0%
	09:00 ~	426	27%	0%	5%	24%	3%	1%	3%	5%	4%	22%	3%	2%	0%	0%	0%	0%
	10:00 ~	417	27%	0%	5%	25%	3%	1%	3%	5%	3%	21%	3%	2%	0%	0%	0%	0%
	11:00 ~	410	26%	0%	5%	26%	3%	1%	3%	5%	3%	21%	3%	2%	0%	0%	0%	0%
	12:00 ~	323	25%	0%	5%	27%	3%	1%	3%	5%	3%	20%	3%	2%	1%	0%	0%	0%
	13:00 ~	318	25%	0%	4%	28%	3%	1%	3%	5%	3%	19%	3%	3%	1%	0%	0%	0%
	14:00 ~	311	24%	0%	5%	29%	3%	1%	4%	5%	3%	19%	3%	3%	1%	0%	0%	0%
	15:00 ~	381	23%	0%	4%	31%	3%	1%	4%	4%	3%	18%	3%	2%	1%	1%	1%	0%
	16:00 ~	374	23%	0%	4%	32%	3%	1%	4%	5%	2%	18%	3%	2%	1%	1%	1%	0%
	17:00 ~	438	22%	0%	4%	34%	3%	2%	4%	4%	2%	17%	3%	3%	1%	0%	0%	0%
	18:00 ~	430	21%	0%	4%	35%	3%	2%	5%	4%	2%	16%	3%	3%	1%	1%	0%	0%
	19:00 ~	436	22%	0%	4%	34%	3%	2%	4%	4%	2%	17%	3%	3%	1%	0%	0%	0%
	20:00 ~	442	22%	0%	4%	33%	3%	2%	4%	4%	2%	17%	3%	2%	1%	0%	0%	0%
	21:00 ~	375	23%	0%	4%	32%	3%	1%	4%	5%	3%	18%	3%	2%	1%	1%	1%	0%
	22:00 ~	380	23%	0%	4%	31%	3%	1%	4%	4%	3%	18%	3%	2%	1%	1%	1%	0%
	23:00 ~	308	24%	0%	4%	30%	3%	1%	4%	5%	3%	19%	3%	3%	1%	1%	0%	0%

Road No.	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
29	00:00 ~	435	36%	0%	2%	13%	1%	1%	3%	4%	4%	29%	3%	2%	0%	0%	0%	0%
	01:00 ~	329	37%	0%	2%	13%	1%	1%	3%	4%	4%	29%	3%	2%	1%	0%	0%	0%
	02:00 ~	224	37%	0%	2%	13%	1%	1%	3%	4%	4%	29%	3%	2%	0%	0%	0%	0%
	03:00 ~	226	37%	0%	2%	12%	1%	1%	3%	4%	4%	29%	3%	2%	0%	0%	0%	0%
	04:00 ~	113	37%	0%	3%	12%	2%	1%	3%	4%	4%	29%	3%	2%	0%	0%	0%	0%
	05:00 ~	115	37%	0%	3%	12%	2%	1%	3%	4%	4%	30%	3%	2%	0%	0%	0%	0%
	06:00 ~	234	37%	0%	2%	12%	1%	1%	2%	4%	5%	29%	3%	2%	0%	0%	0%	0%
	07:00 ~	473	37%	0%	2%	12%	1%	1%	2%	4%	5%	30%	3%	2%	0%	0%	0%	0%
	08:00 ~	720	37%	0%	2%	11%	2%	1%	2%	4%	5%	30%	3%	2%	0%	0%	0%	0%
	09:00 ~	590	37%	0%	2%	12%	2%	1%	2%	4%	5%	30%	3%	2%	0%	0%	0%	0%
	10:00 ~	579	37%	0%	2%	12%	1%	1%	2%	4%	5%	30%	3%	2%	0%	0%	0%	0%
	11:00 ~	571	37%	0%	2%	12%	1%	1%	2%	4%	5%	29%	3%	2%	1%	0%	0%	0%
	12:00 ~	449	37%	0%	2%	13%	1%	1%	2%	4%	4%	29%	3%	2%	0%	0%	0%	0%
	13:00 ~	440	37%	0%	2%	13%	1%	1%	3%	4%	4%	29%	3%	2%	0%	0%	0%	0%
	14:00 ~	432	36%	0%	2%	13%	1%	1%	3%	4%	4%	28%	3%	2%	0%	0%	0%	0%
	15:00 ~	532	36%	0%	2%	14%	1%	1%	3%	4%	4%	28%	3%	2%	1%	0%	0%	0%
	16:00 ~	519	36%	0%	2%	14%	1%	1%	3%	4%	4%	28%	3%	2%	1%	0%	0%	0%
	17:00 ~	611	36%	0%	2%	15%	1%	1%	4%	4%	4%	28%	3%	2%	1%	0%	0%	0%
	18:00 ~	600	36%	0%	2%	15%	1%	1%	4%	3%	4%	27%	3%	2%	1%	1%	0%	0%
	19:00 ~	609	36%	0%	2%	15%	1%	1%	4%	3%	4%	27%	3%	2%	1%	0%	0%	0%
	20:00 ~	616	36%	0%	2%	15%	1%	1%	3%	4%	4%	28%	3%	2%	1%	0%	0%	0%
	21:00 ~	521	36%	0%	2%	14%	1%	1%	3%	4%	4%	28%	3%	2%	1%	0%	0%	0%
	22:00 ~	531	36%	0%	2%	14%	1%	1%	3%	4%	4%	28%	3%	2%	1%	0%	0%	0%
	23:00 ~	430	36%	0%	2%	14%	1%	1%	3%	4%	4%	28%	3%	2%	0%	0%	0%	0%

Road No.	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
30	00:00 ~	690	40%	0%	2%	14%	1%	0%	1%	2%	5%	31%	1%	1%	0%	0%	0%	0%
	01:00 ~	513	40%	0%	2%	13%	1%	0%	1%	2%	5%	31%	2%	1%	0%	0%	0%	0%
	02:00 ~	340	40%	0%	2%	13%	1%	1%	1%	2%	5%	31%	1%	1%	0%	0%	0%	0%
	03:00 ~	337	40%	0%	2%	12%	1%	1%	1%	2%	5%	31%	1%	1%	0%	0%	0%	0%
	04:00 ~	164	41%	0%	2%	12%	1%	1%	1%	2%	5%	32%	2%	1%	0%	0%	0%	0%
	05:00 ~	162	41%	0%	2%	11%	1%	1%	1%	2%	5%	33%	2%	1%	0%	0%	0%	0%
	06:00 ~	327	40%	0%	2%	10%	1%	1%	2%	3%	5%	32%	2%	1%	0%	0%	0%	0%
	07:00 ~	644	40%	0%	2%	10%	1%	0%	1%	3%	5%	32%	2%	1%	0%	0%	0%	0%
	08:00 ~	960	40%	0%	2%	9%	1%	0%	1%	3%	5%	32%	2%	1%	0%	0%	0%	0%
	09:00 ~	812	40%	0%	2%	10%	1%	0%	1%	3%	5%	32%	2%	1%	0%	0%	0%	0%
	10:00 ~	820	40%	0%	2%	11%	1%	0%	1%	3%	5%	32%	2%	1%	0%	0%	0%	0%
	11:00 ~	830	40%	0%	2%	12%	1%	0%	1%	3%	5%	32%	2%	1%	0%	0%	0%	0%
	12:00 ~	674	40%	0%	2%	12%	1%	0%	1%	2%	5%	32%	2%	1%	0%	0%	0%	0%
	13:00 ~	683	40%	0%	2%	13%	1%	0%	1%	2%	5%	31%	1%	1%	0%	0%	0%	0%
	14:00 ~	693	40%	0%	2%	14%	1%	0%	1%	2%	4%	31%	1%	1%	0%	0%	0%	0%
	15:00 ~	876	40%	0%	2%	15%	1%	0%	1%	2%	4%	31%	1%	1%	0%	0%	0%	0%
	16:00 ~	886	40%	0%	2%	15%	1%	0%	1%	2%	4%	31%	1%	1%	0%	0%	0%	0%
	17:00 ~	1079	40%	0%	2%	16%	1%	0%	1%	1%	4%	30%	1%	1%	0%	0%	0%	0%
	18:00 ~	1090	40%	0%	2%	17%	1%	0%	1%	1%	4%	30%	1%	1%	0%	0%	0%	0%
	19:00 ~	1082	40%	0%	2%	16%	1%	0%	1%	1%	4%	30%	1%	1%	0%	0%	0%	0%
	20:00 ~	1073	40%	0%	2%	16%	1%	0%	1%	1%	4%	31%	1%	1%	0%	0%	0%	0%
	21:00 ~	884	40%	0%	2%	15%	1%	0%	1%	2%	4%	31%	1%	1%	0%	0%	0%	0%
	22:00 ~	876	40%	0%	2%	15%	1%	0%	1%	2%	4%	31%	1%	1%	0%	0%	0%	0%
	23:00 ~	697	40%	0%	2%	14%	1%	0%	1%	2%	4%	31%	1%	1%	0%	0%	0%	0%

Road No.	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
53	00:00 ~	435	36%	0%	2%	13%	1%	1%	3%	4%	4%	29%	3%	2%	0%	0%	0%	0%
	01:00 ~	329	37%	0%	2%	13%	1%	1%	3%	4%	4%	29%	3%	2%	1%	0%	0%	0%
	02:00 ~	224	37%	0%	2%	13%	1%	1%	3%	4%	4%	29%	3%	2%	0%	0%	0%	0%
	03:00 ~	226	37%	0%	2%	12%	1%	1%	3%	4%	4%	29%	3%	2%	0%	0%	0%	0%
	04:00 ~	113	37%	0%	3%	12%	2%	1%	3%	4%	4%	29%	3%	2%	0%	0%	0%	0%
	05:00 ~	115	37%	0%	3%	12%	2%	1%	3%	4%	4%	30%	3%	2%	0%	0%	0%	0%
	06:00 ~	234	37%	0%	2%	12%	1%	1%	2%	4%	5%	29%	3%	2%	0%	0%	0%	0%
	07:00 ~	473	37%	0%	2%	12%	1%	1%	2%	4%	5%	30%	3%	2%	0%	0%	0%	0%
	08:00 ~	720	37%	0%	2%	11%	2%	1%	2%	4%	5%	30%	3%	2%	0%	0%	0%	0%
	09:00 ~	590	37%	0%	2%	12%	2%	1%	2%	4%	5%	30%	3%	2%	0%	0%	0%	0%
	10:00 ~	579	37%	0%	2%	12%	1%	1%	2%	4%	5%	30%	3%	2%	0%	0%	0%	0%
	11:00 ~	571	37%	0%	2%	12%	1%	1%	2%	4%	5%	29%	3%	2%	1%	0%	0%	0%
	12:00 ~	449	37%	0%	2%	13%	1%	1%	2%	4%	4%	29%	3%	2%	0%	0%	0%	0%
	13:00 ~	440	37%	0%	2%	13%	1%	1%	3%	4%	4%	29%	3%	2%	0%	0%	0%	0%
	14:00 ~	432	36%	0%	2%	13%	1%	1%	3%	4%	4%	28%	3%	2%	0%	0%	0%	0%
	15:00 ~	532	36%	0%	2%	14%	1%	1%	3%	4%	4%	28%	3%	2%	1%	0%	0%	0%
	16:00 ~	519	36%	0%	2%	14%	1%	1%	3%	4%	4%	28%	3%	2%	1%	0%	0%	0%
	17:00 ~	611	36%	0%	2%	15%	1%	1%	4%	4%	4%	28%	3%	2%	1%	0%	0%	0%
	18:00 ~	600	36%	0%	2%	15%	1%	1%	4%	3%	4%	27%	3%	2%	1%	1%	0%	0%
	19:00 ~	609	36%	0%	2%	15%	1%	1%	4%	3%	4%	27%	3%	2%	1%	0%	0%	0%
	20:00 ~	616	36%	0%	2%	15%	1%	1%	3%	4%	4%	28%	3%	2%	1%	0%	0%	0%
	21:00 ~	521	36%	0%	2%	14%	1%	1%	3%	4%	4%	28%	3%	2%	1%	0%	0%	0%
	22:00 ~	531	36%	0%	2%	14%	1%	1%	3%	4%	4%	28%	3%	2%	1%	0%	0%	0%
	23:00 ~	430	36%	0%	2%	14%	1%	1%	3%	4%	4%	28%	3%	2%	0%	0%	0%	0%

Road No.	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
54	00:00 ~	690	40%	0%	2%	14%	1%	0%	1%	2%	5%	31%	1%	1%	0%	0%	0%	0%
	01:00 ~	513	40%	0%	2%	13%	1%	0%	1%	2%	5%	31%	2%	1%	0%	0%	0%	0%
	02:00 ~	340	40%	0%	2%	13%	1%	1%	1%	2%	5%	31%	1%	1%	0%	0%	0%	0%
	03:00 ~	337	40%	0%	2%	12%	1%	1%	1%	2%	5%	31%	1%	1%	0%	0%	0%	0%
	04:00 ~	164	41%	0%	2%	12%	1%	1%	1%	2%	5%	32%	2%	1%	0%	0%	0%	0%
	05:00 ~	162	41%	0%	2%	11%	1%	1%	1%	2%	5%	33%	2%	1%	0%	0%	0%	0%
	06:00 ~	327	40%	0%	2%	10%	1%	1%	2%	3%	5%	32%	2%	1%	0%	0%	0%	0%
	07:00 ~	644	40%	0%	2%	10%	1%	0%	1%	3%	5%	32%	2%	1%	0%	0%	0%	0%
	08:00 ~	960	40%	0%	2%	9%	1%	0%	1%	3%	5%	32%	2%	1%	0%	0%	0%	0%
	09:00 ~	812	40%	0%	2%	10%	1%	0%	1%	3%	5%	32%	2%	1%	0%	0%	0%	0%
	10:00 ~	820	40%	0%	2%	11%	1%	0%	1%	3%	5%	32%	2%	1%	0%	0%	0%	0%
	11:00 ~	830	40%	0%	2%	12%	1%	0%	1%	3%	5%	32%	2%	1%	0%	0%	0%	0%
	12:00 ~	674	40%	0%	2%	12%	1%	0%	1%	2%	5%	32%	2%	1%	0%	0%	0%	0%
	13:00 ~	683	40%	0%	2%	13%	1%	0%	1%	2%	5%	31%	1%	1%	0%	0%	0%	0%
	14:00 ~	693	40%	0%	2%	14%	1%	0%	1%	2%	4%	31%	1%	1%	0%	0%	0%	0%
	15:00 ~	876	40%	0%	2%	15%	1%	0%	1%	2%	4%	31%	1%	1%	0%	0%	0%	0%
	16:00 ~	886	40%	0%	2%	15%	1%	0%	1%	2%	4%	31%	1%	1%	0%	0%	0%	0%
	17:00 ~	1079	40%	0%	2%	16%	1%	0%	1%	1%	4%	30%	1%	1%	0%	0%	0%	0%
	18:00 ~	1090	40%	0%	2%	17%	1%	0%	1%	1%	4%	30%	1%	1%	0%	0%	0%	0%
	19:00 ~	1082	40%	0%	2%	16%	1%	0%	1%	1%	4%	30%	1%	1%	0%	0%	0%	0%
	20:00 ~	1073	40%	0%	2%	16%	1%	0%	1%	1%	4%	31%	1%	1%	0%	0%	0%	0%
	21:00 ~	884	40%	0%	2%	15%	1%	0%	1%	2%	4%	31%	1%	1%	0%	0%	0%	0%
	22:00 ~	876	40%	0%	2%	15%	1%	0%	1%	2%	4%	31%	1%	1%	0%	0%	0%	0%
	23:00 ~	697	40%	0%	2%	14%	1%	0%	1%	2%	4%	31%	1%	1%	0%	0%	0%	0%

Vehicle Kilometers Travelled

Road No.	Road Name	Dir	Road Length (km)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
7	Road L3	SB	0.40	00:00 – 01:00	31.2	0.0	2.0	12.8	1.2	1.6	4.0	5.6	3.6	24.6	4.0	2.8	0.8	0.4	0.4	0.4
			0.40	01:00 – 02:00	24.4	0.0	1.6	9.6	0.8	1.2	2.8	4.4	3.2	19.2	2.8	2.0	0.4	0.4	0.4	0.4
			0.40	02:00 – 03:00	17.2	0.0	1.2	6.4	0.8	0.8	2.0	2.8	2.0	13.6	2.0	1.6	0.4	0.4	0.4	0.0
			0.40	03:00 – 04:00	18.0	0.0	1.2	6.0	0.8	0.8	2.0	3.2	2.4	14.0	2.0	1.6	0.4	0.4	0.4	0.0
			0.40	04:00 – 05:00	9.2	0.0	0.4	3.2	0.4	0.4	0.8	1.6	1.2	7.2	1.2	0.8	0.0	0.0	0.0	0.0
			0.40	05:00 – 06:00	9.6	0.0	0.4	3.2	0.4	0.4	0.8	1.6	1.2	7.6	1.2	0.8	0.0	0.0	0.0	0.0
			0.40	06:00 – 07:00	20.0	0.0	1.2	8.0	0.8	0.8	1.6	3.6	2.8	16.0	2.0	1.6	0.4	0.4	0.4	0.4
			0.40	07:00 – 08:00	41.2	0.0	2.4	12.0	1.6	1.2	3.2	7.2	5.6	33.2	4.4	3.2	0.8	0.4	0.4	0.4
			0.40	08:00 – 09:00	64.0	0.4	3.6	17.6	2.4	1.6	4.8	10.8	6.4	51.6	6.8	4.8	0.8	0.8	0.4	0.8
			0.40	09:00 – 10:00	50.8	0.4	2.8	14.8	2.0	1.6	4.4	6.8	6.8	40.8	5.6	4.0	0.8	0.8	0.4	0.4
			0.40	10:00 – 11:00	48.4	0.4	2.8	15.2	2.0	1.6	4.4	8.4	6.4	38.8	5.2	4.0	0.8	0.8	0.4	0.4
			0.40	11:00 – 12:00	46.0	0.0	2.8	15.2	1.6	1.6	4.8	8.0	6.0	36.4	5.2	3.6	0.8	0.8	0.4	0.4
			0.40	12:00 – 13:00	34.8	0.0	2.0	12.4	1.2	1.2	4.0	6.0	4.4	27.6	4.0	2.8	0.8	0.8	0.4	0.4
			0.40	13:00 – 14:00	32.8	0.0	2.0	12.4	1.2	1.2	4.0	5.6	4.0	26.0	4.0	2.8	0.8	0.8	0.4	0.4
			0.40	14:00 – 15:00	30.6	0.0	2.0	12.8	1.2	1.6	4.0	5.6	3.6	24.0	4.0	2.8	0.8	0.8	0.4	0.4
			0.40	15:00 – 16:00	36.0	0.0	2.4	16.0	1.6	2.0	5.2	6.4	4.0	28.0	4.8	3.6	0.8	0.8	0.4	0.4
			0.40	16:00 – 17:00	33.6	0.0	2.0	16.4	1.6	2.0	5.6	6.0	3.6	26.0	4.8	3.2	0.8	0.8	0.4	0.4
			0.40	17:00 – 18:00	37.2	0.0	2.4	19.6	1.6	2.4	6.8	6.8	4.0	28.8	5.6	4.0	1.2	0.8	0.8	0.4
			0.40	18:00 – 19:00	34.4	0.0	2.4	20.0	1.6	2.4	6.8	6.4	3.6	26.0	5.2	4.0	1.2	0.8	0.8	0.4
			0.40	19:00 – 20:00	36.4	0.0	2.4	20.0	1.6	2.4	6.6	6.8	4.0	28.0	5.2	4.0	1.2	0.8	0.8	0.4
			0.40	20:00 – 21:00	38.8	0.0	2.4	19.6	1.6	2.4	6.6	7.2	4.4	29.6	5.6	4.0	1.2	0.8	0.8	0.4
			0.40	21:00 – 22:00	34.0	0.0	2.0	16.4	1.6	2.0	5.6	6.0	4.0	26.4	4.8	3.2	0.8	0.8	0.4	0.4
			0.40	22:00 – 23:00	35.6	0.0	2.4	16.0	1.6	2.0	5.2	6.4	4.0	28.0	4.8	3.6	0.8	0.8	0.4	0.4
			0.40	23:00 – 00:00	30.0	0.0	2.0	12.8	1.2	1.6	4.0	5.2	3.6	23.6	4.0	2.8	0.8	0.4	0.4	0.4

Road No.	Road Name	Dir	Road Length (km)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
8	Road L3	NB	0.40	00:00 – 01:00	40.0	0.0	2.0	13.6	1.2	1.6	4.8	6.4	4.8	31.2	4.4	3.2	0.8	0.8	0.4	0.4
			0.40	01:00 – 02:00	30.8	0.0	1.6	10.0	1.2	1.2	3.2	4.8	3.6	24.4	3.2	2.4	0.8	0.4	0.4	0.4
			0.40	02:00 – 03:00	21.2	0.0	1.2	6.8	0.8	0.8	2.0	3.2	2.8	16.8	2.4	1.6	0.4	0.4	0.4	0.4
			0.40	03:00 – 04:00	22.0	0.0	1.2	6.8	0.8	0.8	2.0	3.6	2.8	17.2	2.4	1.6	0.4	0.4	0.4	0.4
			0.40	04:00 – 05:00	11.2	0.0	0.8	3.6	0.4	0.4	1.2	2.0	1.6	8.8	1.2	0.8	0.0	0.0	0.0	0.0
			0.40	05:00 – 06:00	11.6	0.0	0.8	3.6	0.4	0.4	1.2	2.0	1.6	9.2	1.2	0.8	0.0	0.0	0.0	0.0
			0.40	06:00 – 07:00	23.6	0.0	1.2	6.8	0.8	0.8	2.0	4.0	3.2	18.8	2.4	1.6	0.4	0.4	0.4	0.4
			0.40	07:00 – 08:00	46.4	0.0	2.8	13.6	1.6	1.2	3.6	8.0	6.4	38.8	4.8	3.6	0.8	0.4	0.4	0.4
			0.40	08:00 – 09:00	74.4	0.4	4.4	20.8	2.8	2.0	5.6	12.4	10.0	59.6	7.6	5.6	1.2	0.8	0.8	0.8
			0.40	09:00 – 10:00	60.0	0.4	3.6	17.2	2.4	1.6	4.8	9.6	8.0	48.0	6.0	4.4	0.8	0.8	0.4	0.8
			0.40	10:00 – 11:00	57.6	0.4	3.2	17.2	2.0	1.6	5.2	9.2	7.6	46.0	6.0	4.4	0.8	0.8	0.4	0.4
			0.40	11:00 – 12:00	55.6	0.4	3.2	17.2	2.0	2.0	5.2	8.8	7.2	44.4	6.0	4.4	0.8	0.8	0.4	0.4
			0.40	12:00 – 13:00	42.8	0.0	2.4	13.6	1.6	1.6	4.4	6.8	5.2	34.0	4.8	3.2	0.8	0.4	0.4	0.4
			0.40	13:00 – 14:00	41.2	0.0	2.4	13.6	1.6	1.6	4.4	6.4	4.8	32.4	4.4	3.2	0.8	0.8	0.4	0.4
			0.40	14:00 – 15:00	39.6	0.0	2.0	13.6	1.2	1.6	4.8	6.0	4.8	30.8	4.4	3.2	0.8	0.8	0.4	0.4
			0.40	15:00 – 16:00	47.2	0.0	2.4	16.8	1.6	2.0	6.0	7.2	5.6	36.8	5.2	4.0	1.2	0.8	0.8	0.4
			0.40	16:00 – 17:00	45.2	0.0	2.4	16.8	1.6	2.0	6.4	6.8	4.8	35.2	5.2	4.0	1.2	0.8	0.8	0.4
			0.40	17:00 – 18:00	52.0	0.0	2.4	20.0	1.6	2.8	7.6	7.6	5.6	39.6	6.0	4.4	1.2	0.8	0.8	0.4
			0.40	18:00 – 19:00	49.6	0.0	2.4	20.0	1.6	2.8	8.0	7.2	5.2	37.6	6.0	4.4	1.2	1.2	0.8	0.4
			0.40	19:00 – 20:00	51.2	0.0	2.4	20.0	1.6	2.8	7.6	7.6	5.2	39.2	6.0	4.4	1.2	0.8	0.8	0.4
			0.40	20:00 – 21:00	52.8	0.0	2.8	20.0	1.6	2.8	7.6	8.0	5.6	40.8	6.4	4.4	1.2	0.8	0.8	0.4
			0.40	21:00 – 22:00	45.6	0.0	2.4	16.8	1.6	2.0	6.0	6.8	5.2	35.2	5.2	4.0	1.2	0.8	0.8	0.4
			0.40	22:00 – 23:00	47.2	0.0	2.4	16.8	1.6	2.0	6.0	7.2	5.2	36.4	5.2	4.0	1.2	0.8	0.8	0.4
			0.40	23:00 – 00:00	38.8	0.0	2.0	13.6	1.2	1.6	4.8	6.0	4.4	30.4	4.4	3.2	0.8	0.8	0.4	0.4

Road No.	Road Name	Dir	Road Length (km)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
9	Road L5	NB	0.44	00:00 – 01:00	32.6	0.0	0.0	0.0	0.0	0.9	2.6	3.1	4.0	25.5	2.2	1.8	0.4	0.4	0.4	0.0
			0.44	01:00 – 02:00	24.2	0.0	0.0	0.0	0.0	0.4	1.8	2.6	2.6	18.9	1.8	1.3	0.4	0.4	0.0	0.0
			0.44	02:00 – 03:00	16.3	0.0	0.0	0.0	0.0	0.4	1.3	1.8	1.8	12.8	1.3	0.9	0.0	0.0	0.0	0.0
			0.44	03:00 – 04:00	15.8	0.0	0.0	0.0	0.0	0.4	0.9	1.8	1.8	12.3	1.3	0.9	0.0	0.0	0.0	0.0
			0.44	04:00 – 05:00	7.9	0.0	0.0	0.0	0.0	0.0	0.4	0.9	0.9	6.2	0.4	0.4	0.0	0.0	0.0	0.0
			0.44	05:00 – 06:00	7.9	0.0	0.0	0.0	0.0	0.0	0.4	0.9	0.9	6.2	0.4	0.4	0.0	0.0	0.0	0.0
			0.44	06:00 – 07:00	15.4	0.0	0.0	0.0	0.0	0.4	0.9	1.8	2.2	12.3	1.3	0.9	0.0	0.0	0.0	0.0
			0.44	07:00 – 08:00	30.8	0.0	0.0	0.0	0.0	0.4	1.8	4.0	4.0	24.6	2.6	1.8	0.4	0.4	0.4	0.4
			0.44	08:00 – 09:00	45.9	0.0	0.0	0.0	0.0	0.9	2.6	6.2	6.2	36.5	3.5	2.6	0.4	0.4	0.4	0.4
			0.44	09:00 – 10:00	38.3	0.0	0.0	0.0	0.0	0.9	2.2	4.8	4.8	30.8	3.1	2.2	0.4	0.4	0.4	0.4
			0.44	10:00 – 11:00	38.7	0.0	0.0	0.0	0.0	0.9	2.6	4.8	4.8	30.8	3.1	2.2	0.4	0.4	0.4	0.4
			0.44	11:00 – 12:00	39.6	0.0	0.0	0.0	0.0	0.9	2.6	4.4	4.6	31.2	3.1	2.2	0.4	0.4	0.4	0.4
			0.44	12:00 – 13:00	32.1	0.0	0.0	0.0	0.0	0.9	2.2	3.5	4.0	25.1	2.2	1.8	0.4	0.4	0.4	0.4
			0.44	13:00 – 14:00	32.6	0.0	0.0	0.0	0.0	0.9	2.2	3.5	4.0	25.5	2.2	1.8	0.4	0.4	0.4	0.0
			0.44	14:00 – 15:00	33.0	0.0	0.0	0.0	0.0	0.9	2.6	3.1	3.5	25.5	2.2	1.8	0.4	0.4	0.4	0.0
			0.44	15:00 – 16:00	41.8	0.0	0.0	0.0	0.0	1.3	3.1	4.0	4.4	32.1	2.6	2.2	0.4	0.4	0.4	0.4
			0.44	16:00 – 17:00	42.2	0.0	0.0	0.0	0.0	1.3	3.5	3.5	4.4	32.6	2.6	2.2	0.4	0.4	0.4	0.4
			0.44	17:00 – 18:00	51.5	0.0	0.0	0.0	0.0	1.3	4.4	4.4	5.3	39.2	3.5	2.6	0.9	0.4	0.4	0.4
			0.44	18:00 – 19:00	51.9	0.0	0.0	0.0	0.0	1.3	4.4	4.8	5.3	39.6	3.5	2.2	0.9	0.4	0.4	0.4
			0.44	19:00 – 20:00	51.5	0.0	0.0	0.0	0.0	1.3	4.4	4.0	5.3	39.2	3.5	2.6	0.9	0.4	0.4	0.4
			0.44	20:00 – 21:00	51.0	0.0	0.0	0.0	0.0	1.3	4.0	4.4	5.3	39.2	3.5	2.6	0.9	0.4	0.4	0.4
			0.44	21:00 – 22:00	42.2	0.0	0.0	0.0	0.0	1.3	3.5	3.5	4.4	32.6	2.6	2.2	0.4	0.4	0.4	0.4
			0.44	22:00 – 23:00	41.8	0.0	0.0	0.0	0.0	1.3	3.1	4.0	4.4	32.1	2.6	2.2	0.4	0.4	0.4	0.4
			0.44	23:00 – 00:00	33.0	0.0	0.0	0.0	0.0	0.9	2.6	3.1	3.5	25.5	2.2	1.8	0.4	0.4	0.4	0.0

Vehicle Kilometers Travelled

Road No.	Road Name	Dir	Road Length (km)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(5)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
10	Road L5	SB	0.44	00:00 – 01:00	14.1	0.0	0.0	0.0	0.0	0.0	0.4	0.9	1.8	11.0	0.4	0.4	0.0	0.0	0.0	0.0
			0.44	01:00 – 02:00	11.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	1.3	8.8	0.4	0.4	0.0	0.0	0.0	0.0
			0.44	02:00 – 03:00	7.5	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.9	6.2	0.4	0.0	0.0	0.0	0.0	0.0
			0.44	03:00 – 04:00	7.9	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.9	6.2	0.4	0.0	0.0	0.0	0.0	0.0
			0.44	04:00 – 05:00	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	3.1	0.0	0.0	0.0	0.0	0.0	0.0
			0.44	05:00 – 06:00	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	3.5	0.0	0.0	0.0	0.0	0.0	0.0
			0.44	06:00 – 07:00	8.4	0.0	0.0	0.0	0.0	0.0	0.4	0.4	1.3	7.0	0.4	0.0	0.0	0.0	0.0	0.0
			0.44	07:00 – 08:00	17.6	0.0	0.0	0.0	0.0	0.0	0.4	0.9	2.2	14.1	0.4	0.4	0.0	0.0	0.0	0.0
			0.44	08:00 – 09:00	27.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	3.5	22.0	0.9	0.9	0.0	0.0	0.0	0.0
			0.44	09:00 – 10:00	22.0	0.0	0.0	0.0	0.0	0.0	0.4	1.3	3.1	17.6	0.9	0.4	0.0	0.0	0.0	0.0
			0.44	10:00 – 11:00	21.1	0.0	0.0	0.0	0.0	0.0	0.4	1.3	2.6	16.7	0.9	0.4	0.0	0.0	0.0	0.0
			0.44	11:00 – 12:00	20.2	0.0	0.0	0.0	0.0	0.4	0.9	1.3	2.6	15.8	0.9	0.4	0.0	0.0	0.0	0.0
			0.44	12:00 – 13:00	15.4	0.0	0.0	0.0	0.0	0.0	0.4	0.9	1.8	12.3	0.4	0.4	0.0	0.0	0.0	0.0
			0.44	13:00 – 14:00	14.5	0.0	0.0	0.0	0.0	0.0	0.4	0.9	1.8	11.4	0.4	0.4	0.0	0.0	0.0	0.0
			0.44	14:00 – 15:00	14.1	0.0	0.0	0.0	0.0	0.0	0.4	0.9	1.8	11.0	0.4	0.4	0.0	0.0	0.0	0.0
			0.44	15:00 – 16:00	16.3	0.0	0.0	0.0	0.0	0.4	0.9	0.9	1.8	12.8	0.9	0.4	0.0	0.0	0.0	0.0
			0.44	16:00 – 17:00	15.4	0.0	0.0	0.0	0.0	0.4	0.9	0.9	1.8	11.9	0.9	0.4	0.0	0.0	0.0	0.0
			0.44	17:00 – 18:00	17.6	0.0	0.0	0.0	0.0	0.4	0.9	0.9	1.8	13.6	0.9	0.4	0.0	0.0	0.0	0.0
			0.44	18:00 – 19:00	16.7	0.0	0.0	0.0	0.0	0.4	0.9	0.9	1.8	12.6	0.9	0.4	0.0	0.0	0.0	0.0
			0.44	19:00 – 20:00	17.2	0.0	0.0	0.0	0.0	0.4	0.9	0.9	1.8	13.2	0.9	0.4	0.0	0.0	0.0	0.0
			0.44	20:00 – 21:00	18.0	0.0	0.0	0.0	0.0	0.4	0.9	0.9	1.8	14.1	0.9	0.4	0.0	0.0	0.0	0.0
			0.44	21:00 – 22:00	15.6	0.0	0.0	0.0	0.0	0.4	0.9	0.9	1.8	12.3	0.9	0.4	0.0	0.0	0.0	0.0
			0.44	22:00 – 23:00	16.3	0.0	0.0	0.0	0.0	0.4	0.9	0.9	1.8	12.8	0.9	0.4	0.0	0.0	0.0	0.0
			0.44	23:00 – 00:00	13.6	0.0	0.0	0.0	0.0	0.0	0.4	0.9	1.8	10.6	0.4	0.4	0.0	0.0	0.0	0.0

Road No.	Road Name	Dir	Road Length (km)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(5)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
13	Road L4	NB	0.43	00:00 – 01:00	31.8	0.4	4.7	29.7	3.0	1.3	4.3	5.6	3.9	24.9	3.9	3.0	0.9	0.4	0.4	0.4
			0.43	01:00 – 02:00	24.1	0.4	3.4	21.9	2.2	0.9	3.0	4.3	3.0	18.9	3.0	2.2	0.4	0.4	0.4	0.4
			0.43	02:00 – 03:00	16.3	0.0	2.6	14.6	1.7	0.9	2.2	3.0	2.2	12.9	2.2	1.3	0.4	0.4	0.0	0.0
			0.43	03:00 – 04:00	16.6	0.0	2.6	14.2	1.7	0.9	1.7	3.0	2.2	13.3	2.2	1.3	0.4	0.4	0.0	0.0
			0.43	04:00 – 05:00	8.6	0.0	1.3	7.3	0.9	0.4	0.9	1.7	1.3	6.9	0.9	0.9	0.0	0.0	0.0	0.0
			0.43	05:00 – 06:00	8.6	0.0	1.3	6.9	0.9	0.4	0.9	1.7	1.3	6.9	0.9	0.9	0.0	0.0	0.0	0.0
			0.43	06:00 – 07:00	17.6	0.0	2.6	14.2	1.7	0.4	1.7	3.4	2.2	14.2	2.2	1.3	0.4	0.4	0.0	0.0
			0.43	07:00 – 08:00	36.1	0.4	5.6	27.5	3.4	1.3	3.0	6.5	4.7	29.2	4.3	3.0	0.4	0.4	0.4	0.4
			0.43	08:00 – 09:00	55.5	0.4	8.6	41.3	5.6	1.7	4.7	10.3	7.3	44.7	6.5	4.7	0.9	0.9	0.4	0.9
			0.43	09:00 – 10:00	45.2	0.4	6.9	34.8	4.3	1.3	3.9	8.2	6.0	36.1	5.2	3.9	0.9	0.4	0.4	0.4
			0.43	10:00 – 11:00	43.9	0.4	6.5	35.3	4.3	1.3	4.3	8.2	5.6	34.8	5.2	3.9	0.9	0.4	0.4	0.4
			0.43	11:00 – 12:00	42.6	0.4	6.5	35.7	4.3	1.7	4.7	7.7	5.6	34.0	5.2	3.9	0.9	0.4	0.4	0.4
			0.43	12:00 – 13:00	33.1	0.4	4.7	28.8	3.0	1.3	3.9	6.0	4.3	26.2	3.9	3.0	0.9	0.4	0.4	0.4
			0.43	13:00 – 14:00	32.3	0.4	4.7	29.2	3.0	1.3	3.9	5.6	3.9	25.4	3.9	3.0	0.9	0.4	0.4	0.4
			0.43	14:00 – 15:00	31.4	0.4	4.3	29.7	3.0	1.3	4.3	5.6	3.9	24.5	3.9	3.0	0.9	0.4	0.4	0.4
			0.43	15:00 – 16:00	38.3	0.4	5.2	37.4	3.4	1.7	5.6	6.5	4.3	29.7	4.7	3.4	0.9	0.9	0.4	0.4
			0.43	16:00 – 17:00	37.0	0.4	5.2	37.6	3.4	2.2	5.6	6.5	3.9	28.4	4.7	3.4	0.9	0.9	0.4	0.4
			0.43	17:00 – 18:00	43.0	0.4	5.6	46.0	3.9	2.6	7.3	7.3	4.7	33.1	5.6	4.3	1.3	0.9	0.9	0.4
			0.43	18:00 – 19:00	41.7	0.4	5.6	46.4	3.4	2.6	7.3	6.9	4.3	31.8	5.6	4.3	1.3	0.9	0.9	0.4
			0.43	19:00 – 20:00	42.6	0.4	5.6	46.0	3.9	2.6	7.3	6.9	4.3	32.7	5.6	4.3	1.3	0.9	0.9	0.4
			0.43	20:00 – 21:00	43.4	0.4	6.0	45.6	3.9	2.6	6.9	7.3	4.7	33.5	5.6	4.3	1.3	0.9	0.9	0.4
			0.43	21:00 – 22:00	37.0	0.4	5.2	37.8	3.4	2.2	5.6	6.5	3.9	28.6	4.7	3.4	0.9	0.9	0.4	0.4
			0.43	22:00 – 23:00	37.6	0.4	5.2	37.4	3.4	1.7	5.6	6.5	4.3	29.2	4.7	3.4	0.9	0.9	0.4	0.4
			0.43	23:00 – 00:00	31.0	0.4	4.3	29.7	3.0	1.3	4.3	5.2	3.4	24.1	3.9	3.0	0.9	0.4	0.4	0.4

Road No.	Road Name	Dir	Road Length (km)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(5)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
14	Road L4	SB	0.43	00:00 – 01:00	37.4	0.4	4.7	29.7	3.0	1.7	4.7	6.5	4.3	29.2	4.3	3.4	0.9	0.4	0.4	0.4
			0.43	01:00 – 02:00	26.8	0.4	3.4	21.9	2.2	1.3	3.4	5.2	3.4	22.8	3.4	2.6	0.4	0.4	0.4	0.4
			0.43	02:00 – 03:00	19.8	0.0	2.6	14.6	1.7	0.9	2.2	3.4	2.6	15.5	2.2	1.7	0.4	0.4	0.4	0.4
			0.43	03:00 – 04:00	20.2	0.0	2.6	14.2	1.7	0.9	2.2	3.4	2.6	15.9	2.6	1.7	0.4	0.4	0.4	0.4
			0.43	04:00 – 05:00	10.3	0.0	1.3	7.3	0.9	0.4	0.9	1.7	1.3	8.2	1.3	0.9	0.0	0.0	0.0	0.0
			0.43	05:00 – 06:00	10.8	0.0	1.3	6.9	0.9	0.4	0.9	2.2	1.3	8.6	1.3	0.9	0.0	0.0	0.0	0.0
			0.43	06:00 – 07:00	21.9	0.0	2.6	14.2	1.7	0.9	2.2	3.9	3.0	17.6	2.6	1.7	0.4	0.4	0.4	0.4
			0.43	07:00 – 08:00	44.7	0.4	5.6	27.5	3.4	1.3	3.9	6.6	6.0	36.1	5.2	3.9	0.9	0.4	0.4	0.4
			0.43	08:00 – 09:00	68.8	0.4	8.6	41.3	5.6	2.2	6.0	13.3	9.0	55.5	8.2	6.0	1.3	0.9	0.9	0.9
			0.43	09:00 – 10:00	55.5	0.4	6.9	34.8	4.3	1.7	5.2	10.3	7.3	44.3	6.5	4.7	0.9	0.9	0.4	0.9
			0.43	10:00 – 11:00	53.8	0.4	6.5	35.3	4.3	1.7	5.2	9.9	6.9	42.6	6.5	4.7	0.9	0.9	0.4	0.4
			0.43	11:00 – 12:00	51.6	0.4	6.5	35.7	4.3	1.7	5.2	9.5	6.5	40.9	6.0	4.3	0.9	0.9	0.4	0.4
			0.43	12:00 – 13:00	40.0	0.4	4.7	28.8	3.0	1.7	4.3	6.9	4.7	31.4	4.7	3.4	0.9	0.4	0.4	0.4
			0.43	13:00 – 14:00	38.3	0.4	4.7	29.2	3.0	1.7	4.3	6.9	4.7	30.1	4.7	3.4	0.9	0.4	0.4	0.4
			0.43	14:00 – 15:00	37.0	0.4	4.3	29.7	3.0	1.7	4.7	6.5	4.3	28.8	4.3	3.0	0.9	0.4	0.4	0.4
			0.43	15:00 – 16:00	44.3	0.4	5.2	37.4	3.4	2.2	6.0	7.3	5.2	34.4	5.2	3.9	0.9	0.9	0.4	0.4
			0.43	16:00 – 17:00	42.1	0.4	5.2	37.8	3.4	2.2	6.0	6.9	4.7	32.7	5.2	3.9	0.9	0.9	0.4	0.4
			0.43	17:00 – 18:00	48.6	0.4	5.6	46.0	3.9	2.6	7.3	7.3	5.2	37.0	6.0	4.3	1.3	0.9	0.9	0.4
			0.43	18:00 – 19:00	46.0	0.4	5.6	46.4	3.4	2.6	7.3	6.9	4.7	35.3	5.6	4.3	1.3	0.9	0.9	0.4
			0.43	19:00 – 20:00	47.7	0.4	5.6	46.0	3.9	2.6	7.3	7.3	5.2	36.6	6.0	4.3	1.3	0.9	0.9	0.4
			0.43	20:00 – 21:00	49.5	0.4	6.0	45.6	3.9	2.6	7.3	7.7	5.2	37.8	6.0	4.3	1.3	0.9	0.9	0.4
			0.43	21:00 – 22:00	42.6	0.4	5.2	37.8	3.4	2.2	6.0	6.9	4.7	32.7	5.2	3.9	0.9	0.9	0.4	0.4
			0.43	22:00 – 23:00	43.9	0.4	5.2	37.4	3.4	2.2	6.0	7.3	5.2	34.0	5.2	3.9	0.9	0.9	0.4	0.4
			0.43	23:00 – 00:00	36.1	0.4	4.3	29.7	3.0	1.7	4.7	6.0	4.3	28.4	4.3	3.0	0.9	0.4	0.4	0.4

Vehicle Kilometers Travelled

Road No.	Road Name	Direction	Road Length (km)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
15	Po Lam Road	EB	0.13	00:00 – 01:00	36.1	0.3	3.4	22.8	2.2	1.6	4.7	5.9	4.0	28.1	4.3	3.1	0.8	0.7	0.5	0.4
			0.13	01:00 – 02:00	26.4	0.1	2.6	16.6	1.7	1.2	3.3	4.4	3.0	20.5	3.1	2.3	0.5	0.4	0.4	0.3
			0.13	02:00 – 03:00	17.2	0.1	1.8	10.8	1.2	0.8	2.1	3.0	2.0	13.4	2.1	1.6	0.4	0.3	0.3	0.1
			0.13	03:00 – 04:00	16.8	0.1	1.8	10.5	1.2	0.7	2.0	3.0	2.0	13.1	2.1	1.4	0.4	0.3	0.3	0.1
			0.13	04:00 – 05:00	8.2	0.1	0.9	5.2	0.5	0.3	0.9	1.6	1.0	6.4	1.0	0.8	0.1	0.1	0.1	0.1
			0.13	05:00 – 06:00	7.9	0.1	0.9	5.1	0.7	0.3	0.9	1.6	1.0	6.2	1.0	0.8	0.1	0.1	0.1	0.1
			0.13	06:00 – 07:00	15.5	0.1	1.8	9.8	1.2	0.5	1.7	3.0	2.0	12.2	2.0	1.4	0.3	0.3	0.1	0.1
			0.13	07:00 – 08:00	29.9	0.3	3.8	19.1	2.5	1.0	3.0	6.1	3.9	23.9	3.9	2.9	0.5	0.4	0.4	0.4
			0.13	08:00 – 09:00	43.6	0.4	5.7	27.8	3.8	1.4	4.2	9.2	5.9	35.1	5.7	4.2	0.8	0.7	0.5	0.7
			0.13	09:00 – 10:00	37.8	0.4	4.7	24.1	3.0	1.3	3.9	7.7	4.9	30.3	4.8	3.5	0.8	0.5	0.4	0.5
			0.13	10:00 – 11:00	39.4	0.4	4.7	25.0	3.0	1.4	4.3	7.5	4.9	31.2	4.9	3.6	0.8	0.7	0.5	0.5
			0.13	11:00 – 12:00	41.0	0.3	4.6	26.0	2.9	1.7	4.7	7.5	4.9	32.2	5.1	3.6	0.9	0.7	0.5	0.5
			0.13	12:00 – 13:00	34.1	0.3	3.5	21.5	2.3	1.4	4.0	6.0	4.0	26.7	4.2	3.0	0.8	0.5	0.4	0.4
			0.13	13:00 – 14:00	35.2	0.3	3.5	22.2	2.2	1.6	4.4	5.9	4.0	27.4	4.2	3.0	0.8	0.7	0.5	0.4
			0.13	14:00 – 15:00	36.5	0.3	3.4	23.0	2.2	1.7	4.7	5.9	4.0	28.2	4.3	3.1	0.8	0.7	0.5	0.4
			0.13	15:00 – 16:00	47.2	0.3	4.2	29.6	2.6	2.2	6.4	7.2	5.1	36.3	5.5	3.9	1.0	0.8	0.7	0.5
			0.13	16:00 – 17:00	48.6	0.3	4.0	30.6	2.6	2.3	6.6	7.0	5.2	37.3	5.5	4.0	1.2	0.9	0.7	0.4
			0.13	17:00 – 18:00	60.3	0.4	4.7	37.8	3.0	3.0	8.6	8.5	6.2	46.0	6.6	4.9	1.4	1.0	0.9	0.5
			0.13	18:00 – 19:00	62.1	0.4	4.6	39.0	3.0	3.1	9.1	8.3	6.2	47.3	6.9	4.9	1.6	1.2	0.9	0.5
			0.13	19:00 – 20:00	60.8	0.4	4.7	38.1	3.0	3.0	8.7	8.3	6.2	46.4	6.8	4.9	1.4	1.0	0.9	0.5
			0.13	20:00 – 21:00	59.5	0.4	4.8	37.3	3.1	2.9	8.3	8.5	6.2	45.5	6.6	4.8	1.4	1.0	0.9	0.5
			0.13	21:00 – 22:00	48.5	0.3	4.0	30.4	2.6	2.3	6.6	7.0	5.2	37.2	5.5	4.0	1.2	0.9	0.7	0.4
			0.13	22:00 – 23:00	47.3	0.3	4.2	29.8	2.6	2.2	6.4	7.2	5.2	36.5	5.5	3.9	1.0	0.8	0.7	0.5
			0.13	23:00 – 00:00	37.1	0.3	3.4	23.3	2.2	1.7	4.8	5.7	4.0	28.6	4.3	3.1	0.8	0.7	0.5	0.4

Road No.	Road Name	Dir	Road Length (km)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
16	Po Lam Road	WB	0.13	00:00 – 01:00	46.5	0.4	5.3	30.9	3.4	1.8	5.2	8.6	5.5	36.4	5.7	4.2	0.9	0.8	0.5	0.5
			0.13	01:00 – 02:00	35.8	0.3	4.3	24.4	2.9	1.4	4.0	7.0	4.3	28.1	4.7	3.4	0.8	0.5	0.5	0.4
			0.13	02:00 – 03:00	24.4	0.3	3.1	17.0	2.1	1.0	2.9	5.1	3.0	19.4	3.3	2.3	0.5	0.4	0.3	0.4
			0.13	03:00 – 04:00	25.1	0.3	3.4	17.8	2.2	1.0	2.9	5.5	3.1	19.9	3.5	2.6	0.5	0.4	0.4	0.4
			0.13	04:00 – 05:00	12.9	0.1	1.8	9.4	1.2	0.5	1.6	3.0	1.7	10.3	1.8	1.3	0.3	0.3	0.1	0.1
			0.13	05:00 – 06:00	13.1	0.1	2.0	9.8	1.2	0.5	1.6	3.1	1.7	10.5	2.0	1.4	0.3	0.3	0.1	0.3
			0.13	06:00 – 07:00	26.9	0.3	4.0	20.2	2.6	1.2	3.3	6.8	3.5	21.6	4.2	3.0	0.7	0.5	0.4	0.4
			0.13	07:00 – 08:00	55.1	0.7	8.6	41.9	5.6	2.3	6.6	14.2	7.3	44.2	8.8	6.4	1.3	0.9	0.8	0.9
			0.13	08:00 – 09:00	84.5	0.9	13.5	65.1	8.7	3.5	10.1	22.5	11.3	68.0	13.9	10.0	2.0	1.6	1.2	1.4
			0.13	09:00 – 10:00	68.3	0.8	10.5	51.5	6.8	2.9	8.2	17.3	9.0	54.7	10.8	7.8	1.6	1.2	0.9	1.2
			0.13	10:00 – 11:00	66.2	0.7	9.6	48.9	6.2	2.7	7.8	16.0	8.6	52.8	10.0	7.3	1.6	1.2	0.9	1.0
			0.13	11:00 – 12:00	64.0	0.7	8.8	46.2	5.7	2.6	7.4	14.6	8.1	50.8	9.2	6.8	1.4	1.0	0.9	0.9
			0.13	12:00 – 13:00	49.4	0.5	6.5	34.7	4.2	2.0	5.7	10.5	6.1	39.1	6.8	4.9	1.0	0.8	0.7	0.7
			0.13	13:00 – 14:00	47.7	0.4	5.9	32.5	3.8	2.0	5.5	9.4	5.7	37.6	6.2	4.4	1.0	0.8	0.7	0.7
			0.13	14:00 – 15:00	46.0	0.4	5.2	30.3	3.4	1.8	5.2	8.2	5.5	36.0	5.6	4.0	0.9	0.7	0.5	0.5
			0.13	15:00 – 16:00	55.4	0.4	5.6	35.2	3.6	2.1	6.1	9.0	6.2	43.0	6.2	4.6	1.0	0.8	0.7	0.5
			0.13	16:00 – 17:00	53.2	0.4	4.8	32.5	3.1	2.0	5.9	7.5	5.9	41.1	6.5	3.9	1.0	0.8	0.7	0.5
			0.13	17:00 – 18:00	61.2	0.4	4.8	35.8	3.1	2.2	6.5	7.3	6.5	46.9	5.6	4.0	1.2	0.9	0.7	0.5
			0.13	18:00 – 19:00	58.6	0.3	3.8	32.5	2.5	2.1	6.1	5.6	6.0	44.6	4.7	3.4	1.0	0.8	0.7	0.4
			0.13	19:00 – 20:00	60.5	0.3	4.6	34.8	2.9	2.2	6.4	6.9	6.4	46.3	5.3	3.9	1.0	0.8	0.7	0.4
			0.13	20:00 – 21:00	62.4	0.4	5.2	37.2	3.4	2.3	6.6	8.1	6.8	48.0	6.0	4.3	1.2	0.9	0.7	0.5
			0.13	21:00 – 22:00	53.6	0.4	4.9	32.9	3.1	2.1	5.9	7.7	5.9	41.3	5.5	4.0	1.0	0.8	0.7	0.5
			0.13	22:00 – 23:00	55.0	0.4	5.5	34.8	3.5	2.1	6.1	8.7	6.2	42.8	6.1	4.4	1.0	0.8	0.7	0.5
			0.13	23:00 – 00:00	45.2	0.4	4.8	29.4	3.1	1.8	5.1	7.8	5.2	35.4	5.3	3.9	0.9	0.7	0.5	0.5

Road No.	Road Name	Dir	Road Length (km)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
17	Sau Mau Ping Road	NB	0.75	00:00 – 01:00	146.3	0.8	15.0	87.0	9.8	5.3	14.3	21.8	16.5	114.0	15.0	10.5	2.3	2.3	1.5	1.5
			0.75	01:00 – 02:00	109.5	0.8	12.0	67.5	7.5	3.8	10.5	17.3	12.8	85.5	12.0	8.3	2.3	1.5	1.5	0.8
			0.75	02:00 – 03:00	72.8	0.8	8.3	47.3	5.3	2.3	7.5	12.8	9.0	57.0	8.3	6.0	1.5	0.8	0.8	0.8
			0.75	03:00 – 04:00	72.8	0.8	9.0	48.8	6.0	2.3	7.5	13.5	9.0	57.8	8.3	6.0	1.5	0.8	0.8	0.8
			0.75	04:00 – 05:00	36.0	0.0	4.5	25.5	3.0	1.5	3.8	6.8	4.5	28.5	4.5	3.0	0.8	0.8	0.8	0.8
			0.75	05:00 – 06:00	36.0	0.0	5.3	26.3	3.0	1.5	3.8	7.5	4.5	28.5	4.5	3.8	0.8	0.8	0.8	0.8
			0.75	06:00 – 07:00	72.8	0.8	10.5	54.0	6.8	2.3	7.5	15.8	9.0	57.8	9.8	6.8	1.5	0.8	0.8	0.8
			0.75	07:00 – 08:00	144.8	1.5	22.5	111.0	14.3	5.3	15.0	32.3	18.8	116.3	20.3	15.0	3.0	2.3	1.5	2.3
			0.75	08:00 – 09:00	216.8	2.3	36.0	171.0	23.3	8.3	23.3	51.0	29.3	174.0	31.5	22.5	4.5	3.8	3.0	3.0
			0.75	09:00 – 10:00	180.8	2.3	27.8	136.5	18.0	6.8	16.8	39.8	24.0	144.8	24.8	18.0	3.8	3.0	2.3	2.3
			0.75	10:00 – 11:00	181.5	1.5	25.5	130.5	16.5	6.8	16.8	36.8	23.3	144.0	23.3	17.3	3.8	3.0	2.3	2.3
			0.75	11:00 – 12:00	181.5	1.5	24.0	124.5	15.0	6.8	16.8	34.5	22.5	144.0	22.5	15.8	3.8	3.0	2.3	2.3
			0.75	12:00 – 13:00	145.5	1.5	17.3	95.3	11.3	5.3	15.0	25.5	17.3	114.8	16.5	12.0	3.0	2.3	1.5	1.5
			0.75	13:00 – 14:00	146.3	1.5	15.8	90.8	10.5	5.3	14.3	23.3	17.3	114.0	15.8	11.3	3.0	2.3	1.5	1.5
			0.75	14:00 – 15:00	148.3	0.8	14.3	85.5	9.0	5.3	14.3	21.0	16.5	114.0	14.3	10.5	2.3	2.3	1.5	1.5
			0.75	15:00 – 16:00	183.8	1.5	15.8	101.3	10.5	6.0	16.0	24.0	20.3	141.8	17.3	12.0	3.0	2.3	2.3	1.5
			0.75	16:00 – 17:00	183.8	0.8	13.5	95.3	9.0	6.0	17.3	21.0	19.5	141.8	15.8	11.3	3.0	2.3	1.5	1.5
			0.75	17:00 – 18:00	221.3	0.8	14.3	107.3	9.0	7.5	21.0	21.6	23.3	168.8	17.3	12.8	3.8	3.0	2.3	1.5
			0.75	18:00 – 19:00	221.3	0.8	12.0	99.8	7.5	7.5	20.3	18.8	22.5	168.8	15.8	11.3	3.8	2.3	2.3	1.5
			0.75	19:00 – 20:00	221.3	0.8	13.5	105.0	9.0	7.5	21.0	21.0	23.3	168.8	16.5	12.0	3.8	3.0	2.3	1.5
			0.75	20:00 – 21:00	220.5	0.8	15.0	110.3	9.8	7.5	21.0	23.3	23.3	169.5	18.0	12.8	3.8	3.0	2.3	1.5
			0.75	21:00 – 22:00	183.8	0.8	14.3	96.0	9.0	6.0	17.3	21.8	19.5	141.8	15.8	11.3	3.0	2.3	1.5	1.5
			0.75	22:00 – 23:00	183.8	0.8	15.8	100.5	9.8	6.0	18.0	23.3	20.3	141.8	16.5	12.0	3.0	2.3	2.3	1.5
			0.75	23:00 – 00:00	146.3	0.8	13.5	83.3	9.0	5.3	14.3	20.3	16.5	114.0	14.3	10.5	2.3	2.3	1.5	1.5

Vehicle Kilometers Travelled

Road No.	Road Name	Dir	Road Length (km)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
18	Sau Mau Ping Road	SB	0.75	00:00 – 01:00	96.8	0.8	11.3	71.3	6.8	3.8	9.8	12.0	10.5	74.3	9.0	6.8	1.5	1.5	0.8	0.8
			0.75	01:00 – 02:00	68.3	0.8	8.3	53.3	5.3	2.3	6.8	9.0	7.5	53.3	6.8	4.5	1.5	0.8	0.8	0.8
			0.75	02:00 – 03:00	43.5	0.6	6.0	35.3	3.8	1.5	4.5	6.0	5.3	33.8	4.5	3.0	0.8	0.8	0.8	0.8
			0.75	03:00 – 04:00	40.5	0.6	6.0	34.5	3.8	1.5	4.5	6.8	4.5	31.5	4.5	3.0	0.8	0.8	0.8	0.8
			0.75	04:00 – 05:00	19.5	0.0	3.0	17.3	2.3	0.8	2.3	3.0	2.3	15.0	2.3	1.5	0.0	0.0	0.0	0.0
			0.75	05:00 – 06:00	18.0	0.0	3.0	17.3	2.3	0.8	1.5	3.0	2.3	14.3	2.3	1.5	0.0	0.0	0.0	0.0
			0.75	06:00 – 07:00	33.0	0.6	6.8	33.8	4.5	1.5	3.8	6.8	4.5	26.3	4.5	3.0	0.8	0.6	0.8	0.8
			0.75	07:00 – 08:00	61.5	0.8	13.5	66.8	9.0	2.3	6.8	13.5	8.3	49.5	8.3	6.0	1.5	0.8	0.8	0.8
			0.75	08:00 – 09:00	85.5	1.5	21.0	99.8	13.5	3.0	9.0	20.3	11.3	68.3	12.8	9.0	1.5	1.5	0.8	1.5
			0.75	09:00 – 10:00	79.5	1.5	16.5	84.0	10.5	3.0	8.3	16.5	10.5	63.0	10.5	7.5	1.5	1.5	0.8	0.8
			0.75	10:00 – 11:00	88.5	1.5	15.8	84.8	10.5	3.0	9.0	16.5	10.5	69.8	10.5	7.5	1.5	1.5	0.8	0.8
			0.75	11:00 – 12:00	96.8	0.8	15.8	86.3	9.8	3.8	9.8	16.5	11.3	75.8	10.5	8.3	1.5	1.5	0.8	0.8
			0.75	12:00 – 13:00	84.8	0.8	12.0	69.8	7.5	3.0	9.0	12.8	9.8	66.0	9.0	6.8	1.5	1.5	0.8	0.8
			0.75	13:00 – 14:00	91.5	0.8	11.3	70.5	7.5	3.0	9.0	12.8	10.5	70.5	9.0	6.8	1.5	1.5	0.8	0.8
			0.75	14:00 – 15:00	98.3	0.8	10.5	71.3	6.8	3.8	9.8	12.0	10.5	75.8	9.0	6.8	1.5	1.5	0.8	0.8
			0.75	15:00 – 16:00	132.0	0.8	12.8	90.8	8.3	4.5	13.5	15.0	14.3	101.3	11.3	8.3	2.3	1.5	1.5	0.8
			0.75	16:00 – 17:00	140.3	0.8	12.0	91.5	8.3	4.5	14.3	15.0	15.0	107.3	11.3	8.3	2.3	1.5	1.5	0.8
			0.75	17:00 – 18:00	179.3	0.8	14.3	111.0	9.0	6.0	18.0	17.3	18.8	136.5	14.3	10.5	3.0	2.3	1.5	0.8
			0.75	18:00 – 19:00	189.0	0.8	13.5	112.5	8.3	6.8	18.8	17.3	19.5	144.0	14.3	10.5	3.0	2.3	2.3	0.8
			0.75	19:00 – 20:00	182.3	0.8	13.5	111.8	9.0	6.0	18.0	17.3	18.8	138.8	14.3	10.5	3.0	2.3	1.5	0.8
			0.75	20:00 – 21:00	174.8	0.8	14.3	110.3	9.0	6.0	17.3	17.3	18.0	133.5	14.3	9.8	3.0	2.3	1.5	0.8
			0.75	21:00 – 22:00	139.5	0.8	12.0	91.5	8.3	4.5	13.5	15.0	14.3	106.5	11.3	8.3	2.3	1.5	1.5	0.8
			0.75	22:00 – 23:00	132.8	0.8	12.8	90.8	8.3	4.5	13.5	15.0	14.3	102.0	11.3	8.3	2.3	1.5	1.5	0.8
			0.75	23:00 – 00:00	101.3	0.8	10.5	72.0	6.8	3.8	10.5	12.0	11.3	78.0	9.0	6.8	1.5	1.5	0.8	0.8

Road No.	Road Name	Dir	Road Length (km)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
19	Sau Mau Ping Road	NB	0.20	00:00 – 01:00	57.4	0.4	4.4	30.0	2.8	2.2	6.2	7.2	6.6	44.6	5.4	4.0	1.0	0.8	0.6	0.4
			0.20	01:00 – 02:00	42.4	0.2	3.4	21.8	2.2	1.4	4.4	5.4	5.0	33.2	4.0	2.8	0.8	0.6	0.4	0.4
			0.20	02:00 – 03:00	27.8	0.2	2.2	14.0	1.4	1.0	2.6	3.6	3.4	21.8	2.6	1.8	0.4	0.4	0.2	0.2
			0.20	03:00 – 04:00	27.4	0.2	2.2	13.6	1.4	0.8	2.4	3.4	3.4	21.6	2.4	1.6	0.4	0.4	0.2	0.2
			0.20	04:00 – 05:00	13.6	0.0	1.2	6.6	0.8	0.4	1.2	1.6	1.6	10.6	1.2	0.8	0.2	0.2	0.2	0.2
			0.20	05:00 – 06:00	13.4	0.0	1.2	6.4	0.8	0.4	1.0	1.6	1.6	10.6	1.2	0.8	0.2	0.2	0.2	0.2
			0.20	06:00 – 07:00	25.2	0.2	2.4	12.2	1.4	0.6	1.6	3.2	3.4	21.0	2.2	1.6	0.4	0.2	0.2	0.2
			0.20	07:00 – 08:00	51.8	0.4	4.6	23.6	3.0	1.2	3.2	6.4	6.8	41.4	4.0	3.0	0.6	0.4	0.4	0.4
			0.20	08:00 – 09:00	76.4	0.6	7.0	33.8	4.6	1.4	4.2	9.6	10.2	61.4	5.8	4.2	0.8	0.6	0.6	0.6
			0.20	09:00 – 10:00	65.0	0.4	5.8	29.8	3.8	1.4	4.2	8.2	8.4	52.0	5.2	3.8	0.8	0.6	0.4	0.6
			0.20	10:00 – 11:00	66.4	0.4	5.6	31.4	3.8	1.8	5.0	8.4	8.4	52.8	5.6	4.0	1.0	0.6	0.6	0.6
			0.20	11:00 – 12:00	66.0	0.4	5.6	33.0	3.6	2.0	5.8	8.6	8.4	53.6	5.8	4.2	1.0	0.8	0.6	0.6
			0.20	12:00 – 13:00	55.4	0.4	4.4	27.6	2.8	1.8	5.2	7.0	6.6	43.6	5.0	3.6	1.0	0.6	0.6	0.4
			0.20	13:00 – 14:00	56.6	0.4	4.4	29.0	2.8	2.0	5.6	7.2	6.6	44.2	5.2	3.8	1.0	0.8	0.6	0.4
			0.20	14:00 – 15:00	57.8	0.4	4.4	30.4	2.8	2.2	6.4	7.2	6.6	44.8	5.4	4.0	1.0	0.8	0.6	0.4
			0.20	15:00 – 16:00	73.6	0.4	5.4	39.6	3.4	3.0	8.6	9.2	8.0	56.6	7.2	5.2	1.4	1.2	0.8	0.6
			0.20	16:00 – 17:00	75.0	0.4	5.4	41.2	3.4	3.2	9.4	9.4	8.0	57.6	7.4	5.4	1.6	1.2	1.0	0.6
			0.20	17:00 – 18:00	91.6	0.4	6.4	51.4	4.0	4.2	12.0	11.6	9.6	70.2	9.4	6.8	2.0	1.6	1.2	0.8
			0.20	18:00 – 19:00	93.4	0.4	6.2	53.2	4.0	4.4	13.0	11.8	9.4	71.0	9.8	7.2	2.2	1.6	1.4	0.8
			0.20	19:00 – 20:00	92.2	0.4	6.4	51.8	4.0	4.2	12.4	11.6	9.6	70.4	9.6	6.6	2.0	1.6	1.2	0.8
			0.20	20:00 – 21:00	91.0	0.4	6.4	50.4	4.2	4.0	11.6	11.6	9.0	69.8	9.2	6.6	2.0	1.4	1.2	0.8
			0.20	21:00 – 22:00	74.8	0.4	5.4	41.0	3.4	3.2	9.2	9.4	8.0	57.6	7.4	5.4	1.6	1.2	1.0	0.6
			0.20	22:00 – 23:00	73.8	0.4	5.4	39.6	3.4	3.0	8.6	9.4	8.0	57.0	7.2	5.2	1.4	1.2	1.0	0.6
			0.20	23:00 – 00:00	58.2	0.4	4.4	30.8	2.8	2.2	6.6	7.4	6.4	45.0	5.6	4.0	1.2	0.8	0.8	0.4

Road No.	Road Name	Dir	Road Length (km)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
20	Sau Mau Ping Road	SB	0.20	00:00 – 01:00	61.6	0.4	6.4	37.8	4.0	2.0	5.6	8.8	7.2	48.4	6.0	4.4	1.0	0.8	0.6	0.6
			0.20	01:00 – 02:00	47.4	0.4	5.0	29.2	3.2	1.6	4.4	7.2	5.8	37.4	4.8	3.4	0.8	0.6	0.4	0.4
			0.20	02:00 – 03:00	32.4	0.2	3.6	20.2	2.4	1.0	3.0	5.2	4.0	25.6	3.4	2.4	0.6	0.4	0.4	0.4
			0.20	03:00 – 04:00	33.2	0.2	3.6	20.8	2.4	1.0	3.0	5.4	4.2	26.4	3.6	2.6	0.6	0.4	0.4	0.4
			0.20	04:00 – 05:00	17.0	0.2	2.0	10.8	1.4	0.6	1.6	3.0	2.2	13.6	1.8	1.4	0.2	0.2	0.2	0.2
			0.20	05:00 – 06:00	17.4	0.2	2.2	11.0	1.4	0.6	1.6	3.0	2.2	13.8	2.0	1.4	0.2	0.2	0.2	0.2
			0.20	06:00 – 07:00	35.6	0.4	4.6	22.8	3.0	1.0	3.2	6.6	4.6	28.4	4.0	3.0	0.6	0.4	0.4	0.4
			0.20	07:00 – 08:00	72.8	0.6	9.6	46.6	6.2	2.2	6.4	13.8	9.6	58.4	8.6	6.2	1.2	1.0	0.8	0.8
			0.20	08:00 – 09:00	111.4	1.0	15.0	72.2	9.6	3.4	9.8	21.8	15.0	89.6	13.4	9.8	2.0	1.4	1.2	1.4
			0.20	09:00 – 10:00	90.2	0.8	11.8	57.6	7.6	2.8	8.0	16.8	11.8	72.2	10.6	7.6	1.6	1.2	1.0	1.0
			0.20	10:00 – 11:00	87.4	0.8	11.0	55.6	7.0	2.8	7.8	15.8	11.2	69.6	9.8	7.2	1.4	1.2	1.0	1.0
			0.20	11:00 – 12:00	84.6	0.8	10.0	53.4	6.6	2.6	7.6	14.4	10.6	67.2	9.2	6.6	1.4	1.0	0.8	1.0
			0.20	12:00 – 13:00	85.4	0.6	7.4	40.8	4.8	2.0	6.0	10.6	8.0	51.6	6.8	5.0	1.0	0.8	0.6	0.6
			0.20	13:00 – 14:00	83.2	0.4	6.8	39.0	4.4	2.0	5.8	9.6	7.6	49.8	6.4	4.6	1.0	0.8	0.6	0.6
			0.20	14:00 – 15:00	81.0	0.4	6.2	37.2	4.0	2.0	5.6	8.6	7.2	47.8	5.8	4.2	1.0	0.8	0.6	0.6
			0.20	15:00 – 16:00	73.6	0.4	6.8	44.2	4.4	2.4	6.8	9.4	8.4	57.2	6.6	4.8	1.2	1.0	0.8	0.6
			0.20	16:00 – 17:00	70.8	0.4	6.0	42.0	3.8	2.2	6.6	8.2	7.8	54.6	6.0	4.4	1.2	0.8	0.8	0.6
			0.20	17:00 – 18:00	81.8	0.4	6.2	47.6	4.0	2.6	7.6	8.4	8.8	62.6	6.4	4.6	1.4	1.0	0.8	0.6
			0.20	18:00 – 19:00	78.4	0.4	5.2	45.0	3.4	2.6	7.4	6.8	8.0	59.6	5.6	4.0	1.2	1.0	0.8	0.4
			0.20	19:00 – 20:00	80.8	0.4	6.0	46.8	3.8	2.6	7.6	7.8	8.4	61.8	6.2	4.4	1.2	1.0	0.8	0.6
			0.20	20:00 – 21:00	83.2	0.4	6.6	48.8	4.4	2.8	7.8	9.0	9.0	64.0	6.6	5.0	1.4	1.0	0.8	0.8
			0.20	21:00 – 22:00	71.2	0.4	6.2	42.4	4.0	2.4	6.6	8.4	7.8	55.0	6.0	4.4	1.2	0.8	0.6	0.6
			0.20	22:00 – 23:00	73.2	0.4	6.6	44.0	4.4	2.4	6.8	9.2	8.2	56.8	6.6	4.8	1.2	1.0	0.8	0.6
			0.20	23:00 – 00:00	60.2	0.4	5.8	36.4	3.6	2.0	5.6	6.2	7.0	46.8	5.6	4.0	1.0	0.8	0.6	0.6

Vehicle Kilometers Travelled

Road No.	Road Name	Dir	Road Length (km)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
25a	Sau Ming Road	NB	0.35	00:00 – 01:00	12.6	0.0	1.4	10.5	1.1	0.7	2.5	3.2	1.4	9.8	2.5	1.8	0.4	0.4	0.4	0.4
			0.35	01:00 – 02:00	9.8	0.0	1.1	7.7	0.7	0.7	1.8	2.5	1.1	7.7	1.8	1.4	0.4	0.4	0.4	0.0
			0.35	02:00 – 03:00	6.7	0.0	0.7	4.9	0.4	0.4	1.1	1.8	0.7	5.3	1.1	0.7	0.4	0.0	0.0	0.0
			0.35	03:00 – 04:00	6.7	0.0	0.7	4.9	0.7	0.4	1.1	1.8	0.7	5.3	1.1	0.7	0.4	0.0	0.0	0.0
			0.35	04:00 – 05:00	3.5	0.0	0.4	2.5	0.4	0.4	0.7	1.1	0.4	2.8	0.7	0.4	0.0	0.0	0.0	0.0
			0.35	05:00 – 06:00	3.5	0.0	0.4	2.5	0.4	0.4	0.4	1.1	0.4	2.8	0.7	0.4	0.0	0.0	0.0	0.0
			0.35	06:00 – 07:00	7.0	0.0	0.7	4.6	0.7	0.4	1.1	1.8	1.1	5.6	1.1	0.7	0.4	0.0	0.0	0.0
			0.35	07:00 – 08:00	14.4	0.0	1.8	8.6	1.1	0.7	1.8	3.9	1.8	11.6	2.5	1.8	0.4	0.4	0.4	0.4
			0.35	08:00 – 09:00	21.7	0.4	2.8	13.0	1.8	1.1	2.8	6.0	2.8	17.5	3.5	2.8	0.4	0.4	0.4	0.4
			0.35	09:00 – 10:00	17.5	0.0	2.1	11.2	1.4	0.7	2.5	4.9	2.5	14.0	3.2	2.1	0.4	0.4	0.4	0.4
			0.35	10:00 – 11:00	17.2	0.0	2.1	11.6	1.4	0.7	2.5	4.6	2.1	13.7	3.2	2.1	0.4	0.4	0.4	0.4
			0.35	11:00 – 12:00	16.8	0.0	2.1	11.9	1.4	1.1	2.8	4.6	2.1	13.3	2.8	2.1	0.4	0.4	0.4	0.4
			0.35	12:00 – 13:00	13.3	0.0	1.6	9.8	1.1	0.7	2.1	3.5	1.6	10.5	2.5	1.8	0.4	0.4	0.4	0.4
			0.35	13:00 – 14:00	13.0	0.0	1.6	10.2	1.1	0.7	2.5	3.2	1.4	10.2	2.5	1.8	0.4	0.4	0.4	0.4
			0.35	14:00 – 15:00	12.6	0.0	1.4	10.5	1.1	0.7	2.5	3.2	1.4	9.8	2.5	1.8	0.4	0.4	0.4	0.4
			0.35	15:00 – 16:00	15.4	0.0	1.8	13.3	1.1	1.1	3.2	3.9	1.8	11.9	2.8	2.1	0.7	0.4	0.4	0.4
			0.35	16:00 – 17:00	15.1	0.0	1.8	13.7	1.1	1.1	3.5	3.5	1.8	11.6	2.8	2.1	0.7	0.4	0.4	0.4
			0.35	17:00 – 18:00	17.5	0.0	2.1	17.2	1.4	1.4	4.2	4.2	1.8	13.3	3.5	2.5	0.7	0.7	0.4	0.4
			0.35	18:00 – 19:00	16.8	0.0	2.1	17.5	1.4	1.4	4.2	3.9	1.8	13.0	3.2	2.5	0.7	0.7	0.4	0.4
			0.35	19:00 – 20:00	17.2	0.0	2.1	17.2	1.4	1.4	4.2	4.2	1.8	13.3	3.2	2.5	0.7	0.7	0.4	0.4
			0.35	20:00 – 21:00	17.5	0.0	2.1	16.8	1.4	1.4	4.2	4.2	1.8	13.7	3.5	2.5	0.7	0.7	0.4	0.4
			0.35	21:00 – 22:00	15.1	0.0	1.8	13.7	1.1	1.1	3.5	3.5	1.8	11.6	2.8	2.1	0.7	0.4	0.4	0.4
			0.35	22:00 – 23:00	15.4	0.0	1.8	13.3	1.1	1.1	3.2	3.9	1.8	11.9	2.8	2.1	0.7	0.4	0.4	0.4
			0.35	23:00 – 00:00	12.3	0.0	1.4	10.5	1.1	0.7	2.5	3.2	1.4	9.8	2.5	1.8	0.4	0.4	0.4	0.4

Road No.	Road Name	Dir	Road Length (km)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
25b	Sau Ming Road	NB	0.25	00:00 – 01:00	7.0	0.0	1.0	6.5	0.8	0.8	1.8	2.5	0.8	5.5	1.8	1.3	0.3	0.3	0.3	0.3
			0.25	01:00 – 02:00	5.3	0.0	0.8	5.0	0.5	0.5	1.3	2.0	0.5	4.0	1.3	1.0	0.3	0.3	0.3	0.3
			0.25	02:00 – 03:00	3.5	0.0	0.5	3.3	0.3	0.3	1.0	1.5	0.5	2.8	1.0	0.8	0.3	0.0	0.0	0.0
			0.25	03:00 – 04:00	3.5	0.0	0.5	3.3	0.3	0.3	0.8	1.5	0.5	2.8	1.0	0.8	0.3	0.0	0.0	0.0
			0.25	04:00 – 05:00	1.8	0.0	0.3	1.5	0.3	0.3	0.5	0.8	0.3	1.5	0.5	0.3	0.0	0.0	0.0	0.0
			0.25	05:00 – 06:00	1.8	0.0	0.3	1.5	0.3	0.3	0.5	0.8	0.3	1.5	0.5	0.3	0.0	0.0	0.0	0.0
			0.25	06:00 – 07:00	3.5	0.0	0.5	3.3	0.5	0.3	0.8	1.5	0.5	2.8	1.0	0.8	0.3	0.0	0.0	0.0
			0.25	07:00 – 08:00	7.0	0.0	1.3	6.3	0.8	0.5	1.5	3.3	1.0	5.5	2.0	1.5	0.3	0.3	0.3	0.3
			0.25	08:00 – 09:00	10.3	0.3	2.0	9.3	1.3	0.8	2.3	5.0	1.5	8.3	3.3	2.3	0.5	0.3	0.3	0.3
			0.25	09:00 – 10:00	8.8	0.0	1.5	7.8	1.0	0.8	2.0	4.0	1.3	7.0	2.5	1.8	0.5	0.3	0.3	0.3
			0.25	10:00 – 11:00	8.8	0.0	1.5	7.8	1.0	0.8	2.0	3.8	1.0	7.0	2.5	1.8	0.5	0.3	0.3	0.3
			0.25	11:00 – 12:00	8.8	0.0	1.5	8.0	1.0	0.8	2.0	3.8	1.0	7.0	2.5	1.8	0.5	0.3	0.3	0.3
			0.25	12:00 – 13:00	7.0	0.0	1.0	6.5	0.8	0.5	1.8	2.8	0.8	5.5	2.0	1.3	0.3	0.3	0.3	0.3
			0.25	13:00 – 14:00	7.0	0.0	1.0	6.5	0.8	0.8	1.8	2.8	0.8	5.5	1.8	1.3	0.3	0.3	0.3	0.3
			0.25	14:00 – 15:00	7.0	0.0	1.0	6.5	0.8	0.8	1.8	2.5	0.8	5.5	1.8	1.3	0.3	0.3	0.3	0.3
			0.25	15:00 – 16:00	8.8	0.0	1.3	8.3	0.8	0.8	2.5	3.0	1.0	6.8	2.3	1.5	0.5	0.3	0.3	0.3
			0.25	16:00 – 17:00	9.0	0.0	1.3	8.5	0.8	0.8	2.5	2.8	1.0	6.8	2.0	1.5	0.5	0.3	0.3	0.3
			0.25	17:00 – 18:00	10.8	0.0	1.3	10.3	0.8	1.0	3.0	3.0	1.0	8.3	2.5	1.8	0.5	0.5	0.3	0.3
			0.25	18:00 – 19:00	10.8	0.0	1.3	10.5	0.8	1.0	3.0	2.8	1.0	8.3	2.3	1.8	0.5	0.5	0.3	0.3
			0.25	19:00 – 20:00	10.8	0.0	1.3	10.3	0.8	1.0	3.0	3.0	1.0	8.3	2.5	1.8	0.5	0.5	0.3	0.3
			0.25	20:00 – 21:00	10.8	0.0	1.3	10.3	0.8	1.0	3.0	3.3	1.3	8.3	2.5	1.8	0.5	0.5	0.3	0.3
			0.25	21:00 – 22:00	9.0	0.0	1.3	8.5	0.8	0.8	2.5	2.8	1.0	6.8	2.0	1.5	0.5	0.3	0.3	0.3
			0.25	22:00 – 23:00	8.8	0.0	1.3	8.5	0.8	0.8	2.5	3.0	1.0	6.8	2.3	1.5	0.5	0.3	0.3	0.3
			0.25	23:00 – 00:00	7.0	0.0	1.0	6.8	0.8	0.8	2.0	2.5	0.8	5.5	1.8	1.3	0.3	0.3	0.3	0.3

Road No.	Road Name	Dir	Road Length (km)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
25c	Sau Ming Road	NB	0.55	00:00 – 01:00	17.6	0.0	2.2	14.3	1.7	1.7	4.4	6.1	2.2	13.8	4.4	3.3	0.6	0.6	0.6	0.6
			0.55	01:00 – 02:00	13.2	0.0	1.7	11.0	1.1	1.1	3.3	5.0	1.7	10.5	3.3	2.2	0.6	0.6	0.6	0.6
			0.55	02:00 – 03:00	6.8	0.0	1.1	7.2	0.6	0.6	2.2	3.3	1.1	6.6	2.2	1.7	0.6	0.6	0.0	0.0
			0.55	03:00 – 04:00	6.3	0.0	1.1	7.2	0.6	0.6	2.2	3.3	1.1	6.6	2.2	1.7	0.6	0.6	0.0	0.0
			0.55	04:00 – 05:00	3.9	0.0	0.6	3.3	0.6	0.6	1.1	1.7	0.6	3.3	1.1	0.6	0.0	0.0	0.0	0.0
			0.55	05:00 – 06:00	3.9	0.0	0.6	3.3	0.6	0.6	1.1	1.7	0.6	3.3	1.1	0.6	0.0	0.0	0.0	0.0
			0.55	06:00 – 07:00	7.7	0.0	1.1	7.2	1.1	0.6	1.7	3.3	1.1	6.1	2.2	1.7	0.6	0.0	0.0	0.0
			0.55	07:00 – 08:00	15.4	0.0	2.8	13.8	1.7	1.1	3.3	7.2	2.2	12.1	4.4	3.3	0.6	0.6	0.6	0.6
			0.55	08:00 – 09:00	22.6	0.6	4.4	20.4	2.8	1.7	5.0	11.0	3.3	18.2	7.2	5.0	1.1	0.6	0.6	0.6
			0.55	09:00 – 10:00	19.3	0.0	3.3	17.1	2.2	1.7	4.4	6.8	2.8	15.4	5.5	4.4	1.1	0.6	0.6	0.6
			0.55	10:00 – 11:00	19.8	0.0	3.3	17.1	2.2	1.7	5.0	8.8	2.8	16.0	5.5	3.9	1.1	0.6	0.6	0.6
			0.55	11:00 – 12:00	20.9	0.0	3.3	17.6	2.2	1.7	5.0	8.3	2.8	16.5	5.5	3.9	1.1	0.6	0.6	0.6
			0.55	12:00 – 13:00	17.1	0.0	2.2	14.3	1.7	1.7	4.4	6.6	2.2	13.2	4.4	3.3	0.6	0.6	0.6	0.6
			0.55	13:00 – 14:00	17.6	0.0	2.2	14.3	1.7	1.7	4.4	6.1	2.2	13.8	4.4	3.3	0.6	0.6	0.6	0.6
			0.55	14:00 – 15:00	17.6	0.0	2.2	14.3	1.7	1.7	4.4	6.1	2.2	13.8	4.4	3.3	0.6	0.6	0.6	0.6
			0.55	15:00 – 16:00	23.1	0.0	2.8	18.2	1.7	2.2	6.1	7.2	2.8	17.6	5.5	3.9	1.1	0.6	0.6	0.6
			0.55	16:00 – 17:00	23.7	0.0	2.8	18.7	1.7	2.2	6.1	7.2	2.8	18.2	5.5	3.9	1.1	0.6	0.6	0.6
			0.55	17:00 – 18:00	28.6	0.0	2.8	22.6	1.7	2.8	7.7	7.7	2.8	22.0	6.1	4.4	1.1	1.1	0.6	0.6
			0.55	18:00 – 19:00	29.7	0.0	2.8	23.1	1.7	2.8	8.3	7.7	2.8	22.6	6.1	4.4	1.1	1.1	1.1	0.6
			0.55	19:00 – 20:00	29.2	0.0	2.8	22.6	1.7	2.8	8.3	7.7	2.8	22.0	6.1	4.4	1.1	1.1	0.6	0.6
			0.55	20:00 – 21:00	28.6	0.0	2.8	22.6	1.7	2.8	7.7	8.3	2.8	22.0	6.1	4.4	1.1	1.1	0.6	0.6
			0.55	21:00 – 22:00	23.7	0.0	2.8	18.7	1.7	2.2	6.1	7.2	2.8	18.2	5.5	3.9	1.1	0.6	0.6	0.6
			0.55	22:00 – 23:00	23.1	0.0	2.8	18.7	1.7	2.2	6.1	7.2	2.8	17.6	5.5	3.9	1.1	0.6	0.6	0.6
			0.55	23:00 – 00:00	18.2	0.0	2.2	14.9	1.7	1.7	5.0	6.1	2.2	13.8	4.4	3.3	0.6	0.6	0.6	0.6

Vehicle Kilometers Travelled

Road No.	Road Name	Dir	Road Length (km)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
25a	Sau Ming Road	SB	0.35	00:00 – 01:00	13.0	0.0	1.4	10.9	1.1	1.1	2.8	4.2	1.4	10.2	2.8	2.1	0.4	0.4	0.4	0.4
			0.35	01:00 – 02:00	9.8	0.0	1.1	7.7	0.7	0.7	2.1	3.5	1.1	7.7	2.5	1.8	0.4	0.4	0.4	0.4
			0.35	02:00 – 03:00	6.3	0.0	0.7	4.9	0.4	0.4	1.4	2.5	0.7	4.9	1.8	1.1	0.4	0.4	0.0	0.0
			0.35	03:00 – 04:00	6.3	0.0	0.7	4.6	0.4	0.4	1.4	2.5	0.7	4.9	1.8	1.1	0.4	0.4	0.0	0.0
			0.35	04:00 – 05:00	3.2	0.0	0.4	2.1	0.4	0.4	0.7	1.4	0.4	2.5	0.7	0.7	0.0	0.0	0.0	0.0
			0.35	05:00 – 06:00	3.2	0.0	0.4	2.1	0.4	0.4	0.7	1.4	0.4	2.5	1.1	0.7	0.0	0.0	0.0	0.0
			0.35	06:00 – 07:00	6.3	0.0	0.7	3.9	0.4	0.4	1.4	2.8	0.7	4.9	1.8	1.4	0.4	0.4	0.0	0.4
			0.35	07:00 – 08:00	12.3	0.0	1.4	7.4	1.1	1.1	2.8	6.0	1.8	9.8	3.9	2.8	0.7	0.4	0.4	0.4
			0.35	08:00 – 09:00	18.2	0.0	2.1	10.2	1.4	1.4	4.2	9.5	2.5	14.4	6.0	4.2	0.7	0.7	0.4	0.7
			0.35	09:00 – 10:00	15.4	0.0	1.8	9.5	1.1	1.4	3.5	7.4	2.1	12.3	4.6	3.5	0.7	0.4	0.4	0.4
			0.35	10:00 – 11:00	15.4	0.0	1.8	10.2	1.1	1.4	3.5	7.0	2.1	12.3	4.6	3.2	0.7	0.4	0.4	0.4
			0.35	11:00 – 12:00	15.8	0.0	1.8	11.2	1.1	1.4	3.5	6.7	2.1	12.3	4.2	3.2	0.7	0.4	0.4	0.4
			0.35	12:00 – 13:00	12.6	0.0	1.4	9.5	1.1	1.1	2.8	4.9	1.4	10.2	3.2	2.5	0.7	0.4	0.4	0.4
			0.35	13:00 – 14:00	13.0	0.0	1.4	10.2	1.1	1.1	2.8	4.6	1.4	10.2	3.2	2.1	0.4	0.4	0.4	0.4
			0.35	14:00 – 15:00	13.0	0.0	1.4	10.9	1.1	1.1	2.8	4.2	1.4	10.2	2.8	2.1	0.4	0.4	0.4	0.4
			0.35	15:00 – 16:00	16.5	0.0	2.1	14.4	1.4	1.4	3.5	4.6	1.8	13.0	3.5	2.5	0.7	0.4	0.4	0.4
			0.35	16:00 – 17:00	16.8	0.0	2.1	15.4	1.4	1.4	3.5	4.2	1.8	13.0	3.2	2.5	0.7	0.4	0.4	0.4
			0.35	17:00 – 18:00	20.3	0.0	2.5	19.3	1.4	1.4	4.2	4.6	2.1	15.8	3.5	2.5	0.7	0.7	0.4	0.4
			0.35	18:00 – 19:00	20.7	0.0	2.5	20.3	1.4	1.4	4.2	3.9	2.1	15.8	3.2	2.5	0.7	0.7	0.4	0.4
			0.35	19:00 – 20:00	20.7	0.0	2.5	19.6	1.4	1.4	4.2	4.6	2.1	15.8	3.5	2.5	0.7	0.7	0.4	0.4
			0.35	20:00 – 21:00	20.3	0.0	2.5	18.9	1.4	1.4	4.2	4.9	2.1	15.4	3.5	2.8	0.7	0.7	0.4	0.4
			0.35	21:00 – 22:00	16.8	0.0	2.1	15.1	1.4	1.4	3.5	4.2	1.8	13.0	3.2	2.5	0.7	0.4	0.4	0.4
			0.35	22:00 – 23:00	16.5	0.0	2.1	14.7	1.4	1.4	3.5	4.6	1.8	13.0	3.5	2.5	0.7	0.4	0.4	0.4
			0.35	23:00 – 00:00	13.3	0.0	1.4	11.2	1.1	1.1	2.8	3.9	1.4	10.2	2.8	2.1	0.4	0.4	0.4	0.4

Road No.	Road Name	Dir	Road Length (km)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
26b	Sau Ming Road	SB	0.25	00:00 – 01:00	6.5	0.0	1.0	6.8	0.8	0.8	2.3	3.3	1.0	6.5	2.3	1.8	0.5	0.3	0.3	0.3
			0.25	01:00 – 02:00	6.3	0.0	0.8	5.0	0.5	0.5	1.8	2.5	0.8	5.0	1.8	1.3	0.3	0.3	0.3	0.3
			0.25	02:00 – 03:00	4.3	0.0	0.5	3.3	0.3	0.5	1.0	1.8	0.5	3.3	1.3	0.8	0.3	0.3	0.0	0.0
			0.25	03:00 – 04:00	4.0	0.0	0.5	3.0	0.3	0.5	1.0	1.8	0.5	3.3	1.3	1.0	0.3	0.3	0.0	0.0
			0.25	04:00 – 05:00	2.0	0.0	0.3	1.5	0.3	0.3	0.5	1.0	0.3	1.5	0.8	0.5	0.0	0.0	0.0	0.0
			0.25	05:00 – 06:00	2.0	0.0	0.3	1.5	0.3	0.3	0.5	1.0	0.3	1.5	0.8	0.5	0.0	0.0	0.0	0.0
			0.25	06:00 – 07:00	4.0	0.0	0.5	2.8	0.3	0.3	1.0	2.0	0.5	3.3	1.3	1.0	0.3	0.3	0.0	0.3
			0.25	07:00 – 08:00	7.8	0.0	1.0	5.3	0.8	0.8	2.0	4.3	1.0	6.3	2.8	2.0	0.5	0.3	0.3	0.3
			0.25	08:00 – 09:00	11.5	0.0	1.5	7.3	1.0	1.0	3.0	6.8	1.5	9.3	4.3	3.0	0.5	0.5	0.3	0.5
			0.25	09:00 – 10:00	9.8	0.0	1.3	6.5	0.8	1.0	2.5	5.5	1.3	7.8	3.5	2.5	0.5	0.5	0.3	0.3
			0.25	10:00 – 11:00	10.0	0.0	1.3	7.0	0.8	1.0	2.8	5.0	1.3	8.0	3.3	2.3	0.5	0.5	0.3	0.3
			0.25	11:00 – 12:00	10.3	0.0	1.3	7.5	0.8	1.0	2.8	4.8	1.3	8.0	3.3	2.3	0.5	0.5	0.3	0.3
			0.25	12:00 – 13:00	8.3	0.0	1.0	6.3	0.8	0.8	2.3	3.8	1.0	6.5	2.5	1.8	0.5	0.3	0.3	0.3
			0.25	13:00 – 14:00	8.3	0.0	1.0	6.5	0.8	0.8	2.3	3.5	1.0	6.5	2.3	1.8	0.5	0.3	0.3	0.3
			0.25	14:00 – 15:00	8.5	0.0	1.0	7.0	0.8	0.8	2.3	3.3	1.0	6.5	2.3	1.8	0.5	0.3	0.3	0.3
			0.25	15:00 – 16:00	10.8	0.0	1.3	9.0	0.8	1.0	3.0	3.8	1.3	8.3	2.8	2.0	0.5	0.5	0.3	0.3
			0.25	16:00 – 17:00	11.0	0.0	1.3	9.5	0.8	1.0	3.0	3.5	1.3	8.3	2.5	1.8	0.5	0.5	0.3	0.3
			0.25	17:00 – 18:00	13.3	0.0	1.5	12.0	1.0	1.3	3.8	3.8	1.5	10.0	3.0	2.3	0.5	0.5	0.5	0.3
			0.25	18:00 – 19:00	13.5	0.0	1.5	12.5	1.0	1.3	3.8	3.5	1.3	10.3	2.8	2.0	0.5	0.5	0.5	0.3
			0.25	19:00 – 20:00	13.3	0.0	1.5	12.0	1.0	1.3	3.8	3.8	1.3	10.3	3.0	2.0	0.5	0.5	0.5	0.3
			0.25	20:00 – 21:00	13.3	0.0	1.5	11.8	1.0	1.3	3.8	4.0	1.5	10.0	3.0	2.3	0.5	0.5	0.5	0.3
			0.25	21:00 – 22:00	10.8	0.0	1.3	9.5	0.8	1.0	3.0	3.5	1.3	8.3	2.5	2.0	0.5	0.5	0.3	0.3
			0.25	22:00 – 23:00	10.8	0.0	1.3	9.3	0.8	1.0	3.0	3.8	1.3	8.3	2.8	2.0	0.5	0.5	0.3	0.3
			0.25	23:00 – 00:00	8.5	0.0	1.0	7.0	0.8	0.8	2.3	3.0	1.0	6.5	2.3	1.5	0.5	0.3	0.3	0.3

Road No.	Road Name	Dir	Road Length (km)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
26c	Sau Ming Road	SB	0.55	00:00 – 01:00	38.5	0.0	2.8	17.6	1.7	1.7	5.0	6.6	4.4	30.3	4.4	3.3	1.1	0.6	0.6	0.6
			0.55	01:00 – 02:00	29.2	0.0	2.2	13.2	1.1	1.1	3.3	5.0	3.3	22.6	3.3	2.8	0.6	0.6	0.6	0.6
			0.55	02:00 – 03:00	19.3	0.0	1.7	8.8	1.1	0.8	2.2	3.3	2.2	14.9	2.2	1.7	0.6	0.6	0.0	0.0
			0.55	03:00 – 04:00	19.3	0.0	1.7	8.3	1.1	0.6	2.2	3.8	2.2	15.4	2.2	1.7	0.6	0.6	0.0	0.0
			0.55	04:00 – 05:00	9.4	0.0	0.6	4.4	0.6	0.6	1.1	1.7	1.1	7.7	1.1	1.1	0.0	0.0	0.0	0.0
			0.55	05:00 – 06:00	9.4	0.0	0.6	4.4	0.6	0.6	1.1	2.2	1.1	7.7	1.1	1.1	0.0	0.0	0.0	0.0
			0.55	06:00 – 07:00	19.3	0.0	1.7	8.3	1.1	0.6	2.2	3.9	2.2	15.4	2.8	1.7	0.6	0.6	0.0	0.0
			0.55	07:00 – 08:00	38.0	0.0	3.3	16.5	2.2	1.7	3.9	6.3	5.0	30.3	5.5	3.9	0.6	0.6	0.6	0.6
			0.55	08:00 – 09:00	56.7	0.6	5.0	24.2	3.3	2.2	6.1	13.2	7.7	45.7	8.3	6.1	1.1	1.1	0.6	1.1
			0.55	09:00 – 10:00	47.3	0.6	3.9	20.4	2.8	1.7	5.0	10.5	6.1	38.0	6.6	5.0	1.1	0.6	0.6	0.6
			0.55	10:00 – 11:00	47.9	0.6	3.9	20.9	2.8	1.7	5.5	9.9	6.1	38.0	6.6	4.4	1.1	0.6	0.6	0.6
			0.55	11:00 – 12:00	47.9	0.0	3.9	20.9	2.2	1.7	5.5	9.4	6.1	38.0	6.1	4.4	1.1	0.6	0.6	0.6
			0.55	12:00 – 13:00	38.5	0.0	2.8	17.1	1.7	1.7	4.4	7.2	4.4	30.3	5.0	3.3	1.1	0.6	0.6	0.6
			0.55	13:00 – 14:00	38.5	0.0	2.8	17.1	1.7	1.7	5.0	6.6	4.4	30.3	5.0	3.3	1.1	0.6	0.6	0.6
			0.55	14:00 – 15:00	38.5	0.0	2.8	17.6	1.7	1.7	5.0	6.6	4.4	30.3	4.4	3.3	1.1	0.6	0.6	0.6
			0.55	15:00 – 16:00	49.4	0.0	3.3	22.0	2.2	2.2	6.1	7.7	5.5	37.4	5.5	3.9	1.1	0.6	0.6	0.6
			0.55	16:00 – 17:00	49.0	0.0	2.8	22.6	2.2	2.2	6.6	7.2	5.5	37.4	5.5	3.9	1.1	1.1	0.6	0.6
			0.55	17:00 – 18:00	58.9	0.0	3.3	27.0	2.2	2.8	7.7	8.3	6.1	45.1	6.6	4.4	1.1	1.1	0.6	0.6
			0.55	18:00 – 19:00	58.9	0.0	3.3	27.5	2.2	2.8	8.3	7.7	6.1	45.1	6.1	4.4	1.1	1.1	1.1	0.6
			0.55	19:00 – 20:00	58.9	0.0	3.3	27.5	2.2	2.8	8.3	7.7	6.1	45.1	6.6	4.4	1.1	1.1	0.6	0.6
			0.55	20:00 – 21:00	58.9	0.0	3.3	27.0	2.2	2.8	7.7	8.3	6.1	45.1	6.6	5.0	1.1	1.1	0.6	0.6
			0.55	21:00 – 22:00	49.0	0.0	2.8	22.6	2.2	2.2	6.6	7.2	5.5	37.4	5.5	3.9	1.1	1.1	0.6	0.6
			0.55	22:00 – 23:00	49.0	0.0	3.3	22.0	2.2	2.2	6.1	7.7	5.5	37.4	5.5	3.9	1.1	1.1	0.6	0.6
			0.55	23:00 – 00:00	39.1	0.0	2.8	17.6	1.7	1.7	5.0	6.6	4.4	30.3	4.4	3.3	1.1	0.6	0.6	0.6

Vehicle Kilometers Travelled

Road No.	Road Name	Dir	Road Length (km)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
27	Hiu Kwong Street	NB	1.10	00:00 – 01:00	50.6	1.1	9.9	68.2	6.6	4.4	12.1	16.5	5.5	39.6	12.1	8.8	2.2	1.1	1.1	1.1
			1.10	01:00 – 02:00	38.5	1.1	7.7	49.5	5.5	3.3	8.8	12.1	4.4	30.8	8.8	6.6	1.1	1.1	1.1	1.1
			1.10	02:00 – 03:00	26.4	0.0	5.5	31.9	3.3	2.2	5.5	8.8	3.3	20.9	5.5	4.4	1.1	1.1	1.1	1.1
			1.10	03:00 – 04:00	27.5	0.0	5.5	31.9	3.3	2.2	5.5	8.8	3.3	22.0	5.5	4.4	1.1	1.1	1.1	0.0
			1.10	04:00 – 05:00	14.3	0.0	2.2	15.4	2.2	1.1	2.2	4.4	2.2	11.0	3.3	2.2	0.0	0.0	0.0	0.0
			1.10	05:00 – 06:00	14.3	0.0	2.2	15.4	2.2	1.1	2.2	4.4	2.2	11.0	3.3	2.2	0.0	0.0	0.0	0.0
			1.10	06:00 – 07:00	28.6	0.0	5.5	28.6	3.3	2.2	4.4	9.9	3.3	23.1	6.6	4.4	1.1	1.1	1.1	1.1
			1.10	07:00 – 08:00	59.4	1.1	11.0	56.1	7.7	3.3	9.9	19.8	7.7	47.3	12.1	8.8	2.2	1.1	1.1	1.1
			1.10	08:00 – 09:00	91.3	1.1	16.5	81.4	11.0	4.4	13.2	29.7	12.1	72.6	18.7	13.2	2.2	2.2	1.1	2.2
			1.10	09:00 – 10:00	73.7	1.1	14.3	70.4	8.8	4.4	12.1	24.2	9.9	59.4	15.4	11.0	2.2	2.2	1.1	1.1
			1.10	10:00 – 11:00	71.5	1.1	13.2	73.7	8.8	4.4	12.1	23.1	8.8	57.2	15.4	11.0	2.2	2.2	1.1	1.1
			1.10	11:00 – 12:00	69.3	1.1	13.2	77.0	8.8	4.4	13.2	22.0	8.8	55.0	15.4	11.0	2.2	2.2	1.1	1.1
			1.10	12:00 – 13:00	53.9	1.1	11.0	63.8	6.6	4.4	11.0	17.6	6.6	42.9	12.1	8.8	2.2	1.1	1.1	1.1
			1.10	13:00 – 14:00	51.7	1.1	9.9	67.1	6.6	4.4	12.1	16.5	6.6	40.7	12.1	8.8	2.2	1.1	1.1	1.1
			1.10	14:00 – 15:00	50.6	1.1	9.9	69.3	6.6	4.4	12.1	16.5	5.5	39.6	11.0	8.8	2.2	1.1	1.1	1.1
			1.10	15:00 – 16:00	60.5	1.1	12.1	90.2	7.7	5.5	16.5	16.7	6.6	47.3	14.3	9.9	3.3	2.2	2.2	1.1
			1.10	16:00 – 17:00	58.3	1.1	12.1	92.4	7.7	5.5	16.5	16.7	6.6	45.1	14.3	9.9	3.3	2.2	2.2	1.1
			1.10	17:00 – 18:00	67.1	1.1	14.3	115.5	8.8	7.7	20.9	20.9	6.6	51.7	16.5	12.1	3.3	2.2	2.2	1.1
			1.10	18:00 – 19:00	64.9	1.1	14.3	118.8	8.8	7.7	22.0	19.8	6.6	49.5	16.5	12.1	3.3	3.3	2.2	1.1
			1.10	19:00 – 20:00	67.1	1.1	14.3	116.6	8.8	7.7	20.9	20.9	6.6	50.6	16.5	12.1	3.3	2.2	2.2	1.1
			1.10	20:00 – 21:00	68.2	1.1	14.3	113.3	8.8	7.7	20.9	20.9	7.7	52.8	16.5	12.1	3.3	2.2	2.2	1.1
			1.10	21:00 – 22:00	58.3	1.1	12.1	92.4	7.7	5.5	16.5	16.7	6.6	45.1	14.3	9.9	3.3	2.2	2.2	1.1
			1.10	22:00 – 23:00	60.5	1.1	12.1	90.2	7.7	5.5	16.5	16.7	6.6	47.3	14.3	9.9	3.3	2.2	2.2	1.1
			1.10	23:00 – 00:00	49.5	1.1	9.9	70.4	6.6	4.4	12.1	15.4	5.5	38.5	11.0	8.8	2.2	2.2	1.1	1.1

Road No.	Road Name	Dir	Road Length (km)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
28	Hiu Kwong Street	SB	1.10	00:00 – 01:00	83.6	1.1	15.4	100.1	9.9	4.4	12.1	16.5	9.9	66.0	12.1	8.8	2.2	1.1	1.1	1.1
			1.10	01:00 – 02:00	64.9	1.1	12.1	73.7	7.7	3.3	8.8	12.1	7.7	50.6	8.8	6.6	1.1	1.1	1.1	1.1
			1.10	02:00 – 03:00	45.1	1.1	7.7	48.4	5.5	2.2	5.5	8.8	5.5	35.2	5.5	4.4	1.1	1.1	1.1	0.0
			1.10	03:00 – 04:00	46.2	1.1	7.7	47.3	5.5	2.2	5.5	8.8	5.5	36.3	5.5	4.4	1.1	1.1	1.1	1.1
			1.10	04:00 – 05:00	24.2	0.0	4.4	23.1	2.2	1.1	2.2	4.4	3.3	18.7	3.3	2.2	0.0	0.0	0.0	0.0
			1.10	05:00 – 06:00	24.2	0.0	4.4	23.1	2.2	1.1	2.2	4.4	3.3	19.8	3.3	2.2	0.0	0.0	0.0	0.0
			1.10	06:00 – 07:00	50.6	1.1	8.8	45.1	5.5	2.2	4.4	9.9	6.6	40.7	6.6	4.4	1.1	1.1	1.1	1.1
			1.10	07:00 – 08:00	103.4	1.1	17.6	88.0	11.0	3.3	9.9	19.8	13.2	82.5	12.1	8.8	2.2	1.1	1.1	1.1
			1.10	08:00 – 09:00	158.4	2.2	27.5	129.8	17.6	4.4	13.2	29.7	20.9	127.6	18.7	13.2	2.2	2.2	1.1	2.2
			1.10	09:00 – 10:00	127.6	1.1	22.0	111.1	14.3	4.4	12.1	24.2	16.5	102.3	15.4	11.0	2.2	2.2	1.1	1.1
			1.10	10:00 – 11:00	123.2	1.1	20.9	114.4	13.2	4.4	12.1	23.1	15.4	97.9	15.4	11.0	2.2	2.2	1.1	1.1
			1.10	11:00 – 12:00	117.7	1.1	20.9	116.6	13.2	4.4	13.2	22.0	15.4	93.5	15.4	11.0	2.2	2.2	1.1	1.1
			1.10	12:00 – 13:00	90.2	1.1	16.5	95.7	9.9	4.4	11.0	17.6	11.0	71.5	12.1	8.8	2.2	1.1	1.1	1.1
			1.10	13:00 – 14:00	86.9	1.1	15.4	97.9	9.9	4.4	12.1	16.5	11.0	68.2	12.1	8.8	2.2	1.1	1.1	1.1
			1.10	14:00 – 15:00	82.5	1.1	15.4	100.1	9.9	4.4	12.1	16.5	9.9	64.9	11.0	8.8	2.2	1.1	1.1	1.1
			1.10	15:00 – 16:00	97.9	1.1	17.6	128.7	12.1	5.5	16.5	16.7	11.0	77.0	14.3	9.9	3.3	2.2	2.2	1.1
			1.10	16:00 – 17:00	93.5	1.1	17.6	132.0	11.0	5.5	16.5	16.7	9.9	72.6	14.3	9.9	3.3	2.2	2.2	1.1
			1.10	17:00 – 18:00	106.7	1.1	19.8	161.7	13.2	7.7	20.9	20.9	11.0	81.4	16.5	12.1	3.3	2.2	2.2	1.1
			1.10	18:00 – 19:00	100.1	1.1	19.8	165.0	12.1	7.7	22.0	19.8	9.9	75.9	16.5	12.1	3.3	3.3	2.2	1.1
			1.10	19:00 – 20:00	104.5	1.1	19.8	162.8	13.2	7.7	20.9	20.9	11.0	80.3	16.5	12.1	3.3	2.2	2.2	1.1
			1.10	20:00 – 21:00	108.9	1.1	20.9	159.5	13.2	7.7	20.9	20.9	12.1	83.6	16.5	12.1	3.3	2.2	2.2	1.1
			1.10	21:00 – 22:00	94.6	1.1	17.6	130.9	11.0	5.5	16.5	16.7	11.0	72.6	14.3	9.9	3.3	2.2	2.2	1.1
			1.10	22:00 – 23:00	97.9	1.1	17.6	128.7	12.1	5.5	16.5	16.7	11.0	75.9	14.3	9.9	3.3	2.2	2.2	1.1
			1.10	23:00 – 00:00	81.4	1.1	14.3	101.2	9.9	4.4	12.1	15.4	9.9	62.7	11.0	8.8	2.2	2.2	1.1	1.1

Road No.	Road Name	Dir	Road Length (km)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
29	Hip Wo Street	NB	0.38	00:00 – 01:00	60.0	0.4	3.4	22.0	2.3	1.5	4.6	6.5	7.2	47.1	4.6	3.4	0.8	0.8	0.4	0.4
			0.38	01:00 – 02:00	46.0	0.0	2.7	16.3	1.5	1.1	3.4	4.9	5.3	36.1	3.4	2.3	0.8	0.4	0.4	0.4
			0.38	02:00 – 03:00	31.2	0.0	1.9	11.0	1.1	0.8	2.3	3.4	3.8	24.3	2.3	1.5	0.4	0.4	0.4	0.4
			0.38	03:00 – 04:00	31.5	0.0	1.9	10.6	1.1	0.8	2.3	3.4	3.8	25.1	2.3	1.5	0.4	0.4	0.4	0.4
			0.38	04:00 – 05:00	16.0	0.0	1.1	5.3	0.8	0.4	1.1	1.9	1.9	12.5	1.1	0.8	0.0	0.0	0.0	0.0
			0.38	05:00 – 06:00	16.3	0.0	1.1	5.3	0.8	0.4	1.1	1.9	1.9	12.9	1.1	0.8	0.0	0.0	0.0	0.0
			0.38	06:00 – 07:00	33.1	0.0	1.9	10.6	1.1	0.8	1.9	3.8	4.2	26.2	2.3	1.5	0.4	0.4	0.4	0.4
			0.38	07:00 – 08:00	66.9	0.4	4.2	20.9	2.7	1.1	3.8	7.6	8.7	53.6	4.6	3.4	0.8	0.4	0.4	0.4
			0.38	08:00 – 09:00	101.8	0.4	6.5	30.8	4.2	1.9	5.3	11.8	13.7	82.1	7.2	5.3	1.1	0.8	0.8	0.8
			0.38	09:00 – 10:00	83.2	0.4	5.3	25.6	3.4	1.5	4.6	9.5	11.0	66.5	6.1	4.2	0.8	0.8	0.4	0.8
			0.38	10:00 – 11:00	81.7	0.4	4.9	26.2	3.0	1.5	4.9	9.1	10.6	65.0	5.7	4.2	0.8	0.8	0.4	0.8
			0.38	11:00 – 12:00	79.8	0.4	4.9	26.6	3.0	1.9	5.3	8.7	9.9	63.5	5.7	4.2	1.1	0.8	0.8	0.4
			0.38	12:00 – 13:00	62.7	0.4	3.8	21.7	2.3	1.5	4.2	6.8	7.6	49.4	4.6	3.4	0.8	0.8	0.4	0.4
			0.38	13:00 – 14:00	61.2	0.4	3.4	22.0	2.3	1.5	4.6	6.5	7.2	47.9	4.6	3.4	0.8	0.8	0.4	0.4
			0.38	14:00 – 15:00	59.7	0.4	3.4	22.0	2.3	1.5	4.9	6.1	6.8	46.7	4.6	3.4	0.8	0.8	0.4	0.4
			0.38	15:00 – 16:00	73.0	0.4	3.8	26.1	2.7	2.3	6.5	7.6	8.4	56.6	5.7	4.2	1.1	0.8	0.8	0.4
			0.38	16:00 – 17:00	71.4	0.4	3.8	28.5	2.3	2.3	6.5	7.2	7.6	55.1	5.3	3.8	1.1	0.8	0.8	0.4
			0.38	17:00 – 18:00	83.6	0.4	4.2	34.2	2.7	2.7	8.4	8.4	8.7	64.2	6.5	4.6	1.5	1.1	0.8	0.4
			0.38	18:00 – 19:00	81.7	0.4	4.2	35.0	2.7	3.0	8.4	7.8	8.4	61.9	6.5	4.6	1.5	1.1	0.8	0.4
			0.38	19:00 – 20:00	83.2	0.4	4.2	34.6	2.7	3.0	8.4	8.0	8.7	63.5	6.5	4.6	1.5	1.1	0.8	0.4
			0.38	20:00 – 21:00	84.4	0.4	4.6	34.2	2.7	2.7	8.0	8.4	9.1	65.0	6.5	4.6	1.5	1.1	0.8	0.4
			0.38	21:00 – 22:00	71.8	0.4	3.8	28.1	2.3	2.3	6.5	7.2	8.0	55.5	5.3	3.8	1.1	0.8	0.8	0.4
			0.38	22:00 – 23:00	73.0	0.4	3.8	28.1	2.7	2.3	6.5	7.2	8.4	56.6	5.7	4.2	1.1	0.8	0.8	0.4
			0.38	23:00 – 00:00	59.3	0.4	3.4	22.4	2.3	1.5	4.9	6.1	6.8	46.0	4.6	3.4	0.8	0.8	0.4	0.4

Vehicle Kilometers Travelled

Road No.	Road Name	Dir	Road Length (km)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
30	Hip Wo Street	SB	0.38	00:00 – 01:00	104.9	0.4	4.9	36.1	3.4	1.1	3.8	5.3	12.2	61.7	3.8	2.7	0.8	0.4	0.4	0.4
			0.38	01:00 – 02:00	78.3	0.4	3.8	25.8	2.3	0.8	2.7	4.2	9.1	61.2	3.0	1.9	0.4	0.4	0.4	0.4
			0.38	02:00 – 03:00	51.7	0.0	2.7	16.3	1.5	0.8	1.9	3.0	6.1	40.7	1.9	1.5	0.4	0.4	0.4	0.0
			0.38	03:00 – 04:00	51.3	0.0	2.7	15.6	1.5	0.8	1.9	3.0	6.1	40.3	1.9	1.5	0.4	0.4	0.4	0.4
			0.38	04:00 – 05:00	25.5	0.0	1.1	7.2	0.8	0.4	0.8	1.5	3.0	20.1	1.1	0.8	0.0	0.0	0.0	0.0
			0.38	05:00 – 06:00	25.1	0.0	1.1	6.8	0.8	0.4	0.8	1.5	3.0	20.1	1.1	0.8	0.0	0.0	0.0	0.0
			0.38	06:00 – 07:00	49.8	0.0	2.3	12.9	1.5	0.8	1.9	3.4	6.5	39.9	2.3	1.5	0.4	0.4	0.4	0.4
			0.38	07:00 – 08:00	98.8	0.4	4.6	23.9	3.0	1.1	3.4	7.6	12.9	79.0	4.6	3.4	0.8	0.4	0.4	0.4
			0.38	08:00 – 09:00	147.1	0.4	6.8	33.4	4.6	1.9	5.3	11.8	19.8	118.2	7.2	5.3	1.1	0.6	0.8	0.8
			0.38	09:00 – 10:00	123.9	0.4	6.1	31.2	3.8	1.5	4.6	9.1	16.3	99.2	5.7	4.2	0.8	0.6	0.4	0.6
			0.38	10:00 – 11:00	125.4	0.4	6.1	33.8	3.8	1.5	4.6	8.7	16.0	99.9	5.3	3.8	0.8	0.8	0.4	0.4
			0.38	11:00 – 12:00	126.9	0.4	6.1	36.9	3.8	1.5	4.6	8.0	15.6	100.3	5.3	3.8	0.8	0.8	0.4	0.4
			0.38	12:00 – 13:00	103.0	0.4	4.9	31.9	3.0	1.1	3.4	6.1	12.2	80.9	4.2	3.0	0.8	0.4	0.4	0.4
			0.38	13:00 – 14:00	104.1	0.4	4.9	34.2	3.4	1.1	3.8	5.7	12.2	81.3	3.8	2.7	0.8	0.4	0.4	0.4
			0.38	14:00 – 15:00	105.3	0.4	5.3	36.9	3.4	1.1	3.8	5.3	11.8	81.7	3.8	2.7	0.8	0.4	0.4	0.4
			0.38	15:00 – 16:00	133.4	0.4	6.5	49.0	4.2	1.5	4.6	6.1	14.8	103.0	4.2	3.0	0.8	0.6	0.4	0.4
			0.38	16:00 – 17:00	134.9	0.4	6.5	52.1	4.2	1.5	4.6	5.3	14.4	103.4	4.2	3.0	0.8	0.8	0.4	0.4
			0.38	17:00 – 18:00	163.4	0.8	8.0	66.1	5.3	1.9	5.7	5.7	17.1	125.0	4.6	3.4	1.1	0.8	0.8	0.4
			0.38	18:00 – 19:00	165.3	0.8	8.4	69.5	5.3	1.9	5.7	5.3	16.7	125.8	4.2	3.0	0.8	0.8	0.8	0.4
			0.38	19:00 – 20:00	164.2	0.8	8.0	66.9	5.3	1.9	5.7	5.7	17.1	125.0	4.6	3.4	0.8	0.8	0.8	0.4
			0.38	20:00 – 21:00	162.6	0.8	8.0	64.6	5.3	1.9	5.7	6.1	17.1	124.6	4.6	3.4	1.1	0.8	0.6	0.4
			0.38	21:00 – 22:00	134.5	0.4	6.5	51.7	4.2	1.5	4.6	5.3	14.4	103.4	4.2	3.0	0.8	0.6	0.4	0.4
			0.38	22:00 – 23:00	133.4	0.4	6.5	49.4	4.2	1.5	4.6	5.7	14.8	103.0	4.2	3.0	0.8	0.6	0.4	0.4
			0.38	23:00 – 00:00	106.0	0.4	5.3	38.0	3.4	1.1	3.8	4.9	11.8	82.1	3.4	2.7	0.8	0.4	0.4	0.4

Road No.	Road Name	Dir	Road Length (km)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
53	Tsui Ping Road	NB	0.68	00:00 – 01:00	107.4	0.7	6.1	39.4	4.1	2.7	8.2	11.6	12.9	84.3	8.2	6.1	1.4	1.4	0.7	0.7
			0.68	01:00 – 02:00	82.3	0.0	4.8	29.2	2.7	2.0	6.1	8.8	9.5	64.6	6.1	4.1	1.4	0.7	0.7	0.7
			0.68	02:00 – 03:00	55.8	0.0	3.4	19.7	2.0	1.4	4.1	6.1	6.8	43.5	4.1	2.7	0.7	0.7	0.7	0.7
			0.68	03:00 – 04:00	56.4	0.0	3.4	19.0	2.0	1.4	4.1	6.1	6.8	44.9	4.1	2.7	0.7	0.7	0.7	0.7
			0.68	04:00 – 05:00	28.6	0.0	2.0	9.5	1.4	0.7	2.0	3.4	3.4	22.4	2.0	1.4	0.0	0.0	0.0	0.0
			0.68	05:00 – 06:00	29.2	0.0	2.0	9.5	1.4	0.7	2.0	3.4	3.4	23.1	2.0	1.4	0.0	0.0	0.0	0.0
			0.68	06:00 – 07:00	59.2	0.0	3.4	19.0	2.0	1.4	3.4	6.8	7.5	46.9	4.1	2.7	0.7	0.7	0.7	0.7
			0.68	07:00 – 08:00	119.7	0.7	7.5	37.4	4.8	2.0	6.8	13.6	15.6	95.8	8.2	6.1	1.4	0.7	0.7	0.7
			0.68	08:00 – 09:00	162.2	0.7	11.6	55.1	7.5	3.4	9.5	21.1	24.5	146.9	12.9	9.5	2.0	1.4	1.4	1.4
			0.68	09:00 – 10:00	148.9	0.7	9.5	46.2	6.1	2.7	8.2	17.0	19.7	119.0	10.9	7.5	1.4	1.4	0.7	1.4
			0.68	10:00 – 11:00	146.2	0.7	8.8	46.9	5.4	2.7	8.8	16.3	19.0	116.3	10.2	7.5	1.4	1.4	0.7	1.4
			0.68	11:00 – 12:00	142.8	0.7	8.8	47.6	5.4	3.4	9.5	15.6	17.7	113.6	10.2	7.5	2.0	1.4	1.4	0.7
			0.68	12:00 – 13:00	112.2	0.7	6.8	38.8	4.1	2.7	7.5	12.2	13.6	88.4	8.2	6.1	1.4	1.4	0.7	0.7
			0.68	13:00 – 14:00	109.5	0.7	6.1	39.4	4.1	2.7	8.2	11.6	12.9	85.7	8.2	6.1	1.4	1.4	0.7	0.7
			0.68	14:00 – 15:00	106.8	0.7	6.1	39.4	4.1	2.7	8.8	10.9	12.2	83.6	8.2	6.1	1.4	1.4	0.7	0.7
			0.68	15:00 – 16:00	130.6	0.7	6.8	50.3	4.8	4.1	11.6	13.6	15.0	101.3	10.2	7.5	2.0	1.4	1.4	0.7
			0.68	16:00 – 17:00	127.6	0.7	6.8	51.0	4.1	4.1	11.6	12.9	13.6	98.6	9.5	6.8	2.0	1.4	1.4	0.7
			0.68	17:00 – 18:00	149.6	0.7	7.5	61.2	4.8	4.8	15.0	15.0	15.6	114.9	11.6	8.2	2.7	2.0	1.4	0.7
			0.68	18:00 – 19:00	146.2	0.7	7.5	62.6	4.8	5.4	15.0	13.6	15.0	110.8	11.6	8.2	2.7	2.0	1.4	0.7
			0.68	19:00 – 20:00	148.9	0.7	7.5	61.9	4.8	5.4	15.0	14.3	15.6	113.6	11.6	8.2	2.7	2.0	1.4	0.7
			0.68	20:00 – 21:00	151.0	0.7	8.2	61.2	4.8	4.8	14.3	15.0	16.3	116.3	11.6	8.2	2.7	2.0	1.4	0.7
			0.68	21:00 – 22:00	128.5	0.7	6.8	50.3	4.1	4.1	11.6	12.9	14.3	99.3	9.5	6.8	2.0	1.4	1.4	0.7
			0.68	22:00 – 23:00	130.6	0.7	6.8	50.3	4.8	4.1	11.6	12.9	15.0	101.3	10.2	7.5	2.0	1.4	1.4	0.7
			0.68	23:00 – 00:00	106.1	0.7	6.1	40.1	4.1	2.7	8.8	10.9	12.2	82.3	8.2	6.1	1.4	1.4	0.7	0.7

Road No.	Road Name	Dir	Road Length (km)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
54	Tsui Ping Road	SB	0.68	00:00 – 01:00	187.7	0.7	8.8	64.6	6.1	2.0	6.8	9.5	21.8	146.2	6.8	4.8	1.4	0.7	0.7	0.7
			0.68	01:00 – 02:00	140.1	0.7	6.8	46.2	4.1	1.4	4.8	7.5	16.3	109.5	5.4	3.4	0.7	0.7	0.7	0.7
			0.68	02:00 – 03:00	92.5	0.0	4.8	29.2	2.7	1.4	3.4	5.4	10.9	72.8	3.4	2.7	0.7	0.7	0.7	0.0
			0.68	03:00 – 04:00	91.6	0.0	4.8	27.9	2.7	1.4	3.4	5.4	10.9	72.1	3.4	2.7	0.7	0.7	0.7	0.7
			0.68	04:00 – 05:00	45.6	0.0	2.0	12.9	1.4	0.7	1.4	2.7	5.4	36.0	2.0	1.4	0.0	0.0	0.0	0.0
			0.68	05:00 – 06:00	44.9	0.0	2.0	12.2	1.4	0.7	1.4	2.7	5.4	36.0	2.0	1.4	0.0	0.0	0.0	0.0
			0.68	06:00 – 07:00	89.1	0.0	4.1	23.1	2.7	1.4	3.4	6.1	11.6	71.4	4.1	2.7	0.7	0.7	0.7	0.7
			0.68	07:00 – 08:00	176.8	0.7	8.2	42.8	5.4	2.0	6.1	13.6	23.1	141.4	8.2	6.1	1.4	0.7	0.7	0.7
			0.68	08:00 – 09:00	263.2	0.7	12.2	59.8	8.2	3.4	9.5	21.1	35.4	211.5	12.9	9.5	2.0	1.4	1.4	1.4
			0.68	09:00 – 10:00	221.7	0.7	10.9	55.6	6.8	2.7	8.2	16.3	29.2	177.5	10.2	7.5	1.4	1.4	0.7	1.4
			0.68	10:00 – 11:00	224.4	0.7	10.9	60.5	6.8	2.7	8.2	15.6	28.6	178.8	9.5	6.8	1.4	1.4	0.7	0.7
			0.68	11:00 – 12:00	227.1	0.7	10.9	66.0	6.8	2.7	8.2	14.3	27.9	179.5	9.5	6.8	1.4	1.4	0.7	0.7
			0.68	12:00 – 13:00	184.3	0.7	8.8	57.1	5.4	2.0	6.1	10.9	21.8	144.8	7.5	5.4	1.4	0.7	0.7	0.7
			0.68	13:00 – 14:00	186.3	0.7	8.8	61.2	6.1	2.0	6.8	10.2	21.8	145.5	6.8	4.8	1.4	0.7	0.7	0.7
			0.68	14:00 – 15:00	188.4	0.7	9.5	66.0	6.1	2.0	6.8	9.5	21.1	146.2	6.8	4.8	1.4	0.7	0.7	0.7
			0.68	15:00 – 16:00	238.7	0.7	11.6	87.7	7.5	2.7	8.2	10.9	26.5	184.3	7.5	5.4	1.4	1.4	0.7	0.7
			0.68	16:00 – 17:00	241.4	0.7	11.6	93.2	7.5	2.7	8.2	9.5	25.8	185.0	7.5	5.4	1.4	1.4	0.7	0.7
			0.68	17:00 – 18:00	292.4	1.4	14.3	118.3	9.5	3.4	10.2	10.2	30.6	223.7	8.2	6.1	2.0	1.4	1.4	0.7
			0.68	18:00 – 19:00	295.8	1.4	15.0	124.4	9.5	3.4	10.2	9.5	29.9	225.1	7.5	5.4	1.4	1.4	1.4	0.7
			0.68	19:00 – 20:00	293.6	1.4	14.3	119.7	9.5	3.4	10.2	10.2	30.6	223.7	8.2	6.1	1.4	1.4	1.4	0.7
			0.68	20:00 – 21:00	291.0	1.4	14.3	115.6	9.5	3.4	10.2	10.9	30.6	223.0	8.2	6.1	2.0	1.4	1.4	0.7
			0.68	21:00 – 22:00	240.7	0.7	11.6	92.5	7.5	2.7	8.2	9.5	25.8	185.0	7.5	5.4	1.4	1.4	0.7	0.7
			0.68	22:00 – 23:00	238.7	0.7	11.6	88.4	7.5	2.7	8.2	10.2	26.5	184.3	7.5	5.4	1.4	1.4	0.7	0.7
			0.68	23:00 – 00:00	189.7	0.7	9.5	68.0	6.1	2.0	6.8	8.8	21.1	146.9	6.1	4.8	1.4	0.7	0.7	0.7

運輸署
Transport Department

By fax: 2527 8490

本署檔號 Our Ref. KR 158/160-79
來函檔號 Your Ref. 27702-28/GPH/STH/L1104808/jch
電 話 Tel. 2399 2513
圖文傳真 Fax 2397 8046

Total page: 1

MVA		
Job No.	C27702-28	
Reg. No.	0031050	
Date In	11/11/11	
Initials	Action Date	Copy Date
GPH	11/11	
STH	11/11	11/11
JCH	11/11	11/11
Date	Filing Clerk	Day File
		11/11
Reply Ref.		
Reply Date		
File No.		

8 November 2011

MVA Hong Kong Limited
14/F West
Warwick House
TaiKoo Place
979 King's Road
Island East
Hong Kong

(Attn.: Steven Ho)

Dear Sir,

Public Housing Development at Sau Mau Ping GIC Site
2032 Traffic Forecasts for Environmental Assessment Study

I refer to your above letter of 4 November 2011. I have no further comments.

Yours faithfully,

(W. H. CHAN)
for Commissioner for Transport

市區(九龍)及新界分區辦事處
Urban (Kln.) & NT Regional Offices
九龍聯運街三十號旺角政府合署七樓及八樓
7th & 8th Floors, Mong Kok Government Offices, 30 Luen Wan Street, Kowloon.
圖文傳真 Fax No.: 2381 3799 (新界區) (NTRO) 2397 8046 (九龍市區) (U(K)RO)
網址 Web Site: http://www.td.gov.hk

Annex 3:
Traffic Noise Impact Assessment Results

Predicted Road Traffic Noise at Selected Sensitive Receivers
Mitigated with Canopy with Top Level +101.55mPD
1.0m Fins at N10, and 1.5m fin at N11, N15, N16, N17, N22, N23 & N24
6m solid boundary wall along western boundary

Floor	mPD	N1	N2	N3	N4	N5	N6	N7	N8	N9	N10	N11	N12	N13	N14	N15	N16	N17	N18	N19	N20	N21	N22	N23	N24
1/F	100.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	65	65	64	64	61	62	63	65	66
2/F	103.25	-	-	-	-	-	-	-	-	-	-	60	62	62	63	62	67	68	67	66	63	65	66	69	69
3/F	106.00	63	63	62	61	62	62	63	64	66	62	63	65	65	66	66	69	69	69	69	66	68	69	70	70
4/F	108.75	65	65	65	64	64	65	66	67	69	67	65	67	67	68	68	70	70	70	70	69	70	70	70	70
5/F	111.50	66	66	66	66	66	67	68	69	70	69	67	69	69	70	69	70	70	70	70	70	70	70	70	70
6/F	114.25	67	67	67	66	67	68	69	69	70	70	69	70	69	71	70	70	70	71	71	70	70	70	71	71
7/F	117.00	67	68	67	67	68	69	69	69	70	70	70	70	70	71	70	71	71	71	71	70	70	71	71	71
8/F	119.75	68	68	68	68	68	69	69	70	70	70	70	70	70	71	70	71	70	71	71	70	71	70	71	71
9/F	122.50	68	68	68	68	69	69	69	70	70	70	70	70	70	71	70	71	70	71	71	71	71	70	70	70
10/F	125.25	68	68	68	68	69	70	70	70	70	70	70	70	70	71	70	71	70	71	71	70	70	70	70	70
11/F	128.00	68	68	68	68	69	70	70	70	70	70	70	70	69	70	70	70	70	71	71	70	70	70	70	70
12/F	130.75	68	69	69	69	69	70	70	70	70	70	70	69	69	70	69	70	70	71	71	70	70	70	70	70
13/F	133.50	68	69	69	69	69	70	70	70	70	70	69	69	69	70	69	70	70	70	70	70	70	70	70	70
14/F	136.25	68	69	69	69	69	70	70	70	70	70	69	69	69	70	69	70	70	70	70	70	70	70	70	70
15/F	139.00	68	69	69	69	69	70	70	70	70	69	69	69	69	70	69	70	70	70	70	70	70	70	70	70
16/F	141.75	68	69	69	69	69	70	70	70	70	69	69	69	69	70	69	70	69	70	70	70	70	70	70	70
17/F	144.50	68	69	69	69	69	70	69	70	70	69	69	69	68	70	69	70	69	70	70	70	70	69	70	70
18/F	147.25	68	69	69	69	69	69	69	69	70	69	69	69	69	70	69	70	69	70	70	70	70	69	70	69
			0		0	0	0		0		0	0	0	0	5	0	4	1	7	7	1	2		3	3

No of Units = 325
No of Exceedances = 33
% of Compliance = 90%

Predicted Road Traffic Noise at Selected Sensitive Receivers - Unmitigated

Floor	mPD	N1	N2	N3	N4	N5	N6	N7	N8	N9	N10	N11	N12	N13	N14	N15	N16	N17	N18	N19	N20	N21	N22	N23	N24
1/F	100.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	71	71	71	71	69	71	71	71	71
2/F	103.25	-	-	-	-	-	-	-	-	-	-	76	75	75	76	76	72	72	71	71	70	71	71	72	72
3/F	106.00	63	63	62	61	62	63	63	65	67	71	76	75	75	75	76	72	72	71	71	71	71	71	72	72
4/F	108.75	65	65	65	64	64	66	66	68	70	72	75	74	74	75	75	72	72	72	72	71	71	72	72	72
5/F	111.50	66	66	66	66	66	68	68	69	70	72	75	74	74	75	75	72	72	72	72	71	72	72	72	72
6/F	114.25	67	67	67	67	67	69	69	70	71	72	74	73	73	74	74	72	72	72	71	71	71	71	72	71
7/F	117.00	67	68	68	67	68	69	70	70	71	72	74	73	73	74	74	72	72	71	71	71	71	71	71	71
8/F	119.75	68	68	68	68	69	70	70	70	71	72	74	73	72	73	74	72	71	71	71	71	71	71	71	71
9/F	122.50	68	68	68	68	69	70	70	71	71	72	73	72	72	73	73	72	71	71	71	71	71	71	71	71
10/F	125.25	68	68	68	69	69	70	70	71	71	71	73	72	72	73	73	72	71	71	71	71	71	71	71	71
11/F	128.00	68	69	69	69	69	70	70	70	71	71	73	72	72	73	73	71	71	71	71	71	71	71	71	71
12/F	130.75	68	69	69	69	70	70	70	70	71	71	73	72	71	72	73	71	71	71	71	71	71	71	71	71
13/F	133.50	68	69	69	69	70	70	70	70	71	71	72	71	71	72	72	71	71	71	71	70	71	71	71	71
14/F	136.25	68	69	69	69	70	70	70	70	71	71	72	71	71	72	72	71	71	71	71	70	70	71	71	71
15/F	139.00	68	69	69	69	70	70	70	70	70	70	72	71	71	72	72	71	71	70	70	70	70	70	70	70
16/F	141.75	68	69	69	69	69	70	70	70	70	70	72	71	70	71	72	71	71	70	70	70	70	70	70	70
17/F	144.50	68	69	69	69	69	70	70	70	70	70	72	71	70	71	72	71	70	70	70	70	70	70	70	70
18/F	147.25	68	69	69	69	69	70	70	70	70	70	71	70	70	71	71	71	70	70	70	70	70	70	70	70
		0			0	0	0		2		12	17	16	14	17	17	18	16	14	14	10	14		14	14

No of Units = 325
No of Exceedances = 209
% of Compliance = 36%

Annex 4-1:
Technology Fractions Adopted in EMFAC-HK Model

MC1: PC+LGV-petrol - PC+LGV(1)

Year	Vehicle Class (MC)	Exhaust Technology Group Index - PC+LGV(1)										
		Petrol PC						Petrol LGV with GVW < 2.5t				Total
		pre-Euro	pre-Euro (ULP)	Euro I	Euro II	Euro III	Euro IV	Euro I	Euro II	Euro III	Euro IV	
		1	8	10	13	23	24	9	15	18	28	
1972	1	100.00%										100.00%
1973	1	100.00%										100.00%
1974	1	100.00%										100.00%
1975	1	100.00%										100.00%
1976	1	100.00%										100.00%
1977	1	100.00%										100.00%
1978	1	100.00%										100.00%
1979	1	100.00%										100.00%
1980	1	100.00%										100.00%
1981	1	100.00%										100.00%
1982	1	100.00%										100.00%
1983	1	100.00%										100.00%
1984	1	100.00%										100.00%
1985	1	100.00%										100.00%
1986	1	100.00%										100.00%
1987	1	100.00%										100.00%
1988	1	100.00%										100.00%
1989	1	100.00%										100.00%
1990	1	100.00%										100.00%
1991	1	100.00%										100.00%
1992	1	0.06%	99.94%									100.00%
1993	1	0.11%	99.89%									100.00%
1994	1	0.14%	99.86%									100.00%
1995	1	0.05%	37.40%	62.11%				0.44%				100.00%
1996	1			99.91%				0.09%				100.00%
1997	1			18.61%	81.36%			0.03%				100.00%
1998	1				99.79%			0.17%	0.03%			100.00%
1999	1				99.49%				0.51%			100.00%
2000	1				98.85%				1.15%			100.00%
2001	1					99.20%			0.80%			100.00%
2002	1					99.59%				0.41%		100.00%
2003	1					99.60%				0.40%		100.00%
2004	1					99.68%				0.32%		100.00%
2005	1					99.79%				0.21%		100.00%
2006	1						99.22%			0.78%		100.00%
2007	1						99.44%				0.56%	100.00%
2008	1						99.83%				0.17%	100.00%
2009	1						99.83%				0.17%	100.00%
2010	1						99.83%				0.17%	100.00%
2011	1						99.83%				0.17%	100.00%
2012	1						99.83%				0.17%	100.00%
2013	1						99.83%				0.17%	100.00%
2014	1						99.83%				0.17%	100.00%
2015	1						99.83%				0.17%	100.00%
2016	1						99.83%				0.17%	100.00%
2017	1						99.83%				0.17%	100.00%

MC3: PC+LGV<2.5t-diesel - PC+LGV(3)

Year	Vehicle Class (MC)	Exhaust Technology Group Index - PC+LGV(3)											
		Diesel PC					Diesel LGV with GVW < 3.5t						Total
		pre-Euro w/ trap	pre-Euro w/Doc	Euro I	Euro III	Euro IV	pre-Euro w/ trap	pre-Euro w/Doc	Euro I	Euro II	Euro III	Euro IV	
		171	172	173	175	176	179	180	181	182	183	184	
1972	3		100.00%										100.00%
1973	3		100.00%										100.00%
1974	3		100.00%										100.00%
1975	3		100.00%										100.00%
1976	3		100.00%										100.00%
1977	3	66.67%	33.33%										100.00%
1978	3		100.00%										100.00%
1979	3	66.67%	33.33%										100.00%
1980	3	60.00%	20.00%				20.00%						100.00%
1981	3	62.50%	37.50%										100.00%
1982	3	50.00%	50.00%										100.00%
1983	3	66.67%	33.33%										100.00%
1984	3	62.50%	37.50%										100.00%
1985	3	50.00%	40.00%				10.00%						100.00%
1986	3	54.90%	3.92%				37.25%	3.92%					100.00%
1987	3	24.24%	12.12%				58.59%	5.05%					100.00%
1988	3	35.48%	6.45%				54.03%	4.03%					100.00%
1989	3	35.08%	7.85%				51.83%	5.24%					100.00%
1990	3	34.19%	6.99%				53.68%	5.15%					100.00%
1991	3	51.05%	15.61%				27.85%	5.49%					100.00%
1992	3	28.79%	10.51%				49.42%	11.28%					100.00%
1993	3	30.22%	13.27%				46.19%	10.32%					100.00%
1994	3	33.70%	17.27%				37.60%	11.42%					100.00%
1995	3	12.65%	5.71%	67.35%			9.39%	4.08%	0.82%				100.00%
1996	3			98.33%					1.67%				100.00%
1997	3			98.87%					1.13%				100.00%
1998	3			95.31%					4.69%				100.00%
1999	3									100.00%			100.00%
2000	3									100.00%			100.00%
2001	3									100.00%			100.00%
2002	3				100.00%								100.00%
2003	3				33.33%						66.67%		100.00%
2004	3				100.00%								100.00%
2005	3										100.00%		100.00%
2006	3										100.00%		100.00%
2007	3											100.00%	100.00%
2008	3											100.00%	100.00%
2009	3											100.00%	100.00%
2010	3											100.00%	100.00%
2011	3											100.00%	100.00%
2012	3											100.00%	100.00%
2013	3											100.00%	100.00%
2014	3											100.00%	100.00%
2015	3											100.00%	100.00%
2016	3											100.00%	100.00%
2017	3											100.00%	100.00%

MC4: LGV2.5-3.5t-diesel - LGV(4)

Year	Vehicle Class (MC)	Exhaust Technology Group Index - LGV (4)						
		Diesel LGV with GVW < 3.5t						Total
		pre-Euro w/ trap	pre-Euro w/Doc	Euro I	Euro II	Euro III	Euro IV	
		179	180	181	182	183	184	
1972	4	100.00%						100.00%
1973	4	100.00%						100.00%
1974	4	100.00%						100.00%
1975	4	100.00%						100.00%
1976	4	100.00%						100.00%
1977	4	100.00%						100.00%
1978	4	100.00%						100.00%
1979	4	100.00%						100.00%
1980	4	100.00%						100.00%
1981	4	100.00%						100.00%
1982	4	100.00%						100.00%
1983	4	100.00%						100.00%
1984	4	100.00%						100.00%
1985	4	66.67%	33.33%					100.00%
1986	4	80.00%	20.00%					100.00%
1987	4	100.00%						100.00%
1988	4	91.30%	8.70%					100.00%
1989	4	76.27%	23.73%					100.00%
1990	4	88.80%	11.20%					100.00%
1991	4	86.61%	13.39%					100.00%
1992	4	83.33%	16.67%					100.00%
1993	4	84.43%	15.57%					100.00%
1994	4	81.98%	18.02%					100.00%
1995	4	22.58%	5.61%	71.81%				100.00%
1996	4			100.00%				100.00%
1997	4			100.00%				100.00%
1998	4			78.22%	21.78%			100.00%
1999	4				100.00%			100.00%
2000	4				100.00%			100.00%
2001	4				100.00%			100.00%
2002	4					100.00%		100.00%
2003	4					100.00%		100.00%
2004	4					100.00%		100.00%
2005	4					100.00%		100.00%
2006	4					100.00%		100.00%
2007	4						100.00%	100.00%
2008	4						100.00%	100.00%
2009	4						100.00%	100.00%
2010	4						100.00%	100.00%
2011	4						100.00%	100.00%
2012	4						100.00%	100.00%
2013	4						100.00%	100.00%
2014	4						100.00%	100.00%
2015	4						100.00%	100.00%
2016	4						100.00%	100.00%
2017	4						100.00%	100.00%

MC5: Public Light Buses - PLB

Year	Vehicle Class (MC)	Exhaust Technology Group Index - PLB								
		Diesel PLB with GVW > 3.5t						LPG PLB		Total
		pre-Euro w/ trap	pre-Euro w/Doc	Euro I	Euro II	Euro III	Euro IV	Euro III	Euro IV	
		187	188	189	190	191	192	18	28	
1972	5	100.00%								100.00%
1973	5	100.00%								100.00%
1974	5	100.00%								100.00%
1975	5	100.00%								100.00%
1976	5	100.00%								100.00%
1977	5	100.00%								100.00%
1978	5	100.00%								100.00%
1979	5	100.00%								100.00%
1980	5	100.00%								100.00%
1981	5	100.00%								100.00%
1982	5	100.00%								100.00%
1983	5	100.00%								100.00%
1984	5	100.00%								100.00%
1985	5	100.00%								100.00%
1986	5	100.00%								100.00%
1987	5	100.00%								100.00%
1988	5	100.00%								100.00%
1989	5		100.00%							100.00%
1990	5	33.33%	66.67%							100.00%
1991	5		100.00%							100.00%
1992	5	22.22%	77.78%							100.00%
1993	5	50.00%	50.00%							100.00%
1994	5	26.00%	74.00%							100.00%
1995	5	3.96%	6.93%	89.11%						100.00%
1996	5			100.00%						100.00%
1997	5			100.00%						100.00%
1998	5			75.31%	24.69%					100.00%
1999	5				100.00%					100.00%
2000	5				100.00%					100.00%
2001	5				90.23%			9.77%		100.00%
2002	5				11.76%			88.24%		100.00%
2003	5				5.87%	21.74%		72.39%		100.00%
2004	5					22.07%		77.93%		100.00%
2005	5					7.66%		92.34%		100.00%
2006	5					17.11%	3.95%	55.26%	23.68%	100.00%
2007	5						54.46%		45.54%	100.00%
2008	5						42.58%		57.42%	100.00%
2009	5						42.58%		57.42%	100.00%
2010	5						42.58%		57.42%	100.00%
2011	5						42.58%		57.42%	100.00%
2012	5						42.58%		57.42%	100.00%
2013	5						42.58%		57.42%	100.00%
2014	5						42.58%		57.42%	100.00%
2015	5						42.58%		57.42%	100.00%
2016	5						42.58%		57.42%	100.00%
2017	5						42.58%		57.42%	100.00%

MC6: Light Goods Vehicles>3.5t - LGV(6)

Year	Vehicle Class (MC)	Exhaust Technology Group Index - LGV (6)						
		Diesel Vehicles with GVW of 3.5-6.4t						Total
		pre-Euro w/Doc	Euro I	Euro II	Euro III	Euro IV	Euro V	
		121	122	127	128	132	133	
1972	6	100.00%						100.00%
1973	6	100.00%						100.00%
1974	6	100.00%						100.00%
1975	6	100.00%						100.00%
1976	6	100.00%						100.00%
1977	6	100.00%						100.00%
1978	6	100.00%						100.00%
1979	6	100.00%						100.00%
1980	6	100.00%						100.00%
1981	6	100.00%						100.00%
1982	6	100.00%						100.00%
1983	6	100.00%						100.00%
1984	6	100.00%						100.00%
1985	6	100.00%						100.00%
1986	6	100.00%						100.00%
1987	6	100.00%						100.00%
1988	6	100.00%						100.00%
1989	6	100.00%						100.00%
1990	6	100.00%						100.00%
1991	6	100.00%						100.00%
1992	6	100.00%						100.00%
1993	6	100.00%						100.00%
1994	6	100.00%						100.00%
1995	6	28.99%	71.01%					100.00%
1996	6		100.00%					100.00%
1997	6		21.82%	78.18%				100.00%
1998	6			100.00%				100.00%
1999	6			100.00%				100.00%
2000	6			100.00%				100.00%
2001	6			79.22%	20.78%			100.00%
2002	6				100.00%			100.00%
2003	6				100.00%			100.00%
2004	6				100.00%			100.00%
2005	6				100.00%			100.00%
2006	6				76.23%	23.77%		100.00%
2007	6					100.00%		100.00%
2008	6					100.00%		100.00%
2009	6					100.00%		100.00%
2010	6					100.00%		100.00%
2011	6					100.00%		100.00%
2012	6					100.00%		100.00%
2013	6						100.00%	100.00%
2014	6						100.00%	100.00%
2015	6						100.00%	100.00%
2016	6						100.00%	100.00%
2017	6						100.00%	100.00%

MC7: Heavy Goods Vehicle<15t - HGV(7)

Year	Vehicle Class (MC)	Exhaust Technology Group Index - HGV (7)						
		Diesel Vehicles with GVW of 6.4-15t						Total
		pre-Euro w/Doc	Euro I	Euro II	Euro III	Euro IV	Euro V	
		124	125	126	129	130	131	
1972	7	100.00%						100.00%
1973	7	100.00%						100.00%
1974	7	100.00%						100.00%
1975	7	100.00%						100.00%
1976	7	100.00%						100.00%
1977	7	100.00%						100.00%
1978	7	100.00%						100.00%
1979	7	100.00%						100.00%
1980	7	100.00%						100.00%
1981	7	100.00%						100.00%
1982	7	100.00%						100.00%
1983	7	100.00%						100.00%
1984	7	100.00%						100.00%
1985	7	100.00%						100.00%
1986	7	100.00%						100.00%
1987	7	100.00%						100.00%
1988	7	100.00%						100.00%
1989	7	100.00%						100.00%
1990	7	100.00%						100.00%
1991	7	100.00%						100.00%
1992	7	100.00%						100.00%
1993	7	100.00%						100.00%
1994	7	100.00%						100.00%
1995	7	30.75%	69.25%					100.00%
1996	7		100.00%					100.00%
1997	7		20.45%	79.55%				100.00%
1998	7			100.00%				100.00%
1999	7			100.00%				100.00%
2000	7			100.00%				100.00%
2001	7			74.94%	25.06%			100.00%
2002	7				100.00%			100.00%
2003	7				100.00%			100.00%
2004	7				100.00%			100.00%
2005	7				100.00%			100.00%
2006	7				77.16%	22.84%		100.00%
2007	7					100.00%		100.00%
2008	7					100.00%		100.00%
2009	7					100.00%		100.00%
2010	7					100.00%		100.00%
2011	7					100.00%		100.00%
2012	7					100.00%		100.00%
2013	7						100.00%	100.00%
2014	7						100.00%	100.00%
2015	7						100.00%	100.00%
2016	7						100.00%	100.00%
2017	7						100.00%	100.00%

MC8: Heavy Goods Vehicle>15t - HGV(8)

Year	Vehicle Class (MC)	Exhaust Technology Group Index - HGV (8)						
		Diesel Vehicles with GVW > 15t						Total
		pre-Euro w/Doc	Euro I	Euro II	Euro III	Euro IV	Euro V	
		155	154	157	159	160	161	
1972	8	100.00%						100.00%
1973	8	100.00%						100.00%
1974	8	100.00%						100.00%
1975	8	100.00%						100.00%
1976	8	100.00%						100.00%
1977	8	100.00%						100.00%
1978	8	100.00%						100.00%
1979	8	100.00%						100.00%
1980	8	100.00%						100.00%
1981	8	100.00%						100.00%
1982	8	100.00%						100.00%
1983	8	100.00%						100.00%
1984	8	100.00%						100.00%
1985	8	100.00%						100.00%
1986	8	100.00%						100.00%
1987	8	100.00%						100.00%
1988	8	100.00%						100.00%
1989	8	100.00%						100.00%
1990	8	100.00%						100.00%
1991	8	100.00%						100.00%
1992	8	100.00%						100.00%
1993	8	100.00%						100.00%
1994	8	100.00%						100.00%
1995	8	27.84%	72.16%					100.00%
1996	8		100.00%					100.00%
1997	8		20.96%	79.04%				100.00%
1998	8			100.00%				100.00%
1999	8			100.00%				100.00%
2000	8			100.00%				100.00%
2001	8			84.92%	15.08%			100.00%
2002	8				100.00%			100.00%
2003	8				100.00%			100.00%
2004	8				100.00%			100.00%
2005	8				100.00%			100.00%
2006	8				76.10%	23.90%		100.00%
2007	8					100.00%		100.00%
2008	8					100.00%		100.00%
2009	8					100.00%		100.00%
2010	8					100.00%		100.00%
2011	8					100.00%		100.00%
2012	8					100.00%		100.00%
2013	8						100.00%	100.00%
2014	8						100.00%	100.00%
2015	8						100.00%	100.00%
2016	8						100.00%	100.00%
2017	8						100.00%	100.00%

MC10: Franchised Bus(DD) - FBDD

Year	Vehicle Class (MC)	Exhaust Technology Group Index - FBDD									
		Double Deck Franchised Buses									
		Pre-Euro with (DOC)	Euro1 with DOC	Euro II	Euro II with CRT	Euro II with VEC	Euro III	Euro III with CRT	Euro IV	Euro V	Total
		217	219	220	221	227	222	223	224	226	
1972	10	100.00%									100.00%
1973	10	100.00%									100.00%
1974	10	100.00%									100.00%
1975	10	100.00%									100.00%
1976	10	100.00%									100.00%
1977	10	100.00%									100.00%
1978	10	100.00%									100.00%
1979	10	100.00%									100.00%
1980	10	100.00%									100.00%
1981	10	100.00%									100.00%
1982	10	100.00%									100.00%
1983	10	100.00%									100.00%
1984	10	100.00%									100.00%
1985	10	100.00%									100.00%
1986	10	100.00%									100.00%
1987	10	100.00%									100.00%
1988	10	100.00%									100.00%
1989	10	100.00%									100.00%
1990	10	100.00%									100.00%
1991	10	100.00%									100.00%
1992	10	96.79%	3.21%								100.00%
1993	10	80.68%	19.32%								100.00%
1994	10	9.43%	90.57%								100.00%
1995	10		100.00%								100.00%
1996	10		94.83%	4.13%	1.03%						100.00%
1997	10		30.09%	56.99%	12.92%						100.00%
1998	10		0.11%	81.44%	18.45%						100.00%
1999	10			81.52%	18.48%						100.00%
2000	10			81.53%	18.47%						100.00%
2001	10			39.94%	8.94%	22.63%	19.83%	8.66%			100.00%
2002	10			0.49%	0.24%	44.01%	38.14%	17.11%			100.00%
2003	10					44.50%	38.22%	17.28%			100.00%
2004	10					44.57%	38.29%	17.14%			100.00%
2005	10					44.00%	38.00%	18.00%			100.00%
2006	10					43.48%	37.39%	17.39%	1.74%		100.00%
2007	10					40.30%	34.33%	16.42%	8.96%		100.00%
2008	10					21.74%	17.39%	8.70%	52.17%		100.00%
2009	10					21.74%	17.39%	8.70%	52.17%		100.00%
2010	10					21.74%	17.39%	8.70%	52.17%		100.00%
2011	10					21.74%	17.39%	8.70%	52.17%		100.00%
2012	10					21.74%	17.39%	8.70%	52.17%		100.00%
2013	10									100.00%	100.00%
2014	10									100.00%	100.00%
2015	10									100.00%	100.00%
2016	10									100.00%	100.00%
2017	10									100.00%	100.00%

MC11: Motorcycles(MC) - MC

Year	Vehicle Class (MC)	Exhaust Technology Group Index - MC		
		Motorcycles		Total
		pre-Euro	Euro I	
		263	266	
1972	11	100.00%		100.00%
1973	11	100.00%		100.00%
1974	11	100.00%		100.00%
1975	11	100.00%		100.00%
1976	11	100.00%		100.00%
1977	11	100.00%		100.00%
1978	11	100.00%		100.00%
1979	11	100.00%		100.00%
1980	11	100.00%		100.00%
1981	11	100.00%		100.00%
1982	11	100.00%		100.00%
1983	11	100.00%		100.00%
1984	11	100.00%		100.00%
1985	11	100.00%		100.00%
1986	11	100.00%		100.00%
1987	11	100.00%		100.00%
1988	11	100.00%		100.00%
1989	11	100.00%		100.00%
1990	11	100.00%		100.00%
1991	11	100.00%		100.00%
1992	11	100.00%		100.00%
1993	11	100.00%		100.00%
1994	11	100.00%		100.00%
1995	11	100.00%		100.00%
1996	11	100.00%		100.00%
1997	11	100.00%		100.00%
1998	11	100.00%		100.00%
1999	11	73.23%	26.77%	100.00%
2000	11		100.00%	100.00%
2001	11		100.00%	100.00%
2002	11		100.00%	100.00%
2003	11		100.00%	100.00%
2004	11		100.00%	100.00%
2005	11		100.00%	100.00%
2006	11		100.00%	100.00%
2007	11		100.00%	100.00%
2008	11		100.00%	100.00%
2009	11		100.00%	100.00%
2010	11		100.00%	100.00%
2011	11		100.00%	100.00%
2012	11		100.00%	100.00%
2013	11		100.00%	100.00%
2014	11		100.00%	100.00%
2015	11		100.00%	100.00%
2016	11		100.00%	100.00%
2017	11		100.00%	100.00%

Taxi3: Taxi - Taxi

Year	Vehicle Class (Taxi)	Exhaust Technology Group Index - Taxi					
		Diesel Taxi		LPG Taxi			Total
		pre-Euro w Trap	Euro I	Euro II	Euro III	Euro IV	
		171	173	13	23	24	
1972	3	100.00%					100.00%
1973	3	100.00%					100.00%
1974	3	100.00%					100.00%
1975	3	100.00%					100.00%
1976	3	100.00%					100.00%
1977	3	100.00%					100.00%
1978	3	100.00%					100.00%
1979	3	100.00%					100.00%
1980	3	100.00%					100.00%
1981	3	100.00%					100.00%
1982	3	100.00%					100.00%
1983	3	100.00%					100.00%
1984	3	100.00%					100.00%
1985	3	100.00%					100.00%
1986	3	100.00%					100.00%
1987	3	100.00%					100.00%
1988	3	100.00%					100.00%
1989	3	100.00%					100.00%
1990	3	100.00%					100.00%
1991	3	100.00%					100.00%
1992	3	100.00%					100.00%
1993	3	100.00%					100.00%
1994	3	100.00%					100.00%
1995	3	100.00%					100.00%
1996	3		100.00%				100.00%
1997	3		100.00%				100.00%
1998	3		100.00%				100.00%
1999	3			100.00%			100.00%
2000	3			100.00%			100.00%
2001	3			100.00%			100.00%
2002	3			100.00%			100.00%
2003	3			64.71%	35.29%		100.00%
2004	3				100.00%		100.00%
2005	3				100.00%		100.00%
2006	3					100.00%	100.00%
2007	3					100.00%	100.00%
2008	3					100.00%	100.00%
2009	3					100.00%	100.00%
2010	3					100.00%	100.00%
2011	3					100.00%	100.00%
2012	3					100.00%	100.00%
2013	3					100.00%	100.00%
2014	3					100.00%	100.00%
2015	3					100.00%	100.00%
2016	3					100.00%	100.00%
2017	3					100.00%	100.00%

Taxi4: Private Light Bus<3.5t - PrLB(4)

Year	Vehicle Class (Taxi)	Exhaust Technology Group Index - PrLB (4)										
		Diesel PLB with GVW < 3.5t						Petrol PLB				Total
		pre-Euro w/ trap	pre-Euro w/Doc	Euro I	Euro II	Euro III	Euro IV	Euro I	Euro II	Euro III	Euro IV	
		179	180	181	182	183	184	9	15	18	28	
1972	4	100.00%										100.00%
1973	4	100.00%										100.00%
1974	4	100.00%										100.00%
1975	4	100.00%										100.00%
1976	4	100.00%										100.00%
1977	4	100.00%										100.00%
1978	4	100.00%										100.00%
1979	4	100.00%										100.00%
1980	4	100.00%										100.00%
1981	4	100.00%										100.00%
1982	4	100.00%										100.00%
1983	4	100.00%										100.00%
1984	4	100.00%										100.00%
1985	4	100.00%										100.00%
1986	4	100.00%										100.00%
1987	4	100.00%										100.00%
1988	4	100.00%										100.00%
1989	4	100.00%										100.00%
1990	4	100.00%										100.00%
1991	4	100.00%										100.00%
1992	4	60.00%	40.00%									100.00%
1993	4	63.64%	36.36%									100.00%
1994	4	65.79%	34.21%									100.00%
1995	4	13.73%	1.96%	66.67%				17.65%				100.00%
1996	4			76.92%				23.08%				100.00%
1997	4			28.00%				72.00%				100.00%
1998	4			19.79%	6.25%			43.32%	30.64%			100.00%
1999	4				21.81%				78.19%			100.00%
2000	4				8.66%				91.34%			100.00%
2001	4				12.50%				87.50%			100.00%
2002	4					15.35%				84.65%		100.00%
2003	4					8.00%				92.00%		100.00%
2004	4					5.02%				94.98%		100.00%
2005	4					6.02%				93.98%		100.00%
2006	4					8.26%				91.74%		100.00%
2007	4						0.62%				99.38%	100.00%
2008	4						17.91%				82.09%	100.00%
2009	4						17.91%				82.09%	100.00%
2010	4						17.91%				82.09%	100.00%
2011	4						17.91%				82.09%	100.00%
2012	4						17.91%				82.09%	100.00%
2013	4						17.91%				82.09%	100.00%
2014	4						17.91%				82.09%	100.00%
2015	4						17.91%				82.09%	100.00%
2016	4						17.91%				82.09%	100.00%
2017	4						17.91%				82.09%	100.00%

Taxi5: Private Light Bus>3.5t - PrLB(5)

Year	Vehicle Class (Taxi)	Exhaust Technology Group Index - PrLB (5)										
		Diesel PLB with GVW > 3.5t						Petrol PLB				Total
		pre-Euro w/ trap	pre-Euro w/Doc	Euro I	Euro II	Euro III	Euro IV	Euro I	Euro II	Euro III	Euro IV	
		187	188	189	190	191	192	9	15	18	28	
1972	5	100.00%										100.00%
1973	5	100.00%										100.00%
1974	5	100.00%										100.00%
1975	5	100.00%										100.00%
1976	5	100.00%										100.00%
1977	5	100.00%										100.00%
1978	5	100.00%										100.00%
1979	5	100.00%										100.00%
1980	5	100.00%										100.00%
1981	5	100.00%										100.00%
1982	5	100.00%										100.00%
1983	5	100.00%										100.00%
1984	5	100.00%										100.00%
1985	5	66.67%	33.33%									100.00%
1986	5	100.00%										100.00%
1987	5	80.00%	20.00%									100.00%
1988	5	62.50%	37.50%									100.00%
1989	5	80.77%	19.23%									100.00%
1990	5	92.86%	7.14%									100.00%
1991	5	83.33%	16.67%									100.00%
1992	5	73.47%	26.53%									100.00%
1993	5	76.81%	23.19%									100.00%
1994	5	62.14%	37.86%									100.00%
1995	5	6.52%	8.00%	85.48%								100.00%
1996	5			100.00%								100.00%
1997	5			63.38%				36.62%				100.00%
1998	5			49.12%	11.70%			14.84%	24.34%			100.00%
1999	5				55.47%				44.53%			100.00%
2000	5				92.37%				5.93%	1.69%		100.00%
2001	5				95.83%					4.17%		100.00%
2002	5				41.25%					58.75%		100.00%
2003	5				7.48%	8.41%				84.11%		100.00%
2004	5					47.62%				52.38%		100.00%
2005	5					45.16%				54.84%		100.00%
2006	5					22.64%	3.77%			55.66%	17.92%	100.00%
2007	5						41.08%				58.92%	100.00%
2008	5						43.78%				56.22%	100.00%
2009	5						43.78%				56.22%	100.00%
2010	5						43.78%				56.22%	100.00%
2011	5						43.78%				56.22%	100.00%
2012	5						43.78%				56.22%	100.00%
2013	5						43.78%				56.22%	100.00%
2014	5						43.78%				56.22%	100.00%
2015	5						43.78%				56.22%	100.00%
2016	5						43.78%				56.22%	100.00%
2017	5						43.78%				56.22%	100.00%

Taxi6: Non-Franchised Bus<6.4t - NFB(6)

Year	Vehicle Class (Taxi)	Exhaust Technology Group Index - NFB (6)						
		Diesel Vehicles with GVW of 3.5-6.4t						Total
		pre-Euro w/Doc	Euro I	Euro II	Euro III	Euro IV	Euro V	
		121	122	127	128	132	133	
1972	6	100.00%						100.00%
1973	6	100.00%						100.00%
1974	6	100.00%						100.00%
1975	6	100.00%						100.00%
1976	6	100.00%						100.00%
1977	6	100.00%						100.00%
1978	6	100.00%						100.00%
1979	6	100.00%						100.00%
1980	6	100.00%						100.00%
1981	6	100.00%						100.00%
1982	6	100.00%						100.00%
1983	6	100.00%						100.00%
1984	6	100.00%						100.00%
1985	6	100.00%						100.00%
1986	6	100.00%						100.00%
1987	6	100.00%						100.00%
1988	6	100.00%						100.00%
1989	6	100.00%						100.00%
1990	6	100.00%						100.00%
1991	6	100.00%						100.00%
1992	6	100.00%						100.00%
1993	6	100.00%						100.00%
1994	6	100.00%						100.00%
1995	6	13.64%	86.36%					100.00%
1996	6		100.00%					100.00%
1997	6		18.03%	81.97%				100.00%
1998	6			100.00%				100.00%
1999	6			100.00%				100.00%
2000	6			100.00%				100.00%
2001	6			82.46%	17.54%			100.00%
2002	6				100.00%			100.00%
2003	6				100.00%			100.00%
2004	6				100.00%			100.00%
2005	6				100.00%			100.00%
2006	6				85.79%	14.21%		100.00%
2007	6					100.00%		100.00%
2008	6					100.00%		100.00%
2009	6					100.00%		100.00%
2010	6					100.00%		100.00%
2011	6					100.00%		100.00%
2012	6					100.00%		100.00%
2013	6						100.00%	100.00%
2014	6						100.00%	100.00%
2015	6						100.00%	100.00%
2016	6						100.00%	100.00%
2017	6						100.00%	100.00%

Taxi7: Non-Franchised Bus 6.4-15t - NFB(7)

Year	Vehicle Class (Taxi)	Exhaust Technology Group Index - NFB (7)						
		Diesel Vehicles with GVW of 6.4-15t						Total
		pre-Euro w/Doc	Euro I	Euro II	Euro III	Euro IV	Euro V	
		124	125	126	129	130	131	
1972	7	100.00%						100.00%
1973	7	100.00%						100.00%
1974	7	100.00%						100.00%
1975	7	100.00%						100.00%
1976	7	100.00%						100.00%
1977	7	100.00%						100.00%
1978	7	100.00%						100.00%
1979	7	100.00%						100.00%
1980	7	100.00%						100.00%
1981	7	100.00%						100.00%
1982	7	100.00%						100.00%
1983	7	100.00%						100.00%
1984	7	100.00%						100.00%
1985	7	100.00%						100.00%
1986	7	100.00%						100.00%
1987	7	100.00%						100.00%
1988	7	100.00%						100.00%
1989	7	100.00%						100.00%
1990	7	100.00%						100.00%
1991	7	100.00%						100.00%
1992	7	100.00%						100.00%
1993	7	100.00%						100.00%
1994	7	100.00%						100.00%
1995	7	18.42%	81.58%					100.00%
1996	7		100.00%					100.00%
1997	7		32.20%	67.80%				100.00%
1998	7			100.00%				100.00%
1999	7			100.00%				100.00%
2000	7			100.00%				100.00%
2001	7			68.07%	31.93%			100.00%
2002	7				100.00%			100.00%
2003	7				100.00%			100.00%
2004	7				100.00%			100.00%
2005	7				100.00%			100.00%
2006	7				82.04%	17.96%		100.00%
2007	7					100.00%		100.00%
2008	7					100.00%		100.00%
2009	7					100.00%		100.00%
2010	7					100.00%		100.00%
2011	7					100.00%		100.00%
2012	7					100.00%		100.00%
2013	7						100.00%	100.00%
2014	7						100.00%	100.00%
2015	7						100.00%	100.00%
2016	7						100.00%	100.00%
2017	7						100.00%	100.00%

Taxi8: Non-Franchised Bus>15t - NFB(8)

Year	Vehicle Class (Taxi)	Exhaust Technology Group Index - NFB (8)						
		Diesel Vehicles with GVW of 6.4-15t						Total
		pre-Euro w/Doc	Euro I	Euro II	Euro III	Euro IV	Euro V	
		155	154	157	159	160	161	
1972	8	100.00%						100.00%
1973	8	100.00%						100.00%
1974	8	100.00%						100.00%
1975	8	100.00%						100.00%
1976	8	100.00%						100.00%
1977	8	100.00%						100.00%
1978	8	100.00%						100.00%
1979	8	100.00%						100.00%
1980	8	100.00%						100.00%
1981	8	100.00%						100.00%
1982	8	100.00%						100.00%
1983	8	100.00%						100.00%
1984	8	100.00%						100.00%
1985	8	100.00%						100.00%
1986	8	100.00%						100.00%
1987	8	100.00%						100.00%
1988	8	100.00%						100.00%
1989	8	100.00%						100.00%
1990	8	100.00%						100.00%
1991	8	100.00%						100.00%
1992	8	100.00%						100.00%
1993	8	100.00%						100.00%
1994	8	100.00%						100.00%
1995	8	25.00%	75.00%					100.00%
1996	8		100.00%					100.00%
1997	8		26.53%	73.47%				100.00%
1998	8			100.00%				100.00%
1999	8			100.00%				100.00%
2000	8			100.00%				100.00%
2001	8			67.74%	32.26%			100.00%
2002	8				100.00%			100.00%
2003	8				100.00%			100.00%
2004	8				100.00%			100.00%
2005	8				100.00%			100.00%
2006	8				72.33%	27.67%		100.00%
2007	8					100.00%		100.00%
2008	8					100.00%		100.00%
2009	8					100.00%		100.00%
2010	8					100.00%		100.00%
2011	8					100.00%		100.00%
2012	8					100.00%		100.00%
2013	8						100.00%	100.00%
2014	8						100.00%	100.00%
2015	8						100.00%	100.00%
2016	8						100.00%	100.00%
2017	8						100.00%	100.00%

Taxi10: Franchised Buses(SD) - FBSD

Year	Vehicle Class (Taxi)	Exhaust Technology Group Index - FBSD									
		Single Deck Franchised Buses									Total
		pre-Euro w Doc	Euro I w DOC	Euro II	Euro II w CRT	Euro III	Euro II w VEC	Euro III w CRT	Euro IV	Euro V	
		217	219	220	221	222	227	223	224	226	
1972	10	100.00%									100.00%
1973	10	100.00%									100.00%
1974	10	100.00%									100.00%
1975	10	100.00%									100.00%
1976	10	100.00%									100.00%
1977	10	100.00%									100.00%
1978	10	100.00%									100.00%
1979	10	100.00%									100.00%
1980	10	100.00%									100.00%
1981	10	100.00%									100.00%
1982	10	100.00%									100.00%
1983	10	100.00%									100.00%
1984	10	100.00%									100.00%
1985	10	100.00%									100.00%
1986	10	100.00%									100.00%
1987	10	100.00%									100.00%
1988	10	100.00%									100.00%
1989	10	100.00%									100.00%
1990	10	100.00%									100.00%
1991	10	100.00%									100.00%
1992	10	100.00%									100.00%
1993	10	100.00%									100.00%
1994	10	5.56%	94.44%								100.00%
1995	10		100.00%								100.00%
1996	10		33.33%	66.67%							100.00%
1997	10		15.38%	69.23%	15.38%						100.00%
1998	10			81.51%	18.49%						100.00%
1999	10			81.58%	18.42%						100.00%
2000	10			78.95%	21.05%						100.00%
2001	10			66.67%	33.33%						100.00%
2002	10					100.00%					100.00%
2003	10					42.86%	42.86%	14.29%			100.00%
2004	10					42.86%	42.86%	14.29%			100.00%
2005	10					33.33%	33.33%	33.33%			100.00%
2006	10					100.00%					100.00%
2007	10								100.00%		100.00%
2008	10								100.00%		100.00%
2009	10								100.00%		100.00%
2010	10								100.00%		100.00%
2011	10								100.00%		100.00%
2012	10								100.00%		100.00%
2013	10									100.00%	100.00%
2014	10									100.00%	100.00%
2015	10									100.00%	100.00%
2016	10									100.00%	100.00%
2017	10									100.00%	100.00%

Annex 4-2:
Vehicle Population Adopted in EMFAC-HK Model

Vehicle Population (for Gas)

Age	Vehicle Type								
	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC
1	34277	0	0	120	0	0	0	0	3709
2	32257	0	0	51	0	0	0	0	3826
3	26892	0	0	60	0	0	0	0	3750
4	26072	0	0	1073	0	0	0	0	4046
5	26286	0	0	671	0	0	0	0	4045
6	21660	0	0	333	0	0	0	0	3592
7	28479	0	0	285	0	0	0	0	3262
8	31303	0	0	17	0	0	0	0	2607
9	29955	0	0	0	0	0	0	0	1893
10	24446	0	0	0	0	0	0	0	1823
11	25761	0	0	0	0	0	0	0	1539
12	29501	0	0	0	0	0	0	0	1496
13	12839	0	0	0	0	0	0	0	981
14	9958	0	0	0	0	0	0	0	742
15	10522	0	0	0	0	0	0	0	448
16	6092	0	0	0	0	0	0	0	270
17	3441	0	0	0	0	0	0	0	165
18	1492	0	0	0	0	0	0	0	121
19	860	0	0	0	0	0	0	0	80
20	552	0	0	0	0	0	0	0	78
21	352	0	0	0	0	0	0	0	35
22	209	0	0	0	0	0	0	0	28
23	175	0	0	0	0	0	0	0	10
24	104	0	0	0	0	0	0	0	4
25	42	0	0	0	0	0	0	0	5
26	32	0	0	0	0	0	0	0	7
27	87	0	0	0	0	0	0	0	14
28	85	0	0	0	0	0	0	0	17
29	84	0	0	0	0	0	0	0	10
30	43	0	0	0	0	0	0	0	7
31	44	0	0	0	0	0	0	0	1
32	41	0	0	0	0	0	0	0	4
33	23	0	0	0	0	0	0	0	1
34	23	0	0	0	0	0	0	0	1
35	35	0	0	0	0	0	0	0	1
36	47	0	0	0	0	0	0	0	5
37	25	0	0	0	0	0	0	0	2
38	16	0	0	0	0	0	0	0	6
39	26	0	0	0	0	0	0	0	2
40	11	0	0	0	0	0	0	0	3
41	4	0	0	0	0	0	0	0	0
42	6	0	0	0	0	0	0	0	0
43	3	0	0	0	0	0	0	0	1
44	2	0	0	0	0	0	0	0	1
>44	19	0	0	0	0	0	0	0	1

Vehicle Population (for Diesel)

Age	Vehicle Type								
	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC
1	0	7	3876	89	1235	730	1836	46	0
2	0	4	3228	61	1077	561	1519	67	0
3	0	2	3136	16	1140	556	1573	115	0
4	0	1	2971	89	1141	574	1593	50	0
5	0	1	2157	190	1221	538	1889	175	0
6	0	3	1515	127	1070	351	1351	191	0
7	0	1	1706	38	1373	537	1543	409	0
8	0	3	2025	157	1530	423	1499	358	0
9	0	2	2284	135	1763	508	2213	379	0
10	0	3	2328	173	1345	462	1346	487	0
11	0	128	2861	162	1409	409	1361	916	0
12	0	265	3045	187	2163	626	2128	751	0
13	0	180	1728	116	1656	408	1538	387	0
14	0	245	1550	101	1390	491	1293	379	0
15	0	359	1792	50	1580	629	1542	318	0
16	0	407	1914	26	1795	788	1495	207	0
17	0	257	1386	9	1669	854	1745	156	0
18	0	237	478	7	547	517	1094	55	0
19	0	272	259	6	363	214	661	0	0
20	0	191	59	1	273	155	475	0	0
21	0	124	23	0	169	127	309	0	0
22	0	99	7	0	68	57	232	0	0
23	0	51	5	0	30	26	58	0	0
24	0	10	3	0	3	10	67	0	0
25	0	8	0	0	1	5	8	0	0
26	0	6	0	0	0	0	1	0	0
27	0	4	0	0	0	1	2	0	0
28	0	8	0	0	2	0	0	0	0
29	0	5	0	0	0	0	1	0	0
30	0	3	0	0	0	0	0	0	0
31	0	3	0	0	0	0	0	0	0
32	0	3	0	0	0	0	1	0	0
33	0	1	0	0	0	0	0	0	0
34	0	0	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0
37	0	0	0	0	0	0	0	0	0
38	0	0	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0	0	0
40	0	0	0	0	0	0	0	0	0
41	0	0	0	0	0	0	0	0	0
42	0	0	0	0	0	0	0	0	0
43	0	0	0	0	0	0	0	0	0
44	0	0	0	0	0	0	0	0	0
>44	0	0	0	0	0	0	0	0	0

Vehicle Population (for Electric)

Age	Vehicle Type								
	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC
1	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0	0	0
33	0	0	0	0	0	0	0	0	0
34	0	0	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0
37	0	0	0	0	0	0	0	0	0
38	0	0	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0	0	0
40	0	0	0	0	0	0	0	0	0
41	0	0	0	0	0	0	0	0	0
42	0	0	0	0	0	0	0	0	0
43	0	0	0	0	0	0	0	0	0
44	0	0	0	0	0	0	0	0	0
>44	0	0	0	0	0	0	0	0	0

Vehicle Population (for Gas)

Age	Vehicle Type						
	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
1	557	110	140	0	0	0	0
2	335	320	109	0	0	0	0
3	388	111	78	0	0	0	0
4	447	250	34	0	0	0	0
5	581	208	66	0	0	0	0
6	1465	230	90	0	0	0	0
7	2595	193	47	0	0	0	0
8	9100	161	3	0	0	0	0
9	2698	306	9	0	0	0	0
10	57	147	61	0	0	0	0
11	0	142	67	0	0	0	0
12	2	108	52	0	0	0	0
13	2	9	0	0	0	0	0
14	1	9	0	0	0	0	0
15	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0
33	0	0	0	0	0	0	0
34	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0
37	0	0	0	0	0	0	0
38	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0
40	0	0	0	0	0	0	0
41	0	0	0	0	0	0	0
42	0	0	0	0	0	0	0
43	0	0	0	0	0	0	0
44	0	0	0	0	0	0	0
>44	0	0	0	0	0	0	0

Vehicle Population (for Diesel)

Age	Vehicle Type						
	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
1	0	24	109	300	238	238	10
2	0	2	76	192	154	204	5
3	0	10	28	183	167	206	0
4	0	16	28	153	155	251	3
5	0	11	60	202	116	171	7
6	0	20	17	311	131	167	14
7	0	35	33	391	145	171	0
8	0	23	69	422	238	155	3
9	0	29	109	315	156	92	19
10	0	41	76	259	205	84	38
11	0	50	104	179	209	96	119
12	0	42	90	186	180	50	13
13	0	30	74	129	208	30	3
14	0	42	125	66	76	20	17
15	0	38	103	31	51	6	18
16	0	22	69	24	19	5	59
17	0	15	49	7	21	38	20
18	0	0	42	0	16	40	0
19	0	0	14	0	28	0	0
20	0	0	26	0	12	0	0
21	0	0	8	0	6	0	0
22	0	0	5	0	3	3	0
23	0	2	0	0	0	2	0
24	0	0	3	0	0	0	0
25	0	0	0	0	0	6	0
26	0	0	0	0	0	6	0
27	0	0	0	0	0	0	0
28	0	0	0	1	0	0	0
29	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0
31	0	0	0	0	0	1	0
32	0	0	0	0	0	0	0
33	0	0	0	0	0	0	0
34	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0
37	0	0	0	0	0	4	0
38	0	0	0	1	0	0	0
39	0	0	0	0	0	0	0
40	0	0	0	0	0	0	0
41	0	0	0	0	0	0	0
42	0	0	0	0	0	0	0
43	0	0	0	0	0	0	0
44	0	0	0	0	0	0	0
>44	0	0	0	1	0	0	0

Vehicle Population (for Electric)

Age	Vehicle Type						
	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0
33	0	0	0	0	0	0	0
34	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0
37	0	0	0	0	0	0	0
38	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0
40	0	0	0	0	0	0	0
41	0	0	0	0	0	0	0
42	0	0	0	0	0	0	0
43	0	0	0	0	0	0	0
44	0	0	0	0	0	0	0
>44	0	0	0	0	0	0	0

Annex 4-3:
Vehicular Miles Travelled Adopted in EMFAC-HK Model

Vehicle Miles Travelled

Road No.	Road Name	Dir	Road Length (mile)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
7	Road L3	SB	0.25	00:00 – 01:00	19.4	0.0	1.2	8.0	0.7	1.0	2.5	3.5	2.2	15.4	2.5	1.7	0.5	0.2	0.2	0.2
			0.25	01:00 – 02:00	15.2	0.0	1.0	6.0	0.5	0.7	1.7	2.7	2.0	11.9	1.7	1.2	0.2	0.2	0.2	0.2
			0.25	02:00 – 03:00	10.7	0.0	0.7	4.0	0.5	0.5	1.2	1.7	1.2	8.5	1.2	1.0	0.2	0.2	0.2	0.0
			0.25	03:00 – 04:00	11.2	0.0	0.7	3.7	0.5	0.5	1.2	2.0	1.5	8.7	1.2	1.0	0.2	0.2	0.2	0.0
			0.25	04:00 – 05:00	5.7	0.0	0.2	2.0	0.2	0.2	0.5	1.0	0.7	4.5	0.7	0.5	0.0	0.0	0.0	0.0
			0.25	05:00 – 06:00	6.0	0.0	0.2	2.0	0.2	0.2	0.5	1.0	0.7	4.7	0.7	0.5	0.0	0.0	0.0	0.0
			0.25	06:00 – 07:00	12.4	0.0	0.7	3.7	0.5	0.5	1.0	2.2	1.7	9.9	1.2	1.0	0.2	0.2	0.2	0.2
			0.25	07:00 – 08:00	25.6	0.0	1.5	7.5	1.0	0.7	2.0	4.5	3.5	20.6	2.7	2.0	0.5	0.2	0.2	0.2
			0.25	08:00 – 09:00	39.8	0.2	2.2	10.9	1.5	1.0	3.0	6.7	5.2	32.1	4.2	3.0	0.5	0.5	0.2	0.5
			0.25	09:00 – 10:00	31.6	0.2	1.7	9.2	1.2	1.0	2.7	5.5	4.2	25.4	3.5	2.5	0.5	0.5	0.2	0.2
			0.25	10:00 – 11:00	30.1	0.2	1.7	9.4	1.2	1.0	2.7	5.2	4.0	24.1	3.2	2.5	0.5	0.5	0.2	0.2
			0.25	11:00 – 12:00	28.6	0.0	1.7	9.4	1.0	1.0	3.0	5.0	3.7	22.6	3.2	2.2	0.5	0.5	0.2	0.2
			0.25	12:00 – 13:00	21.6	0.0	1.2	7.7	0.7	0.7	2.5	3.7	2.7	17.1	2.5	1.7	0.5	0.2	0.2	0.2
			0.25	13:00 – 14:00	20.4	0.0	1.2	7.7	0.7	0.7	2.5	3.5	2.5	16.2	2.5	1.7	0.5	0.2	0.2	0.2
			0.25	14:00 – 15:00	19.1	0.0	1.2	6.0	0.7	1.0	2.5	3.5	2.2	14.9	2.5	1.7	0.5	0.2	0.2	0.2
			0.25	15:00 – 16:00	22.4	0.0	1.5	9.9	1.0	1.2	3.2	4.0	2.5	17.4	3.0	2.2	0.5	0.5	0.2	0.2
			0.25	16:00 – 17:00	20.9	0.0	1.2	10.2	1.0	1.2	3.5	3.7	2.2	16.2	3.0	2.0	0.5	0.5	0.2	0.2
			0.25	17:00 – 18:00	23.1	0.0	1.5	12.2	1.0	1.5	4.2	4.2	2.5	17.9	3.5	2.5	0.7	0.5	0.2	0.2
			0.25	18:00 – 19:00	21.4	0.0	1.5	12.4	1.0	1.5	4.2	4.0	2.2	16.2	3.2	2.5	0.7	0.5	0.2	0.2
			0.25	19:00 – 20:00	22.6	0.0	1.5	12.4	1.0	1.5	4.2	4.2	2.5	17.4	3.2	2.5	0.7	0.5	0.2	0.2
			0.25	20:00 – 21:00	24.1	0.0	1.5	12.2	1.0	1.5	4.2	4.5	2.7	18.4	3.5	2.5	0.7	0.5	0.2	0.2
			0.25	21:00 – 22:00	21.1	0.0	1.2	10.2	1.0	1.2	3.5	3.7	2.5	16.4	3.0	2.0	0.5	0.5	0.2	0.2
			0.25	22:00 – 23:00	22.1	0.0	1.5	9.9	1.0	1.2	3.2	4.0	2.5	17.4	3.0	2.2	0.5	0.5	0.2	0.2
			0.25	23:00 – 00:00	18.6	0.0	1.2	8.0	0.7	1.0	2.5	3.2	2.2	14.7	2.5	1.7	0.5	0.2	0.2	0.2

Road No.	Road Name	Dir	Road Length (mile)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
8	Road L3	NB	0.25	00:00 – 01:00	24.9	0.0	1.2	8.5	0.7	1.0	3.0	4.0	3.0	19.4	2.7	2.0	0.5	0.5	0.2	0.2
			0.25	01:00 – 02:00	19.1	0.0	1.0	6.2	0.7	0.7	2.0	3.0	2.2	15.2	2.0	1.5	0.5	0.2	0.2	0.2
			0.25	02:00 – 03:00	13.2	0.0	0.7	4.2	0.5	0.5	1.2	2.0	1.7	10.4	1.5	1.0	0.2	0.2	0.2	0.2
			0.25	03:00 – 04:00	13.7	0.0	0.7	4.2	0.5	0.5	1.2	2.2	1.7	10.7	1.5	1.0	0.2	0.2	0.2	0.2
			0.25	04:00 – 05:00	7.0	0.0	0.5	2.2	0.2	0.2	0.7	1.2	1.0	5.5	0.7	0.5	0.0	0.0	0.0	0.0
			0.25	05:00 – 06:00	7.2	0.0	0.5	2.2	0.2	0.2	0.7	1.2	1.0	5.7	0.7	0.5	0.0	0.0	0.0	0.0
			0.25	06:00 – 07:00	14.7	0.0	0.7	4.2	0.5	0.5	1.2	2.5	2.0	11.7	1.5	1.0	0.2	0.2	0.2	0.2
			0.25	07:00 – 08:00	30.1	0.0	1.7	8.5	1.0	0.7	2.2	5.0	4.0	24.1	3.0	2.2	0.5	0.2	0.2	0.2
			0.25	08:00 – 09:00	46.2	0.2	2.7	12.9	1.7	1.2	3.5	7.7	6.2	37.0	4.7	3.5	0.7	0.5	0.5	0.5
			0.25	09:00 – 10:00	37.3	0.2	2.2	10.7	1.5	1.0	3.0	6.0	5.0	29.8	3.7	2.7	0.5	0.5	0.2	0.5
			0.25	10:00 – 11:00	35.6	0.2	2.0	10.7	1.2	1.0	3.2	5.7	4.7	28.6	3.7	2.7	0.5	0.5	0.2	0.2
			0.25	11:00 – 12:00	34.5	0.2	2.0	10.7	1.2	1.2	3.2	5.5	4.5	27.6	3.7	2.7	0.5	0.5	0.2	0.2
			0.25	12:00 – 13:00	26.6	0.0	1.5	8.5	1.0	1.0	2.7	4.2	3.2	21.1	3.0	2.0	0.5	0.2	0.2	0.2
			0.25	13:00 – 14:00	25.6	0.0	1.5	8.5	1.0	1.0	2.7	4.0	3.0	20.1	2.7	2.0	0.5	0.5	0.2	0.2
			0.25	14:00 – 15:00	24.6	0.0	1.2	8.5	0.7	1.0	3.0	3.7	3.0	19.1	2.7	2.0	0.5	0.5	0.2	0.2
			0.25	15:00 – 16:00	29.3	0.0	1.5	10.4	1.0	1.2	3.7	4.5	3.5	22.9	3.2	2.5	0.7	0.5	0.5	0.2
			0.25	16:00 – 17:00	28.1	0.0	1.5	10.4	1.0	1.2	4.0	4.2	3.0	21.9	3.2	2.5	0.7	0.5	0.5	0.2
			0.25	17:00 – 18:00	32.3	0.0	1.5	12.4	1.0	1.7	4.7	4.7	3.5	24.6	3.7	2.7	0.7	0.5	0.5	0.2
			0.25	18:00 – 19:00	30.8	0.0	1.5	12.4	1.0	1.7	5.0	4.5	3.2	23.4	3.7	2.7	0.7	0.7	0.5	0.2
			0.25	19:00 – 20:00	31.8	0.0	1.5	12.4	1.0	1.7	4.7	4.7	3.2	24.4	3.7	2.7	0.7	0.5	0.5	0.2
			0.25	20:00 – 21:00	32.8	0.0	1.7	12.4	1.0	1.7	4.7	5.0	3.5	25.4	4.0	2.7	0.7	0.5	0.5	0.2
			0.25	21:00 – 22:00	28.3	0.0	1.5	10.4	1.0	1.2	3.7	4.2	3.2	21.9	3.2	2.5	0.7	0.5	0.5	0.2
			0.25	22:00 – 23:00	29.3	0.0	1.5	10.4	1.0	1.2	3.7	4.5	3.2	22.6	3.2	2.5	0.7	0.5	0.5	0.2
			0.25	23:00 – 00:00	24.1	0.0	1.2	8.5	0.7	1.0	3.0	3.7	2.7	18.9	2.7	2.0	0.5	0.5	0.2	0.2

Road No.	Road Name	Dir	Road Length (mile)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
9	Road L5	NB	0.27	00:00 – 01:00	20.2	0.0	0.0	0.0	0.0	0.5	1.6	1.9	2.5	15.9	1.4	1.1	0.3	0.3	0.3	0.0
			0.27	01:00 – 02:00	15.0	0.0	0.0	0.0	0.0	0.3	1.1	1.6	1.6	11.8	1.1	0.6	0.3	0.3	0.0	0.0
			0.27	02:00 – 03:00	10.1	0.0	0.0	0.0	0.0	0.3	0.8	1.1	1.1	7.9	0.8	0.5	0.0	0.0	0.0	0.0
			0.27	03:00 – 04:00	9.8	0.0	0.0	0.0	0.0	0.3	0.5	1.1	1.1	7.7	0.8	0.5	0.0	0.0	0.0	0.0
			0.27	04:00 – 05:00	4.9	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	3.8	0.3	0.3	0.0	0.0	0.0	0.0
			0.27	05:00 – 06:00	4.9	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	3.8	0.3	0.3	0.0	0.0	0.0	0.0
			0.27	06:00 – 07:00	9.6	0.0	0.0	0.0	0.0	0.3	0.5	1.1	1.4	7.7	0.8	0.5	0.0	0.0	0.0	0.0
			0.27	07:00 – 08:00	19.1	0.0	0.0	0.0	0.0	0.3	1.1	2.5	2.5	15.3	1.6	1.1	0.3	0.3	0.3	0.3
			0.27	08:00 – 09:00	28.2	0.0	0.0	0.0	0.0	0.5	1.6	3.8	3.8	22.7	2.2	1.6	0.3	0.3	0.3	0.3
			0.27	09:00 – 10:00	23.8	0.0	0.0	0.0	0.0	0.5	1.4	3.0	3.0	19.1	1.9	1.4	0.3	0.3	0.3	0.3
			0.27	10:00 – 11:00	24.1	0.0	0.0	0.0	0.0	0.5	1.6	3.0	3.0	19.1	1.9	1.4	0.3	0.3	0.3	0.3
			0.27	11:00 – 12:00	24.6	0.0	0.0	0.0	0.0	0.5	1.6	2.7	3.0	19.4	1.9	1.4	0.3	0.3	0.3	0.3
			0.27	12:00 – 13:00	20.0	0.0	0.0	0.0	0.0	0.5	1.4	2.2	2.5	15.6	1.4	1.1	0.3	0.3	0.3	0.3
			0.27	13:00 – 14:00	20.2	0.0	0.0	0.0	0.0	0.5	1.4	2.2	2.5	15.9	1.4	1.1	0.3	0.3	0.3	0.0
			0.27	14:00 – 15:00	20.5	0.0	0.0	0.0	0.0	0.5	1.6	1.9	2.2	15.9	1.4	1.1	0.3	0.3	0.3	0.0
			0.27	15:00 – 16:00	26.0	0.0	0.0	0.0	0.0	0.6	1.9	2.5	2.7	20.0	1.6	1.4	0.3	0.3	0.3	0.3
			0.27	16:00 – 17:00	26.2	0.0	0.0	0.0	0.0	0.6	2.2	2.2	2.7	20.2	1.6	1.4	0.3	0.3	0.3	0.3
			0.27	17:00 – 18:00	32.0	0.0	0.0	0.0	0.0	0.8	2.7	2.7	3.3	24.3	2.2	1.6	0.5	0.3	0.3	0.3
			0.27	18:00 – 19:00	32.3	0.0	0.0	0.0	0.0	0.8	2.7	2.5	3.3	24.6	2.2	1.4	0.5	0.3	0.3	0.3
			0.27	19:00 – 20:00	32.0	0.0	0.0	0.0	0.0	0.8	2.7	2.5	3.3	24.3	2.2	1.6	0.5	0.3	0.3	0.3
			0.27	20:00 – 21:00	31.7	0.0	0.0	0.0	0.0	0.8	2.5	2.7	3.3	24.3	2.2	1.6	0.5	0.3	0.3	0.3
			0.27	21:00 – 22:00	26.2	0.0	0.0	0.0	0.0	0.8	2.2	2.2	2.7	20.2	1.6	1.4	0.3	0.3	0.3	0.3
			0.27	22:00 – 23:00	26.0	0.0	0.0	0.0	0.0	0.8	1.9	2.5	2.7	20.0	1.6	1.4	0.3	0.3	0.3	0.3
			0.27	23:00 – 00:00	20.5	0.0	0.0	0.0	0.0	0.5	1.6	1.9	2.2	15.9	1.4	1.1	0.3	0.3	0.3	0.0

Vehicle Miles Travelled

Road No.	Road Name	Dir	Road Length (mile)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
10	Road L5	SB	0.27	00:00 – 01:00	8.7	0.0	0.0	0.0	0.0	0.0	0.3	0.5	1.1	6.6	0.3	0.3	0.0	0.0	0.0	0.0
			0.27	01:00 – 02:00	6.6	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.8	5.5	0.3	0.3	0.0	0.0	0.0	0.0
			0.27	02:00 – 03:00	4.6	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.5	3.8	0.3	0.0	0.0	0.0	0.0	0.0
			0.27	03:00 – 04:00	4.9	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.5	3.8	0.3	0.0	0.0	0.0	0.0	0.0
			0.27	04:00 – 05:00	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	1.9	0.0	0.0	0.0	0.0	0.0	0.0
			0.27	05:00 – 06:00	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	2.2	0.0	0.0	0.0	0.0	0.0	0.0
			0.27	06:00 – 07:00	5.2	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.8	4.4	0.3	0.0	0.0	0.0	0.0	0.0
			0.27	07:00 – 08:00	10.9	0.0	0.0	0.0	0.0	0.0	0.3	0.5	1.4	8.7	0.3	0.3	0.0	0.0	0.0	0.0
			0.27	08:00 – 09:00	17.0	0.0	0.0	0.0	0.0	0.3	0.5	0.8	2.2	13.7	0.5	0.5	0.0	0.0	0.0	0.0
			0.27	09:00 – 10:00	13.7	0.0	0.0	0.0	0.0	0.0	0.3	0.8	1.9	10.9	0.5	0.3	0.0	0.0	0.0	0.0
			0.27	10:00 – 11:00	13.1	0.0	0.0	0.0	0.0	0.0	0.3	0.8	1.6	10.4	0.5	0.3	0.0	0.0	0.0	0.0
			0.27	11:00 – 12:00	12.6	0.0	0.0	0.0	0.0	0.0	0.5	0.8	1.6	9.8	0.5	0.3	0.0	0.0	0.0	0.0
			0.27	12:00 – 13:00	9.6	0.0	0.0	0.0	0.0	0.0	0.3	0.5	1.1	7.7	0.3	0.3	0.0	0.0	0.0	0.0
			0.27	13:00 – 14:00	9.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	1.1	7.1	0.3	0.3	0.0	0.0	0.0	0.0
			0.27	14:00 – 15:00	8.7	0.0	0.0	0.0	0.0	0.0	0.3	0.5	1.1	6.8	0.3	0.3	0.0	0.0	0.0	0.0
			0.27	15:00 – 16:00	10.1	0.0	0.0	0.0	0.0	0.3	0.5	0.5	1.1	7.9	0.5	0.3	0.0	0.0	0.0	0.0
			0.27	16:00 – 17:00	9.6	0.0	0.0	0.0	0.0	0.3	0.5	0.5	1.1	7.4	0.5	0.3	0.0	0.0	0.0	0.0
			0.27	17:00 – 18:00	10.9	0.0	0.0	0.0	0.0	0.3	0.5	0.5	1.1	8.5	0.5	0.3	0.0	0.0	0.0	0.0
			0.27	18:00 – 19:00	10.4	0.0	0.0	0.0	0.0	0.3	0.5	0.5	1.1	7.9	0.5	0.3	0.0	0.0	0.0	0.0
			0.27	19:00 – 20:00	10.7	0.0	0.0	0.0	0.0	0.3	0.5	0.5	1.1	8.2	0.5	0.3	0.0	0.0	0.0	0.0
			0.27	20:00 – 21:00	11.2	0.0	0.0	0.0	0.0	0.3	0.5	0.5	1.1	8.7	0.5	0.3	0.0	0.0	0.0	0.0
			0.27	21:00 – 22:00	9.8	0.0	0.0	0.0	0.0	0.3	0.5	0.5	1.1	7.7	0.5	0.3	0.0	0.0	0.0	0.0
			0.27	22:00 – 23:00	10.1	0.0	0.0	0.0	0.0	0.3	0.5	0.5	1.1	7.9	0.5	0.3	0.0	0.0	0.0	0.0
			0.27	23:00 – 00:00	8.5	0.0	0.0	0.0	0.0	0.0	0.3	0.5	1.1	6.6	0.3	0.3	0.0	0.0	0.0	0.0

Road No.	Road Name	Dir	Road Length (mile)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
13	Road L4	NB	0.27	00:00 – 01:00	19.8	0.3	2.9	16.4	1.9	0.8	2.7	3.5	2.4	15.5	2.4	1.9	0.5	0.3	0.3	0.3
			0.27	01:00 – 02:00	15.0	0.3	2.1	13.6	1.3	0.5	1.9	2.7	1.9	11.8	1.9	1.3	0.3	0.3	0.3	0.3
			0.27	02:00 – 03:00	10.2	0.0	1.6	9.1	1.1	0.5	1.3	1.9	1.3	8.0	1.3	0.6	0.3	0.3	0.0	0.0
			0.27	03:00 – 04:00	10.4	0.0	1.6	8.8	1.1	0.5	1.1	1.9	1.3	8.3	1.3	0.6	0.3	0.3	0.0	0.0
			0.27	04:00 – 05:00	5.3	0.0	0.8	4.5	0.5	0.3	0.5	1.1	0.8	4.3	0.5	0.5	0.0	0.0	0.0	0.0
			0.27	05:00 – 06:00	5.3	0.0	0.8	4.3	0.5	0.3	0.5	1.1	0.8	4.3	0.5	0.5	0.0	0.0	0.0	0.0
			0.27	06:00 – 07:00	11.0	0.0	1.6	8.8	1.1	0.3	1.1	2.1	1.3	8.8	1.3	0.8	0.3	0.3	0.0	0.0
			0.27	07:00 – 08:00	22.4	0.3	3.5	17.1	2.1	0.8	1.9	4.0	2.9	18.2	2.7	1.9	0.3	0.3	0.3	0.3
			0.27	08:00 – 09:00	34.5	0.3	5.3	25.7	3.5	1.1	2.9	6.4	4.5	27.6	4.0	2.9	0.5	0.5	0.3	0.5
			0.27	09:00 – 10:00	28.1	0.3	4.3	21.6	2.7	0.8	2.4	5.1	3.7	22.4	3.2	2.4	0.5	0.3	0.3	0.3
			0.27	10:00 – 11:00	27.3	0.3	4.0	21.9	2.7	0.8	2.7	5.1	3.5	21.6	3.2	2.4	0.5	0.3	0.3	0.3
			0.27	11:00 – 12:00	26.5	0.3	4.0	22.2	2.7	1.1	2.9	4.8	3.5	21.1	3.2	2.4	0.5	0.3	0.3	0.3
			0.27	12:00 – 13:00	20.6	0.3	2.9	17.9	1.9	0.8	2.4	3.7	2.7	16.3	2.4	1.9	0.5	0.3	0.3	0.3
			0.27	13:00 – 14:00	20.0	0.3	2.9	16.2	1.9	0.8	2.4	3.5	2.4	15.8	2.4	1.9	0.5	0.3	0.3	0.3
			0.27	14:00 – 15:00	19.5	0.3	2.7	16.4	1.9	0.8	2.7	3.5	2.4	15.2	2.4	1.9	0.5	0.3	0.3	0.3
			0.27	15:00 – 16:00	23.6	0.3	3.2	23.2	2.1	1.1	3.5	4.0	2.7	18.4	2.9	2.1	0.5	0.5	0.3	0.3
			0.27	16:00 – 17:00	23.0	0.3	3.2	23.5	2.1	1.3	3.5	4.0	2.4	17.6	2.9	2.1	0.5	0.5	0.3	0.3
			0.27	17:00 – 18:00	26.7	0.3	3.5	28.6	2.4	1.6	4.5	4.5	2.9	20.6	3.5	2.7	0.8	0.5	0.5	0.3
			0.27	18:00 – 19:00	25.9	0.3	3.5	28.9	2.1	1.6	4.5	4.3	2.7	19.8	3.5	2.7	0.8	0.5	0.5	0.3
			0.27	19:00 – 20:00	26.5	0.3	3.5	28.6	2.4	1.6	4.5	4.3	2.7	20.3	3.5	2.7	0.8	0.5	0.5	0.3
			0.27	20:00 – 21:00	27.0	0.3	3.7	28.3	2.4	1.6	4.3	4.5	2.9	20.6	3.5	2.7	0.8	0.5	0.5	0.3
			0.27	21:00 – 22:00	23.0	0.3	3.2	23.5	2.1	1.3	3.5	4.0	2.4	17.9	2.9	2.1	0.5	0.5	0.3	0.3
			0.27	22:00 – 23:00	23.5	0.3	3.2	23.2	2.1	1.1	3.5	4.0	2.7	18.2	2.9	2.1	0.5	0.5	0.3	0.3
			0.27	23:00 – 00:00	19.2	0.3	2.7	18.4	1.9	0.8	2.7	3.2	2.1	15.0	2.4	1.9	0.5	0.3	0.3	0.3

Road No.	Road Name	Dir	Road Length (mile)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
14	Road L4	SB	0.27	00:00 – 01:00	23.2	0.3	2.9	18.4	1.9	1.1	2.9	4.0	2.7	18.2	2.7	2.1	0.5	0.3	0.3	0.3
			0.27	01:00 – 02:00	17.9	0.3	2.1	13.6	1.3	0.8	2.1	3.2	2.1	14.2	2.1	1.6	0.3	0.3	0.3	0.3
			0.27	02:00 – 03:00	12.3	0.0	1.6	9.1	1.1	0.5	1.3	2.1	1.6	9.6	1.3	1.1	0.3	0.3	0.3	0.3
			0.27	03:00 – 04:00	12.6	0.0	1.6	8.8	1.1	0.5	1.3	2.1	1.6	9.9	1.6	1.1	0.3	0.3	0.3	0.3
			0.27	04:00 – 05:00	6.4	0.0	0.8	4.5	0.5	0.3	0.5	1.1	0.8	5.1	0.8	0.5	0.0	0.0	0.0	0.0
			0.27	05:00 – 06:00	6.7	0.0	0.8	4.3	0.5	0.3	0.5	1.3	0.8	5.3	0.8	0.5	0.0	0.0	0.0	0.0
			0.27	06:00 – 07:00	13.6	0.0	1.6	8.8	1.1	0.5	1.3	2.4	1.9	11.0	1.6	1.1	0.3	0.3	0.3	0.3
			0.27	07:00 – 08:00	27.8	0.3	3.5	17.1	2.1	0.8	2.4	5.3	3.7	22.4	3.2	2.4	0.5	0.3	0.3	0.3
			0.27	08:00 – 09:00	42.8	0.3	5.3	25.7	3.5	1.3	3.7	8.3	5.6	34.5	5.1	3.7	0.8	0.5	0.5	0.5
			0.27	09:00 – 10:00	34.5	0.3	4.3	21.6	2.7	1.1	3.2	6.4	4.5	27.5	4.0	2.9	0.5	0.5	0.3	0.5
			0.27	10:00 – 11:00	33.4	0.3	4.0	21.9	2.7	1.1	3.2	6.1	4.3	26.5	4.0	2.9	0.5	0.5	0.3	0.3
			0.27	11:00 – 12:00	32.1	0.3	4.0	22.2	2.7	1.1	3.2	5.9	4.0	25.4	3.7	2.7	0.5	0.5	0.3	0.3
			0.27	12:00 – 13:00	24.8	0.3	2.9	17.9	1.9	1.1	2.7	4.3	2.9	19.5	2.9	2.1	0.5	0.3	0.3	0.3
			0.27	13:00 – 14:00	23.6	0.3	2.9	18.2	1.9	1.1	2.7	4.3	2.9	18.7	2.9	2.1	0.5	0.3	0.3	0.3
			0.27	14:00 – 15:00	23.0	0.3	2.7	18.4	1.9	1.1	2.9	4.0	2.7	17.9	2.7	1.9	0.5	0.3	0.3	0.3
			0.27	15:00 – 16:00	27.5	0.3	3.2	23.2	2.1	1.3	3.7	4.5	3.2	21.4	3.2	2.4	0.5	0.5	0.3	0.3
			0.27	16:00 – 17:00	26.2	0.3	3.2	23.5	2.1	1.3	3.7	4.3	2.9	20.3	3.2	2.4	0.5	0.5	0.3	0.3
			0.27	17:00 – 18:00	30.2	0.3	3.5	28.6	2.4	1.6	4.5	4.5	3.2	23.0	3.7	2.7	0.8	0.5	0.5	0.3
			0.27	18:00 – 19:00	28.6	0.3	3.5	28.9	2.1	1.6	4.5	4.3	2.9	21.9	3.5	2.7	0.8	0.5	0.5	0.3
			0.27	19:00 – 20:00	29.7	0.3	3.5	28.6	2.4	1.6	4.5	4.5	3.2	22.7	3.7	2.7	0.8	0.5	0.5	0.3
			0.27	20:00 – 21:00	30.7	0.3	3.7	28.3	2.4	1.6	4.5	4.8	3.2	23.5	3.7	2.7	0.8	0.5	0.5	0.3
			0.27	21:00 – 22:00	26.5	0.3	3.2	23.5	2.1	1.3	3.7	4.3	2.9	20.3	3.2	2.4	0.5	0.5	0.3	0.3
			0.27	22:00 – 23:00	27.3	0.3	3.2	23.2	2.1	1.3	3.7	4.5	3.2	21.1	3.2	2.4	0.5	0.5	0.3	0.3
			0.27	23:00 – 00:00	22.4	0.3	2.7	18.4	1.9	1.1	2.9	3.7	2.7	17.6	2.7	1.9	0.5	0.3	0.3	0.3

Vehicle Miles Travelled

Road No.	Road Name	Direction	Road Length (mile)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
			0.08	00:00 – 01:00	22.5	0.2	2.1	14.1	1.4	1.0	2.9	3.6	2.5	17.4	2.7	1.9	0.5	0.4	0.3	0.2
			0.08	01:00 – 02:00	16.4	0.1	1.6	10.3	1.1	0.7	2.0	2.7	1.9	12.8	1.9	1.5	0.3	0.2	0.2	0.2
			0.08	02:00 – 03:00	10.7	0.1	1.1	6.7	0.7	0.5	1.3	1.9	1.2	8.3	1.3	1.0	0.2	0.2	0.2	0.1
			0.08	03:00 – 04:00	10.4	0.1	1.1	6.5	0.7	0.4	1.2	1.9	1.2	8.2	1.3	0.9	0.2	0.2	0.2	0.1
			0.08	04:00 – 05:00	5.1	0.1	0.6	3.2	0.3	0.2	0.6	1.0	0.6	4.0	0.6	0.5	0.1	0.1	0.1	0.1
			0.08	05:00 – 06:00	4.9	0.1	0.6	3.2	0.4	0.2	0.6	1.0	0.6	3.9	0.6	0.5	0.1	0.1	0.1	0.1
			0.08	06:00 – 07:00	9.6	0.1	1.1	6.1	0.7	0.3	1.1	1.9	1.2	7.6	1.2	0.9	0.2	0.2	0.1	0.1
			0.08	07:00 – 08:00	18.6	0.2	2.3	11.9	1.5	0.6	1.9	3.8	2.4	14.9	2.4	1.8	0.3	0.2	0.2	0.2
			0.08	08:00 – 09:00	27.1	0.2	3.6	17.3	2.3	0.9	2.6	5.7	3.6	21.8	3.6	2.6	0.5	0.4	0.3	0.4
			0.08	09:00 – 10:00	23.5	0.2	2.9	14.9	1.9	0.8	2.4	4.8	3.1	18.8	3.0	2.2	0.5	0.3	0.2	0.3
			0.08	10:00 – 11:00	24.5	0.2	2.9	15.5	1.9	0.9	2.7	4.7	3.1	19.4	3.1	2.3	0.5	0.4	0.3	0.3
15	Po Lam Road	EB	0.08	11:00 – 12:00	25.4	0.2	2.8	16.2	1.8	1.1	2.9	4.7	3.1	20.0	3.2	2.3	0.6	0.4	0.3	0.3
			0.08	12:00 – 13:00	21.2	0.2	2.2	13.3	1.5	0.9	2.5	3.7	2.5	16.6	2.6	1.9	0.5	0.3	0.2	0.2
			0.08	13:00 – 14:00	21.9	0.2	2.2	13.6	1.4	1.0	2.7	3.6	2.5	17.0	2.6	1.9	0.5	0.4	0.3	0.2
			0.08	14:00 – 15:00	22.7	0.2	2.1	14.3	1.4	1.1	2.9	3.6	2.5	17.5	2.7	1.9	0.5	0.4	0.3	0.2
			0.08	15:00 – 16:00	29.3	0.2	2.6	18.4	1.6	1.4	4.0	4.4	3.2	22.5	3.4	2.4	0.6	0.5	0.4	0.3
			0.08	16:00 – 17:00	30.3	0.2	2.5	19.0	1.6	1.5	4.2	4.4	3.2	23.2	3.4	2.5	0.7	0.6	0.4	0.2
			0.08	17:00 – 18:00	37.5	0.2	2.9	23.5	1.9	1.9	5.3	5.3	3.9	28.6	4.2	3.1	0.9	0.6	0.6	0.3
			0.08	18:00 – 19:00	38.6	0.2	2.8	24.2	1.9	1.9	5.7	5.2	3.9	29.4	4.3	3.1	1.0	0.7	0.6	0.3
			0.08	19:00 – 20:00	37.8	0.2	2.9	23.7	1.9	1.9	5.4	5.2	3.9	28.8	4.2	3.1	0.9	0.6	0.6	0.3
			0.08	20:00 – 21:00	37.0	0.2	3.0	23.2	1.9	1.8	5.2	5.3	3.9	28.3	4.1	3.0	0.9	0.6	0.6	0.3
			0.08	21:00 – 22:00	30.1	0.2	2.5	18.9	1.6	1.5	4.1	4.4	3.2	23.1	3.4	2.5	0.7	0.6	0.4	0.2
			0.08	22:00 – 23:00	29.4	0.2	2.6	18.5	1.6	1.4	4.0	4.4	3.2	22.7	3.4	2.4	0.6	0.5	0.4	0.3
			0.08	23:00 – 00:00	23.0	0.2	2.1	14.5	1.4	1.1	3.0	3.6	2.5	17.8	2.7	1.9	0.5	0.4	0.3	0.2

Road No.	Road Name	Dir	Road Length (mile)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
			0.08	00:00 – 01:00	28.9	0.2	3.3	19.2	2.1	1.1	3.2	5.3	3.4	22.6	3.6	2.6	0.6	0.5	0.3	0.3
			0.08	01:00 – 02:00	22.2	0.2	2.7	15.2	1.8	0.9	2.5	4.4	2.7	17.4	2.9	2.1	0.5	0.3	0.3	0.2
			0.08	02:00 – 03:00	15.2	0.2	1.9	10.6	1.3	0.6	1.8	3.2	1.9	12.0	2.0	1.5	0.3	0.2	0.2	0.2
			0.08	03:00 – 04:00	15.6	0.2	2.1	11.1	1.4	0.6	1.8	3.4	1.9	12.4	2.2	1.6	0.3	0.2	0.2	0.2
			0.08	04:00 – 05:00	8.0	0.1	1.1	5.8	0.7	0.3	1.0	1.9	1.1	6.4	1.1	0.8	0.2	0.2	0.1	0.1
			0.08	05:00 – 06:00	8.2	0.1	1.2	6.1	0.7	0.3	1.0	1.9	1.1	6.5	1.2	0.9	0.2	0.2	0.1	0.2
			0.08	06:00 – 07:00	16.7	0.2	2.5	12.5	1.6	0.7	2.0	4.2	2.2	13.4	2.6	1.9	0.4	0.3	0.2	0.2
			0.08	07:00 – 08:00	34.2	0.4	5.3	26.0	3.5	1.5	4.1	6.8	4.5	27.5	5.5	4.0	0.8	0.6	0.5	0.6
			0.08	08:00 – 09:00	52.5	0.6	8.4	40.5	5.4	2.2	6.3	14.0	7.0	42.2	8.6	6.2	1.2	1.0	0.7	0.9
			0.08	09:00 – 10:00	42.4	0.5	6.5	32.0	4.2	1.8	5.1	10.7	5.6	34.0	6.7	4.8	1.0	0.7	0.6	0.7
			0.08	10:00 – 11:00	41.1	0.4	6.0	30.4	3.9	1.7	4.8	9.9	5.3	32.8	6.2	4.5	1.0	0.7	0.6	0.6
16	Po Lam Road	WB	0.08	11:00 – 12:00	39.7	0.4	5.5	28.7	3.6	1.6	4.6	9.0	5.0	31.6	5.7	4.2	0.9	0.6	0.6	0.6
			0.08	12:00 – 13:00	30.7	0.3	4.0	21.6	2.6	1.2	3.6	6.5	3.8	24.3	4.2	3.1	0.6	0.5	0.4	0.4
			0.08	13:00 – 14:00	29.6	0.2	3.6	20.2	2.3	1.2	3.4	5.8	3.6	23.3	3.9	2.7	0.6	0.5	0.4	0.4
			0.08	14:00 – 15:00	28.6	0.2	3.2	19.8	2.1	1.1	3.2	5.1	3.4	22.4	3.5	2.5	0.6	0.4	0.3	0.3
			0.08	15:00 – 16:00	34.4	0.2	3.5	21.9	2.3	1.3	3.6	5.6	3.9	26.7	3.9	2.8	0.6	0.5	0.4	0.3
			0.08	16:00 – 17:00	33.0	0.2	3.0	20.2	1.9	1.2	3.6	4.7	3.6	25.5	3.4	2.4	0.6	0.5	0.4	0.3
			0.08	17:00 – 18:00	38.0	0.2	3.0	22.2	1.9	1.4	4.0	4.5	4.0	29.2	3.5	2.5	0.7	0.6	0.4	0.3
			0.08	18:00 – 19:00	36.4	0.2	2.3	20.2	1.5	1.3	3.8	3.5	3.7	27.7	2.9	2.1	0.6	0.5	0.4	0.2
			0.08	19:00 – 20:00	37.6	0.2	2.8	21.6	1.8	1.4	4.0	4.3	4.0	28.8	3.3	2.4	0.6	0.5	0.4	0.2
			0.08	20:00 – 21:00	38.8	0.2	3.2	23.1	2.1	1.5	4.2	5.0	4.2	29.8	3.7	2.7	0.7	0.6	0.4	0.3
			0.08	21:00 – 22:00	33.3	0.2	3.1	20.4	1.9	1.3	3.6	4.8	3.6	25.7	3.4	2.5	0.6	0.5	0.4	0.3
			0.08	22:00 – 23:00	34.2	0.2	3.4	21.6	2.2	1.3	3.8	5.4	3.9	26.6	3.8	2.7	0.6	0.5	0.4	0.3
			0.08	23:00 – 00:00	28.1	0.2	3.0	18.3	1.9	1.1	3.2	4.8	3.2	22.0	3.3	2.4	0.6	0.4	0.3	0.3

Road No.	Road Name	Dir	Road Length (mile)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
			0.47	00:00 – 01:00	90.9	0.5	9.3	54.1	6.1	3.3	8.9	13.5	10.3	70.8	9.3	6.5	1.4	1.4	0.9	0.9
			0.47	01:00 – 02:00	68.0	0.5	7.5	41.9	4.7	2.3	6.5	10.7	7.9	53.1	7.5	5.1	1.4	0.9	0.9	0.5
			0.47	02:00 – 03:00	45.2	0.5	5.1	29.4	3.3	1.4	4.7	7.9	5.6	35.4	5.1	3.7	0.9	0.5	0.5	0.5
			0.47	03:00 – 04:00	45.2	0.5	5.6	30.3	3.7	1.4	4.7	8.4	5.6	35.9	5.1	3.7	0.9	0.5	0.5	0.5
			0.47	04:00 – 05:00	22.4	0.0	2.8	15.8	1.9	0.9	2.3	4.2	2.8	17.7	2.8	1.9	0.5	0.5	0.5	0.5
			0.47	05:00 – 06:00	22.4	0.0	3.3	16.3	1.9	0.9	2.3	4.7	2.8	17.7	2.8	2.3	0.5	0.5	0.5	0.5
			0.47	06:00 – 07:00	45.2	0.5	6.5	33.6	4.2	1.4	4.7	9.8	5.6	35.9	6.1	4.2	0.9	0.5	0.5	0.5
			0.47	07:00 – 08:00	89.9	0.9	14.0	69.0	8.9	3.3	9.3	20.0	11.7	72.2	12.6	9.3	1.9	1.4	0.9	1.4
			0.47	08:00 – 09:00	134.7	1.4	22.4	106.3	14.4	5.1	14.4	31.7	18.2	108.1	19.6	14.0	2.8	2.3	1.9	1.9
			0.47	09:00 – 10:00	112.3	1.4	17.2	84.8	11.2	4.2	11.7	24.7	14.9	89.9	15.4	11.2	2.3	1.9	1.4	1.4
			0.47	10:00 – 11:00	112.8	0.9	15.8	81.1	10.3	4.2	11.7	22.8	14.4	89.5	14.4	10.7	2.3	1.9	1.4	1.4
17	Sau Mau Ping Road	NB	0.47	11:00 – 12:00	112.8	0.9	14.9	77.4	9.3	4.2	11.7	21.4	14.0	89.5	14.0	9.8	2.3	1.9	1.4	1.4
			0.47	12:00 – 13:00	90.4	0.9	10.7	59.2	7.0	3.3	9.3	15.6	10.7	71.3	10.3	7.5	1.9	1.4	0.9	0.9
			0.47	13:00 – 14:00	90.9	0.9	9.8	58.4	6.5	3.3	8.9	14.4	10.7	70.8	9.8	7.0	1.9	1.4	0.9	0.9
			0.47	14:00 – 15:00	90.9	0.5	8.9	53.1	5.6	3.3	8.9	13.0	10.3	70.8	8.9	6.5	1.4	1.4	0.9	0.9
			0.47	15:00 – 16:00	114.2	0.9	9.8	62.9	6.5	3.7	11.2	14.9	12.6	88.1	10.7	7.5	1.9	1.4	1.4	0.9
			0.47	16:00 – 17:00	114.2	0.5	8.4	59.2	5.6	3.7	10.7	13.0	12.1	88.1	9.8	7.0	1.9	1.4	0.9	0.9
			0.47	17:00 – 18:00	137.5	0.5	8.9	66.6	5.6	4.7	13.0	13.5	14.4	104.9	10.7	7.9	2.3	1.9	1.4	0.9
			0.47	18:00 – 19:00	137.5	0.5	7.5	62.0	4.7	4.7	12.6	11.7	14.0	104.9	9.8	7.0	2.3	1.4	1.4	0.9
			0.47	19:00 – 20:00	137.5	0.5	8.4	65.2	5.6	4.7	13.0	13.0	14.4	104.9	10.3	7.5	2.3	1.9	1.4	0.9
			0.47	20:00 – 21:00	137.0	0.5	9.3	68.5	6.1	4.7	13.0	14.4	14.4	105.3	11.2	7.9	2.3	1.9	1.4	0.9
			0.47	21:00 – 22:00	114.2	0.5	8.9	59.7	5.6	3.7	10.7	13.5	12.1	88.1	9.8	7.0	1.9	1.4	0.9	0.9
			0.47	22:00 – 23:00	114.2	0.5	9.8	62.4	6.1	3.7	11.2	14.4	12.6	88.1	10.3	7.5	1.9	1.4	1.4	0.9
			0.47	23:00 – 00:00	90.9	0.5	8.4	51.7	5.6	3.3	8.9	12.6	10.3	70.8	8.9	6.5	1.4	1.4	0.9	0.9

Vehicle Miles Travelled

Road No.	Road Name	Dir	Road Length (mile)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
18	Sau Mau Ping Road	SB	0.47	00:00 – 01:00	60.1	0.5	7.0	44.3	4.2	2.3	6.1	7.5	6.5	46.1	5.6	4.2	0.9	0.9	0.5	0.5
			0.47	01:00 – 02:00	42.4	0.5	5.1	33.1	3.3	1.4	4.2	5.6	4.7	33.1	4.2	2.8	0.9	0.5	0.5	0.5
			0.47	02:00 – 03:00	27.0	0.5	3.7	21.9	2.3	0.9	2.8	3.7	3.3	21.0	2.8	1.9	0.5	0.5	0.5	0.5
			0.47	03:00 – 04:00	25.2	0.5	3.7	21.4	2.3	0.9	2.8	4.2	2.8	19.6	2.8	1.9	0.5	0.5	0.5	0.5
			0.47	04:00 – 05:00	12.1	0.0	1.9	10.7	1.4	0.5	1.4	1.9	1.4	9.3	1.4	0.9	0.0	0.0	0.0	0.0
			0.47	05:00 – 06:00	11.2	0.0	1.9	10.7	1.4	0.5	0.9	1.9	1.4	8.9	1.4	0.9	0.0	0.0	0.0	0.0
			0.47	06:00 – 07:00	20.5	0.5	4.2	21.0	2.8	0.9	2.3	4.2	2.8	16.3	2.8	1.9	0.5	0.5	0.5	0.5
			0.47	07:00 – 08:00	38.2	0.5	8.4	41.5	5.6	1.4	4.2	8.4	5.1	30.8	5.1	3.7	0.9	0.5	0.5	0.5
			0.47	08:00 – 09:00	53.1	0.9	13.0	62.0	8.4	1.9	5.6	12.6	7.0	42.4	7.9	5.6	0.9	0.9	0.5	0.9
			0.47	09:00 – 10:00	49.4	0.9	10.3	52.2	6.5	1.9	5.1	10.3	6.5	39.1	6.5	4.7	0.9	0.9	0.5	0.5
			0.47	10:00 – 11:00	55.0	0.9	9.8	52.7	6.5	1.9	5.6	10.3	6.5	43.3	6.5	4.7	0.9	0.9	0.5	0.5
			0.47	11:00 – 12:00	60.1	0.5	9.8	53.6	6.1	2.3	6.1	10.3	7.0	47.1	6.5	5.1	0.9	0.9	0.5	0.5
			0.47	12:00 – 13:00	52.7	0.5	7.5	43.3	4.7	1.9	5.6	7.9	6.1	41.0	5.6	4.2	0.9	0.9	0.5	0.5
			0.47	13:00 – 14:00	56.9	0.5	7.0	43.8	4.7	1.9	5.6	7.9	6.5	43.8	5.6	4.2	0.9	0.9	0.5	0.5
			0.47	14:00 – 15:00	61.0	0.5	6.5	44.3	4.2	2.3	6.1	7.5	6.5	47.1	5.6	4.2	0.9	0.9	0.5	0.5
			0.47	15:00 – 16:00	62.0	0.5	7.9	56.4	5.1	2.8	8.4	9.3	8.9	62.9	7.0	5.1	1.4	0.9	0.9	0.5
			0.47	16:00 – 17:00	87.1	0.5	7.5	56.9	5.1	2.8	8.9	9.3	9.3	66.6	7.0	5.1	1.4	0.9	0.9	0.5
			0.47	17:00 – 18:00	111.4	0.5	8.9	69.0	5.6	3.7	11.2	10.7	11.7	84.8	8.9	6.5	1.9	1.4	0.9	0.5
			0.47	18:00 – 19:00	117.4	0.5	8.4	69.9	5.1	4.2	11.7	10.7	12.1	89.5	8.9	6.5	1.9	1.4	1.4	0.5
			0.47	19:00 – 20:00	113.2	0.5	8.4	69.4	5.6	3.7	11.2	10.7	11.7	86.2	8.9	6.5	1.9	1.4	0.9	0.5
			0.47	20:00 – 21:00	108.6	0.5	8.9	68.5	5.6	3.7	10.7	10.7	11.2	83.0	8.9	6.1	1.9	1.4	0.9	0.5
			0.47	21:00 – 22:00	86.7	0.5	7.5	56.9	5.1	2.8	8.4	9.3	8.9	66.2	7.0	5.1	1.4	0.9	0.9	0.5
			0.47	22:00 – 23:00	62.5	0.5	7.9	56.4	5.1	2.8	8.4	9.3	8.9	63.4	7.0	5.1	1.4	0.9	0.9	0.5
			0.47	23:00 – 00:00	62.9	0.5	6.5	44.7	4.2	2.3	6.5	7.5	7.0	48.5	5.6	4.2	0.9	0.9	0.5	0.5

Road No.	Road Name	Dir	Road Length (mile)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
19	Sau Mau Ping Road	NB	0.12	00:00 – 01:00	35.7	0.2	2.7	18.6	1.7	1.4	3.9	4.5	4.1	27.7	3.4	2.5	0.6	0.5	0.4	0.2
			0.12	01:00 – 02:00	26.3	0.1	2.1	13.5	1.4	0.9	2.7	3.4	3.1	20.6	2.5	1.7	0.5	0.4	0.2	0.2
			0.12	02:00 – 03:00	17.3	0.1	1.4	8.7	0.9	0.6	1.6	2.2	2.1	13.5	1.6	1.1	0.2	0.2	0.1	0.1
			0.12	03:00 – 04:00	17.0	0.1	1.4	8.5	0.9	0.5	1.5	2.1	2.1	13.4	1.5	1.1	0.2	0.2	0.1	0.1
			0.12	04:00 – 05:00	8.5	0.0	0.7	4.1	0.5	0.2	0.7	1.0	1.0	6.6	0.7	0.5	0.1	0.1	0.1	0.1
			0.12	05:00 – 06:00	8.3	0.0	0.7	4.0	0.5	0.2	0.6	1.0	1.0	6.6	0.7	0.5	0.1	0.1	0.1	0.1
			0.12	06:00 – 07:00	16.3	0.1	1.5	7.6	0.9	0.4	1.1	2.0	2.1	13.0	1.4	1.0	0.2	0.1	0.1	0.1
			0.12	07:00 – 08:00	32.2	0.2	2.9	14.7	1.9	0.7	2.0	4.0	4.2	25.7	2.5	1.9	0.4	0.2	0.2	0.2
			0.12	08:00 – 09:00	47.5	0.4	4.3	21.0	2.9	0.9	2.6	6.0	6.3	38.2	3.6	2.6	0.5	0.4	0.4	0.4
			0.12	09:00 – 10:00	40.4	0.2	3.6	18.5	2.4	0.9	2.6	5.1	5.2	32.3	3.2	2.4	0.5	0.4	0.2	0.4
			0.12	10:00 – 11:00	41.3	0.2	3.6	19.5	2.4	1.1	3.1	5.2	5.2	32.8	3.5	2.5	0.6	0.4	0.4	0.4
			0.12	11:00 – 12:00	42.3	0.2	3.5	20.5	2.2	1.2	3.6	5.3	5.2	33.3	3.6	2.6	0.6	0.5	0.4	0.4
			0.12	12:00 – 13:00	34.4	0.2	2.7	17.3	1.7	1.1	3.2	4.3	4.1	27.1	3.1	2.2	0.6	0.4	0.4	0.2
			0.12	13:00 – 14:00	35.2	0.2	2.7	18.0	1.7	1.2	3.6	4.5	4.1	27.5	3.2	2.4	0.6	0.5	0.4	0.2
			0.12	14:00 – 15:00	35.9	0.2	2.7	18.9	1.7	1.4	4.0	4.5	4.1	27.8	3.4	2.5	0.6	0.5	0.4	0.2
			0.12	15:00 – 16:00	45.7	0.2	3.4	24.6	2.1	1.9	5.3	5.7	5.0	35.3	4.5	3.2	0.9	0.7	0.5	0.4
			0.12	16:00 – 17:00	46.6	0.2	3.4	25.6	2.1	2.0	5.8	5.8	5.0	35.8	4.6	3.4	1.0	0.7	0.6	0.4
			0.12	17:00 – 18:00	57.0	0.2	4.0	31.9	2.5	2.6	7.5	7.2	6.0	43.6	5.8	4.2	1.2	1.0	0.7	0.5
			0.12	18:00 – 19:00	58.0	0.2	3.9	33.1	2.5	2.7	8.1	7.3	5.8	44.1	6.1	4.5	1.4	1.0	0.9	0.5
			0.12	19:00 – 20:00	57.3	0.2	4.0	32.2	2.5	2.6	7.7	7.2	6.0	43.7	6.0	4.2	1.2	1.0	0.7	0.5
			0.12	20:00 – 21:00	56.5	0.2	4.0	31.3	2.6	2.5	7.2	7.2	6.0	43.2	5.7	4.1	1.2	0.9	0.7	0.5
			0.12	21:00 – 22:00	46.5	0.2	3.4	25.5	2.1	2.0	5.7	5.8	5.0	35.6	4.6	3.4	1.0	0.7	0.6	0.4
			0.12	22:00 – 23:00	45.9	0.2	3.4	24.7	2.1	1.9	5.5	5.8	5.0	35.4	4.5	3.2	0.9	0.7	0.6	0.4
			0.12	23:00 – 00:00	36.2	0.2	2.7	19.1	1.7	1.4	4.1	4.6	4.0	28.0	3.5	2.5	0.7	0.5	0.4	0.2

Road No.	Road Name	Dir	Road Length (mile)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
20	Sau Mau Ping Road	SB	0.12	00:00 – 01:00	38.4	0.2	4.0	23.5	2.5	1.2	3.5	5.5	4.5	30.1	3.7	2.7	0.6	0.5	0.4	0.4
			0.12	01:00 – 02:00	29.5	0.2	3.1	18.1	2.0	1.0	2.7	4.5	3.6	23.2	3.0	2.1	0.5	0.4	0.2	0.2
			0.12	02:00 – 03:00	20.1	0.1	2.2	12.6	1.5	0.6	1.9	3.2	2.5	15.9	2.1	1.5	0.4	0.2	0.2	0.2
			0.12	03:00 – 04:00	20.6	0.1	2.4	12.9	1.5	0.6	1.9	3.4	2.6	16.4	2.2	1.6	0.4	0.2	0.2	0.2
			0.12	04:00 – 05:00	10.6	0.1	1.2	6.7	0.9	0.4	1.0	1.9	1.4	8.5	1.1	0.9	0.1	0.1	0.1	0.1
			0.12	05:00 – 06:00	10.8	0.1	1.4	6.8	0.9	0.4	1.0	1.9	1.4	8.6	1.2	0.9	0.1	0.1	0.1	0.1
			0.12	06:00 – 07:00	22.1	0.2	2.9	14.2	1.9	0.6	2.0	4.1	2.9	17.6	2.5	1.9	0.4	0.2	0.2	0.2
			0.12	07:00 – 08:00	45.2	0.4	6.0	29.1	3.9	1.4	4.0	8.6	6.0	36.3	5.3	3.9	0.7	0.6	0.5	0.5
			0.12	08:00 – 09:00	69.2	0.6	9.3	44.9	6.0	2.1	6.1	13.5	9.3	55.7	8.3	6.1	1.2	0.9	0.7	0.9
			0.12	09:00 – 10:00	56.0	0.5	7.3	35.9	4.7	1.7	5.0	10.4	7.3	44.9	6.6	4.7	1.0	0.7	0.6	0.6
			0.12	10:00 – 11:00	54.3	0.5	6.8	34.5	4.3	1.7	4.8	9.7	7.0	43.2	6.1	4.5	0.9	0.7	0.6	0.6
			0.12	11:00 – 12:00	52.6	0.5	6.2	33.2	4.1	1.6	4.7	8.9	6.6	41.6	5.7	4.1	0.9	0.6	0.5	0.6
			0.12	12:00 – 13:00	40.6	0.4	4.6	25.4	3.0	1.2	3.7	6.6	5.0	32.2	4.2	3.1	0.8	0.5	0.4	0.4
			0.12	13:00 – 14:00	39.3	0.2	4.2	24.2	2.7	1.2	3.6	6.0	4.7	30.9	4.0	2.9	0.6	0.5	0.4	0.4
			0.12	14:00 – 15:00	37.9	0.2	3.9	23.1	2.5	1.2	3.5	5.3	4.5	29.7	3.6	2.6	0.6	0.5	0.4	0.4
			0.12	15:00 – 16:00	45.7	0.2	4.2	27.5	2.7	1.5	4.2	5.8	5.2	35.5	4.1	3.0	0.7	0.6	0.5	0.4
			0.12	16:00 – 17:00	44.0	0.2	3.7	26.1	2.4	1.4	4.1	5.1	4.8	33.9	3.7	2.7	0.7	0.5	0.5	0.4
			0.12	17:00 – 18:00	50.6	0.2	3.9	29.6	2.5	1.6	4.7	5.2	5.3	38.9	4.0	2.9	0.9	0.6	0.5	0.4
			0.12	18:00 – 19:00	48.7	0.2	3.2	28.0	2.1	1.6	4.6	4.2	5.0	37.0	3.5	2.5	0.7	0.6	0.5	0.2
			0.12	19:00 – 20:00	50.2	0.2	3.7	29.1	2.4	1.6	4.7	4.8	5.2	38.4	3.9	2.7	0.7	0.6	0.5	0.4
			0.12	20:00 – 21:00	51.7	0.2	4.1	30.3	2.7	1.7	4.8	5.6	5.6	39.8	4.2	3.1	0.9	0.6	0.5	0.4
			0.12	21:00 – 22:00	44.2	0.2	3.9	26.3	2.5	1.5	4.1	5.2	4.8	34.2	3.7	2.7	0.7	0.5	0.5	0.4
			0.12	22:00 – 23:00	45.5	0.2	4.2	27.3	2.7	1.5	4.2	5.7	5.1	35.3	4.1	3.0	0.7	0.6	0.5	0.4
			0.12	23:00 – 00:00	37.4	0.2	3.6	22.6	2.4	1.2	3.5	5.1	4.3	29.1	3.5	2.5	0.6	0.5	0.4	0.4

Vehicle Miles Travelled

Road No.	Road Name	Dir	Road Length (mile)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
25a	Sau Ming Road	NB	0.22	00:00 - 01:00	7.8	0.0	0.9	6.5	0.7	0.4	1.5	2.0	0.9	6.1	1.5	1.1	0.2	0.2	0.2	0.2
			0.22	01:00 - 02:00	6.1	0.0	0.7	4.8	0.4	0.4	1.1	1.5	0.7	4.8	1.1	0.9	0.2	0.2	0.2	0.0
			0.22	02:00 - 03:00	4.1	0.0	0.4	3.0	0.2	0.2	0.7	1.1	0.4	3.3	0.7	0.4	0.2	0.0	0.0	0.0
			0.22	03:00 - 04:00	4.1	0.0	0.4	3.0	0.4	0.2	0.7	1.1	0.4	3.3	0.7	0.4	0.2	0.0	0.0	0.0
			0.22	04:00 - 05:00	2.2	0.0	0.2	1.5	0.2	0.2	0.4	0.7	0.2	1.7	0.4	0.2	0.0	0.0	0.0	0.0
			0.22	05:00 - 06:00	2.2	0.0	0.2	1.5	0.2	0.2	0.2	0.7	0.2	1.7	0.4	0.2	0.0	0.0	0.0	0.0
			0.22	06:00 - 07:00	4.3	0.0	0.4	2.8	0.4	0.2	0.7	1.1	0.7	3.5	0.7	0.4	0.2	0.0	0.0	0.0
			0.22	07:00 - 08:00	8.9	0.0	1.1	5.4	0.7	0.4	1.1	2.4	1.1	7.2	1.5	1.1	0.2	0.2	0.2	0.2
			0.22	08:00 - 09:00	13.5	0.2	1.7	8.0	1.1	0.7	1.7	3.7	1.7	10.9	2.2	1.7	0.2	0.2	0.2	0.2
			0.22	09:00 - 10:00	10.9	0.0	1.3	7.0	0.9	0.4	1.5	3.0	1.5	8.7	2.0	1.3	0.2	0.2	0.2	0.2
			0.22	10:00 - 11:00	10.7	0.0	1.3	7.2	0.9	0.4	1.5	2.8	1.3	8.5	2.0	1.3	0.2	0.2	0.2	0.2
			0.22	11:00 - 12:00	10.4	0.0	1.3	7.4	0.9	0.7	1.7	2.8	1.3	8.3	1.7	1.3	0.2	0.2	0.2	0.2
			0.22	12:00 - 13:00	8.3	0.0	1.1	6.1	0.7	0.4	1.3	2.2	1.1	6.5	1.5	1.1	0.2	0.2	0.2	0.2
			0.22	13:00 - 14:00	8.0	0.0	1.1	6.3	0.7	0.4	1.5	2.0	0.9	6.3	1.5	1.1	0.2	0.2	0.2	0.2
			0.22	14:00 - 15:00	7.8	0.0	0.9	6.5	0.7	0.4	1.5	2.0	0.9	6.1	1.5	1.1	0.2	0.2	0.2	0.2
			0.22	15:00 - 16:00	9.6	0.0	1.1	8.3	0.7	0.7	2.0	2.4	1.1	7.4	1.7	1.3	0.4	0.2	0.2	0.2
			0.22	16:00 - 17:00	9.4	0.0	1.1	8.5	0.7	0.7	2.2	2.2	1.1	7.2	1.7	1.3	0.4	0.2	0.2	0.2
			0.22	17:00 - 18:00	10.9	0.0	1.3	10.7	0.9	0.9	2.6	2.6	1.1	8.3	2.2	1.5	0.4	0.4	0.2	0.2
			0.22	18:00 - 19:00	10.4	0.0	1.3	10.9	0.9	0.9	2.6	2.4	1.1	8.0	2.0	1.5	0.4	0.4	0.2	0.2
			0.22	19:00 - 20:00	10.7	0.0	1.3	10.7	0.9	0.9	2.6	2.6	1.1	8.3	2.0	1.5	0.4	0.4	0.2	0.2
			0.22	20:00 - 21:00	10.9	0.0	1.3	10.4	0.9	0.9	2.6	2.6	1.1	8.5	2.2	1.5	0.4	0.4	0.2	0.2
			0.22	21:00 - 22:00	9.4	0.0	1.1	8.5	0.7	0.7	2.2	2.2	1.1	7.2	1.7	1.3	0.4	0.2	0.2	0.2
			0.22	22:00 - 23:00	9.6	0.0	1.1	8.3	0.7	0.7	2.0	2.4	1.1	7.4	1.7	1.3	0.4	0.2	0.2	0.2
			0.22	23:00 - 00:00	7.6	0.0	0.9	6.5	0.7	0.4	1.5	2.0	0.9	6.1	1.5	1.1	0.2	0.2	0.2	0.2

Road No.	Road Name	Dir	Road Length (mile)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
25b	Sau Ming Road	NB	0.16	00:00 - 01:00	4.3	0.0	0.6	4.0	0.5	0.5	1.1	1.6	0.5	3.4	1.1	0.8	0.2	0.2	0.2	0.2
			0.16	01:00 - 02:00	3.3	0.0	0.5	3.1	0.3	0.3	0.8	1.2	0.3	2.5	0.8	0.6	0.2	0.2	0.2	0.2
			0.16	02:00 - 03:00	2.2	0.0	0.3	2.0	0.2	0.2	0.6	0.9	0.3	1.7	0.6	0.5	0.2	0.0	0.0	0.0
			0.16	03:00 - 04:00	2.2	0.0	0.3	2.0	0.2	0.2	0.5	0.9	0.3	1.7	0.6	0.5	0.2	0.0	0.0	0.0
			0.16	04:00 - 05:00	1.1	0.0	0.2	0.9	0.2	0.2	0.3	0.5	0.2	0.9	0.3	0.2	0.0	0.0	0.0	0.0
			0.16	05:00 - 06:00	1.1	0.0	0.2	0.9	0.2	0.2	0.3	0.5	0.2	0.9	0.3	0.2	0.0	0.0	0.0	0.0
			0.16	06:00 - 07:00	2.2	0.0	0.3	2.0	0.3	0.2	0.5	0.9	0.3	1.7	0.6	0.5	0.2	0.0	0.0	0.0
			0.16	07:00 - 08:00	4.3	0.0	0.8	3.9	0.5	0.3	0.9	2.0	0.6	3.4	1.2	0.9	0.2	0.2	0.2	0.2
			0.16	08:00 - 09:00	6.4	0.2	1.2	5.7	0.8	0.5	1.4	3.1	0.9	5.1	2.0	1.4	0.3	0.2	0.2	0.2
			0.16	09:00 - 10:00	5.4	0.0	0.9	4.8	0.6	0.5	1.2	2.5	0.8	4.3	1.6	1.1	0.3	0.2	0.2	0.2
			0.16	10:00 - 11:00	5.4	0.0	0.9	4.8	0.6	0.5	1.2	2.3	0.6	4.3	1.6	1.1	0.3	0.2	0.2	0.2
			0.16	11:00 - 12:00	5.4	0.0	0.9	5.0	0.6	0.5	1.2	2.3	0.6	4.3	1.6	1.1	0.3	0.2	0.2	0.2
			0.16	12:00 - 13:00	4.3	0.0	0.6	4.0	0.5	0.3	1.1	1.7	0.5	3.4	1.2	0.8	0.2	0.2	0.2	0.2
			0.16	13:00 - 14:00	4.3	0.0	0.6	4.0	0.5	0.5	1.1	1.7	0.5	3.4	1.1	0.8	0.2	0.2	0.2	0.2
			0.16	14:00 - 15:00	4.3	0.0	0.6	4.0	0.5	0.5	1.1	1.6	0.5	3.4	1.1	0.8	0.2	0.2	0.2	0.2
			0.16	15:00 - 16:00	5.4	0.0	0.8	5.1	0.5	0.5	1.6	1.9	0.6	4.2	1.4	0.9	0.3	0.2	0.2	0.2
			0.16	16:00 - 17:00	5.6	0.0	0.8	5.3	0.5	0.5	1.6	1.7	0.6	4.2	1.2	0.9	0.3	0.2	0.2	0.2
			0.16	17:00 - 18:00	6.7	0.0	0.8	6.4	0.5	0.6	1.9	1.9	0.6	5.1	1.6	1.1	0.3	0.3	0.2	0.2
			0.16	18:00 - 19:00	6.7	0.0	0.8	6.5	0.5	0.6	1.9	1.7	0.6	5.1	1.4	1.1	0.3	0.3	0.2	0.2
			0.16	19:00 - 20:00	6.7	0.0	0.8	6.4	0.5	0.6	1.9	1.9	0.6	5.1	1.6	1.1	0.3	0.3	0.2	0.2
			0.16	20:00 - 21:00	6.7	0.0	0.8	6.4	0.5	0.6	1.9	2.0	0.8	5.1	1.6	1.1	0.3	0.3	0.2	0.2
			0.16	21:00 - 22:00	5.6	0.0	0.8	5.3	0.5	0.5	1.6	1.7	0.6	4.2	1.2	0.9	0.3	0.2	0.2	0.2
			0.16	22:00 - 23:00	5.4	0.0	0.8	5.3	0.5	0.5	1.6	1.9	0.6	4.2	1.4	0.9	0.3	0.2	0.2	0.2
			0.16	23:00 - 00:00	4.3	0.0	0.6	4.2	0.5	0.5	1.2	1.6	0.5	3.4	1.1	0.8	0.2	0.2	0.2	0.2

Road No.	Road Name	Dir	Road Length (mile)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
25c	Sau Ming Road	NB	0.34	00:00 - 01:00	10.9	0.0	1.4	8.9	1.0	1.0	2.7	3.8	1.4	8.5	2.7	2.1	0.3	0.3	0.3	0.3
			0.34	01:00 - 02:00	8.2	0.0	1.0	6.6	0.7	0.7	2.1	3.1	1.0	6.5	2.1	1.4	0.3	0.3	0.3	0.3
			0.34	02:00 - 03:00	5.5	0.0	0.7	4.4	0.3	0.3	1.4	2.1	0.7	4.1	1.4	1.0	0.3	0.3	0.0	0.0
			0.34	03:00 - 04:00	5.1	0.0	0.7	4.4	0.3	0.3	1.4	2.1	0.7	4.1	1.4	1.0	0.3	0.3	0.0	0.0
			0.34	04:00 - 05:00	2.4	0.0	0.3	2.1	0.3	0.3	0.7	1.0	0.3	2.1	0.7	0.3	0.0	0.0	0.0	0.0
			0.34	05:00 - 06:00	2.4	0.0	0.3	2.1	0.3	0.3	0.7	1.0	0.3	2.1	0.7	0.3	0.0	0.0	0.0	0.0
			0.34	06:00 - 07:00	4.8	0.0	0.7	4.4	0.7	0.3	1.0	2.1	0.7	3.8	1.4	1.0	0.3	0.0	0.0	0.0
			0.34	07:00 - 08:00	9.6	0.0	1.7	8.5	1.0	0.7	2.1	4.4	1.4	7.5	2.7	2.1	0.3	0.3	0.3	0.3
			0.34	08:00 - 09:00	14.0	0.3	2.7	12.6	1.7	1.0	3.1	6.8	2.1	11.3	4.4	3.1	0.7	0.3	0.3	0.3
			0.34	09:00 - 10:00	12.0	0.0	2.1	10.6	1.4	1.0	2.7	5.5	1.7	9.6	3.4	2.7	0.7	0.3	0.3	0.3
			0.34	10:00 - 11:00	12.3	0.0	2.1	10.6	1.4	1.0	3.1	5.5	1.7	9.9	3.4	2.4	0.7	0.3	0.3	0.3
			0.34	11:00 - 12:00	13.0	0.0	2.1	10.9	1.4	1.0	3.1	5.1	1.7	10.3	3.4	2.4	0.7	0.3	0.3	0.3
			0.34	12:00 - 13:00	10.6	0.0	1.4	8.9	1.0	1.0	2.7	4.1	1.4	8.2	2.7	2.1	0.3	0.3	0.3	0.3
			0.34	13:00 - 14:00	10.9	0.0	1.4	8.9	1.0	1.0	2.7	3.8	1.4	8.5	2.7	2.1	0.3	0.3	0.3	0.3
			0.34	14:00 - 15:00	10.9	0.0	1.4	8.9	1.0	1.0	2.7	3.8	1.4	8.5	2.7	2.1	0.3	0.3	0.3	0.3
			0.34	15:00 - 16:00	14.4	0.0	1.7	11.3	1.0	1.4	3.8	4.4	1.7	10.9	3.4	2.4	0.7	0.3	0.3	0.3
			0.34	16:00 - 17:00	14.7	0.0	1.7	11.6	1.0	1.4	3.8	4.4	1.7	11.3	3.4	2.4	0.7	0.3	0.3	0.3
			0.34	17:00 - 18:00	17.8	0.0	1.7	14.0	1.0	1.7	4.8	4.8	1.7	13.7	3.8	2.7	0.7	0.7	0.3	0.3
			0.34	18:00 - 19:00	18.5	0.0	1.7	14.4	1.0	1.7	5.1	4.8	1.7	14.0	3.8	2.7	0.7	0.7	0.7	0.3
			0.34	19:00 - 20:00	18.1	0.0	1.7	14.0	1.0	1.7	5.1	4.8	1.7	13.7	3.8	2.7	0.7	0.7	0.3	0.3
			0.34	20:00 - 21:00	17.8	0.0	1.7	14.0	1.0	1.7	4.8	5.1	1.7	13.7	3.8	2.7	0.7	0.7	0.3	0.3
			0.34	21:00 - 22:00	14.7	0.0	1.7	11.6	1.0	1.4	3.8	4.4	1.7	11.3	3.4	2.4	0.7	0.3	0.3	0.3
			0.34	22:00 - 23:00	14.4	0.0	1.7	11.6	1.0	1.4	3.8	4.4	1.7	10.9	3.4	2.4	0.7	0.3	0.3	0.3
			0.34	23:00 - 00:00	11.3	0.0	1.4	9.2	1.0	1.0	3.1	3.8	1.4	8.5	2.7	2.1	0.3	0.3	0.3	0.3

Vehicle Miles Travelled

Road No.	Road Name	Dir	Road Length (mile)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
26a	Sau Ming Road	SB	0.22	00:00 - 01:00	8.0	0.0	0.9	6.7	0.7	0.7	1.7	2.6	0.9	6.3	1.7	1.3	0.2	0.2	0.2	0.2
			0.22	01:00 - 02:00	6.1	0.0	0.7	4.8	0.4	0.4	1.3	2.2	0.7	4.6	1.5	1.1	0.2	0.2	0.2	0.2
			0.22	02:00 - 03:00	3.9	0.0	0.4	3.0	0.2	0.2	0.9	1.5	0.4	3.0	1.1	0.7	0.2	0.2	0.0	0.0
			0.22	03:00 - 04:00	3.9	0.0	0.4	2.8	0.2	0.2	0.9	1.5	0.4	3.0	1.1	0.7	0.2	0.2	0.0	0.0
			0.22	04:00 - 05:00	2.0	0.0	0.2	1.3	0.2	0.2	0.4	0.9	0.2	1.5	0.4	0.4	0.0	0.0	0.0	0.0
			0.22	05:00 - 06:00	2.0	0.0	0.2	1.3	0.2	0.2	0.4	0.9	0.2	1.5	0.7	0.4	0.0	0.0	0.0	0.0
			0.22	06:00 - 07:00	3.9	0.0	0.4	2.4	0.2	0.2	0.9	1.7	0.4	3.0	1.1	0.9	0.2	0.2	0.0	0.2
			0.22	07:00 - 08:00	7.6	0.0	0.9	4.6	0.7	0.7	1.7	3.7	1.1	6.1	2.4	1.7	0.4	0.2	0.2	0.2
			0.22	08:00 - 09:00	11.3	0.0	1.3	6.3	0.9	0.9	2.6	5.9	1.5	8.9	3.7	2.6	0.4	0.4	0.2	0.4
			0.22	09:00 - 10:00	9.6	0.0	1.1	5.9	0.7	0.9	2.2	4.6	1.3	7.6	2.8	2.2	0.4	0.2	0.2	0.2
			0.22	10:00 - 11:00	9.6	0.0	1.1	6.3	0.7	0.9	2.2	4.3	1.3	7.6	2.8	2.0	0.4	0.2	0.2	0.2
			0.22	11:00 - 12:00	9.8	0.0	1.1	7.0	0.7	0.9	2.2	4.1	1.3	7.6	2.6	2.0	0.4	0.2	0.2	0.2
			0.22	12:00 - 13:00	7.8	0.0	0.9	5.9	0.7	0.7	1.7	3.0	0.9	6.3	2.0	1.5	0.4	0.2	0.2	0.2
			0.22	13:00 - 14:00	8.0	0.0	0.9	6.3	0.7	0.7	1.7	2.8	0.9	6.3	2.0	1.3	0.2	0.2	0.2	0.2
			0.22	14:00 - 15:00	8.0	0.0	0.9	6.7	0.7	0.7	1.7	2.6	0.9	6.3	1.7	1.3	0.2	0.2	0.2	0.2
			0.22	15:00 - 16:00	10.2	0.0	1.3	8.9	0.9	0.9	2.2	2.8	1.1	8.0	2.2	1.5	0.4	0.2	0.2	0.2
			0.22	16:00 - 17:00	10.4	0.0	1.3	9.6	0.9	0.9	2.2	2.6	1.1	8.0	2.0	1.5	0.4	0.2	0.2	0.2
			0.22	17:00 - 18:00	12.6	0.0	1.5	12.0	0.9	0.9	2.6	2.8	1.3	9.8	2.2	1.5	0.4	0.4	0.2	0.2
			0.22	18:00 - 19:00	12.8	0.0	1.5	12.6	0.9	0.9	2.6	2.4	1.3	9.8	2.0	1.5	0.4	0.4	0.2	0.2
			0.22	19:00 - 20:00	12.8	0.0	1.5	12.2	0.9	0.9	2.6	2.6	1.3	9.8	2.2	1.5	0.4	0.4	0.2	0.2
			0.22	20:00 - 21:00	12.6	0.0	1.5	11.7	0.9	0.9	2.6	3.0	1.3	9.6	2.2	1.7	0.4	0.4	0.2	0.2
			0.22	21:00 - 22:00	10.4	0.0	1.3	9.4	0.9	0.9	2.2	2.6	1.1	8.0	2.0	1.5	0.4	0.2	0.2	0.2
			0.22	22:00 - 23:00	10.2	0.0	1.3	9.1	0.9	0.9	2.2	2.6	1.1	8.0	2.2	1.5	0.4	0.2	0.2	0.2
			0.22	23:00 - 00:00	8.3	0.0	0.9	7.0	0.7	0.7	1.7	2.4	0.9	6.3	1.7	1.3	0.2	0.2	0.2	0.2

Road No.	Road Name	Dir	Road Length (mile)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
26b	Sau Ming Road	SB	0.16	00:00 - 01:00	5.3	0.0	0.6	4.2	0.5	0.5	1.4	2.0	0.6	4.0	1.4	1.1	0.3	0.2	0.2	0.2
			0.16	01:00 - 02:00	3.9	0.0	0.5	3.1	0.3	0.3	1.1	1.6	0.5	3.1	1.1	0.8	0.2	0.2	0.2	0.2
			0.16	02:00 - 03:00	2.6	0.0	0.3	2.0	0.2	0.3	0.6	1.1	0.3	2.0	0.8	0.5	0.2	0.2	0.0	0.0
			0.16	03:00 - 04:00	2.5	0.0	0.3	1.9	0.2	0.3	0.6	1.1	0.3	2.0	0.8	0.6	0.2	0.2	0.0	0.0
			0.16	04:00 - 05:00	1.2	0.0	0.2	0.9	0.2	0.2	0.3	0.6	0.2	0.9	0.5	0.3	0.0	0.0	0.0	0.0
			0.16	05:00 - 06:00	1.2	0.0	0.2	0.9	0.2	0.2	0.3	0.6	0.2	0.9	0.5	0.3	0.0	0.0	0.0	0.0
			0.16	06:00 - 07:00	2.5	0.0	0.3	1.7	0.2	0.2	0.6	1.2	0.3	2.0	0.8	0.6	0.2	0.2	0.0	0.2
			0.16	07:00 - 08:00	4.8	0.0	0.6	3.3	0.5	0.5	1.2	2.6	0.6	3.9	1.7	1.2	0.3	0.2	0.2	0.2
			0.16	08:00 - 09:00	7.1	0.0	0.9	4.5	0.6	0.6	1.9	4.2	0.9	5.7	2.6	1.9	0.3	0.3	0.2	0.3
			0.16	09:00 - 10:00	6.1	0.0	0.8	4.0	0.5	0.6	1.6	3.4	0.8	4.8	2.2	1.6	0.3	0.3	0.2	0.2
			0.16	10:00 - 11:00	6.2	0.0	0.8	4.3	0.5	0.6	1.7	3.1	0.8	5.0	2.0	1.4	0.3	0.3	0.2	0.2
			0.16	11:00 - 12:00	6.4	0.0	0.8	4.7	0.5	0.6	1.7	3.0	0.8	5.0	2.0	1.4	0.3	0.3	0.2	0.2
			0.16	12:00 - 13:00	5.1	0.0	0.6	3.9	0.5	0.5	1.4	2.3	0.6	4.0	1.6	1.1	0.3	0.2	0.2	0.2
			0.16	13:00 - 14:00	5.1	0.0	0.6	4.0	0.5	0.5	1.4	2.2	0.6	4.0	1.4	1.1	0.3	0.2	0.2	0.2
			0.16	14:00 - 15:00	5.3	0.0	0.6	4.3	0.5	0.5	1.4	2.0	0.6	4.0	1.4	1.1	0.3	0.2	0.2	0.2
			0.16	15:00 - 16:00	6.7	0.0	0.8	5.6	0.5	0.6	1.9	2.3	0.8	5.1	1.7	1.2	0.3	0.3	0.2	0.2
			0.16	16:00 - 17:00	6.8	0.0	0.8	5.9	0.5	0.6	1.9	2.2	0.8	5.1	1.6	1.1	0.3	0.3	0.2	0.2
			0.16	17:00 - 18:00	8.2	0.0	0.9	7.5	0.6	0.8	2.3	2.3	0.9	6.2	1.9	1.4	0.3	0.3	0.3	0.2
			0.16	18:00 - 19:00	8.4	0.0	0.9	7.8	0.6	0.8	2.3	2.2	0.8	6.4	1.7	1.2	0.3	0.3	0.3	0.2
			0.16	19:00 - 20:00	8.2	0.0	0.9	7.5	0.6	0.8	2.3	2.3	0.8	6.4	1.9	1.2	0.3	0.3	0.3	0.2
			0.16	20:00 - 21:00	8.2	0.0	0.9	7.3	0.6	0.8	2.3	2.5	0.9	6.2	1.9	1.4	0.3	0.3	0.3	0.2
			0.16	21:00 - 22:00	6.7	0.0	0.8	5.9	0.5	0.6	1.9	2.2	0.8	5.1	1.6	1.2	0.3	0.3	0.2	0.2
			0.16	22:00 - 23:00	6.7	0.0	0.8	5.7	0.5	0.6	1.9	2.3	0.8	5.1	1.7	1.2	0.3	0.3	0.2	0.2
			0.16	23:00 - 00:00	5.3	0.0	0.6	4.3	0.5	0.5	1.4	1.9	0.6	4.0	1.4	0.9	0.3	0.2	0.2	0.2

Road No.	Road Name	Dir	Road Length (mile)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
26c	Sau Ming Road	SB	0.34	00:00 - 01:00	23.9	0.0	1.7	10.9	1.0	1.0	3.1	4.1	2.7	18.8	2.7	2.1	0.7	0.3	0.3	0.3
			0.34	01:00 - 02:00	18.1	0.0	1.4	8.2	0.7	0.7	2.1	3.1	2.1	14.0	2.1	1.7	0.3	0.3	0.3	0.3
			0.34	02:00 - 03:00	12.0	0.0	1.0	5.5	0.7	0.3	1.4	2.1	1.4	9.2	1.4	1.0	0.3	0.3	0.0	0.0
			0.34	03:00 - 04:00	12.0	0.0	1.0	5.1	0.7	0.3	1.4	2.4	1.4	9.6	1.4	1.0	0.3	0.3	0.0	0.0
			0.34	04:00 - 05:00	5.6	0.0	0.3	2.7	0.3	0.3	0.7	1.0	0.7	4.8	0.7	0.7	0.0	0.0	0.0	0.0
			0.34	05:00 - 06:00	5.6	0.0	0.3	2.7	0.3	0.3	0.7	1.4	0.7	4.8	0.7	0.7	0.0	0.0	0.0	0.0
			0.34	06:00 - 07:00	12.0	0.0	1.0	5.1	0.7	0.3	1.4	2.4	1.4	9.6	1.7	1.0	0.3	0.3	0.0	0.0
			0.34	07:00 - 08:00	23.6	0.0	2.1	10.3	1.4	1.0	2.4	5.1	3.1	18.8	3.4	2.4	0.3	0.3	0.3	0.3
			0.34	08:00 - 09:00	35.2	0.3	3.1	15.0	2.1	1.4	3.8	8.2	4.8	28.4	5.1	3.8	0.7	0.7	0.3	0.7
			0.34	09:00 - 10:00	29.4	0.3	2.4	12.6	1.7	1.0	3.1	6.5	3.8	23.6	4.1	3.1	0.7	0.3	0.3	0.3
			0.34	10:00 - 11:00	29.7	0.3	2.4	13.0	1.7	1.0	3.4	6.2	3.8	23.6	4.1	2.7	0.7	0.3	0.3	0.3
			0.34	11:00 - 12:00	29.7	0.0	2.4	13.0	1.4	1.0	3.4	5.8	3.8	23.6	3.8	2.7	0.7	0.3	0.3	0.3
			0.34	12:00 - 13:00	23.9	0.0	1.7	10.6	1.0	1.0	2.7	4.4	2.7	18.8	3.1	2.1	0.7	0.3	0.3	0.3
			0.34	13:00 - 14:00	23.9	0.0	1.7	10.6	1.0	1.0	3.1	4.1	2.7	18.8	3.1	2.1	0.7	0.3	0.3	0.3
			0.34	14:00 - 15:00	23.9	0.0	1.7	10.9	1.0	1.0	3.1	4.1	2.7	18.8	2.7	2.1	0.7	0.3	0.3	0.3
			0.34	15:00 - 16:00	30.1	0.0	2.1	13.7	1.4	1.4	3.8	4.8	3.4	23.2	3.4	2.4	0.7	0.3	0.3	0.3
			0.34	16:00 - 17:00	30.4	0.0	1.7	14.0	1.4	1.4	4.1	4.4	3.4	23.2	3.4	2.4	0.7	0.7	0.3	0.3
			0.34	17:00 - 18:00	36.6	0.0	2.1	16.7	1.4	1.7	4.8	5.1	3.8	28.0	4.1	2.7	0.7	0.7	0.3	0.3
			0.34	18:00 - 19:00	36.6	0.0	2.1	17.1	1.4	1.7	5.1	4.8	3.8	28.0	3.8	2.7	0.7	0.7	0.7	0.3
			0.34	19:00 - 20:00	36.6	0.0	2.1	17.1	1.4	1.7	5.1	4.8	3.8	28.0	4.1	2.7	0.7	0.7	0.3	0.3
			0.34	20:00 - 21:00	36.6	0.0	2.1	16.7	1.4	1.7	4.8	5.1	3.8	28.0	4.1	3.1	0.7	0.7	0.3	0.3
			0.34	21:00 - 22:00	30.4	0.0	1.7	14.0	1.4	1.4	4.1	4.4	3.4	23.2	3.4	2.4	0.7	0.7	0.3	0.3
			0.34	22:00 - 23:00	30.4	0.0	2.1	13.7	1.4	1.4	3.8	4.8	3.4	23.2	3.4	2.4	0.7	0.3	0.3	0.3
			0.34	23:00 - 00:00	24.3	0.0	1.7	10.9	1.0	1.0	3.1	4.1	2.7	18.8	2.7	2.1	0.7	0.3	0.3	0.3

Vehicle Miles Travelled

Road No.	Road Name	Dir	Road Length (mile)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
27	Hiu Kwong Street	NB	0.68	00:00 – 01:00	31.4	0.7	6.2	42.4	4.1	2.7	7.5	10.3	3.4	24.6	7.5	5.5	1.4	0.7	0.7	0.7
			0.68	01:00 – 02:00	23.9	0.7	4.8	30.8	3.4	2.1	5.5	7.5	2.7	19.1	5.5	4.1	0.7	0.7	0.7	0.7
			0.68	02:00 – 03:00	16.4	0.0	3.4	19.8	2.1	1.4	3.4	5.5	2.1	13.0	3.4	2.7	0.7	0.7	0.7	0.0
			0.68	03:00 – 04:00	17.1	0.0	3.4	19.8	2.1	1.4	3.4	5.5	2.1	13.7	3.4	2.7	0.7	0.7	0.7	0.7
			0.68	04:00 – 05:00	8.9	0.0	1.4	9.6	1.4	0.7	1.4	2.7	1.4	6.8	2.1	1.4	0.0	0.0	0.0	0.0
			0.68	05:00 – 06:00	8.9	0.0	1.4	9.6	1.4	0.7	1.4	2.7	1.4	6.8	2.1	1.4	0.0	0.0	0.0	0.0
			0.68	06:00 – 07:00	17.8	0.0	3.4	17.8	2.1	1.4	2.7	6.2	2.1	14.4	4.1	2.7	0.7	0.7	0.7	0.7
			0.68	07:00 – 08:00	36.9	0.7	6.8	34.9	4.8	2.1	6.2	12.3	4.8	29.4	7.5	5.5	1.4	0.7	0.7	0.7
			0.68	08:00 – 09:00	56.7	0.7	10.3	50.6	6.8	2.7	8.2	18.5	7.5	45.1	11.6	8.2	1.4	1.4	0.7	1.4
			0.68	09:00 – 10:00	45.6	0.7	8.9	43.7	5.5	2.7	7.5	15.0	6.2	36.9	9.6	6.8	1.4	1.4	0.7	0.7
			0.68	10:00 – 11:00	44.4	0.7	8.2	45.8	5.5	2.7	7.5	14.4	5.5	35.5	9.6	6.8	1.4	1.4	0.7	0.7
			0.68	11:00 – 12:00	43.1	0.7	8.2	47.8	5.5	2.7	8.2	13.7	5.5	34.2	9.6	6.8	1.4	1.4	0.7	0.7
			0.68	12:00 – 13:00	33.5	0.7	6.8	39.6	4.1	2.7	6.8	10.9	4.1	26.7	7.5	5.5	1.4	0.7	0.7	0.7
			0.68	13:00 – 14:00	32.1	0.7	6.2	41.7	4.1	2.7	7.5	10.3	4.1	25.3	7.5	5.5	1.4	0.7	0.7	0.7
			0.68	14:00 – 15:00	31.4	0.7	6.2	43.1	4.1	2.7	7.5	10.3	3.4	24.6	6.8	5.5	1.4	0.7	0.7	0.7
			0.68	15:00 – 16:00	37.6	0.7	7.5	56.0	4.8	3.4	10.3	11.6	4.1	29.4	8.9	6.2	2.1	1.4	1.4	0.7
			0.68	16:00 – 17:00	36.2	0.7	7.5	57.4	4.8	3.4	10.3	11.6	4.1	28.0	8.9	6.2	2.1	1.4	1.4	0.7
			0.68	17:00 – 18:00	41.7	0.7	8.9	71.8	5.5	4.8	13.0	13.0	4.1	32.1	10.3	7.5	2.1	1.4	1.4	0.7
			0.68	18:00 – 19:00	40.3	0.7	8.9	73.8	5.5	4.8	13.7	12.3	4.1	30.8	10.3	7.5	2.1	2.1	1.4	0.7
			0.68	19:00 – 20:00	41.7	0.7	8.9	72.5	5.5	4.8	13.0	13.0	4.1	31.4	10.3	7.5	2.1	1.4	1.4	0.7
			0.68	20:00 – 21:00	42.4	0.7	8.9	70.4	5.5	4.8	13.0	13.0	4.8	32.8	10.3	7.5	2.1	1.4	1.4	0.7
			0.68	21:00 – 22:00	36.2	0.7	7.5	57.4	4.8	3.4	10.3	11.6	4.1	28.0	8.9	6.2	2.1	1.4	1.4	0.7
			0.68	22:00 – 23:00	37.6	0.7	7.5	56.0	4.8	3.4	10.3	11.6	4.1	29.4	8.9	6.2	2.1	1.4	1.4	0.7
			0.68	23:00 – 00:00	30.8	0.7	6.2	43.7	4.1	2.7	7.5	9.6	3.4	23.9	6.8	5.5	1.4	1.4	0.7	0.7

Road No.	Road Name	Dir	Road Length (mile)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
28	Hiu Kwong Street	SB	0.68	00:00 – 01:00	51.9	0.7	9.6	62.2	6.2	2.7	7.5	10.3	6.2	41.0	7.5	5.5	1.4	0.7	0.7	0.7
			0.68	01:00 – 02:00	40.3	0.7	7.5	45.8	4.8	2.1	5.5	7.5	4.8	31.4	5.5	4.1	0.7	0.7	0.7	0.7
			0.68	02:00 – 03:00	28.0	0.7	4.8	30.1	3.4	1.4	3.4	5.5	3.4	21.9	3.4	2.7	0.7	0.7	0.7	0.0
			0.68	03:00 – 04:00	28.7	0.7	4.8	29.4	3.4	1.4	3.4	5.5	3.4	22.6	3.4	2.7	0.7	0.7	0.7	0.7
			0.68	04:00 – 05:00	15.0	0.0	2.7	14.4	1.4	0.7	1.4	2.7	2.1	11.6	2.1	1.4	0.0	0.0	0.0	0.0
			0.68	05:00 – 06:00	15.0	0.0	2.7	14.4	1.4	0.7	1.4	2.7	2.1	12.3	2.1	1.4	0.0	0.0	0.0	0.0
			0.68	06:00 – 07:00	31.4	0.7	5.5	26.0	3.4	1.4	2.7	6.2	4.1	25.3	4.1	2.7	0.7	0.7	0.7	0.7
			0.68	07:00 – 08:00	64.2	0.7	10.9	54.7	6.8	2.1	6.2	12.3	8.2	51.3	7.5	5.5	1.4	0.7	0.7	0.7
			0.68	08:00 – 09:00	98.4	1.4	17.1	80.7	10.9	2.7	8.2	18.5	13.0	79.3	11.6	8.2	1.4	1.4	0.7	1.4
			0.68	09:00 – 10:00	79.3	0.7	13.7	69.0	8.9	2.7	7.5	15.0	10.3	63.6	9.6	6.8	1.4	1.4	0.7	0.7
			0.68	10:00 – 11:00	76.6	0.7	13.0	71.1	8.2	2.7	7.5	14.4	9.6	60.8	9.6	6.8	1.4	1.4	0.7	0.7
			0.68	11:00 – 12:00	73.1	0.7	13.0	72.5	8.2	2.7	8.2	13.7	9.6	58.1	9.6	6.8	1.4	1.4	0.7	0.7
			0.68	12:00 – 13:00	56.0	0.7	10.3	59.5	6.2	2.7	6.8	10.9	6.8	44.4	7.5	5.5	1.4	0.7	0.7	0.7
			0.68	13:00 – 14:00	54.0	0.7	9.6	60.8	6.2	2.7	7.5	10.3	6.8	42.4	7.5	5.5	1.4	0.7	0.7	0.7
			0.68	14:00 – 15:00	51.3	0.7	9.6	62.2	6.2	2.7	7.5	10.3	6.2	40.3	6.8	5.5	1.4	0.7	0.7	0.7
			0.68	15:00 – 16:00	60.8	0.7	10.9	80.0	7.5	3.4	10.3	11.6	6.8	47.6	8.9	6.2	2.1	1.4	1.4	0.7
			0.68	16:00 – 17:00	58.1	0.7	10.9	82.0	6.8	3.4	10.3	11.6	6.2	45.1	8.9	6.2	2.1	1.4	1.4	0.7
			0.68	17:00 – 18:00	66.3	0.7	12.3	100.5	8.2	4.8	13.0	13.0	6.8	50.6	10.3	7.5	2.1	1.4	1.4	0.7
			0.68	18:00 – 19:00	62.2	0.7	12.3	102.5	7.5	4.8	13.7	12.3	6.2	47.2	10.3	7.5	2.1	2.1	1.4	0.7
			0.68	19:00 – 20:00	64.9	0.7	12.3	101.2	8.2	4.8	13.0	13.0	6.8	49.9	10.3	7.5	2.1	1.4	1.4	0.7
			0.68	20:00 – 21:00	67.7	0.7	13.0	99.1	8.2	4.8	13.0	13.0	7.5	51.9	10.3	7.5	2.1	1.4	1.4	0.7
			0.68	21:00 – 22:00	58.8	0.7	10.9	81.3	6.8	3.4	10.3	11.6	6.8	45.1	8.9	6.2	2.1	1.4	1.4	0.7
			0.68	22:00 – 23:00	60.8	0.7	10.9	80.0	7.5	3.4	10.3	11.6	6.8	47.2	8.9	6.2	2.1	1.4	1.4	0.7
			0.68	23:00 – 00:00	50.6	0.7	8.9	62.9	6.2	2.7	7.5	9.6	6.2	39.0	6.8	5.5	1.4	1.4	0.7	0.7

Road No.	Road Name	Dir	Road Length (mile)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
29	Hip Wo Street	NB	0.24	00:00 – 01:00	37.3	0.2	2.1	13.7	1.4	0.9	2.8	4.0	4.5	29.3	2.8	2.1	0.5	0.5	0.2	0.2
			0.24	01:00 – 02:00	28.6	0.0	1.7	10.2	0.9	0.7	2.1	3.1	3.3	22.4	2.1	1.4	0.5	0.2	0.2	0.2
			0.24	02:00 – 03:00	19.4	0.0	1.2	6.8	0.7	0.5	1.4	2.1	2.4	15.1	1.4	0.9	0.2	0.2	0.2	0.2
			0.24	03:00 – 04:00	19.6	0.0	1.2	6.6	0.7	0.5	1.4	2.1	2.4	15.6	1.4	0.9	0.2	0.2	0.2	0.2
			0.24	04:00 – 05:00	9.9	0.0	0.7	3.3	0.5	0.2	0.7	1.2	1.2	7.8	0.7	0.5	0.0	0.0	0.0	0.0
			0.24	05:00 – 06:00	10.2	0.0	0.7	3.3	0.5	0.2	0.7	1.2	1.2	8.0	0.7	0.5	0.0	0.0	0.0	0.0
			0.24	06:00 – 07:00	20.5	0.0	1.2	6.6	0.7	0.5	1.2	2.4	2.6	16.3	1.4	0.9	0.2	0.2	0.2	0.2
			0.24	07:00 – 08:00	41.6	0.2	2.6	13.0	1.7	0.7	2.4	4.7	5.4	33.3	2.8	2.1	0.5	0.2	0.2	0.2
			0.24	08:00 – 09:00	63.3	0.2	4.0	19.1	2.6	1.2	3.3	7.3	8.5	51.0	4.5	3.3	0.7	0.5	0.5	0.5
			0.24	09:00 – 10:00	51.7	0.2	3.3	16.1	2.1	0.9	2.8	5.9	6.8	41.3	3.8	2.6	0.5	0.5	0.2	0.5
			0.24	10:00 – 11:00	50.8	0.2	3.1	16.3	1.9	0.9	3.1	5.7	6.6	40.4	3.5	2.6	0.5	0.5	0.2	0.5
			0.24	11:00 – 12:00	49.6	0.2	3.1	16.5	1.9	1.2	3.3	5.4	6.1	39.4	3.5	2.6	0.7	0.5	0.5	0.2
			0.24	12:00 – 13:00	39.0	0.2	2.4	13.5	1.4	0.9	2.6	4.3	4.7	30.7	2.8	2.1	0.5	0.5	0.2	0.2
			0.24	13:00 – 14:00	36.0	0.2	2.1	13.7	1.4	0.9	2.8	4.0	4.5	29.8	2.8	2.1	0.5	0.5	0.2	0.2
			0.24	14:00 – 15:00	37.1	0.2	2.1	13.7	1.4	0.9	3.1	3.8	4.3	29.0	2.8	2.1	0.5	0.5	0.2	0.2
			0.24	15:00 – 16:00	45.3	0.2	2.4	17.5	1.7	1.4	4.0	4.7	5.2	35.2	3.5	2.6	0.7	0.5	0.5	0.2
			0.24	16:00 – 17:00	44.4	0.2	2.4	17.7	1.4	1.4	4.0	4.5	4.7	34.2	3.3	2.4	0.7	0.5	0.5	0.2
			0.24	17:00 – 18:00	51.9	0.2	2.6	21.3	1.7	1.7	5.2	5.2	5.4	39.9	4.0	2.8	0.9	0.7	0.5	0.2
			0.24	18:00 – 19:00	50.8	0.2	2.6	21.7	1.7	1.9	5.2	4.7	5.2	38.5	4.0	2.8	0.9	0.7	0.5	0.2
			0.24	19:00 – 20:00	51.7	0.2	2.6	21.5	1.7	1.9	5.2	5.0	5.4	39.4	4.0	2.8	0.9	0.7	0.5	0.2
			0.24	20:00 – 21:00	52.4	0.2	2.8	21.3	1.7	1.7	5.0	5.2	5.7	40.4	4.0	2.8	0.9	0.7	0.5	0.2
			0.24	21:00 – 22:00	44.6	0.2	2.4	17.5	1.4	1.4	4.0	4.5	5.0	34.5	3.3	2.4	0.7	0.5	0.5	0.2
			0.24	22:00 – 23:00	45.3	0.2	2.4	17.5	1.7	1.4	4.0	4.5	5.2	35.2	3.5	2.6	0.7	0.5	0.5	0.2
			0.24	23:00 – 00:00	36.6	0.2	2.1	13.9	1.4	0.9	3.1	3.8	4.3	28.6	2.8	2.1	0.5	0.5	0.2	0.2

Vehicle Miles Travelled

Road No.	Road Name	Dir	Road Length (mile)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
30	Hip Wo Street	SB	0.24	00:00 – 01:00	65.2	0.2	3.1	22.4	2.1	0.7	2.4	3.3	7.6	50.8	2.4	1.7	0.5	0.2	0.2	0.2
			0.24	01:00 – 02:00	48.6	0.2	2.4	16.1	1.4	0.5	1.7	2.6	5.7	38.0	1.9	1.2	0.2	0.2	0.2	0.2
			0.24	02:00 – 03:00	32.1	0.0	1.7	10.2	0.9	0.5	1.2	1.9	3.8	25.3	1.2	0.9	0.2	0.2	0.2	0.2
			0.24	03:00 – 04:00	31.9	0.0	1.7	9.7	0.9	0.5	1.2	1.9	3.8	25.0	1.2	0.9	0.2	0.2	0.2	0.0
			0.24	04:00 – 05:00	15.8	0.0	0.7	4.5	0.5	0.2	0.5	0.9	1.9	12.5	0.7	0.5	0.0	0.0	0.0	0.0
			0.24	05:00 – 06:00	15.6	0.0	0.7	4.3	0.5	0.2	0.5	0.9	1.9	12.5	0.7	0.5	0.0	0.0	0.0	0.0
			0.24	06:00 – 07:00	30.9	0.0	1.4	8.0	0.9	0.5	1.2	2.1	4.0	24.8	1.4	0.9	0.2	0.2	0.2	0.2
			0.24	07:00 – 08:00	61.4	0.2	2.8	14.9	1.9	0.7	2.1	4.7	8.0	49.1	2.8	2.1	0.5	0.2	0.2	0.2
			0.24	08:00 – 09:00	91.4	0.2	4.3	20.6	2.8	1.2	3.3	7.3	12.3	73.4	4.5	3.3	0.7	0.5	0.5	0.5
			0.24	09:00 – 10:00	77.0	0.2	3.8	19.4	2.4	0.9	2.8	5.7	10.2	61.6	3.5	2.8	0.5	0.5	0.2	0.5
			0.24	10:00 – 11:00	77.9	0.2	3.8	21.0	2.4	0.9	2.8	5.4	9.9	62.1	3.3	2.4	0.5	0.5	0.2	0.2
			0.24	11:00 – 12:00	78.9	0.2	3.8	22.9	2.4	0.9	2.8	5.0	9.7	62.3	3.3	2.4	0.5	0.5	0.2	0.2
			0.24	12:00 – 13:00	64.0	0.2	3.1	19.8	1.9	0.7	2.1	3.8	7.6	50.3	2.6	1.9	0.5	0.2	0.2	0.2
			0.24	13:00 – 14:00	64.7	0.2	3.1	21.3	2.1	0.7	2.4	3.5	7.6	50.5	2.4	1.7	0.5	0.2	0.2	0.2
			0.24	14:00 – 15:00	65.4	0.2	3.3	22.9	2.1	0.7	2.4	3.3	7.3	50.8	2.4	1.7	0.5	0.2	0.2	0.2
			0.24	15:00 – 16:00	82.9	0.2	4.0	30.5	2.6	0.9	2.8	3.8	9.2	64.0	2.6	1.9	0.5	0.5	0.2	0.2
			0.24	16:00 – 17:00	83.8	0.2	4.0	32.3	2.6	0.9	2.8	3.3	9.0	64.2	2.6	1.9	0.5	0.5	0.2	0.2
			0.24	17:00 – 18:00	101.5	0.5	5.0	41.1	3.3	1.2	3.5	3.5	10.6	77.7	2.8	2.1	0.7	0.5	0.5	0.2
			0.24	18:00 – 19:00	102.7	0.5	5.2	43.2	3.3	1.2	3.5	3.3	10.4	78.2	2.6	1.9	0.5	0.5	0.5	0.2
			0.24	19:00 – 20:00	102.0	0.5	5.0	41.6	3.3	1.2	3.5	3.5	10.6	77.7	2.8	2.1	0.5	0.5	0.5	0.2
			0.24	20:00 – 21:00	101.1	0.5	5.0	40.1	3.3	1.2	3.5	3.8	10.6	77.4	2.8	2.1	0.7	0.5	0.5	0.2
			0.24	21:00 – 22:00	83.6	0.2	4.0	32.1	2.6	0.9	2.8	3.3	9.0	64.2	2.6	1.9	0.5	0.5	0.2	0.2
			0.24	22:00 – 23:00	82.9	0.2	4.0	30.7	2.6	0.9	2.8	3.5	9.2	64.0	2.6	1.9	0.5	0.5	0.2	0.2
			0.24	23:00 – 00:00	65.9	0.2	3.3	23.6	2.1	0.7	2.4	3.1	7.3	51.0	2.1	1.7	0.5	0.2	0.2	0.2

Road No.	Road Name	Dir	Road Length (mile)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
53	Tsui Ping Road	NB	0.42	00:00 – 01:00	66.8	0.4	3.8	24.5	2.5	1.7	5.1	7.2	8.0	52.4	5.1	3.8	0.8	0.8	0.4	0.4
			0.42	01:00 – 02:00	51.1	0.0	3.0	18.2	1.7	1.3	3.8	5.5	5.9	40.1	3.8	2.5	0.8	0.4	0.4	0.4
			0.42	02:00 – 03:00	34.6	0.0	2.1	12.3	1.3	0.8	2.5	3.8	4.2	27.0	2.5	1.7	0.4	0.4	0.4	0.4
			0.42	03:00 – 04:00	35.1	0.0	2.1	11.8	1.3	0.8	2.5	3.8	4.2	27.9	2.5	1.7	0.4	0.4	0.4	0.4
			0.42	04:00 – 05:00	17.7	0.0	1.3	5.9	0.8	0.4	1.3	2.1	2.1	13.9	1.3	0.8	0.0	0.0	0.0	0.0
			0.42	05:00 – 06:00	18.2	0.0	1.3	5.9	0.8	0.4	1.3	2.1	2.1	14.4	1.3	0.8	0.0	0.0	0.0	0.0
			0.42	06:00 – 07:00	36.8	0.0	2.1	11.8	1.3	0.8	2.1	4.2	4.6	29.2	2.5	1.7	0.4	0.4	0.4	0.4
			0.42	07:00 – 08:00	74.4	0.4	4.6	23.2	3.0	1.3	4.2	6.5	9.7	59.6	5.1	3.8	0.8	0.4	0.4	0.4
			0.42	08:00 – 09:00	113.2	0.4	7.2	34.2	4.6	2.1	5.9	13.1	15.2	91.3	8.0	5.9	1.3	0.8	0.8	0.8
			0.42	09:00 – 10:00	92.5	0.4	5.9	28.7	3.8	1.7	5.1	10.6	12.3	73.9	6.8	4.6	0.8	0.8	0.4	0.8
			0.42	10:00 – 11:00	90.8	0.4	5.5	29.2	3.4	1.7	5.5	10.1	11.8	72.3	6.3	4.6	0.8	0.8	0.4	0.8
			0.42	11:00 – 12:00	88.7	0.4	5.5	29.6	3.4	2.1	5.9	9.7	11.0	70.6	6.3	4.6	1.3	0.8	0.8	0.4
			0.42	12:00 – 13:00	69.7	0.4	4.2	24.1	2.5	1.7	4.6	7.6	8.5	54.9	5.1	3.8	0.8	0.6	0.4	0.4
			0.42	13:00 – 14:00	68.0	0.4	3.8	24.5	2.5	1.7	5.1	7.2	8.0	53.2	5.1	3.8	0.0	0.6	0.4	0.4
			0.42	14:00 – 15:00	66.3	0.4	3.8	24.5	2.5	1.7	5.5	6.8	7.6	52.0	5.1	3.8	0.8	0.8	0.4	0.4
			0.42	15:00 – 16:00	81.1	0.4	4.2	31.3	3.0	2.5	7.2	8.5	9.3	63.0	6.3	4.6	1.3	0.8	0.8	0.4
			0.42	16:00 – 17:00	79.4	0.4	4.2	31.7	2.5	2.5	7.2	8.0	8.5	61.3	5.9	4.2	1.3	0.8	0.8	0.4
			0.42	17:00 – 18:00	93.0	0.4	4.6	36.0	3.0	3.0	9.3	9.3	9.7	71.4	7.2	5.1	1.7	1.3	0.8	0.4
			0.42	18:00 – 19:00	90.8	0.4	4.6	36.9	3.0	3.4	9.3	8.5	9.3	68.9	7.2	5.1	1.7	1.3	0.8	0.4
			0.42	19:00 – 20:00	92.5	0.4	4.6	36.5	3.0	3.4	9.3	8.9	9.7	70.6	7.2	5.1	1.7	1.3	0.8	0.4
			0.42	20:00 – 21:00	93.8	0.4	5.1	38.0	3.0	3.0	8.9	9.3	10.1	72.3	7.2	5.1	1.7	1.3	0.8	0.4
			0.42	21:00 – 22:00	79.9	0.4	4.2	31.3	2.5	2.5	7.2	8.0	8.9	61.7	5.9	4.2	1.3	0.8	0.8	0.4
			0.42	22:00 – 23:00	81.1	0.4	4.2	31.3	3.0	2.5	7.2	8.0	9.3	63.0	6.3	4.6	1.3	0.8	0.8	0.4
			0.42	23:00 – 00:00	65.9	0.4	3.8	24.9	2.5	1.7	5.5	6.8	7.6	51.1	5.1	3.8	0.8	0.8	0.4	0.4

Road No.	Road Name	Dir	Road Length (mile)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
54	Tsui Ping Road	SB	0.42	00:00 – 01:00	116.6	0.4	5.5	40.1	3.8	1.3	4.2	5.9	13.5	90.8	4.2	3.0	0.8	0.4	0.4	0.4
			0.42	01:00 – 02:00	87.0	0.4	4.2	28.7	2.5	0.8	3.0	4.6	10.1	68.0	3.4	2.1	0.4	0.4	0.4	0.4
			0.42	02:00 – 03:00	57.5	0.0	3.0	18.2	1.7	0.8	2.1	3.4	6.8	45.2	2.1	1.7	0.4	0.4	0.4	0.0
			0.42	03:00 – 04:00	57.0	0.0	3.0	17.3	1.7	0.8	2.1	3.4	6.0	44.6	2.1	1.7	0.4	0.4	0.4	0.4
			0.42	04:00 – 05:00	28.3	0.0	1.3	8.0	0.8	0.4	0.8	1.7	3.4	22.4	1.3	0.8	0.0	0.0	0.0	0.0
			0.42	05:00 – 06:00	27.9	0.0	1.3	7.6	0.8	0.4	0.8	1.7	3.4	22.4	1.3	0.8	0.0	0.0	0.0	0.0
			0.42	06:00 – 07:00	55.4	0.0	2.5	14.4	1.7	0.8	2.1	3.8	7.2	44.4	2.5	1.7	0.4	0.4	0.4	0.4
			0.42	07:00 – 08:00	109.9	0.4	5.1	26.6	3.4	1.3	3.8	8.5	14.4	87.9	5.1	3.8	0.8	0.4	0.4	0.4
			0.42	08:00 – 09:00	163.5	0.4	7.6	37.2	5.1	2.1	5.9	13.1	22.0	131.4	8.0	5.9	1.3	0.8	0.8	0.8
			0.42	09:00 – 10:00	137.7	0.4	6.8	34.6	4.2	1.7	5.1	10.1	18.2	110.3	6.3	4.6	0.8	0.8	0.4	0.8
			0.42	10:00 – 11:00	139.4	0.4	6.8	37.6	4.2	1.7	5.1	9.7	17.7	111.1	5.9	4.2	0.8	0.8	0.4	0.4
			0.42	11:00 – 12:00	141.1	0.4	6.8	41.0	4.2	1.7	5.1	8.9	17.3	111.5	5.9	4.2	0.8	0.8	0.4	0.4
			0.42	12:00 – 13:00	114.5	0.4	5.5	35.5	3.4	1.3	3.8	6.8	13.5	90.0	4.6	3.4	0.8	0.4	0.4	0.4
			0.42	13:00 – 14:00	115.8	0.4	5.5	36.0	3.8	1.3	4.2	6.3	13.5	90.4	4.2	3.0	0.8	0.4	0.4	0.4
			0.42	14:00 – 15:00	117.0	0.4	5.9	41.0	3.8	1.3	4.2	5.9	13.1	90.8	4.2	3.0	0.8	0.4	0.4	0.4
			0.42	15:00 – 16:00	148.3	0.4	7.2	54.5	4.6	1.7	5.1	6.8	16.5	114.5	4.6	3.4	0.8	0.8	0.4	0.4
			0.42	16:00 – 17:00	150.0	0.4	7.2	57.9	4.6	1.7	5.1	5.9	16.1	114.9	4.6	3.4	0.8	0.8	0.4	0.4
			0.42	17:00 – 18:00	181.7	0.8	8.9	73.5	5.9	2.1	6.3	6.3	19.0	139.0	5.1	3.8	1.3	0.8	0.8	0.4
			0.42	18:00 – 19:00	183.8	0.8	9.3	77.3	5.9	2.1	6.3	5.9	18.8	139.9	4.6	3.4	0.8	0.8	0.8	0.4
			0.42	19:00 – 20:00	182.5	0.8	8.9	74.4	5.9	2.1	6.3	6.3	19.0	139.0	5.1	3.8	0.8	0.8	0.8	0.4
			0.42	20:00 – 21:00	180.8	0.8	8.9	71.8	5.9	2.1	6.3	6.8	19.0	138.6	5.1	3.8	1.3	0.8	0.8	0.4
			0.42	21:00 – 22:00	149.6	0.4	7.2	57.5	4.6	1.7	5.1	5.9	16.1	114.9	4.6	3.4	0.8	0.8	0.4	0.4
			0.42	22:00 – 23:00	148.3	0.4	7.2	54.9	4.6	1.7	5.1	6.3	16.5	114.5	4.6	3.4	0.8	0.8	0.4	0.4
			0.42	23:00 – 00:00	117.9	0.4	5.9	42.3	3.8	1.3	4.2	5.5	13.1	91.3	3.8	3.0	0.8	0.4	0.4	0.4

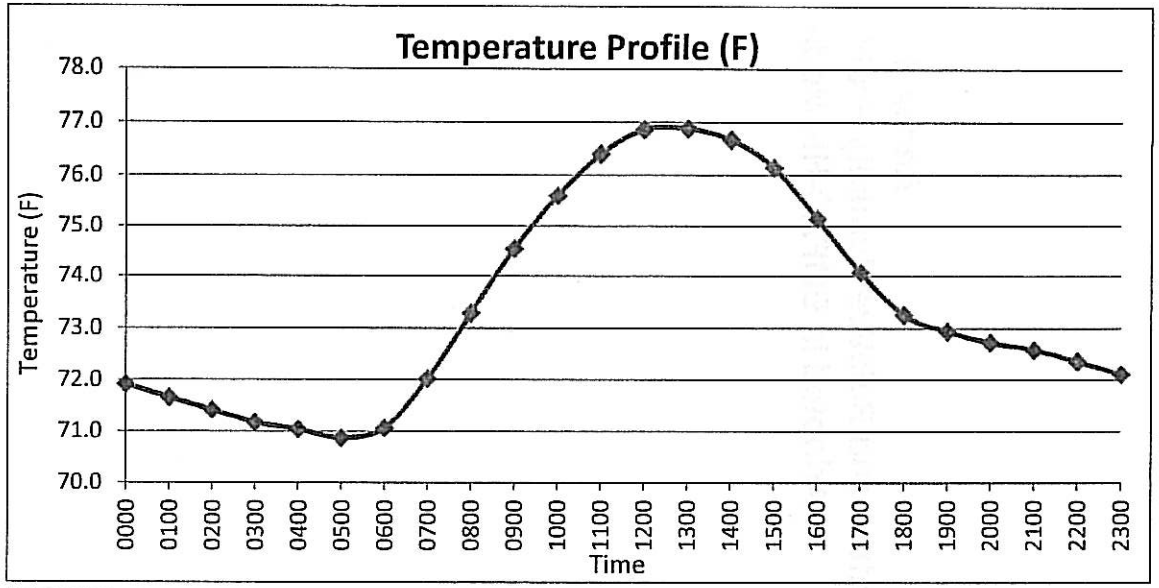
Vehicle Miles Travelled

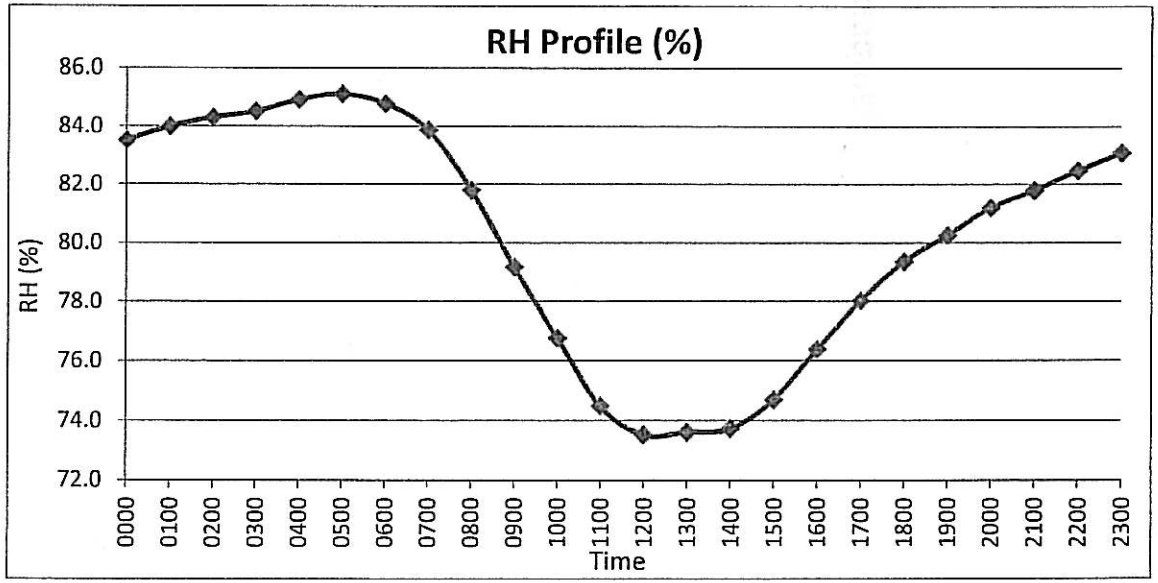
Road No.	Road Name	Dir	Road Length (mile)	Hour	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
ALL	All roads with Designed Speed equal to 50km/hr		7.03	00:00 - 01:00	822.3	5.1	73.1	473.8	47.6	28.9	82.5	114.2	95.2	642.1	80.9	59.4	14.3	10.5	8.2	7.7
			7.03	01:00 - 02:00	619.2	4.1	56.5	352.2	35.7	20.6	59.6	88.2	72.2	485.4	61.8	44.0	10.5	8.1	7.6	6.8
			7.03	02:00 - 03:00	414.9	2.1	39.5	233.5	25.0	14.0	39.8	62.1	50.2	325.3	41.4	29.6	7.7	6.6	5.1	2.8
			7.03	03:00 - 04:00	415.8	2.1	40.3	230.3	25.7	13.8	38.9	64.1	50.2	328.1	41.8	30.2	7.7	6.6	5.2	4.8
			7.03	04:00 - 05:00	208.8	0.3	20.2	114.9	14.0	7.6	16.5	33.0	26.2	164.5	22.0	15.3	1.0	1.0	0.9	0.9
			7.03	05:00 - 06:00	208.7	0.3	20.8	114.3	14.1	7.6	17.7	34.2	26.2	166.6	22.4	15.9	1.0	1.0	0.9	1.0
			7.03	06:00 - 07:00	419.4	2.2	42.7	225.6	27.8	13.2	35.7	71.0	54.2	335.1	45.6	31.2	7.7	6.2	5.1	5.4
			7.03	07:00 - 08:00	841.6	5.8	89.1	445.4	57.6	23.9	69.6	146.7	110.3	674.2	90.8	66.6	14.3	9.0	8.3	8.8
			7.03	08:00 - 09:00	1266.5	9.6	138.1	661.9	89.6	35.6	102.2	226.9	169.5	1017.9	140.8	101.7	19.3	15.7	11.8	15.2
			7.03	09:00 - 10:00	1050.2	7.9	111.3	558.0	71.5	30.8	88.0	180.6	138.7	840.6	113.9	82.3	16.6	14.0	9.0	11.2
			7.03	10:00 - 11:00	1046.5	7.3	105.5	564.6	68.3	31.1	91.1	172.5	133.3	832.5	110.6	79.7	16.6	14.1	9.2	9.9
			7.03	11:00 - 12:00	1041.0	6.2	103.3	572.2	65.5	33.3	95.0	163.9	129.8	824.4	109.4	78.1	17.2	14.0	9.7	9.2
			7.03	12:00 - 13:00	830.0	5.7	78.9	463.4	49.7	27.7	77.7	125.7	99.6	654.1	84.7	61.7	15.0	10.1	8.2	8.1
			7.03	13:00 - 14:00	825.8	5.5	74.7	469.1	49.3	26.1	80.8	118.3	97.9	646.2	82.6	59.9	14.8	10.5	8.3	7.8
			7.03	14:00 - 15:00	821.4	5.1	72.1	474.6	47.1	26.9	83.2	112.5	93.6	640.0	78.9	58.9	14.3	10.5	8.2	7.7
			7.03	15:00 - 16:00	1022.9	5.5	84.7	601.1	55.6	37.3	108.2	131.4	114.1	791.9	96.9	69.6	19.0	14.0	11.8	8.2
			7.03	16:00 - 17:00	1018.5	5.1	81.2	608.5	52.7	37.6	110.0	123.9	109.7	783.6	94.0	67.6	19.2	14.3	11.5	8.1
			7.03	17:00 - 18:00	1216.4	5.8	91.9	736.0	59.5	47.4	136.4	137.6	126.9	930.6	109.5	79.4	23.1	17.3	13.8	8.3
			7.03	18:00 - 19:00	1210.1	5.7	89.2	746.6	56.1	48.7	139.3	127.8	122.9	921.0	105.5	76.9	22.5	16.5	15.1	8.1
			7.03	19:00 - 20:00	1215.3	5.7	90.7	740.5	59.2	48.1	137.4	134.9	126.1	927.4	106.4	78.6	22.3	17.2	13.8	8.3
			7.03	20:00 - 21:00	1218.1	5.8	95.1	733.6	60.6	47.4	134.6	141.7	129.3	935.1	110.5	79.7	23.1	17.2	13.8	8.3
			7.03	21:00 - 22:00	1019.8	5.1	81.8	607.0	52.6	37.8	109.1	124.5	111.0	784.9	94.0	67.8	19.2	14.3	11.5	8.1
			7.03	22:00 - 23:00	1022.6	5.1	84.6	602.0	55.1	37.3	108.3	129.5	113.8	790.8	96.3	69.5	19.0	14.0	11.9	8.2
			7.03	23:00 - 00:00	820.8	5.1	70.4	477.6	46.9	28.9	84.3	109.4	93.1	636.7	78.0	58.6	14.4	11.8	8.2	7.7

Annex 4-4:
Comparison between EMFAC-HK Modelling result by using EIAR and Project Adopted Approach (in CD-Rom)

Annex 4-5:
Temperature and Relative Humidity Profile Adopted in EMFAC-HK Model

Time	Annual Average	
	Temperature (F)	RH (%)
0000	71.9	83.5
0100	71.7	84.0
0200	71.4	84.3
0300	71.2	84.5
0400	71.0	84.9
0500	70.9	85.1
0600	71.1	84.8
0700	72.0	83.9
0800	73.3	81.8
0900	74.5	79.2
1000	75.6	76.8
1100	76.4	74.5
1200	76.9	73.5
1300	76.9	73.6
1400	76.7	73.7
1500	76.2	74.7
1600	75.1	76.4
1700	74.1	78.0
1800	73.3	79.4
1900	72.9	80.3
2000	72.7	81.2
2100	72.6	81.8
2200	72.4	82.5
2300	72.1	83.1





Annex 4-6:
Forecast Speed Profile Adopted in EMFAC-HK Model

Speed Profile

08:00 ~ 09:00	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
Road group with District Distributor																
Flow Speed 0-5 mph (%)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Flow Speed 5-10 mph (%)	13.92%	4.93%	6.09%	6.24%	6.28%	6.72%	6.55%	6.54%	13.98%	13.91%	6.47%	6.59%	7.33%	6.18%	7.88%	6.44%
Flow Speed 10-15 mph (%)	23.85%	18.80%	19.96%	20.05%	19.85%	22.97%	22.70%	22.61%	23.90%	23.88%	22.36%	22.75%	23.10%	21.63%	24.16%	21.91%
Flow Speed 15-20 mph (%)	62.23%	76.27%	73.95%	73.71%	73.87%	70.31%	70.75%	70.85%	62.12%	62.21%	71.16%	70.66%	69.57%	72.19%	67.96%	71.65%
Flow Speed 20-25 mph (%)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Flow Speed 25-30 mph (%)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Flow Speed 30-35 mph (%)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Flow Speed 35-40 mph (%)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Flow Speed 40-45 mph (%)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Flow Speed 45-50 mph (%)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

18:00 ~ 19:00	PC	LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
Road group with District Distributor																
Flow Speed 0-5 mph (%)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Flow Speed 5-10 mph (%)	15.19%	14.80%	10.42%	10.36%	10.55%	4.34%	4.55%	4.63%	15.12%	15.19%	4.40%	4.40%	3.76%	4.58%	5.59%	5.20%
Flow Speed 10-15 mph (%)	3.52%	0.00%	0.00%	0.00%	0.00%	2.25%	2.36%	2.35%	3.56%	3.53%	2.59%	2.13%	2.43%	1.48%	1.81%	3.36%
Flow Speed 15-20 mph (%)	81.29%	85.20%	89.58%	89.64%	89.45%	93.41%	93.09%	93.02%	81.32%	81.28%	93.00%	93.47%	93.81%	93.94%	92.60%	91.44%
Flow Speed 20-25 mph (%)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Flow Speed 25-30 mph (%)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Flow Speed 30-35 mph (%)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Flow Speed 35-40 mph (%)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Flow Speed 40-45 mph (%)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Flow Speed 45-50 mph (%)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Annex 4-7:
Vehicular Emission Factor for Criteria Air Pollutant

Max Emissions Factor in g/veh-mile (for particular vehicle type within each hour out of 24 hours)

Max EF	Vehicle Type															
	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
NOx	0.20	1.44	0.39	0.21	3.15	5.95	7.43	6.03	1.12	0.41	0.19	0.23	2.87	4.81	5.73	4.28
RSP	0.04	0.72	0.20	0.20	0.42	0.67	0.58	0.31	0.13	0.10	0.15	0.28	0.25	0.51	0.44	0.00

Road No.	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
7	00:00 ~ 01:00	239	33%	0%	2%	13%	1%	2%	4%	6%	4%	26%	4%	3%	1%	0%	0%	0%
	01:00 ~ 02:00	184	33%	0%	2%	13%	1%	2%	4%	6%	4%	26%	4%	3%	1%	1%	1%	1%
	02:00 ~ 03:00	129	33%	0%	2%	12%	2%	2%	4%	5%	4%	26%	4%	3%	1%	1%	1%	0%
	03:00 ~ 04:00	133	34%	0%	2%	11%	2%	2%	4%	6%	5%	26%	4%	3%	1%	1%	1%	0%
	04:00 ~ 05:00	66	35%	0%	2%	12%	2%	2%	3%	6%	5%	27%	5%	3%	0%	0%	0%	0%
	05:00 ~ 06:00	68	35%	0%	1%	12%	1%	1%	3%	6%	4%	28%	4%	3%	0%	0%	0%	0%
	06:00 ~ 07:00	145	34%	0%	2%	10%	1%	1%	3%	6%	5%	28%	3%	3%	1%	1%	1%	1%
	07:00 ~ 08:00	293	35%	0%	2%	10%	1%	1%	3%	6%	5%	28%	4%	3%	1%	0%	0%	0%
	08:00 ~ 09:00	450	36%	0%	2%	10%	1%	1%	3%	6%	5%	29%	4%	3%	0%	0%	0%	0%
	09:00 ~ 10:00	363	35%	0%	2%	10%	1%	1%	3%	6%	5%	28%	4%	3%	1%	1%	0%	0%
	10:00 ~ 11:00	350	35%	0%	2%	11%	1%	1%	3%	6%	5%	28%	4%	3%	1%	1%	0%	0%
	11:00 ~ 12:00	334	34%	0%	2%	11%	1%	1%	4%	6%	4%	27%	4%	3%	1%	1%	0%	0%
	12:00 ~ 13:00	256	34%	0%	2%	12%	1%	1%	4%	6%	4%	27%	4%	3%	1%	0%	0%	0%
	13:00 ~ 14:00	245	33%	0%	2%	13%	1%	1%	4%	6%	4%	27%	4%	3%	1%	0%	0%	0%
	14:00 ~ 15:00	236	33%	0%	2%	14%	1%	2%	4%	6%	4%	25%	4%	3%	1%	0%	0%	0%
	15:00 ~ 16:00	281	32%	0%	2%	14%	1%	2%	5%	6%	4%	25%	4%	3%	1%	1%	0%	0%
	16:00 ~ 17:00	268	31%	0%	2%	15%	1%	2%	5%	6%	3%	24%	4%	3%	1%	1%	0%	0%
	17:00 ~ 18:00	306	30%	0%	2%	16%	1%	2%	6%	6%	3%	24%	5%	3%	1%	1%	1%	0%
	18:00 ~ 19:00	290	30%	0%	2%	17%	1%	2%	6%	6%	3%	22%	4%	3%	1%	1%	1%	0%
	19:00 ~ 20:00	302	30%	0%	2%	17%	1%	2%	6%	6%	3%	23%	4%	3%	1%	1%	1%	0%
	20:00 ~ 21:00	314	31%	0%	2%	16%	1%	2%	5%	6%	4%	24%	4%	3%	1%	1%	1%	0%
	21:00 ~ 22:00	271	31%	0%	2%	15%	1%	2%	5%	6%	4%	24%	4%	3%	1%	1%	0%	0%
	22:00 ~ 23:00	280	32%	0%	2%	14%	1%	2%	5%	6%	4%	25%	4%	3%	1%	1%	0%	0%
	23:00 ~ 00:00	232	32%	0%	2%	14%	1%	2%	4%	6%	4%	25%	4%	3%	1%	0%	0%	0%
Max		450	36%	0%	2%	17%	2%	2%	6%	6%	5%	29%	5%	3%	1%	1%	1%	1%

Composite Emission Factor

Hour	NOx	RSP
00:00 ~ 01:00	1.15	0.15
01:00 ~ 02:00	1.14	0.15
02:00 ~ 03:00	1.13	0.15
03:00 ~ 04:00	1.15	0.15
04:00 ~ 05:00	1.01	0.14
05:00 ~ 06:00	0.99	0.14
06:00 ~ 07:00	1.11	0.14
07:00 ~ 08:00	1.03	0.14
08:00 ~ 09:00	1.01	0.14
09:00 ~ 10:00	1.05	0.14
10:00 ~ 11:00	1.06	0.14
11:00 ~ 12:00	1.09	0.14
12:00 ~ 13:00	1.10	0.15
13:00 ~ 14:00	1.11	0.15
14:00 ~ 15:00	1.16	0.15
15:00 ~ 16:00	1.19	0.16
16:00 ~ 17:00	1.23	0.16
17:00 ~ 18:00	1.27	0.17
18:00 ~ 19:00	1.30	0.17
19:00 ~ 20:00	1.28	0.17
20:00 ~ 21:00	1.26	0.17
21:00 ~ 22:00	1.23	0.16
22:00 ~ 23:00	1.19	0.16
23:00 ~ 00:00	1.15	0.15
Max	1.30	0.17

Remark:

1) The max EF for each vehicle type can be referred to Table MC1, MC2, TAXI1 and TAXI2 for this road

2) Under an extreme worst case scenario, the max composite EF of each road is selected to be the max hourly composite EF calculated by the max EF for each vehicle type by the following equation:
Composite Hourly Emission Factor (in g/veh-mile) = {% of PC x max EF in g/veh-mile of PC} + {% of LGV(3) x max EF in g/veh-mile of LGV(3)} + {% of LGV(4) x max EF in g/veh-mile of LGV(4)} + {% of PLB x max EF in g/veh-mile of PLB} + ...}

3) Max composite EF and max traffic flow are used to predict the air pollutant concentration from vehicle emission

Max Emissions Factor in g/veh-mile (for particular vehicle type within each hour out of 24 hours)

Max EF	Vehicle Type															
	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
NOx	0.20	1.41	0.39	0.21	3.15	5.95	7.13	6.03	1.12	0.41	0.19	0.23	2.87	4.81	5.73	4.28
RSP	0.01	0.72	0.20	0.20	0.42	0.67	0.58	0.31	0.13	0.10	0.15	0.28	0.25	0.51	0.44	0.00

Road No.	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
8	00:00 ~ 01:00	289	35%	0%	2%	12%	1%	1%	4%	6%	4%	27%	4%	3%	1%	1%	0%	0%
	01:00 ~ 02:00	221	35%	0%	2%	11%	1%	1%	4%	5%	4%	28%	4%	3%	1%	0%	0%	0%
	02:00 ~ 03:00	153	35%	0%	2%	11%	1%	1%	3%	5%	5%	27%	4%	3%	1%	1%	1%	1%
	03:00 ~ 04:00	157	35%	0%	2%	11%	1%	1%	3%	6%	4%	27%	4%	3%	1%	1%	1%	1%
	04:00 ~ 05:00	80	35%	0%	3%	11%	1%	1%	4%	6%	5%	28%	4%	3%	0%	0%	0%	0%
	05:00 ~ 06:00	82	35%	0%	2%	11%	1%	1%	4%	6%	5%	28%	4%	2%	0%	0%	0%	0%
	06:00 ~ 07:00	167	35%	0%	2%	10%	1%	1%	3%	6%	5%	28%	4%	2%	1%	1%	1%	1%
	07:00 ~ 08:00	337	36%	0%	2%	10%	1%	1%	3%	6%	5%	29%	4%	3%	1%	0%	0%	0%
	08:00 ~ 09:00	520	36%	0%	2%	10%	1%	1%	3%	6%	5%	28%	4%	3%	1%	0%	0%	0%
	09:00 ~ 10:00	422	36%	0%	2%	10%	1%	1%	3%	6%	5%	28%	4%	3%	0%	0%	0%	0%
	10:00 ~ 11:00	407	35%	0%	2%	11%	1%	1%	3%	6%	5%	28%	4%	3%	0%	0%	0%	0%
	11:00 ~ 12:00	397	35%	0%	2%	11%	1%	1%	3%	6%	5%	28%	4%	3%	1%	1%	0%	0%
	12:00 ~ 13:00	306	35%	0%	2%	11%	1%	1%	4%	6%	4%	28%	4%	3%	1%	0%	0%	0%
	13:00 ~ 14:00	296	35%	0%	2%	11%	1%	1%	4%	5%	4%	27%	4%	3%	1%	1%	0%	0%
	14:00 ~ 15:00	286	35%	0%	2%	12%	1%	1%	4%	5%	4%	27%	4%	3%	1%	1%	0%	0%
	15:00 ~ 16:00	345	34%	0%	2%	12%	1%	1%	4%	5%	4%	27%	4%	3%	1%	1%	1%	0%
	16:00 ~ 17:00	334	34%	0%	2%	13%	1%	1%	5%	5%	4%	26%	4%	3%	1%	1%	1%	0%
	17:00 ~ 18:00	382	34%	0%	2%	13%	1%	2%	5%	5%	4%	26%	4%	3%	1%	1%	1%	0%
	18:00 ~ 19:00	370	33%	0%	2%	13%	1%	2%	5%	5%	4%	25%	4%	3%	1%	1%	1%	0%
	19:00 ~ 20:00	378	34%	0%	2%	13%	1%	2%	5%	5%	3%	26%	4%	3%	1%	1%	1%	0%
	20:00 ~ 21:00	390	34%	0%	2%	13%	1%	2%	5%	5%	4%	26%	4%	3%	1%	1%	1%	0%
	21:00 ~ 22:00	335	34%	0%	2%	13%	1%	1%	4%	5%	4%	26%	4%	3%	1%	1%	1%	0%
	22:00 ~ 23:00	343	34%	0%	2%	12%	1%	1%	4%	5%	4%	27%	4%	3%	1%	1%	1%	0%
	23:00 ~ 00:00	282	34%	0%	2%	12%	1%	1%	4%	5%	4%	27%	4%	3%	1%	1%	0%	0%
Max		520	36%	0%	3%	13%	1%	2%	5%	6%	5%	29%	4%	3%	1%	1%	1%	1%

Composite Emission Factor

Hour	NOx	RSP
00:00 ~ 01:00	1.12	0.15
01:00 ~ 02:00	1.08	0.14
02:00 ~ 03:00	1.07	0.14
03:00 ~ 04:00	1.09	0.14
04:00 ~ 05:00	1.05	0.14
05:00 ~ 06:00	1.04	0.14
06:00 ~ 07:00	1.08	0.14
07:00 ~ 08:00	0.99	0.13
08:00 ~ 09:00	1.01	0.14
09:00 ~ 10:00	1.01	0.14
10:00 ~ 11:00	1.02	0.14
11:00 ~ 12:00	1.04	0.14
12:00 ~ 13:00	1.06	0.14
13:00 ~ 14:00	1.08	0.14
14:00 ~ 15:00	1.10	0.15
15:00 ~ 16:00	1.13	0.15
16:00 ~ 17:00	1.15	0.15
17:00 ~ 18:00	1.16	0.15
18:00 ~ 19:00	1.20	0.16
19:00 ~ 20:00	1.17	0.15
20:00 ~ 21:00	1.16	0.15
21:00 ~ 22:00	1.13	0.15
22:00 ~ 23:00	1.13	0.15
23:00 ~ 00:00	1.11	0.15
Max	1.20	0.16

Remark:

1) The max EF for each vehicle type can be referred to Table MC1, MC2, TAXI1 and TAXI2 for this road

2) Under an extreme worst case scenario, the max composite EF of each road is selected to be the max hourly composite EF calculated by the max EF for each vehicle type by the following equation:

Composite Hourly Emission Factor (in g/veh-mile) = [% of PC* x max EF in g/veh-mile of PC*) + (% of LGV(3) x max EF in g/veh-mile of LGV(3)) + (% of LGV(4) x max EF in g/veh-mile of LGV(4)) + (% of PLB x max EF in g/veh-mile of PLB) + ...]

3) Max composite EF and max traffic flow are used to predict the air pollutant concentration from vehicle emission

Max Emissions Factor in g/veh-mile (for particular vehicle type within each hour out of 24 hours)

Max EF	Vehicle Type															
	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
NOx	0.20	1.41	0.39	0.21	3.15	5.95	7.13	6.03	1.12	0.41	0.19	0.23	2.87	4.81	5.73	4.28
RSP	0.04	0.72	0.20	0.20	0.42	0.67	0.58	0.51	0.13	0.10	0.15	0.28	0.25	0.51	0.44	0.00

Road No.	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
9	00:00 ~ 01:00	168	44%	0%	0%	0%	0%	1%	4%	4%	5%	35%	3%	2%	1%	1%	1%	0%
	01:00 ~ 02:00	124	44%	0%	0%	0%	0%	1%	3%	5%	5%	35%	3%	2%	1%	1%	0%	0%
	02:00 ~ 03:00	83	45%	0%	0%	0%	0%	1%	4%	5%	5%	35%	4%	2%	0%	0%	0%	0%
	03:00 ~ 04:00	80	45%	0%	0%	0%	0%	1%	3%	5%	5%	35%	4%	3%	0%	0%	0%	0%
	04:00 ~ 05:00	39	46%	0%	0%	0%	0%	0%	3%	5%	5%	36%	3%	3%	0%	0%	0%	0%
	05:00 ~ 06:00	39	46%	0%	0%	0%	0%	0%	3%	5%	5%	36%	3%	3%	0%	0%	0%	0%
	06:00 ~ 07:00	80	44%	0%	0%	0%	0%	1%	3%	5%	6%	35%	4%	3%	0%	0%	0%	0%
	07:00 ~ 08:00	163	43%	0%	0%	0%	0%	1%	2%	6%	6%	34%	4%	2%	1%	1%	1%	1%
	08:00 ~ 09:00	240	43%	0%	0%	0%	0%	1%	3%	6%	6%	35%	3%	3%	0%	0%	0%	0%
	09:00 ~ 10:00	202	43%	0%	0%	0%	0%	1%	2%	5%	5%	35%	3%	2%	0%	0%	0%	0%
	10:00 ~ 11:00	204	43%	0%	0%	0%	0%	1%	3%	5%	5%	34%	3%	2%	0%	0%	0%	0%
	11:00 ~ 12:00	206	44%	0%	0%	0%	0%	1%	3%	5%	5%	34%	3%	2%	0%	0%	0%	0%
	12:00 ~ 13:00	167	44%	0%	0%	0%	0%	1%	3%	5%	5%	34%	3%	2%	1%	1%	1%	1%
	13:00 ~ 14:00	168	44%	0%	0%	0%	0%	1%	3%	5%	5%	35%	3%	2%	1%	1%	1%	0%
	14:00 ~ 15:00	168	45%	0%	0%	0%	0%	1%	4%	4%	5%	35%	3%	2%	1%	1%	1%	0%
	15:00 ~ 16:00	212	45%	0%	0%	0%	0%	1%	3%	4%	5%	34%	3%	2%	0%	0%	0%	0%
	16:00 ~ 17:00	214	45%	0%	0%	0%	0%	1%	4%	4%	5%	35%	3%	2%	0%	0%	0%	0%
	17:00 ~ 18:00	260	45%	0%	0%	0%	0%	1%	4%	4%	5%	34%	3%	2%	1%	0%	0%	0%
	18:00 ~ 19:00	260	45%	0%	0%	0%	0%	1%	4%	3%	5%	35%	3%	2%	1%	0%	0%	0%
	19:00 ~ 20:00	259	45%	0%	0%	0%	0%	1%	4%	3%	5%	34%	3%	2%	1%	0%	0%	0%
	20:00 ~ 21:00	258	45%	0%	0%	0%	0%	1%	3%	4%	5%	34%	3%	2%	1%	0%	0%	0%
	21:00 ~ 22:00	214	45%	0%	0%	0%	0%	1%	4%	4%	5%	35%	3%	2%	0%	0%	0%	0%
	22:00 ~ 23:00	212	45%	0%	0%	0%	0%	1%	3%	4%	5%	34%	3%	2%	0%	0%	0%	0%
	23:00 ~ 00:00	168	45%	0%	0%	0%	0%	1%	4%	4%	5%	35%	3%	2%	1%	1%	1%	0%
Max		260	46%	0%	0%	0%	0%	1%	4%	6%	6%	36%	4%	3%	1%	1%	1%	1%

Composite Emission Factor

Hour	NOx	RSP
00:00 ~ 01:00	0.97	0.12
01:00 ~ 02:00	0.94	0.11
02:00 ~ 03:00	0.93	0.11
03:00 ~ 04:00	0.86	0.11
04:00 ~ 05:00	0.81	0.10
05:00 ~ 06:00	0.81	0.10
06:00 ~ 07:00	0.88	0.11
07:00 ~ 08:00	0.96	0.11
08:00 ~ 09:00	0.97	0.11
09:00 ~ 10:00	0.96	0.11
10:00 ~ 11:00	0.99	0.11
11:00 ~ 12:00	0.95	0.11
12:00 ~ 13:00	0.99	0.11
13:00 ~ 14:00	0.96	0.12
14:00 ~ 15:00	0.96	0.12
15:00 ~ 16:00	0.96	0.11
16:00 ~ 17:00	0.96	0.12
17:00 ~ 18:00	0.96	0.11
18:00 ~ 19:00	0.94	0.11
19:00 ~ 20:00	0.94	0.11
20:00 ~ 21:00	0.94	0.11
21:00 ~ 22:00	0.96	0.12
22:00 ~ 23:00	0.96	0.11
23:00 ~ 00:00	0.96	0.12
Max	0.99	0.12

Remark:

1) The max EF for each vehicle type can be refered to Table MC1, MC2, TAXI1 and TAXI2 for this road

2) Under an extreme worst case scenario, the max composite EF of each road is selected to be the max hourly composite EF calculated by the max EF for each vehicle type by the following equation:

Composite Hourly Emission Factor (in g/veh-mile) = [% of PC x max EF in g/veh-mile of PC] + [% of LGV(3) x max EF in g/veh-mile of LGV(3)] + [% of LGV(4) x max EF in g/veh-mile of LGV(4)] + [% of PLB x max EF in g/veh-mile of PLB] + ...]

3) Max composite EF and max traffic flow are used to predict the air pollutant concentration from vehicle emission

Max Emissions Factor in g/veh-mile (for particular vehicle type within each hour out of 24 hours)

Max EF	Vehicle Type															
	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
NOx	0.20	1.41	0.39	0.21	3.15	5.95	7.13	0.03	1.12	0.41	0.19	0.23	2.87	4.81	5.73	4.28
RSP	0.04	0.72	0.20	0.20	0.42	0.67	0.58	0.31	0.13	0.10	0.15	0.28	0.25	0.51	0.44	0.00

Road No.	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
10	00:00 ~ 01:00	66	48%	0%	0%	0%	0%	0%	2%	3%	6%	38%	2%	2%	0%	0%	0%	0%
	01:00 ~ 02:00	52	48%	0%	0%	0%	0%	0%	2%	2%	6%	38%	2%	2%	0%	0%	0%	0%
	02:00 ~ 03:00	36	47%	0%	0%	0%	0%	0%	3%	3%	6%	39%	3%	0%	0%	0%	0%	0%
	03:00 ~ 04:00	37	49%	0%	0%	0%	0%	0%	3%	3%	5%	38%	3%	0%	0%	0%	0%	0%
	04:00 ~ 05:00	18	50%	0%	0%	0%	0%	0%	0%	6%	6%	39%	0%	0%	0%	0%	0%	0%
	05:00 ~ 06:00	19	47%	0%	0%	0%	0%	0%	0%	5%	5%	42%	0%	0%	0%	0%	0%	0%
	06:00 ~ 07:00	41	46%	0%	0%	0%	0%	0%	2%	2%	7%	39%	2%	0%	0%	0%	0%	0%
	07:00 ~ 08:00	82	49%	0%	0%	0%	0%	0%	1%	2%	6%	39%	1%	1%	0%	0%	0%	0%
	08:00 ~ 09:00	130	48%	0%	0%	0%	0%	1%	2%	2%	6%	38%	2%	2%	0%	0%	0%	0%
	09:00 ~ 10:00	104	48%	0%	0%	0%	0%	0%	1%	3%	7%	38%	2%	1%	0%	0%	0%	0%
	10:00 ~ 11:00	99	48%	0%	0%	0%	0%	0%	1%	3%	6%	38%	2%	1%	0%	0%	0%	0%
	11:00 ~ 12:00	97	47%	0%	0%	0%	0%	1%	2%	3%	6%	37%	2%	1%	0%	0%	0%	0%
	12:00 ~ 13:00	72	49%	0%	0%	0%	0%	0%	1%	3%	6%	39%	1%	1%	0%	0%	0%	0%
	13:00 ~ 14:00	68	49%	0%	0%	0%	0%	0%	1%	3%	6%	38%	1%	1%	0%	0%	0%	0%
	14:00 ~ 15:00	66	48%	0%	0%	0%	0%	0%	2%	3%	6%	38%	2%	2%	0%	0%	0%	0%
	15:00 ~ 16:00	78	47%	0%	0%	0%	0%	1%	3%	3%	5%	37%	3%	1%	0%	0%	0%	0%
	16:00 ~ 17:00	74	47%	0%	0%	0%	0%	1%	3%	3%	5%	36%	3%	1%	0%	0%	0%	0%
	17:00 ~ 18:00	83	48%	0%	0%	0%	0%	1%	2%	2%	5%	37%	2%	1%	0%	0%	0%	0%
	18:00 ~ 19:00	80	48%	0%	0%	0%	0%	1%	3%	3%	5%	37%	3%	1%	0%	0%	0%	0%
	19:00 ~ 20:00	81	48%	0%	0%	0%	0%	1%	2%	2%	5%	37%	2%	1%	0%	0%	0%	0%
	20:00 ~ 21:00	85	48%	0%	0%	0%	0%	1%	2%	2%	5%	38%	2%	1%	0%	0%	0%	0%
	21:00 ~ 22:00	76	47%	0%	0%	0%	0%	1%	3%	3%	5%	37%	3%	1%	0%	0%	0%	0%
	22:00 ~ 23:00	78	47%	0%	0%	0%	0%	1%	3%	3%	5%	37%	3%	1%	0%	0%	0%	0%
	23:00 ~ 00:00	64	48%	0%	0%	0%	0%	0%	2%	3%	6%	38%	2%	2%	0%	0%	0%	0%
Max		130	50%	0%	0%	0%	0%	1%	3%	6%	7%	42%	3%	2%	0%	0%	0%	0%

Composite Emission Factor

Hour	NOx	RSP
00:00 ~ 01:00	0.62	0.09
01:00 ~ 02:00	0.58	0.09
02:00 ~ 03:00	0.69	0.09
03:00 ~ 04:00	0.68	0.09
04:00 ~ 05:00	0.65	0.09
05:00 ~ 06:00	0.64	0.08
06:00 ~ 07:00	0.67	0.09
07:00 ~ 08:00	0.57	0.08
08:00 ~ 09:00	0.63	0.09
09:00 ~ 10:00	0.58	0.08
10:00 ~ 11:00	0.59	0.08
11:00 ~ 12:00	0.72	0.10
12:00 ~ 13:00	0.59	0.08
13:00 ~ 14:00	0.61	0.09
14:00 ~ 15:00	0.62	0.09
15:00 ~ 16:00	0.73	0.10
16:00 ~ 17:00	0.76	0.10
17:00 ~ 18:00	0.71	0.10
18:00 ~ 19:00	0.73	0.10
19:00 ~ 20:00	0.72	0.10
20:00 ~ 21:00	0.70	0.10
21:00 ~ 22:00	0.74	0.10
22:00 ~ 23:00	0.73	0.10
23:00 ~ 00:00	0.63	0.09
Max	0.76	0.10

Remark:

1) The max EF for each vehicle type can be referred to Table MC1, MC2, TAXI and TAXI2 for this road

2) Under an extreme worst case scenario, the max composite EF of each road is selected to be the max hourly composite EF calculated by the max EF for each vehicle type by the following equation:

Composite Hourly Emission Factor (in g/veh-mile) = {% of PC x max EF in g/veh-mile of PC} + {% of LGV(3) x max EF in g/veh-mile of LGV(3)} + {% of LGV(4) x max EF in g/veh-mile of LGV(4)} + {% of PLB x max EF in g/veh-mile of PLB} + ...}

3) Max composite EF and max traffic flow are used to predict the air pollutant concentration from vehicle emission

Max Emissions Factor in g/veh-mile (for particular vehicle type within each hour out of 24 hours)

Max EF	Vehicle Type															
	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
NOx	0.20	1.41	0.39	0.21	3.15	5.95	7.13	6.03	1.12	0.41	0.19	0.23	2.87	4.81	5.73	4.28
RSP	0.04	0.72	0.20	0.20	0.42	0.67	0.58	0.31	0.13	0.10	0.15	0.28	0.25	0.51	0.44	0.00

Road No.	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
13	00:00 ~ 01:00	276	27%	0%	4%	25%	3%	1%	4%	5%	3%	21%	3%	3%	1%	0%	0%	0%
	01:00 ~ 02:00	207	27%	0%	4%	25%	2%	1%	3%	5%	3%	21%	3%	2%	0%	0%	0%	0%
	02:00 ~ 03:00	141	27%	0%	4%	24%	3%	1%	4%	5%	4%	21%	4%	2%	1%	1%	0%	0%
	03:00 ~ 04:00	141	28%	0%	4%	23%	3%	1%	3%	5%	4%	22%	4%	2%	1%	1%	0%	0%
	04:00 ~ 05:00	72	28%	0%	4%	24%	3%	1%	3%	6%	4%	22%	3%	3%	0%	0%	0%	0%
	05:00 ~ 06:00	71	28%	0%	4%	23%	3%	1%	3%	6%	4%	23%	3%	3%	0%	0%	0%	0%
	06:00 ~ 07:00	145	28%	0%	4%	23%	3%	1%	3%	6%	3%	23%	3%	2%	1%	1%	0%	0%
	07:00 ~ 08:00	295	28%	0%	4%	22%	3%	1%	2%	5%	4%	23%	3%	2%	0%	0%	0%	0%
	08:00 ~ 09:00	450	29%	0%	4%	21%	3%	1%	2%	5%	4%	23%	3%	2%	0%	0%	0%	0%
	09:00 ~ 10:00	368	29%	0%	4%	22%	3%	1%	2%	5%	4%	23%	3%	2%	1%	0%	0%	0%
	10:00 ~ 11:00	362	28%	0%	4%	23%	3%	1%	3%	5%	4%	22%	3%	2%	1%	0%	0%	0%
	11:00 ~ 12:00	359	28%	0%	4%	23%	3%	1%	3%	5%	4%	22%	3%	3%	1%	0%	0%	0%
	12:00 ~ 13:00	281	27%	0%	4%	24%	2%	1%	3%	5%	4%	22%	3%	2%	1%	0%	0%	0%
	13:00 ~ 14:00	276	27%	0%	4%	25%	3%	1%	3%	5%	3%	21%	3%	3%	1%	0%	0%	0%
	14:00 ~ 15:00	273	27%	0%	4%	25%	3%	1%	4%	5%	3%	21%	3%	3%	1%	0%	0%	0%
	15:00 ~ 16:00	333	27%	0%	4%	26%	2%	1%	4%	5%	3%	21%	3%	2%	1%	1%	0%	0%
	16:00 ~ 17:00	328	26%	0%	4%	27%	2%	2%	4%	5%	3%	20%	3%	2%	1%	1%	0%	0%
	17:00 ~ 18:00	389	26%	0%	3%	28%	2%	2%	4%	4%	3%	20%	3%	3%	1%	1%	1%	0%
	18:00 ~ 19:00	380	25%	0%	3%	28%	2%	2%	4%	4%	3%	19%	3%	3%	1%	1%	1%	0%
	19:00 ~ 20:00	385	26%	0%	3%	28%	2%	2%	4%	4%	3%	20%	3%	3%	1%	1%	1%	0%
	20:00 ~ 21:00	390	26%	0%	4%	27%	2%	2%	4%	4%	3%	20%	3%	3%	1%	1%	1%	0%
	21:00 ~ 22:00	329	26%	0%	4%	27%	2%	2%	4%	5%	3%	20%	3%	2%	1%	1%	0%	0%
	22:00 ~ 23:00	331	27%	0%	4%	26%	2%	1%	4%	5%	3%	21%	3%	2%	1%	1%	0%	0%
	23:00 ~ 00:00	269	27%	0%	4%	26%	3%	1%	4%	4%	3%	21%	3%	3%	1%	0%	0%	0%
Max		450	29%	0%	4%	28%	3%	2%	4%	6%	4%	23%	4%	3%	1%	1%	1%	0%

Composite Emission Factor

Hour	NOx	RSP
00:00 ~ 01:00	1.03	0.17
01:00 ~ 02:00	1.03	0.17
02:00 ~ 03:00	1.05	0.17
03:00 ~ 04:00	1.00	0.16
04:00 ~ 05:00	0.98	0.16
05:00 ~ 06:00	0.99	0.16
06:00 ~ 07:00	0.98	0.16
07:00 ~ 08:00	0.96	0.16
08:00 ~ 09:00	0.98	0.16
09:00 ~ 10:00	0.95	0.16
10:00 ~ 11:00	0.98	0.16
11:00 ~ 12:00	1.01	0.16
12:00 ~ 13:00	1.02	0.16
13:00 ~ 14:00	1.01	0.16
14:00 ~ 15:00	1.04	0.17
15:00 ~ 16:00	1.04	0.17
16:00 ~ 17:00	1.07	0.17
17:00 ~ 18:00	1.09	0.17
18:00 ~ 19:00	1.08	0.18
19:00 ~ 20:00	1.08	0.18
20:00 ~ 21:00	1.07	0.17
21:00 ~ 22:00	1.07	0.17
22:00 ~ 23:00	1.05	0.17
23:00 ~ 00:00	1.03	0.17
Max	1.09	0.18

Remark:

1) The max EF for each vehicle type can be referred to Table MC1, MC2, TAXI1 and TAXI2 for this road

2) Under an extreme worst case scenario, the max composite EF of each road is selected to be the max hourly composite EF calculated by the max EF for each vehicle type by the following equation:

Composite Hourly Emission Factor (in g/veh-mile) = [% of PC x max EF in g/veh-mile of PC] + [% of LGV(3) x max EF in g/veh-mile of LGV(3)] + [% of LGV(4) x max EF in g/veh-mile of LGV(4)] + [% of PLB x max EF in g/veh-mile of PLB] + ……)

3) Max composite EF and max traffic flow are used to predict the air pollutant concentration from vehicle emission

Max Emissions Factor in g/veh-mile (for particular vehicle type within each hour out of 24 hours)

Max EF	Vehicle Type															
	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
NOx	0.20	1.41	0.39	0.21	3.15	5.95	7.13	6.03	1.12	0.41	0.19	0.23	2.87	4.81	5.73	4.28
RSP	0.04	0.72	0.20	0.20	0.42	0.67	0.58	0.31	0.13	0.10	0.15	0.28	0.25	0.51	0.44	0.00

Road No.	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
14	00:00 ~ 01:00	306	28%	0%	4%	23%	2%	1%	4%	5%	3%	22%	3%	3%	1%	0%	0%	0%
	01:00 ~ 02:00	234	29%	0%	3%	22%	2%	1%	3%	5%	3%	23%	3%	3%	0%	0%	0%	0%
	02:00 ~ 03:00	160	29%	0%	4%	21%	3%	1%	3%	5%	4%	23%	3%	3%	1%	1%	1%	1%
	03:00 ~ 04:00	162	29%	0%	4%	20%	2%	1%	3%	5%	4%	23%	4%	2%	1%	1%	1%	1%
	04:00 ~ 05:00	80	30%	0%	4%	21%	3%	1%	3%	5%	4%	24%	4%	3%	0%	0%	0%	0%
	05:00 ~ 06:00	82	30%	0%	4%	20%	2%	1%	2%	6%	4%	24%	4%	2%	0%	0%	0%	0%
	06:00 ~ 07:00	172	30%	0%	3%	19%	2%	1%	3%	5%	4%	24%	3%	2%	1%	1%	1%	1%
	07:00 ~ 08:00	346	30%	0%	4%	18%	2%	1%	3%	6%	4%	24%	3%	3%	1%	0%	0%	0%
	08:00 ~ 09:00	530	30%	0%	4%	18%	2%	1%	3%	6%	4%	24%	4%	3%	1%	0%	0%	0%
	09:00 ~ 10:00	430	30%	0%	4%	19%	2%	1%	3%	6%	4%	24%	3%	3%	0%	0%	0%	0%
	10:00 ~ 11:00	419	30%	0%	4%	20%	2%	1%	3%	5%	4%	24%	4%	3%	0%	0%	0%	0%
	11:00 ~ 12:00	407	29%	0%	4%	20%	2%	1%	3%	5%	4%	23%	3%	2%	0%	0%	0%	0%
	12:00 ~ 13:00	317	29%	0%	3%	21%	2%	1%	3%	5%	3%	23%	3%	3%	1%	0%	0%	0%
	13:00 ~ 14:00	311	29%	0%	4%	22%	2%	1%	3%	5%	4%	23%	4%	3%	1%	0%	0%	0%
	14:00 ~ 15:00	302	28%	0%	3%	23%	2%	1%	4%	5%	3%	22%	3%	2%	1%	0%	0%	0%
	15:00 ~ 16:00	366	28%	0%	3%	24%	2%	1%	4%	5%	3%	22%	3%	2%	1%	1%	0%	0%
	16:00 ~ 17:00	356	28%	0%	3%	25%	2%	1%	4%	4%	3%	21%	3%	3%	1%	1%	0%	0%
	17:00 ~ 18:00	413	27%	0%	3%	26%	2%	1%	4%	4%	3%	21%	3%	2%	1%	0%	0%	0%
	18:00 ~ 19:00	400	27%	0%	3%	27%	2%	2%	4%	4%	3%	21%	3%	3%	1%	1%	1%	0%
	19:00 ~ 20:00	410	27%	0%	3%	26%	2%	1%	4%	4%	3%	21%	3%	2%	1%	0%	0%	0%
	20:00 ~ 21:00	418	28%	0%	3%	25%	2%	1%	4%	4%	3%	21%	3%	2%	1%	0%	0%	0%
	21:00 ~ 22:00	357	28%	0%	3%	25%	2%	1%	4%	4%	3%	21%	3%	3%	1%	1%	0%	0%
	22:00 ~ 23:00	364	28%	0%	3%	24%	2%	1%	4%	5%	3%	22%	3%	2%	1%	1%	0%	0%
	23:00 ~ 00:00	298	28%	0%	3%	23%	2%	1%	4%	5%	3%	22%	3%	2%	1%	0%	0%	0%
Max		530	30%	0%	4%	27%	3%	2%	4%	6%	4%	24%	4%	3%	1%	1%	1%	1%

Composite Emission Factor

Hour	NOx	RSP
00:00 ~ 01:00	1.01	0.16
01:00 ~ 02:00	1.05	0.16
02:00 ~ 03:00	1.06	0.16
03:00 ~ 04:00	1.05	0.16
04:00 ~ 05:00	0.91	0.15
05:00 ~ 06:00	0.97	0.15
06:00 ~ 07:00	1.04	0.15
07:00 ~ 08:00	1.00	0.15
08:00 ~ 09:00	1.02	0.15
09:00 ~ 10:00	1.01	0.15
10:00 ~ 11:00	1.01	0.15
11:00 ~ 12:00	1.01	0.16
12:00 ~ 13:00	1.01	0.16
13:00 ~ 14:00	1.03	0.16
14:00 ~ 15:00	1.05	0.16
15:00 ~ 16:00	1.04	0.16
16:00 ~ 17:00	1.05	0.17
17:00 ~ 18:00	1.05	0.17
18:00 ~ 19:00	1.05	0.17
19:00 ~ 20:00	1.05	0.17
20:00 ~ 21:00	1.05	0.17
21:00 ~ 22:00	1.04	0.17
22:00 ~ 23:00	1.05	0.17
23:00 ~ 00:00	1.04	0.16
Max	1.06	0.17

Remark:

1) The max EF for each vehicle type can be referred to Table MC1, MC2, TAXI1 and TAXI2 for this road

2) Under an extreme worst case scenario, the max composite EF of each road is selected to be the max hourly composite EF calculated by the max EF for each vehicle type by the following equation:

Composite Hourly Emission Factor (in g/veh-mile) = [% of PC* x max EF in g/veh-mile of PC) + (% of LGV(3) x max EF in g/veh-mile of LGV(3)] + [% of LGV(4) x max EF in g/veh-mile of LGV(4)] + [% of PLB x max EF in g/veh-mile of PLB) + ...)

3) Max composite EF and max traffic flow are used to predict the air pollutant concentration from vehicle emission

Max Emissions Factor in g/veh-mile (for particular vehicle type within each hour out of 24 hours)

Max EF	Vehicle Type															
	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
NOx	0.20	1.41	0.39	0.21	3.15	5.95	7.13	6.03	1.12	0.41	0.19	0.23	2.87	4.81	5.73	4.28
RSP	0.04	0.72	0.20	0.20	0.42	0.67	0.58	0.31	0.13	0.10	0.15	0.28	0.25	0.51	0.44	0.00

Road No.	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
15	00:00 ~ 01:00	913	30%	0%	3%	19%	2%	1%	4%	5%	3%	24%	4%	3%	1%	1%	0%	0%
	01:00 ~ 02:00	668	30%	0%	3%	19%	2%	1%	4%	5%	3%	24%	4%	3%	1%	0%	0%	0%
	02:00 ~ 03:00	438	30%	0%	3%	19%	2%	1%	4%	5%	3%	24%	4%	3%	1%	0%	0%	0%
	03:00 ~ 04:00	428	30%	0%	3%	19%	2%	1%	4%	5%	4%	24%	4%	3%	1%	0%	0%	0%
	04:00 ~ 05:00	211	30%	0%	3%	19%	2%	1%	3%	6%	4%	23%	4%	3%	0%	0%	0%	0%
	05:00 ~ 06:00	208	29%	0%	3%	19%	2%	1%	3%	6%	4%	23%	4%	3%	0%	0%	0%	0%
	06:00 ~ 07:00	399	30%	0%	4%	19%	2%	1%	3%	6%	4%	24%	4%	3%	1%	1%	0%	0%
	07:00 ~ 08:00	784	29%	0%	4%	19%	2%	1%	3%	6%	4%	23%	4%	3%	1%	0%	0%	0%
	08:00 ~ 09:00	1150	29%	0%	4%	19%	3%	1%	3%	6%	4%	23%	4%	3%	1%	0%	0%	0%
	09:00 ~ 10:00	989	29%	0%	4%	19%	2%	1%	3%	6%	4%	24%	4%	3%	1%	0%	0%	0%
	10:00 ~ 11:00	1022	30%	0%	4%	19%	2%	1%	3%	6%	4%	23%	4%	3%	1%	0%	0%	0%
	11:00 ~ 12:00	1054	30%	0%	3%	19%	2%	1%	3%	6%	4%	24%	4%	3%	1%	0%	0%	0%
	12:00 ~ 13:00	869	30%	0%	3%	19%	2%	1%	4%	5%	4%	24%	4%	3%	1%	0%	0%	0%
	13:00 ~ 14:00	894	30%	0%	3%	19%	2%	1%	4%	5%	3%	24%	4%	3%	1%	1%	0%	0%
	14:00 ~ 15:00	920	31%	0%	3%	19%	2%	1%	4%	5%	3%	24%	4%	3%	1%	1%	0%	0%
	15:00 ~ 16:00	1179	31%	0%	3%	19%	2%	1%	4%	5%	3%	24%	4%	3%	1%	1%	0%	0%
	16:00 ~ 17:00	1211	31%	0%	3%	19%	2%	1%	4%	4%	3%	24%	3%	3%	1%	1%	0%	0%
	17:00 ~ 18:00	1493	31%	0%	2%	19%	2%	2%	4%	4%	3%	24%	3%	3%	1%	1%	0%	0%
	18:00 ~ 19:00	1530	31%	0%	2%	20%	2%	2%	5%	4%	3%	24%	3%	2%	1%	1%	0%	0%
	19:00 ~ 20:00	1502	31%	0%	2%	20%	2%	2%	4%	4%	3%	24%	3%	3%	1%	1%	0%	0%
	20:00 ~ 21:00	1476	31%	0%	3%	19%	2%	1%	4%	4%	3%	24%	3%	3%	1%	1%	0%	0%
	21:00 ~ 22:00	1206	31%	0%	3%	19%	2%	1%	4%	4%	3%	24%	3%	3%	1%	1%	0%	0%
	22:00 ~ 23:00	1184	31%	0%	3%	19%	2%	1%	4%	5%	3%	24%	4%	3%	1%	1%	0%	0%
	23:00 ~ 00:00	929	31%	0%	3%	19%	2%	1%	4%	5%	3%	24%	4%	3%	1%	1%	0%	0%
Max		1530	31%	0%	4%	20%	3%	2%	5%	6%	4%	24%	4%	3%	1%	1%	0%	0%

Composite Emission Factor

Hour	NOx	RSP
00:00 ~ 01:00	1.07	0.16
01:00 ~ 02:00	1.07	0.16
02:00 ~ 03:00	1.08	0.16
03:00 ~ 04:00	1.06	0.16
04:00 ~ 05:00	1.06	0.16
05:00 ~ 06:00	1.09	0.16
06:00 ~ 07:00	1.05	0.16
07:00 ~ 08:00	1.06	0.16
08:00 ~ 09:00	1.06	0.16
09:00 ~ 10:00	1.06	0.16
10:00 ~ 11:00	1.06	0.16
11:00 ~ 12:00	1.07	0.16
12:00 ~ 13:00	1.07	0.16
13:00 ~ 14:00	1.08	0.16
14:00 ~ 15:00	1.07	0.16
15:00 ~ 16:00	1.07	0.16
16:00 ~ 17:00	1.07	0.16
17:00 ~ 18:00	1.09	0.16
18:00 ~ 19:00	1.08	0.16
19:00 ~ 20:00	1.07	0.16
20:00 ~ 21:00	1.08	0.16
21:00 ~ 22:00	1.07	0.16
22:00 ~ 23:00	1.07	0.16
23:00 ~ 00:00	1.07	0.16
Max	1.09	0.16

Remark:

1) The max EF for each vehicle type can be referred to Table MC1, MC2, TAXI1 and TAXI2 for this road

2) Under an extreme worst case scenario, the max composite EF of each road is selected to be the max hourly composite EF calculated by the max EF for each vehicle type by the following equation:

Composite Hourly Emission Factor (in g/veh-mile) = [% of [1] x max EF in g/veh-mile of [1] + [% of LGV(3) x max EF in g/veh-mile of LGV(3)] + [% of LGV(4) x max EF in g/veh-mile of LGV(4)] + [% of PLB x max EF in g/veh-mile of PLB] + ...]

3) Max composite EF and max traffic flow are used to predict the air pollutant concentration from vehicle emission

Max Emissions Factor in g/veh-mile (for particular vehicle type within each hour out of 24 hours)

Max EF	Vehicle Type															
	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
NOx	0.20	1.41	0.39	0.21	3.15	5.95	7.13	6.03	1.12	0.41	0.19	0.23	2.87	4.81	5.73	4.28
RSP	0.04	0.72	0.20	0.20	0.42	0.67	0.58	0.31	0.13	0.10	0.15	0.28	0.25	0.51	0.44	0.00

Road No.	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
16	00:00 ~ 01:00	1205	30%	0%	3%	20%	2%	1%	3%	5%	3%	23%	4%	3%	1%	0%	0%	0%
	01:00 ~ 02:00	944	29%	0%	3%	20%	2%	1%	3%	6%	3%	23%	4%	3%	1%	0%	0%	0%
	02:00 ~ 03:00	657	29%	0%	4%	20%	2%	1%	3%	6%	4%	23%	4%	3%	1%	0%	0%	0%
	03:00 ~ 04:00	684	28%	0%	4%	20%	2%	1%	3%	6%	4%	22%	4%	3%	1%	0%	0%	0%
	04:00 ~ 05:00	356	28%	0%	4%	20%	3%	1%	3%	6%	4%	22%	4%	3%	1%	1%	0%	0%
	05:00 ~ 06:00	368	27%	0%	4%	20%	2%	1%	3%	7%	4%	22%	4%	3%	1%	1%	0%	1%
	06:00 ~ 07:00	764	27%	0%	4%	20%	3%	1%	3%	7%	4%	22%	4%	3%	1%	1%	0%	0%
	07:00 ~ 08:00	1581	27%	0%	4%	20%	3%	1%	3%	7%	4%	22%	4%	3%	1%	0%	0%	0%
	08:00 ~ 09:00	2450	27%	0%	4%	20%	3%	1%	3%	7%	4%	21%	4%	3%	1%	0%	0%	0%
	09:00 ~ 10:00	1948	27%	0%	4%	20%	3%	1%	3%	7%	4%	22%	4%	3%	1%	0%	0%	0%
	10:00 ~ 11:00	1857	27%	0%	4%	20%	3%	1%	3%	7%	4%	22%	4%	3%	1%	0%	0%	0%
	11:00 ~ 12:00	1762	28%	0%	4%	20%	2%	1%	3%	6%	4%	22%	4%	3%	1%	0%	0%	0%
	12:00 ~ 13:00	1335	28%	0%	4%	20%	2%	1%	3%	6%	4%	23%	4%	3%	1%	0%	0%	0%
	13:00 ~ 14:00	1262	29%	0%	4%	20%	2%	1%	3%	6%	3%	23%	4%	3%	1%	0%	0%	0%
	14:00 ~ 15:00	1186	30%	0%	3%	20%	2%	1%	3%	5%	4%	23%	4%	3%	1%	0%	0%	0%
	15:00 ~ 16:00	1388	31%	0%	3%	20%	2%	1%	3%	5%	3%	24%	3%	3%	1%	0%	0%	0%
	16:00 ~ 17:00	1297	32%	0%	3%	19%	2%	1%	3%	4%	3%	24%	3%	2%	1%	0%	0%	0%
	17:00 ~ 18:00	1443	33%	0%	3%	19%	2%	1%	3%	4%	3%	25%	3%	2%	1%	0%	0%	0%
	18:00 ~ 19:00	1330	34%	0%	2%	19%	1%	1%	4%	3%	3%	26%	3%	2%	1%	0%	0%	0%
	19:00 ~ 20:00	1409	33%	0%	2%	19%	2%	1%	3%	4%	3%	25%	3%	2%	1%	0%	0%	0%
	20:00 ~ 21:00	1492	32%	0%	3%	19%	2%	1%	3%	4%	3%	25%	3%	2%	1%	0%	0%	0%
	21:00 ~ 22:00	1309	31%	0%	3%	19%	2%	1%	3%	5%	3%	24%	3%	2%	1%	0%	0%	0%
	22:00 ~ 23:00	1374	31%	0%	3%	20%	2%	1%	3%	5%	3%	24%	3%	2%	1%	0%	0%	0%
	23:00 ~ 00:00	1154	30%	0%	3%	20%	2%	1%	3%	5%	3%	24%	4%	3%	1%	0%	0%	0%
Max		2450	34%	0%	4%	20%	3%	1%	4%	7%	4%	26%	4%	3%	1%	1%	0%	1%

Remark:

1) The max EF for each vehicle type can be referred to Table MC1, MC2, TAXI1 and TAXI2 for this road

2) Under an extreme worst case scenario, the max composite EF of each road is selected to be the max hourly composite EF calculated by the max EF for each vehicle type by the following equation:

Composite Hourly Emission Factor (in g/veh-mile) = {% of PC x max EF in g/veh-mile of PC} + {% of LGV(3) x max EF in g/veh-mile of LGV(3)} + {% of LGV(4) x max EF in g/veh-mile of LGV(4)} + {% of PLB x max EF in g/veh-mile of PLB} + ...,}

3) Max composite EF and max traffic flow are used to predict the air pollutant concentration from vehicle emission

Composite Emission Factor

Hour	NOx	RSP
00:00 ~ 01:00	1.05	0.16
01:00 ~ 02:00	1.07	0.16
02:00 ~ 03:00	1.10	0.16
03:00 ~ 04:00	1.10	0.16
04:00 ~ 05:00	1.12	0.16
05:00 ~ 06:00	1.12	0.16
06:00 ~ 07:00	1.15	0.17
07:00 ~ 08:00	1.15	0.17
08:00 ~ 09:00	1.16	0.17
09:00 ~ 10:00	1.14	0.17
10:00 ~ 11:00	1.13	0.17
11:00 ~ 12:00	1.11	0.16
12:00 ~ 13:00	1.09	0.16
13:00 ~ 14:00	1.08	0.16
14:00 ~ 15:00	1.05	0.16
15:00 ~ 16:00	1.02	0.16
16:00 ~ 17:00	1.00	0.15
17:00 ~ 18:00	0.96	0.15
18:00 ~ 19:00	0.92	0.15
19:00 ~ 20:00	0.94	0.15
20:00 ~ 21:00	0.98	0.15
21:00 ~ 22:00	1.00	0.15
22:00 ~ 23:00	1.02	0.15
23:00 ~ 00:00	1.04	0.16
Max	1.16	0.17

Road No. 17

Calculation of Composite Emission Factor

Max Emissions Factor in g/veh-mile (for particular vehicle type within each hour out of 24 hours)

Max EF	Vehicle Type															
	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
NOx	0.20	1.41	0.39	0.21	3.15	5.95	7.13	6.03	1.12	0.41	0.19	0.23	2.87	4.81	5.73	4.28
RSP	0.04	0.72	0.20	0.20	0.42	0.67	0.58	0.31	0.13	0.10	0.15	0.28	0.25	0.51	0.44	0.00

Road No.	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
17	00:00 ~ 01:00	618	32%	0%	3%	19%	2%	1%	3%	5%	4%	25%	3%	2%	0%	0%	0%	0%
	01:00 ~ 02:00	471	31%	0%	3%	19%	2%	1%	3%	5%	4%	24%	3%	2%	1%	0%	0%	0%
	02:00 ~ 03:00	321	30%	0%	3%	20%	2%	1%	3%	5%	4%	24%	3%	2%	1%	0%	0%	0%
	03:00 ~ 04:00	327	30%	0%	4%	20%	2%	1%	3%	6%	4%	24%	3%	2%	1%	0%	0%	0%
	04:00 ~ 05:00	166	29%	0%	4%	20%	2%	1%	3%	5%	4%	23%	4%	2%	1%	1%	1%	1%
	05:00 ~ 06:00	170	28%	0%	4%	21%	2%	1%	3%	6%	4%	22%	4%	3%	1%	1%	1%	1%
	06:00 ~ 07:00	343	28%	0%	4%	21%	3%	1%	3%	6%	3%	22%	4%	3%	1%	0%	0%	0%
	07:00 ~ 08:00	701	28%	0%	4%	21%	3%	1%	3%	6%	4%	22%	4%	3%	1%	0%	0%	0%
	08:00 ~ 09:00	1070	27%	0%	4%	21%	3%	1%	3%	6%	4%	22%	4%	3%	1%	0%	0%	0%
	09:00 ~ 10:00	871	28%	0%	4%	21%	3%	1%	3%	6%	4%	22%	4%	3%	1%	0%	0%	0%
	10:00 ~ 11:00	849	29%	0%	4%	20%	3%	1%	3%	6%	4%	23%	4%	3%	1%	0%	0%	0%
	11:00 ~ 12:00	830	29%	0%	4%	20%	2%	1%	3%	6%	4%	23%	4%	3%	1%	0%	0%	0%
	12:00 ~ 13:00	647	30%	0%	4%	20%	2%	1%	3%	5%	4%	24%	3%	2%	1%	0%	0%	0%
	13:00 ~ 14:00	632	31%	0%	3%	19%	2%	1%	3%	5%	4%	24%	3%	2%	1%	0%	0%	0%
	14:00 ~ 15:00	612	32%	0%	3%	19%	2%	1%	3%	5%	4%	25%	3%	2%	0%	0%	0%	0%
	15:00 ~ 16:00	748	33%	0%	3%	18%	2%	1%	3%	4%	4%	25%	3%	2%	1%	0%	0%	0%
	16:00 ~ 17:00	724	34%	0%	2%	18%	2%	1%	3%	4%	4%	26%	3%	2%	1%	0%	0%	0%
	17:00 ~ 18:00	847	35%	0%	2%	17%	1%	1%	3%	3%	4%	27%	3%	2%	1%	0%	0%	0%
	18:00 ~ 19:00	820	36%	0%	2%	16%	1%	1%	3%	3%	4%	27%	3%	2%	1%	0%	0%	0%
	19:00 ~ 20:00	840	35%	0%	2%	17%	1%	1%	3%	3%	4%	27%	3%	2%	1%	0%	0%	0%
	20:00 ~ 21:00	856	34%	0%	2%	17%	2%	1%	3%	4%	4%	26%	3%	2%	1%	0%	0%	0%
	21:00 ~ 22:00	727	34%	0%	3%	18%	2%	1%	3%	4%	4%	26%	3%	2%	1%	0%	0%	0%
	22:00 ~ 23:00	743	33%	0%	3%	18%	2%	1%	3%	4%	4%	25%	3%	2%	1%	0%	0%	0%
	23:00 ~ 00:00	607	32%	0%	3%	18%	2%	1%	3%	4%	4%	25%	3%	2%	0%	0%	0%	0%
Max		1070	36%	0%	4%	21%	3%	1%	3%	6%	4%	27%	4%	3%	1%	1%	1%	1%

Composite Emission Factor

Hour	NOx	RSP
00:00 ~ 01:00	0.98	0.15
01:00 ~ 02:00	0.99	0.15
02:00 ~ 03:00	1.01	0.15
03:00 ~ 04:00	1.02	0.16
04:00 ~ 05:00	1.07	0.16
05:00 ~ 06:00	1.08	0.16
06:00 ~ 07:00	1.05	0.16
07:00 ~ 08:00	1.06	0.16
08:00 ~ 09:00	1.09	0.16
09:00 ~ 10:00	1.07	0.16
10:00 ~ 11:00	1.05	0.16
11:00 ~ 12:00	1.04	0.16
12:00 ~ 13:00	1.02	0.16
13:00 ~ 14:00	1.00	0.15
14:00 ~ 15:00	0.98	0.15
15:00 ~ 16:00	0.96	0.15
16:00 ~ 17:00	0.92	0.14
17:00 ~ 18:00	0.91	0.14
18:00 ~ 19:00	0.88	0.14
19:00 ~ 20:00	0.91	0.14
20:00 ~ 21:00	0.92	0.14
21:00 ~ 22:00	0.93	0.14
22:00 ~ 23:00	0.95	0.15
23:00 ~ 00:00	0.97	0.15
Max	1.09	0.16

Remark:

1) The max EF for each vehicle type can be referred to Table MC1, MC2, TAXI1 and TAXI2 for this road

2) Under an extreme worst case scenario, the max composite EF of each road is selected to be the max hourly composite EF calculated by the max EF for each vehicle type by the following equation:

Composite Hourly Emission Factor (in g/veh-mile) = {% of PC x max EF in g/veh-mile of PC} + {% of LGV(3) x max EF in g/veh-mile of LGV(3)} + {% of LGV(4) x max EF in g/veh-mile of LGV(4)} + {% of PLB x max EF in g/veh-mile of PLB} + ...}

3) Max composite EF and max traffic flow are used to predict the air pollutant concentration from vehicle emission

Max Emissions Factor in g/veh-mile (for particular vehicle type within each hour out of 24 hours)

Max EF	Vehicle Type															
	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
NOx	0.20	1.11	0.39	0.21	3.15	5.95	7.13	6.03	1.12	0.41	0.19	0.23	2.87	4.81	5.73	4.28
RSP	0.04	0.72	0.20	0.20	0.42	0.67	0.58	0.31	0.13	0.10	0.15	0.28	0.25	0.51	0.44	0.00

Road No.	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
18	00:00 ~ 01:00	423	30%	0%	4%	22%	2%	1%	3%	4%	3%	23%	3%	2%	0%	0%	0%	0%
	01:00 ~ 02:00	306	30%	0%	4%	23%	2%	1%	3%	4%	3%	23%	3%	2%	1%	0%	0%	0%
	02:00 ~ 03:00	201	29%	0%	4%	23%	2%	1%	3%	4%	3%	22%	3%	2%	0%	0%	0%	0%
	03:00 ~ 04:00	193	28%	1%	4%	24%	3%	1%	3%	5%	3%	22%	3%	2%	1%	1%	1%	1%
	04:00 ~ 05:00	92	28%	0%	4%	25%	3%	1%	3%	4%	3%	22%	3%	2%	0%	0%	0%	0%
	05:00 ~ 06:00	88	27%	0%	5%	26%	3%	1%	2%	5%	3%	22%	3%	2%	0%	0%	0%	0%
	06:00 ~ 07:00	176	25%	1%	5%	26%	3%	1%	3%	5%	3%	20%	3%	2%	1%	1%	1%	1%
	07:00 ~ 08:00	333	25%	0%	5%	27%	4%	1%	3%	5%	3%	20%	3%	2%	1%	0%	0%	0%
	08:00 ~ 09:00	480	24%	0%	6%	28%	4%	1%	3%	6%	3%	19%	4%	3%	0%	0%	0%	0%
	09:00 ~ 10:00	421	25%	0%	5%	27%	3%	1%	3%	5%	3%	20%	3%	2%	0%	0%	0%	0%
	10:00 ~ 11:00	443	27%	0%	5%	26%	3%	1%	3%	5%	3%	21%	3%	2%	0%	0%	0%	0%
	11:00 ~ 12:00	466	28%	0%	5%	25%	3%	1%	3%	5%	3%	22%	3%	2%	0%	0%	0%	0%
	12:00 ~ 13:00	394	29%	0%	4%	24%	3%	1%	3%	4%	3%	22%	3%	2%	1%	1%	0%	0%
	13:00 ~ 14:00	410	30%	0%	4%	23%	2%	1%	3%	4%	3%	23%	3%	2%	0%	0%	0%	0%
	14:00 ~ 15:00	426	31%	0%	3%	22%	2%	1%	3%	4%	3%	24%	3%	2%	0%	0%	0%	0%
	15:00 ~ 16:00	558	32%	0%	3%	22%	2%	1%	3%	4%	3%	24%	3%	2%	1%	0%	0%	0%
	16:00 ~ 17:00	579	32%	0%	3%	21%	2%	1%	3%	3%	3%	25%	3%	2%	1%	0%	0%	0%
	17:00 ~ 18:00	724	33%	0%	3%	20%	2%	1%	3%	3%	3%	25%	3%	2%	1%	0%	0%	0%
	18:00 ~ 19:00	750	34%	0%	2%	20%	1%	1%	3%	3%	3%	26%	3%	2%	1%	0%	0%	0%
	19:00 ~ 20:00	731	33%	0%	2%	20%	2%	1%	3%	3%	3%	25%	3%	2%	1%	0%	0%	0%
	20:00 ~ 21:00	710	33%	0%	3%	21%	2%	1%	3%	3%	3%	25%	3%	2%	1%	0%	0%	0%
	21:00 ~ 22:00	575	32%	0%	3%	21%	2%	1%	3%	3%	3%	25%	3%	2%	1%	0%	0%	0%
	22:00 ~ 23:00	560	32%	0%	3%	22%	2%	1%	3%	4%	3%	24%	3%	2%	1%	0%	0%	0%
	23:00 ~ 00:00	436	31%	0%	3%	22%	2%	1%	3%	4%	3%	24%	3%	2%	0%	0%	0%	0%
Max		750	34%	1%	6%	28%	4%	1%	3%	6%	3%	26%	4%	3%	1%	1%	1%	1%

Remark:

1) The max EF for each vehicle type can be referred to Table MC1, MC2, TAXI1 and TAXI2 for this road

2) Under an extreme worst case scenario, the max composite EF of each road is selected to be the max hourly composite EF calculated by the max EF for each vehicle type by the following equation:

Composite Hourly Emission Factor (in g/veh-mile) = [% of PC x max EF in g/veh-mile of PC) + [% of LGV(3) x max EF in g/veh-mile of LGV(3)] + [% of LGV(4) x max EF in g/veh-mile of LGV(4)] + [% of PLB x max EF in g/veh-mile of PLB] + ...]

3) Max composite EF and max traffic flow are used to predict the air pollutant concentration from vehicle emission

Composite Emission Factor

Hour	NOx	RSP
00:00 ~ 01:00	0.92	0.15
01:00 ~ 02:00	0.92	0.15
02:00 ~ 03:00	0.96	0.16
03:00 ~ 04:00	1.01	0.16
04:00 ~ 05:00	0.93	0.16
05:00 ~ 06:00	0.88	0.16
06:00 ~ 07:00	1.06	0.17
07:00 ~ 08:00	1.02	0.17
08:00 ~ 09:00	1.01	0.17
09:00 ~ 10:00	0.99	0.17
10:00 ~ 11:00	0.98	0.16
11:00 ~ 12:00	0.96	0.16
12:00 ~ 13:00	0.96	0.16
13:00 ~ 14:00	0.93	0.16
14:00 ~ 15:00	0.92	0.15
15:00 ~ 16:00	0.91	0.15
16:00 ~ 17:00	0.90	0.15
17:00 ~ 18:00	0.89	0.15
18:00 ~ 19:00	0.89	0.15
19:00 ~ 20:00	0.88	0.15
20:00 ~ 21:00	0.89	0.15
21:00 ~ 22:00	0.89	0.15
22:00 ~ 23:00	0.91	0.15
23:00 ~ 00:00	0.92	0.15
Max	1.06	0.17

Calculation of Composite Emission Factor

Max Emissions Factor in g/veh-mile (for particular vehicle type within each hour out of 24 hours)

Max EF	Vehicle Type															
	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
NOx	0.20	1.41	0.39	0.21	3.15	5.95	7.13	0.03	1.12	0.41	0.19	0.23	2.87	4.81	5.73	4.28
RSP	0.04	0.72	0.20	0.20	0.42	0.67	0.58	0.31	0.13	0.10	0.15	0.28	0.25	0.51	0.44	0.00

Road No.	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
19	00:00 ~ 01:00	870	33%	0%	3%	17%	2%	1%	4%	4%	4%	26%	3%	2%	1%	0%	0%	0%
	01:00 ~ 02:00	642	33%	0%	3%	17%	2%	1%	3%	4%	4%	26%	3%	2%	1%	0%	0%	0%
	02:00 ~ 03:00	418	33%	0%	3%	17%	2%	1%	3%	4%	4%	26%	3%	2%	0%	0%	0%	0%
	03:00 ~ 04:00	409	33%	0%	3%	17%	2%	1%	3%	4%	4%	26%	3%	2%	0%	0%	0%	0%
	04:00 ~ 05:00	202	34%	0%	3%	16%	2%	1%	3%	4%	4%	26%	3%	2%	0%	0%	0%	0%
	05:00 ~ 06:00	199	34%	0%	3%	16%	2%	1%	3%	4%	4%	26%	3%	2%	0%	0%	0%	0%
	06:00 ~ 07:00	386	34%	0%	3%	16%	2%	1%	3%	4%	4%	27%	3%	2%	1%	1%	1%	1%
	07:00 ~ 08:00	756	34%	0%	3%	16%	2%	1%	2%	4%	4%	27%	3%	2%	1%	0%	0%	0%
	08:00 ~ 09:00	1110	34%	0%	3%	15%	2%	1%	2%	4%	4%	27%	3%	2%	0%	0%	0%	0%
	09:00 ~ 10:00	952	34%	0%	3%	16%	2%	1%	2%	4%	5%	28%	3%	2%	0%	0%	0%	0%
	10:00 ~ 11:00	983	34%	0%	3%	16%	2%	1%	2%	4%	4%	27%	3%	2%	0%	0%	0%	0%
	11:00 ~ 12:00	1010	34%	0%	3%	16%	2%	1%	3%	4%	4%	27%	3%	2%	1%	0%	0%	0%
	12:00 ~ 13:00	831	33%	0%	3%	16%	2%	1%	3%	4%	4%	27%	3%	2%	0%	0%	0%	0%
	13:00 ~ 14:00	854	33%	0%	3%	17%	2%	1%	3%	4%	4%	26%	3%	2%	1%	0%	0%	0%
	14:00 ~ 15:00	876	33%	0%	3%	17%	2%	1%	3%	4%	4%	26%	3%	2%	1%	0%	0%	0%
	15:00 ~ 16:00	1122	33%	0%	2%	18%	2%	1%	4%	4%	4%	26%	3%	2%	1%	0%	0%	0%
	16:00 ~ 17:00	1151	33%	0%	2%	18%	2%	1%	4%	4%	4%	25%	3%	2%	1%	0%	0%	0%
	17:00 ~ 18:00	1417	32%	0%	2%	18%	1%	1%	4%	4%	4%	25%	3%	2%	1%	1%	0%	0%
	18:00 ~ 19:00	1450	32%	0%	2%	18%	1%	1%	4%	4%	3%	25%	3%	2%	1%	1%	0%	0%
	19:00 ~ 20:00	1425	32%	0%	2%	18%	1%	2%	4%	4%	3%	24%	3%	2%	1%	1%	0%	0%
	20:00 ~ 21:00	1400	33%	0%	2%	18%	1%	1%	4%	4%	3%	25%	3%	2%	1%	1%	0%	0%
	21:00 ~ 22:00	1148	33%	0%	2%	18%	2%	1%	4%	4%	3%	25%	3%	2%	1%	1%	0%	0%
	22:00 ~ 23:00	1128	33%	0%	2%	18%	1%	1%	4%	4%	4%	25%	3%	2%	1%	1%	0%	0%
	23:00 ~ 00:00	884	33%	0%	2%	17%	2%	1%	4%	4%	4%	25%	3%	2%	1%	1%	0%	0%
Max		1450	34%	0%	3%	18%	2%	2%	4%	4%	5%	28%	3%	2%	1%	1%	1%	1%

Composite Emission Factor

Hour	NOx	RSP
00:00 ~ 01:00	0.98	0.15
01:00 ~ 02:00	0.97	0.15
02:00 ~ 03:00	0.95	0.15
03:00 ~ 04:00	0.92	0.14
04:00 ~ 05:00	0.94	0.14
05:00 ~ 06:00	0.92	0.14
06:00 ~ 07:00	0.87	0.14
07:00 ~ 08:00	0.86	0.14
08:00 ~ 09:00	0.85	0.13
09:00 ~ 10:00	0.87	0.14
10:00 ~ 11:00	0.90	0.14
11:00 ~ 12:00	0.93	0.14
12:00 ~ 13:00	0.95	0.15
13:00 ~ 14:00	0.97	0.15
14:00 ~ 15:00	0.99	0.15
15:00 ~ 16:00	1.00	0.15
16:00 ~ 17:00	1.03	0.15
17:00 ~ 18:00	1.04	0.15
18:00 ~ 19:00	1.06	0.16
19:00 ~ 20:00	1.05	0.15
20:00 ~ 21:00	1.04	0.15
21:00 ~ 22:00	1.02	0.15
22:00 ~ 23:00	1.02	0.15
23:00 ~ 00:00	1.00	0.15
Max	1.06	0.16

Remark:

1) The max EF for each vehicle type can be referred to Table MC1, MC2, TAXI and TAXI2 for this road

2) Under an extreme worst case scenario, the max composite EF of each road is selected to be the max hourly composite EF calculated by the max EF for each vehicle type by the following equation:

Composite Hourly Emission Factor (in g/veh-mile) = [% of PC x max EF in g/veh-mile of PC) + (% of LGV(3) x max EF in g/veh-mile of LGV(3)] + [% of LGV(4) x max EF in g/veh-mile of LGV(4)] + [% of PLB x max EF in g/veh-mile of PLB] + ...]

3) Max composite EF and max traffic flow are used to predict the air pollutant concentration from vehicle emission

Max Emissions Factor in g/veh-mile (for particular vehicle type within each hour out of 24 hours)

Max EF	Vehicle Type															
	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
NOx	0.20	1.41	0.39	0.21	3.15	5.95	7.13	6.03	1.12	0.41	0.19	0.23	2.87	4.81	5.73	4.78
RSP	0.04	0.72	0.20	0.20	0.42	0.67	0.58	0.31	0.13	0.10	0.15	0.28	0.25	0.51	0.44	0.00

Road No.	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
20	00:00 ~ 01:00	979	32%	0%	3%	19%	2%	1%	3%	4%	4%	25%	3%	2%	1%	0%	0%	0%
	01:00 ~ 02:00	760	31%	0%	3%	19%	2%	1%	3%	5%	4%	25%	3%	2%	1%	0%	0%	0%
	02:00 ~ 03:00	526	31%	0%	3%	19%	2%	1%	3%	5%	4%	24%	3%	2%	1%	0%	0%	0%
	03:00 ~ 04:00	542	31%	0%	4%	19%	2%	1%	3%	5%	4%	24%	3%	2%	1%	0%	0%	0%
	04:00 ~ 05:00	282	30%	0%	4%	19%	2%	1%	3%	5%	4%	24%	3%	2%	0%	0%	0%	0%
	05:00 ~ 06:00	288	30%	0%	4%	19%	2%	1%	3%	5%	4%	24%	3%	2%	0%	0%	0%	0%
	06:00 ~ 07:00	595	30%	0%	4%	19%	3%	1%	3%	6%	4%	24%	3%	3%	1%	0%	0%	0%
	07:00 ~ 08:00	1225	30%	0%	4%	19%	3%	1%	3%	6%	4%	24%	4%	3%	0%	0%	0%	0%
	08:00 ~ 09:00	1890	29%	0%	4%	19%	3%	1%	3%	6%	4%	24%	4%	3%	1%	0%	0%	0%
	09:00 ~ 10:00	1514	30%	0%	4%	19%	3%	1%	3%	6%	4%	24%	4%	3%	1%	0%	0%	0%
	10:00 ~ 11:00	1452	30%	0%	4%	19%	2%	1%	3%	5%	4%	24%	3%	2%	0%	0%	0%	0%
	11:00 ~ 12:00	1389	30%	0%	4%	19%	2%	1%	3%	5%	4%	24%	3%	2%	1%	0%	0%	0%
	12:00 ~ 13:00	1061	31%	0%	3%	19%	2%	1%	3%	5%	4%	24%	3%	2%	0%	0%	0%	0%
	13:00 ~ 14:00	1013	31%	0%	3%	19%	2%	1%	3%	5%	4%	25%	3%	2%	0%	0%	0%	0%
	14:00 ~ 15:00	965	32%	0%	3%	19%	2%	1%	3%	4%	4%	25%	3%	2%	1%	0%	0%	0%
	15:00 ~ 16:00	1143	32%	0%	3%	19%	2%	1%	3%	4%	4%	25%	3%	2%	1%	0%	0%	0%
	16:00 ~ 17:00	1081	33%	0%	3%	19%	2%	1%	3%	4%	4%	25%	3%	2%	1%	0%	0%	0%
	17:00 ~ 18:00	1223	33%	0%	3%	19%	2%	1%	3%	3%	4%	26%	3%	2%	1%	0%	0%	0%
	18:00 ~ 19:00	1150	34%	0%	2%	20%	1%	1%	3%	3%	3%	26%	2%	2%	1%	0%	0%	0%
	19:00 ~ 20:00	1201	34%	0%	2%	19%	2%	1%	3%	3%	3%	26%	3%	2%	0%	0%	0%	0%
	20:00 ~ 21:00	1258	33%	0%	3%	19%	2%	1%	3%	4%	4%	25%	3%	2%	1%	0%	0%	0%
	21:00 ~ 22:00	1091	33%	0%	3%	19%	2%	1%	3%	4%	4%	25%	3%	2%	1%	0%	0%	0%
	22:00 ~ 23:00	1136	32%	0%	3%	19%	2%	1%	3%	4%	4%	25%	3%	2%	1%	0%	0%	0%
	23:00 ~ 00:00	944	32%	0%	3%	19%	2%	1%	3%	4%	4%	25%	3%	2%	1%	0%	0%	0%
Max		1890	34%	0%	4%	20%	3%	1%	3%	6%	4%	26%	4%	3%	1%	0%	0%	0%

Composite Emission Factor

Hour	NOx	RSP
00:00 ~ 01:00	0.95	0.15
01:00 ~ 02:00	0.96	0.15
02:00 ~ 03:00	0.98	0.15
03:00 ~ 04:00	0.97	0.15
04:00 ~ 05:00	1.01	0.15
05:00 ~ 06:00	0.99	0.15
06:00 ~ 07:00	1.00	0.15
07:00 ~ 08:00	1.01	0.15
08:00 ~ 09:00	1.01	0.15
09:00 ~ 10:00	1.00	0.15
10:00 ~ 11:00	1.00	0.15
11:00 ~ 12:00	0.98	0.15
12:00 ~ 13:00	0.97	0.15
13:00 ~ 14:00	0.96	0.15
14:00 ~ 15:00	0.95	0.15
15:00 ~ 16:00	0.93	0.15
16:00 ~ 17:00	0.91	0.15
17:00 ~ 18:00	0.89	0.14
18:00 ~ 19:00	0.87	0.14
19:00 ~ 20:00	0.88	0.14
20:00 ~ 21:00	0.90	0.15
21:00 ~ 22:00	0.92	0.15
22:00 ~ 23:00	0.93	0.15
23:00 ~ 00:00	0.95	0.15
Max	1.01	0.15

Remark:

1) The max EF for each vehicle type can be referred to Table MC1, MC2, TAXI1 and TAXI2 for this road

2) Under an extreme worst case scenario, the max composite EF of each road is selected to be the max hourly composite EF calculated by the max EF for each vehicle type by the following equation:

Composite Hourly Emission Factor (in g/veh-mile) = {% of PC x max EF in g/veh-mile of PC} + {% of LGV(3) x max EF in g/veh-mile of LGV(3)} + {% of LGV(4) x max EF in g/veh-mile of LGV(4)} + {% of PLB x max EF in g/veh-mile of PLB} + ...}

3) Max composite EF and max traffic flow are used to predict the air pollutant concentration from vehicle emission

Max Emissions Factor in g/veh-mile (for particular vehicle type within each hour out of 24 hours)

Max EF	Vehicle Type															
	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
NOx	0.20	1.41	0.39	0.21	3.15	5.95	7.13	0.03	1.12	0.41	0.19	0.23	2.87	4.81	5.73	4.28
RSP	0.04	0.72	0.20	0.20	0.42	0.67	0.58	0.31	0.13	0.10	0.15	0.28	0.25	0.51	0.44	0.00

Road No.	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
25a	00:00 ~ 01:00	139	26%	0%	3%	22%	2%	1%	5%	6%	3%	20%	5%	4%	1%	1%	1%	1%
	01:00 ~ 02:00	106	26%	0%	3%	21%	2%	2%	5%	7%	3%	21%	5%	4%	1%	1%	1%	0%
	02:00 ~ 03:00	68	28%	0%	3%	21%	1%	1%	4%	7%	3%	22%	4%	3%	1%	0%	0%	0%
	03:00 ~ 04:00	69	28%	0%	3%	20%	3%	1%	4%	7%	3%	22%	4%	3%	1%	0%	0%	0%
	04:00 ~ 05:00	37	27%	0%	3%	19%	3%	3%	5%	8%	3%	22%	5%	3%	0%	0%	0%	0%
	05:00 ~ 06:00	36	28%	0%	3%	19%	3%	3%	3%	8%	3%	22%	6%	3%	0%	0%	0%	0%
	06:00 ~ 07:00	71	28%	0%	3%	18%	3%	1%	4%	7%	4%	23%	4%	3%	1%	0%	0%	0%
	07:00 ~ 08:00	146	28%	0%	3%	17%	2%	1%	3%	8%	3%	23%	5%	3%	1%	1%	1%	1%
	08:00 ~ 09:00	220	28%	0%	4%	17%	2%	1%	4%	8%	4%	23%	5%	4%	0%	0%	0%	0%
	09:00 ~ 10:00	181	28%	0%	3%	18%	2%	1%	4%	8%	4%	22%	5%	3%	1%	1%	1%	1%
	10:00 ~ 11:00	178	28%	0%	3%	19%	2%	1%	4%	7%	3%	22%	5%	3%	1%	1%	1%	1%
	11:00 ~ 12:00	178	27%	0%	3%	19%	2%	2%	4%	7%	3%	21%	4%	3%	1%	1%	1%	1%
	12:00 ~ 13:00	143	27%	0%	3%	20%	2%	1%	4%	7%	3%	21%	5%	3%	1%	1%	1%	1%
	13:00 ~ 14:00	141	26%	0%	4%	21%	2%	1%	5%	6%	3%	21%	5%	4%	1%	1%	1%	1%
	14:00 ~ 15:00	139	26%	0%	3%	22%	2%	1%	5%	6%	3%	20%	5%	4%	1%	1%	1%	1%
	15:00 ~ 16:00	171	26%	0%	3%	22%	2%	2%	5%	6%	3%	20%	5%	4%	1%	1%	1%	1%
	16:00 ~ 17:00	170	25%	0%	3%	23%	2%	2%	6%	6%	3%	19%	5%	4%	1%	1%	1%	1%
	17:00 ~ 18:00	203	25%	0%	3%	24%	2%	2%	6%	6%	2%	19%	5%	3%	1%	1%	0%	0%
	18:00 ~ 19:00	200	24%	0%	3%	25%	2%	2%	6%	6%	3%	19%	5%	4%	1%	1%	1%	1%
	19:00 ~ 20:00	201	24%	0%	3%	24%	2%	2%	6%	6%	2%	19%	4%	3%	1%	1%	0%	0%
	20:00 ~ 21:00	203	25%	0%	3%	24%	2%	2%	6%	6%	2%	19%	5%	3%	1%	1%	0%	0%
	21:00 ~ 22:00	170	25%	0%	3%	23%	2%	2%	6%	6%	3%	19%	5%	4%	1%	1%	1%	1%
	22:00 ~ 23:00	171	26%	0%	3%	22%	2%	2%	5%	6%	3%	20%	5%	4%	1%	1%	1%	1%
	23:00 ~ 00:00	138	25%	0%	3%	22%	2%	1%	5%	7%	3%	20%	5%	4%	1%	1%	1%	1%
Max		220	28%	0%	4%	25%	3%	3%	6%	8%	4%	23%	6%	4%	1%	1%	1%	1%

Composite Emission Factor

Hour	NOx	RSP
00:00 – 01:00	1.29	0.18
01:00 – 02:00	1.29	0.18
02:00 – 03:00	1.20	0.17
03:00 – 04:00	1.22	0.17
04:00 – 05:00	1.38	0.18
05:00 – 06:00	1.21	0.17
06:00 – 07:00	1.21	0.17
07:00 – 08:00	1.23	0.16
08:00 – 09:00	1.24	0.17
09:00 – 10:00	1.24	0.17
10:00 – 11:00	1.22	0.17
11:00 – 12:00	1.29	0.17
12:00 – 13:00	1.26	0.17
13:00 – 14:00	1.27	0.18
14:00 – 15:00	1.29	0.18
15:00 – 16:00	1.30	0.18
16:00 – 17:00	1.31	0.18
17:00 – 18:00	1.33	0.19
18:00 – 19:00	1.33	0.19
19:00 – 20:00	1.34	0.19
20:00 – 21:00	1.33	0.19
21:00 – 22:00	1.31	0.18
22:00 – 23:00	1.30	0.18
23:00 – 00:00	1.29	0.18
Max	1.38	0.19

Remark:

1) The max EF for each vehicle type can be referred to Table MC1, MC2, TAXI1 and TAXI2 for this road

2) Under an extreme worst case scenario, the max composite EF of each road is selected to be the max hourly composite EF calculated by the max EF for each vehicle type by the following equation:

Composite Hourly Emission Factor (in g/veh-mile) = [% of PC x max EF in g/veh-mile of PC) + (% of LGV(3) x max EF in g/veh-mile of LGV(3)] + [% of LGV(4) x max EF in g/veh-mile of LGV(4)] + [% of PLB x max EF in g/veh-mile of PLB] + ...]

3) Max composite EF and max traffic flow are used to predict the air pollutant concentration from vehicle emission

Max Emissions Factor in g/veh-mile (for particular vehicle type within each hour out of 24 hours)

Max EF	Vehicle Type															
	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
NOx	0.20	1.41	0.39	0.21	3.15	5.95	7.13	0.05	1.12	0.41	0.19	0.23	2.87	4.81	5.73	4.28
RSP	0.04	0.72	0.20	0.20	0.42	0.67	0.58	0.31	0.13	0.10	0.15	0.28	0.25	0.51	0.44	0.00

Road No.	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
25b	00:00 ~ 01:00	122	23%	0%	3%	21%	2%	2%	6%	8%	2%	18%	6%	4%	1%	1%	1%	1%
	01:00 ~ 02:00	92	23%	0%	3%	22%	2%	2%	5%	9%	2%	17%	5%	4%	1%	1%	1%	1%
	02:00 ~ 03:00	62	23%	0%	3%	21%	2%	2%	6%	10%	3%	18%	6%	5%	2%	0%	0%	0%
	03:00 ~ 04:00	61	23%	0%	3%	21%	2%	2%	5%	10%	3%	18%	7%	5%	2%	0%	0%	0%
	04:00 ~ 05:00	31	23%	0%	3%	19%	3%	3%	6%	10%	3%	19%	6%	3%	0%	0%	0%	0%
	05:00 ~ 06:00	31	23%	0%	3%	19%	3%	3%	6%	10%	3%	19%	6%	3%	0%	0%	0%	0%
	06:00 ~ 07:00	62	23%	0%	3%	21%	3%	2%	5%	10%	3%	18%	6%	5%	2%	0%	0%	0%
	07:00 ~ 08:00	126	22%	0%	4%	20%	2%	2%	5%	10%	3%	17%	6%	5%	1%	1%	1%	1%
	08:00 ~ 09:00	190	22%	1%	4%	19%	3%	2%	5%	11%	3%	17%	7%	5%	1%	1%	1%	1%
	09:00 ~ 10:00	158	22%	0%	4%	20%	3%	2%	5%	10%	3%	18%	6%	4%	1%	1%	1%	1%
	10:00 ~ 11:00	156	22%	0%	4%	20%	3%	2%	5%	10%	3%	18%	6%	4%	1%	1%	1%	1%
	11:00 ~ 12:00	157	22%	0%	4%	20%	3%	2%	5%	10%	3%	18%	6%	4%	1%	1%	1%	1%
	12:00 ~ 13:00	123	23%	0%	3%	21%	2%	2%	6%	9%	2%	18%	7%	4%	1%	1%	1%	1%
	13:00 ~ 14:00	123	23%	0%	3%	21%	2%	2%	6%	9%	2%	18%	6%	4%	1%	1%	1%	1%
	14:00 ~ 15:00	122	23%	0%	3%	21%	2%	2%	6%	8%	2%	18%	6%	4%	1%	1%	1%	1%
	15:00 ~ 16:00	152	23%	0%	3%	22%	2%	2%	7%	8%	3%	18%	6%	4%	1%	1%	1%	1%
	16:00 ~ 17:00	152	24%	0%	3%	22%	2%	2%	7%	7%	3%	18%	5%	4%	1%	1%	1%	1%
	17:00 ~ 18:00	180	24%	0%	3%	23%	2%	2%	7%	7%	2%	18%	6%	4%	1%	1%	1%	1%
	18:00 ~ 19:00	180	24%	0%	3%	23%	2%	2%	7%	6%	2%	18%	5%	4%	1%	1%	1%	1%
	19:00 ~ 20:00	180	24%	0%	3%	23%	2%	2%	7%	7%	2%	18%	6%	4%	1%	1%	1%	1%
	20:00 ~ 21:00	182	24%	0%	3%	23%	2%	2%	7%	7%	3%	18%	5%	4%	1%	1%	1%	1%
	21:00 ~ 22:00	152	24%	0%	3%	22%	2%	2%	7%	7%	3%	18%	5%	4%	1%	1%	1%	1%
	22:00 ~ 23:00	153	23%	0%	3%	22%	2%	2%	7%	8%	3%	18%	6%	4%	1%	1%	1%	1%
	23:00 ~ 00:00	124	23%	0%	3%	22%	2%	2%	6%	8%	2%	18%	6%	4%	1%	1%	1%	1%
Max		190	24%	1%	4%	23%	3%	3%	7%	11%	3%	19%	7%	5%	2%	1%	1%	1%

Composite Emission Factor

Hour	NOx	RSP
00:00 ~ 01:00	1.51	0.19
01:00 ~ 02:00	1.54	0.19
02:00 ~ 03:00	1.49	0.19
03:00 ~ 04:00	1.39	0.18
04:00 ~ 05:00	1.59	0.20
05:00 ~ 06:00	1.59	0.20
06:00 ~ 07:00	1.42	0.19
07:00 ~ 08:00	1.52	0.19
08:00 ~ 09:00	1.51	0.19
09:00 ~ 10:00	1.54	0.19
10:00 ~ 11:00	1.51	0.19
11:00 ~ 12:00	1.51	0.19
12:00 ~ 13:00	1.50	0.19
13:00 ~ 14:00	1.55	0.20
14:00 ~ 15:00	1.51	0.19
15:00 ~ 16:00	1.51	0.19
16:00 ~ 17:00	1.47	0.19
17:00 ~ 18:00	1.45	0.19
18:00 ~ 19:00	1.42	0.19
19:00 ~ 20:00	1.45	0.19
20:00 ~ 21:00	1.47	0.19
21:00 ~ 22:00	1.47	0.19
22:00 ~ 23:00	1.50	0.19
23:00 ~ 00:00	1.55	0.20
Max	1.59	0.20

Remark:

1) The max EF for each vehicle type can be referred to Table MC1, MC2, TAXI1 and TAXI2 for this road

2) Under an extreme worst case scenario, the max composite EF of each road is selected to be the max hourly composite EF calculated by the max EF for each vehicle type by the following equation:

Composite Hourly Emission Factor (in g/veh-mile) = {% of PC x max EF in g/veh-mile of PC} + {% of LGV(3) x max EF in g/veh-mile of LGV(3)} + {% of LGV(4) x max EF in g/veh-mile of LGV(4)} + {% of PLB x max EF in g/veh-mile of PLB} + ……

3) Max composite EF and max traffic flow are used to predict the air pollutant concentration from vehicle emission

Road No. 25c

Calculation of Composite Emission Factor

Max Emissions Factor in g/veh-mile (for particular vehicle type within each hour out of 24 hours)

Max EF	Vehicle Type															
	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
NOx	0.20	1.41	0.39	0.21	3.15	5.95	7.13	0.03	1.12	0.41	0.19	0.23	2.87	4.81	5.73	4.28
RSP	0.04	0.72	0.20	0.20	0.42	0.67	0.58	0.31	0.13	0.10	0.15	0.28	0.25	0.51	0.44	0.00

Road No.	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
25c	00:00 ~ 01:00	134	24%	0%	3%	19%	2%	2%	6%	8%	3%	19%	6%	4%	1%	1%	1%	1%
	01:00 ~ 02:00	102	24%	0%	3%	20%	2%	2%	6%	9%	3%	19%	6%	4%	1%	1%	1%	1%
	02:00 ~ 03:00	66	24%	0%	3%	20%	2%	2%	6%	9%	3%	18%	6%	5%	2%	2%	0%	0%
	03:00 ~ 04:00	65	23%	0%	3%	20%	2%	2%	6%	9%	3%	18%	6%	5%	2%	2%	0%	0%
	04:00 ~ 05:00	31	23%	0%	3%	19%	3%	3%	6%	10%	3%	19%	6%	3%	0%	0%	0%	0%
	05:00 ~ 06:00	31	23%	0%	3%	19%	3%	3%	6%	10%	3%	19%	6%	3%	0%	0%	0%	0%
	06:00 ~ 07:00	62	23%	0%	3%	21%	3%	2%	5%	10%	3%	18%	6%	5%	2%	0%	0%	0%
	07:00 ~ 08:00	126	22%	0%	4%	20%	2%	2%	5%	10%	3%	17%	6%	5%	1%	1%	1%	1%
	08:00 ~ 09:00	190	22%	1%	4%	19%	3%	2%	5%	11%	3%	17%	7%	5%	1%	1%	1%	1%
	09:00 ~ 10:00	159	22%	0%	4%	19%	3%	2%	5%	10%	3%	18%	6%	5%	1%	1%	1%	1%
	10:00 ~ 11:00	161	22%	0%	4%	19%	2%	2%	6%	10%	3%	18%	6%	4%	1%	1%	1%	1%
	11:00 ~ 12:00	164	23%	0%	4%	20%	2%	2%	5%	9%	3%	18%	6%	4%	1%	1%	1%	1%
	12:00 ~ 13:00	133	23%	0%	3%	20%	2%	2%	6%	9%	3%	18%	6%	5%	1%	1%	1%	1%
	13:00 ~ 14:00	134	24%	0%	3%	19%	2%	2%	6%	8%	3%	19%	6%	4%	1%	1%	1%	1%
	14:00 ~ 15:00	134	24%	0%	3%	19%	2%	2%	6%	8%	3%	19%	6%	4%	1%	1%	1%	1%
	15:00 ~ 16:00	170	25%	0%	3%	19%	2%	2%	6%	8%	3%	19%	6%	4%	1%	1%	1%	1%
	16:00 ~ 17:00	173	25%	0%	3%	20%	2%	2%	6%	8%	3%	19%	6%	4%	1%	1%	1%	1%
	17:00 ~ 18:00	204	25%	0%	2%	20%	1%	2%	7%	7%	2%	20%	5%	4%	1%	1%	0%	0%
	18:00 ~ 19:00	210	26%	0%	2%	20%	1%	2%	7%	7%	2%	20%	5%	4%	1%	1%	0%	0%
	19:00 ~ 20:00	206	26%	0%	2%	20%	1%	2%	7%	7%	2%	19%	5%	4%	1%	1%	0%	0%
	20:00 ~ 21:00	205	25%	0%	2%	20%	1%	2%	7%	7%	2%	20%	5%	4%	1%	1%	0%	0%
	21:00 ~ 22:00	173	25%	0%	3%	20%	2%	2%	6%	8%	3%	19%	6%	4%	1%	1%	1%	1%
	22:00 ~ 23:00	171	25%	0%	3%	20%	2%	2%	6%	8%	3%	19%	6%	4%	1%	1%	1%	1%
	23:00 ~ 00:00	137	24%	0%	3%	20%	2%	2%	7%	8%	3%	18%	6%	4%	1%	1%	1%	1%
Max		210	26%	1%	4%	21%	3%	3%	7%	11%	3%	20%	7%	5%	2%	2%	1%	1%

Composite Emission Factor

Hour	NOx	RSP
00:00 ~ 01:00	1.51	0.19
01:00 ~ 02:00	1.55	0.19
02:00 ~ 03:00	1.48	0.19
03:00 ~ 04:00	1.50	0.19
04:00 ~ 05:00	1.59	0.20
05:00 ~ 06:00	1.59	0.20
06:00 ~ 07:00	1.42	0.19
07:00 ~ 08:00	1.52	0.19
08:00 ~ 09:00	1.51	0.19
09:00 ~ 10:00	1.53	0.19
10:00 ~ 11:00	1.56	0.19
11:00 ~ 12:00	1.50	0.19
12:00 ~ 13:00	1.56	0.19
13:00 ~ 14:00	1.51	0.19
14:00 ~ 15:00	1.51	0.19
15:00 ~ 16:00	1.49	0.19
16:00 ~ 17:00	1.47	0.19
17:00 ~ 18:00	1.47	0.19
18:00 ~ 19:00	1.50	0.19
19:00 ~ 20:00	1.49	0.19
20:00 ~ 21:00	1.49	0.19
21:00 ~ 22:00	1.47	0.19
22:00 ~ 23:00	1.48	0.19
23:00 ~ 00:00	1.53	0.19
Max	1.59	0.20

Remark:

1) The max EF for each vehicle type can be referred to Table MC1, MC2, TAXI1 and TAXI2 for this road

2) Under an extreme worst case scenario, the max composite EF of each road is selected to be the max hourly composite EF calculated by the max EF for each vehicle type by the following equation:

Composite Hourly Emission Factor (in g/veh-mile) = [% of PC x max EF in g/veh-mile of PC) + (% of LGV(3) x max EF in g/veh-mile of LGV(3)) + [% of LGV(4) x max EF in g/veh-mile of LGV(4)] + [% of PLB x max EF in g/veh-mile of PLB] + ...]

3) Max composite EF and max traffic flow are used to predict the air pollutant concentration from vehicle emission

Max Emissions Factor in g/veh-mile (for particular vehicle type within each hour out of 24 hours)

Max EF	Vehicle Type															
	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
NOx	0.20	1.41	0.39	0.21	3.15	5.95	7.13	6.03	1.12	0.41	0.15	0.23	2.87	4.81	5.73	4.28
RSP	0.04	0.72	0.20	0.20	0.42	0.67	0.58	0.31	0.13	0.10	0.15	0.29	0.25	0.51	0.44	0.00

Road No.	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
26a	00:00 ~ 01:00	149	25%	0%	3%	21%	2%	2%	5%	8%	3%	19%	5%	4%	1%	1%	1%	1%
	01:00 ~ 02:00	114	25%	0%	3%	19%	2%	2%	5%	9%	3%	19%	6%	4%	1%	1%	1%	1%
	02:00 ~ 03:00	73	25%	0%	3%	19%	1%	1%	5%	10%	3%	19%	7%	4%	1%	1%	0%	0%
	03:00 ~ 04:00	72	25%	0%	3%	18%	1%	1%	6%	10%	3%	19%	7%	4%	1%	1%	0%	0%
	04:00 ~ 05:00	36	25%	0%	3%	17%	3%	3%	6%	11%	3%	19%	6%	6%	0%	0%	0%	0%
	05:00 ~ 06:00	37	24%	0%	3%	16%	3%	3%	5%	11%	3%	19%	8%	5%	0%	0%	0%	0%
	06:00 ~ 07:00	73	25%	0%	3%	15%	1%	1%	5%	11%	3%	19%	7%	5%	1%	1%	0%	1%
	07:00 ~ 08:00	148	24%	0%	3%	14%	2%	2%	5%	11%	3%	19%	7%	5%	1%	1%	1%	1%
	08:00 ~ 09:00	220	24%	0%	3%	13%	2%	2%	6%	12%	3%	19%	8%	6%	1%	1%	0%	1%
	09:00 ~ 10:00	183	24%	0%	3%	15%	2%	2%	5%	11%	3%	19%	7%	5%	1%	1%	1%	1%
	10:00 ~ 11:00	183	24%	0%	3%	16%	2%	2%	5%	11%	3%	19%	7%	5%	1%	1%	1%	1%
	11:00 ~ 12:00	185	24%	0%	3%	17%	2%	2%	5%	10%	3%	19%	6%	5%	1%	1%	1%	1%
	12:00 ~ 13:00	149	24%	0%	3%	18%	2%	2%	5%	9%	3%	19%	6%	5%	1%	1%	1%	1%
	13:00 ~ 14:00	149	25%	0%	3%	19%	2%	2%	5%	9%	3%	19%	6%	4%	1%	1%	1%	1%
	14:00 ~ 15:00	149	25%	0%	3%	21%	2%	2%	5%	8%	3%	19%	5%	4%	1%	1%	1%	1%
	15:00 ~ 16:00	189	25%	0%	3%	22%	2%	2%	5%	7%	3%	20%	5%	4%	1%	1%	1%	1%
	16:00 ~ 17:00	191	25%	0%	3%	23%	2%	2%	5%	6%	3%	19%	5%	4%	1%	1%	1%	1%
	17:00 ~ 18:00	227	26%	0%	3%	24%	2%	2%	5%	6%	3%	20%	4%	3%	1%	1%	0%	0%
	18:00 ~ 19:00	230	26%	0%	3%	25%	2%	2%	5%	5%	3%	20%	4%	3%	1%	1%	0%	0%
	19:00 ~ 20:00	229	26%	0%	3%	24%	2%	2%	5%	6%	3%	20%	4%	3%	1%	1%	0%	0%
	20:00 ~ 21:00	227	26%	0%	3%	24%	2%	2%	5%	6%	3%	19%	4%	4%	1%	1%	0%	0%
	21:00 ~ 22:00	190	25%	0%	3%	23%	2%	2%	5%	6%	3%	19%	5%	4%	1%	1%	1%	1%
	22:00 ~ 23:00	190	25%	0%	3%	22%	2%	2%	5%	7%	3%	19%	5%	4%	1%	1%	1%	1%
	23:00 ~ 00:00	150	25%	0%	3%	21%	2%	2%	5%	7%	3%	19%	5%	4%	1%	1%	1%	1%
Max		230	26%	0%	3%	25%	3%	3%	6%	12%	3%	20%	8%	6%	1%	1%	1%	1%

Composite Emission Factor

Hour	NOx	RSP
00:00 ~ 01:00	1.42	0.18
01:00 ~ 02:00	1.47	0.18
02:00 ~ 03:00	1.45	0.18
03:00 ~ 04:00	1.46	0.18
04:00 ~ 05:00	1.57	0.19
05:00 ~ 06:00	1.53	0.19
06:00 ~ 07:00	1.58	0.18
07:00 ~ 08:00	1.65	0.19
08:00 ~ 09:00	1.69	0.19
09:00 ~ 10:00	1.62	0.19
10:00 ~ 11:00	1.59	0.19
11:00 ~ 12:00	1.54	0.19
12:00 ~ 13:00	1.52	0.19
13:00 ~ 14:00	1.46	0.18
14:00 ~ 15:00	1.42	0.18
15:00 ~ 16:00	1.35	0.18
16:00 ~ 17:00	1.30	0.18
17:00 ~ 18:00	1.25	0.18
18:00 ~ 19:00	1.19	0.18
19:00 ~ 20:00	1.24	0.18
20:00 ~ 21:00	1.28	0.18
21:00 ~ 22:00	1.31	0.18
22:00 ~ 23:00	1.34	0.18
23:00 ~ 00:00	1.37	0.18
Max	1.69	0.19

Remark:

1) The max EF for each vehicle type can be refered to Table MC1, MC2, TAXI1 and TAXI2 for this road

2) Under an extreme worst case scenario, the max composite EF of each road is selected to be the max hourly composite EF calculated by the max EF for each vehicle type by the following equation:

Composite Hourly Emission Factor (in g/veh-mile) = [% of PC x max EF in g/veh-mile of PC] + [% of LGV(3) x max EF in g/veh-mile of LGV(3)] + [% of LGV(4) x max EF in g/veh-mile of LGV(4)] + [% of PLB x max EF in g/veh-mile of PLB] + ...)

3) Max composite EF and max traffic flow are used to predict the air pollutant concentration from vehicle emission

Road No. 26b

Calculation of Composite Emission Factor

Max Emissions Factor in g/veh-mile (for particular vehicle type within each hour out of 24 hours)

Max EF	Vehicle Type															
	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
NOx	0.20	1.41	0.39	0.21	3.15	5.95	7.13	0.03	1.12	0.41	0.19	0.23	2.87	4.81	5.73	4.28
RSP	0.04	0.72	0.20	0.20	0.42	0.67	0.58	0.31	0.13	0.10	0.15	0.28	0.25	0.51	0.44	0.00

Road No.	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
26b	00:00 ~ 01:00	144	24%	0%	3%	19%	2%	2%	6%	9%	3%	18%	6%	5%	1%	1%	1%	1%
	01:00 ~ 02:00	108	23%	0%	3%	19%	2%	2%	6%	9%	3%	19%	6%	5%	1%	1%	1%	1%
	02:00 ~ 03:00	71	24%	0%	3%	18%	1%	3%	6%	10%	3%	18%	7%	4%	1%	1%	0%	0%
	03:00 ~ 04:00	70	23%	0%	3%	17%	1%	3%	6%	10%	3%	19%	7%	6%	1%	1%	0%	0%
	04:00 ~ 05:00	35	23%	0%	3%	17%	3%	3%	6%	11%	3%	17%	9%	6%	0%	0%	0%	0%
	05:00 ~ 06:00	35	23%	0%	3%	17%	3%	3%	6%	11%	3%	17%	9%	6%	0%	0%	0%	0%
	06:00 ~ 07:00	70	23%	0%	3%	16%	1%	1%	6%	11%	3%	19%	7%	6%	1%	1%	0%	1%
	07:00 ~ 08:00	140	22%	0%	3%	15%	2%	2%	6%	12%	3%	18%	8%	6%	1%	1%	1%	1%
	08:00 ~ 09:00	210	22%	0%	3%	14%	2%	2%	6%	13%	3%	18%	8%	6%	1%	1%	0%	1%
	09:00 ~ 10:00	175	22%	0%	3%	15%	2%	2%	6%	13%	3%	18%	8%	6%	1%	1%	1%	1%
	10:00 ~ 11:00	176	23%	0%	3%	16%	2%	2%	6%	11%	3%	18%	7%	5%	1%	1%	1%	1%
	11:00 ~ 12:00	178	23%	0%	3%	17%	2%	2%	6%	11%	3%	18%	7%	5%	1%	1%	1%	1%
	12:00 ~ 13:00	144	23%	0%	3%	17%	2%	2%	6%	10%	3%	18%	7%	5%	1%	1%	1%	1%
	13:00 ~ 14:00	143	23%	0%	3%	18%	2%	2%	6%	10%	3%	18%	6%	5%	1%	1%	1%	1%
	14:00 ~ 15:00	145	23%	0%	3%	19%	2%	2%	6%	9%	3%	18%	6%	5%	1%	1%	1%	1%
	15:00 ~ 16:00	181	24%	0%	3%	20%	2%	2%	7%	8%	3%	18%	6%	4%	1%	1%	1%	1%
	16:00 ~ 17:00	181	24%	0%	3%	21%	2%	2%	7%	8%	3%	18%	6%	4%	1%	1%	1%	1%
	17:00 ~ 18:00	220	24%	0%	3%	22%	2%	2%	7%	7%	3%	18%	5%	4%	1%	1%	1%	0%
	18:00 ~ 19:00	220	25%	0%	3%	23%	2%	2%	7%	6%	2%	19%	5%	4%	1%	1%	1%	0%
	19:00 ~ 20:00	219	24%	0%	3%	22%	2%	2%	7%	7%	2%	19%	5%	4%	1%	1%	1%	0%
	20:00 ~ 21:00	220	24%	0%	3%	21%	2%	2%	7%	7%	3%	18%	5%	4%	1%	1%	1%	0%
	21:00 ~ 22:00	181	24%	0%	3%	21%	2%	2%	7%	8%	3%	18%	6%	4%	1%	1%	1%	1%
	22:00 ~ 23:00	182	24%	0%	3%	20%	2%	2%	7%	8%	3%	18%	6%	4%	1%	1%	1%	1%
	23:00 ~ 00:00	143	24%	0%	3%	20%	2%	2%	6%	8%	3%	18%	6%	4%	1%	1%	1%	1%
Max		220	25%	0%	3%	23%	3%	3%	7%	13%	3%	19%	9%	6%	1%	1%	1%	1%

Composite Emission Factor

Hour	NOx	RSP
00:00 – 01:00	1.57	0.19
01:00 – 02:00	1.60	0.19
02:00 – 03:00	1.56	0.19
03:00 – 04:00	1.58	0.20
04:00 – 05:00	1.60	0.20
05:00 – 06:00	1.60	0.20
06:00 – 07:00	1.64	0.19
07:00 – 08:00	1.72	0.20
08:00 – 09:00	1.76	0.20
09:00 – 10:00	1.74	0.20
10:00 – 11:00	1.70	0.20
11:00 – 12:00	1.66	0.20
12:00 – 13:00	1.65	0.20
13:00 – 14:00	1.62	0.20
14:00 – 15:00	1.56	0.19
15:00 – 16:00	1.54	0.19
16:00 – 17:00	1.51	0.19
17:00 – 18:00	1.48	0.19
18:00 – 19:00	1.45	0.19
19:00 – 20:00	1.48	0.19
20:00 – 21:00	1.51	0.19
21:00 – 22:00	1.51	0.19
22:00 – 23:00	1.54	0.19
23:00 – 00:00	1.54	0.19
Max	**1.76**	**0.20**

Remark:

1) The max EF for each vehicle type can be referred to Table MC1, MC2, TAXI1 and TAXI2 for this road

2) Under an extreme worst case scenario, the max composite EF of each road is selected to be the max hourly composite EF calculated by the max EF for each vehicle type by the following equation:

Composite Hourly Emission Factor (in g/veh-mile) = [% of PC] x max EF in g/veh-mile of PC] + [% of LGV(3) x max EF in g/veh-mile of LGV(3)] + [% of LGV(4) x max EF in g/veh-mile of LGV(4)] + [% of PLB x max EF in g/veh-mile of PLB] + ...]

3) Max composite EF and max traffic flow are used to predict the air pollutant concentration from vehicle emission

Max Emissions Factor in g/veh-mile (for particular vehicle type within each hour out of 24 hours)

Max EF	Vehicle Type															
	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
NOx	0.20	1.41	0.39	0.21	3.15	5.95	7.13	6.03	1.12	0.41	0.19	0.23	2.87	4.81	5.73	4.28
RSP	0.04	0.72	0.20	0.20	0.42	0.67	0.58	0.31	0.13	0.10	0.15	0.28	0.25	0.51	0.44	0.00

Road No.	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
26c	00:00 ~ 01:00	216	32%	0%	2%	15%	1%	1%	4%	6%	4%	25%	4%	3%	1%	0%	0%	0%
	01:00 ~ 02:00	162	33%	0%	2%	15%	1%	1%	4%	6%	4%	25%	4%	3%	1%	1%	1%	1%
	02:00 ~ 03:00	107	33%	0%	3%	15%	2%	1%	4%	6%	4%	25%	4%	3%	1%	1%	0%	0%
	03:00 ~ 04:00	108	32%	0%	3%	14%	2%	1%	4%	6%	4%	26%	4%	3%	1%	1%	0%	0%
	04:00 ~ 05:00	53	32%	0%	2%	15%	2%	2%	4%	6%	4%	26%	4%	4%	0%	0%	0%	0%
	05:00 ~ 06:00	54	31%	0%	2%	15%	2%	2%	4%	7%	4%	26%	4%	4%	0%	0%	0%	0%
	06:00 ~ 07:00	109	32%	0%	3%	14%	2%	1%	4%	6%	4%	26%	5%	3%	1%	1%	0%	0%
	07:00 ~ 08:00	219	32%	0%	3%	14%	2%	1%	3%	7%	4%	25%	5%	3%	0%	0%	0%	0%
	08:00 ~ 09:00	330	31%	0%	3%	13%	2%	1%	3%	7%	4%	25%	5%	3%	1%	1%	0%	1%
	09:00 ~ 10:00	273	32%	0%	3%	14%	2%	1%	3%	7%	4%	25%	4%	3%	1%	0%	0%	0%
	10:00 ~ 11:00	274	32%	0%	3%	14%	2%	1%	4%	7%	4%	25%	4%	3%	1%	0%	0%	0%
	11:00 ~ 12:00	270	32%	0%	3%	14%	1%	1%	4%	6%	4%	26%	4%	3%	1%	0%	0%	0%
	12:00 ~ 13:00	216	32%	0%	2%	14%	1%	1%	4%	6%	4%	25%	4%	3%	1%	0%	0%	0%
	13:00 ~ 14:00	216	32%	0%	2%	14%	1%	1%	4%	6%	4%	25%	4%	3%	1%	0%	0%	0%
	14:00 ~ 15:00	216	32%	0%	2%	15%	1%	1%	4%	6%	4%	25%	4%	3%	1%	0%	0%	0%
	15:00 ~ 16:00	267	33%	0%	2%	15%	1%	1%	4%	5%	4%	25%	4%	3%	1%	0%	0%	0%
	16:00 ~ 17:00	269	33%	0%	2%	15%	1%	1%	4%	5%	4%	25%	4%	3%	1%	1%	0%	0%
	17:00 ~ 18:00	319	34%	0%	2%	15%	1%	2%	4%	5%	3%	26%	4%	3%	1%	1%	0%	0%
	18:00 ~ 19:00	320	33%	0%	2%	16%	1%	2%	5%	4%	3%	26%	3%	3%	1%	1%	1%	0%
	19:00 ~ 20:00	320	33%	0%	2%	16%	1%	2%	5%	4%	3%	26%	4%	3%	1%	1%	0%	0%
	20:00 ~ 21:00	320	33%	0%	2%	15%	1%	2%	4%	5%	3%	26%	4%	3%	1%	1%	0%	0%
	21:00 ~ 22:00	269	33%	0%	2%	15%	1%	1%	4%	5%	4%	25%	4%	3%	1%	1%	0%	0%
	22:00 ~ 23:00	268	33%	0%	2%	15%	1%	1%	4%	5%	4%	25%	4%	3%	1%	0%	0%	0%
	23:00 ~ 00:00	217	33%	0%	2%	15%	1%	1%	4%	6%	4%	25%	4%	3%	1%	0%	0%	0%
Max		330	34%	0%	3%	16%	2%	2%	5%	7%	4%	26%	5%	4%	1%	1%	1%	1%

Composite Emission Factor

Hour	NOx	RSP
00:00 ~ 01:00	1.13	0.15
01:00 ~ 02:00	1.10	0.15
02:00 ~ 03:00	1.07	0.15
03:00 ~ 04:00	1.12	0.15
04:00 ~ 05:00	1.05	0.15
05:00 ~ 06:00	1.15	0.16
06:00 ~ 07:00	1.11	0.15
07:00 ~ 08:00	1.14	0.15
08:00 ~ 09:00	1.17	0.15
09:00 ~ 10:00	1.13	0.15
10:00 ~ 11:00	1.14	0.15
11:00 ~ 12:00	1.11	0.15
12:00 ~ 13:00	1.12	0.15
13:00 ~ 14:00	1.13	0.15
14:00 ~ 15:00	1.13	0.15
15:00 ~ 16:00	1.10	0.15
16:00 ~ 17:00	1.12	0.15
17:00 ~ 18:00	1.09	0.15
18:00 ~ 19:00	1.10	0.15
19:00 ~ 20:00	1.09	0.15
20:00 ~ 21:00	1.08	0.15
21:00 ~ 22:00	1.12	0.15
22:00 ~ 23:00	1.10	0.15
23:00 ~ 00:00	1.13	0.15
Max	**1.17**	**0.16**

Remark:

1) The max EF for each vehicle type can be referred to Table MC1, MC2, TAXI1 and TAXI2 for this road

2) Under an extreme worst case scenario, the max composite EF of each road is selected to be the max hourly composite EF calculated by the max EF for each vehicle type by the following equation:

Composite Hourly Emission Factor (in g/veh-mile) = {% of PC1 x max EF in g/veh-mile of PC1 + {% of LGV(3) x max EF in g/veh-mile of LGV(3)} + {% of LGV(4) x max EF in g/veh-mile of LGV(4)} + {% of PLB x max EF in g/veh-mile of PLB} + ...}

3) Max composite EF and max traffic flow are used to predict the air pollutant concentration from vehicle emission

Road No. 27

Calculation of Composite Emission Factor

Max Emissions Factor in g/veh-mile (for particular vehicle type within each hour out of 24 hours)

Max EF	Vehicle Type															
	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FDDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
NOx	0.20	1.44	0.39	0.21	3.15	5.95	7.43	6.03	1.12	0.41	0.19	0.23	2.87	4.81	5.73	4.28
RSP	0.04	0.72	0.20	0.20	0.42	0.67	0.58	0.31	0.13	0.10	0.15	0.28	0.25	0.51	0.44	0.00

Road No.	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FDDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
27	00:00 ~ 01:00	219	21%	0%	4%	28%	3%	2%	5%	7%	2%	16%	5%	4%	1%	0%	0%	0%
	01:00 ~ 02:00	165	21%	1%	4%	27%	3%	2%	5%	7%	2%	17%	5%	4%	1%	1%	1%	1%
	02:00 ~ 03:00	110	22%	0%	5%	26%	3%	2%	5%	7%	3%	17%	5%	4%	1%	1%	1%	0%
	03:00 ~ 04:00	133	22%	0%	4%	26%	3%	2%	4%	7%	3%	18%	4%	4%	1%	1%	1%	1%
	04:00 ~ 05:00	55	24%	0%	4%	25%	4%	2%	4%	7%	4%	18%	5%	4%	0%	0%	0%	0%
	05:00 ~ 06:00	55	24%	0%	4%	25%	4%	2%	4%	7%	4%	18%	5%	4%	0%	0%	0%	0%
	06:00 ~ 07:00	113	23%	0%	4%	23%	3%	2%	4%	8%	3%	19%	5%	4%	1%	1%	1%	1%
	07:00 ~ 08:00	227	24%	0%	4%	22%	3%	1%	4%	8%	3%	19%	5%	4%	1%	0%	0%	0%
	08:00 ~ 09:00	340	24%	0%	4%	22%	3%	1%	4%	8%	3%	19%	5%	4%	1%	1%	0%	1%
	09:00 ~ 10:00	283	24%	0%	5%	23%	3%	1%	4%	8%	3%	19%	5%	4%	1%	1%	0%	0%
	10:00 ~ 11:00	279	23%	0%	4%	24%	3%	1%	4%	8%	3%	19%	5%	4%	1%	1%	0%	0%
	11:00 ~ 12:00	278	23%	0%	4%	25%	3%	1%	4%	7%	3%	18%	5%	4%	1%	1%	0%	0%
	12:00 ~ 13:00	223	22%	0%	4%	26%	3%	2%	4%	7%	3%	17%	5%	4%	1%	0%	0%	0%
	13:00 ~ 14:00	221	21%	0%	4%	28%	3%	2%	5%	7%	3%	17%	5%	4%	1%	0%	0%	0%
	14:00 ~ 15:00	219	21%	0%	4%	29%	3%	2%	5%	7%	2%	16%	5%	4%	1%	0%	0%	0%
	15:00 ~ 16:00	272	20%	0%	4%	30%	3%	2%	6%	6%	2%	16%	5%	3%	1%	1%	1%	0%
	16:00 ~ 17:00	270	20%	0%	4%	31%	3%	2%	6%	6%	2%	15%	5%	3%	1%	1%	1%	0%
	17:00 ~ 18:00	320	19%	0%	4%	33%	3%	2%	6%	6%	2%	15%	5%	3%	1%	1%	1%	0%
	18:00 ~ 19:00	320	18%	0%	4%	34%	3%	2%	6%	6%	2%	14%	5%	3%	1%	1%	1%	0%
	19:00 ~ 20:00	320	19%	0%	4%	33%	3%	2%	6%	6%	2%	14%	5%	3%	1%	1%	1%	0%
	20:00 ~ 21:00	321	19%	0%	4%	32%	2%	2%	6%	6%	2%	15%	5%	3%	1%	1%	1%	0%
	21:00 ~ 22:00	270	20%	0%	4%	31%	3%	2%	6%	6%	2%	15%	5%	3%	1%	1%	1%	0%
	22:00 ~ 23:00	272	20%	0%	4%	30%	3%	2%	6%	6%	2%	16%	5%	3%	1%	1%	1%	0%
	23:00 ~ 00:00	218	21%	0%	4%	29%	3%	2%	5%	6%	2%	16%	5%	4%	1%	1%	0%	0%
Max		340	24%	1%	5%	34%	4%	2%	6%	8%	4%	19%	5%	4%	1%	1%	1%	1%

Remark:

1) The max EF for each vehicle type can be referred to Table MC1, MC2, TAXI1 and TAXI2 for this road

2) Under an extreme worst case scenario, the max composite EF of each road is selected to be the max hourly composite EF calculated by the max EF for each vehicle type by the following equation:
Composite Hourly Emission Factor (in g/veh-mile) = (% of PC x max EF in g/veh-mile of PC) + (% of LGV(3) x max EF in g/veh-mile of LGV(3)) + (% of LGV(4) x max EF in g/veh-mile of LGV(4)) + (% of PLB x max EF in g/veh-mile of PLB) + ...)

3) Max composite EF and max traffic flow are used to predict the air pollutant concentration from vehicle emission

Composite Emission Factor

Hour	NOx	RSP
00:00 ~ 01:00	1.31	0.19
01:00 ~ 02:00	1.31	0.19
02:00 ~ 03:00	1.33	0.19
03:00 ~ 04:00	1.34	0.19
04:00 ~ 05:00	1.18	0.18
05:00 ~ 06:00	1.18	0.18
06:00 ~ 07:00	1.32	0.18
07:00 ~ 08:00	1.29	0.18
08:00 ~ 09:00	1.24	0.18
09:00 ~ 10:00	1.27	0.18
10:00 ~ 11:00	1.26	0.18
11:00 ~ 12:00	1.27	0.19
12:00 ~ 13:00	1.29	0.19
13:00 ~ 14:00	1.30	0.19
14:00 ~ 15:00	1.31	0.19
15:00 ~ 16:00	1.33	0.20
16:00 ~ 17:00	1.34	0.20
17:00 ~ 18:00	1.34	0.20
18:00 ~ 19:00	1.36	0.21
19:00 ~ 20:00	1.34	0.20
20:00 ~ 21:00	1.34	0.20
21:00 ~ 22:00	1.34	0.20
22:00 ~ 23:00	1.33	0.20
23:00 ~ 00:00	1.31	0.20
Max	1.36	0.21

Max Emissions Factor in g/veh-mile (for particular vehicle type within each hour out of 24 hours)

Max EF	Vehicle Type															
	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
NOx	0.20	1.41	0.39	0.21	3.15	5.95	7.13	6.03	1.12	0.41	0.19	0.23	2.87	4.81	5.73	4.28
RSP	0.04	0.72	0.20	0.20	0.42	0.67	0.58	0.31	0.13	0.10	0.15	0.28	0.25	0.51	0.44	0.00

Road No.	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
28	00:00 ~ 01:00	314	24%	0%	4%	29%	3%	1%	4%	5%	3%	19%	4%	3%	1%	0%	0%	0%
	01:00 ~ 02:00	238	25%	0%	5%	28%	3%	1%	3%	5%	3%	19%	3%	3%	0%	0%	0%	0%
	02:00 ~ 03:00	162	25%	1%	4%	27%	3%	1%	3%	5%	3%	20%	3%	2%	1%	1%	1%	0%
	03:00 ~ 04:00	164	26%	1%	4%	26%	3%	1%	3%	5%	3%	20%	3%	2%	1%	1%	1%	1%
	04:00 ~ 05:00	81	27%	0%	5%	26%	2%	1%	2%	5%	4%	21%	4%	2%	0%	0%	0%	0%
	05:00 ~ 06:00	82	27%	0%	5%	26%	2%	1%	2%	5%	4%	22%	4%	2%	0%	0%	0%	0%
	06:00 ~ 07:00	173	27%	1%	5%	24%	3%	1%	2%	5%	3%	21%	3%	2%	1%	1%	1%	1%
	07:00 ~ 08:00	342	27%	0%	5%	23%	3%	1%	3%	5%	4%	22%	3%	2%	1%	0%	0%	0%
	08:00 ~ 09:00	520	28%	0%	5%	23%	3%	1%	2%	5%	4%	22%	3%	2%	0%	0%	0%	0%
	09:00 ~ 10:00	426	27%	0%	5%	24%	3%	1%	3%	5%	4%	22%	3%	2%	0%	0%	0%	0%
	10:00 ~ 11:00	417	27%	0%	5%	25%	3%	1%	3%	5%	3%	21%	3%	2%	0%	0%	0%	0%
	11:00 ~ 12:00	410	26%	0%	5%	26%	3%	1%	3%	5%	3%	21%	3%	2%	0%	0%	0%	0%
	12:00 ~ 13:00	323	25%	0%	5%	27%	3%	1%	3%	5%	3%	20%	3%	2%	1%	0%	0%	0%
	13:00 ~ 14:00	318	25%	0%	4%	28%	3%	1%	3%	5%	3%	19%	3%	3%	1%	0%	0%	0%
	14:00 ~ 15:00	311	24%	0%	5%	29%	3%	1%	4%	5%	3%	19%	3%	3%	1%	0%	0%	0%
	15:00 ~ 16:00	381	23%	0%	4%	31%	3%	1%	4%	4%	3%	18%	3%	2%	1%	1%	1%	0%
	16:00 ~ 17:00	374	23%	0%	4%	32%	3%	1%	4%	5%	2%	18%	3%	2%	1%	1%	1%	0%
	17:00 ~ 18:00	438	22%	0%	4%	34%	3%	2%	4%	4%	2%	17%	3%	3%	1%	0%	0%	0%
	18:00 ~ 19:00	430	21%	0%	4%	35%	3%	2%	5%	4%	2%	16%	3%	3%	1%	1%	0%	0%
	19:00 ~ 20:00	436	22%	0%	4%	34%	3%	2%	4%	4%	2%	17%	3%	3%	1%	0%	0%	0%
	20:00 ~ 21:00	442	22%	0%	4%	33%	3%	2%	4%	4%	2%	17%	3%	2%	1%	0%	0%	0%
	21:00 ~ 22:00	375	23%	0%	4%	32%	3%	1%	4%	5%	3%	18%	3%	2%	1%	1%	1%	0%
	22:00 ~ 23:00	380	23%	0%	4%	31%	3%	1%	4%	4%	3%	18%	3%	2%	1%	1%	1%	0%
	23:00 ~ 00:00	308	24%	0%	4%	30%	3%	1%	4%	5%	3%	19%	3%	3%	1%	1%	0%	0%
Max		520	28%	1%	5%	35%	3%	2%	5%	5%	4%	22%	4%	3%	1%	1%	1%	1%

Composite Emission Factor

Hour	NOx	RSP
00:00 ~ 01:00	1.03	0.17
01:00 ~ 02:00	1.03	0.17
02:00 ~ 03:00	1.04	0.17
03:00 ~ 04:00	1.05	0.17
04:00 ~ 05:00	0.90	0.16
05:00 ~ 06:00	0.89	0.16
06:00 ~ 07:00	1.01	0.16
07:00 ~ 08:00	0.98	0.16
08:00 ~ 09:00	0.95	0.16
09:00 ~ 10:00	0.98	0.16
10:00 ~ 11:00	0.97	0.16
11:00 ~ 12:00	0.99	0.17
12:00 ~ 13:00	1.01	0.17
13:00 ~ 14:00	1.03	0.17
14:00 ~ 15:00	1.04	0.17
15:00 ~ 16:00	1.07	0.18
16:00 ~ 17:00	1.07	0.18
17:00 ~ 18:00	1.08	0.18
18:00 ~ 19:00	1.11	0.19
19:00 ~ 20:00	1.09	0.19
20:00 ~ 21:00	1.08	0.18
21:00 ~ 22:00	1.07	0.18
22:00 ~ 23:00	1.07	0.18
23:00 ~ 00:00	1.04	0.18
Max	**1.11**	**0.19**

Remark:

1) The max EF for each vehicle type can be referred to Table MC1, MC2, TAXI1 and TAXI2 for this road

2) Under an extreme worst case scenario, the max composite EF of each road is selected to be the max hourly composite EF calculated by the max EF for each vehicle type by the following equation:

Composite Hourly Emission Factor (in g/veh-mile) = {% of PC* x max EF in g/veh-mile of PC*} + {% of LGV(3) x max EF in g/veh-mile of LGV(3)} + {% of LGV(4) x max EF in g/veh-mile of LGV(4)} + {% of PLB x max EF in g/veh-mile of PLB} + ...}

3) Max composite EF and max traffic flow are used to predict the air pollutant concentration from vehicle emission

Max Emissions Factor in g/veh-mile (for particular vehicle type within each hour out of 24 hours)

Max EF	Vehicle Type															
	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
NOx	0.20	1.41	0.39	0.21	3.15	5.95	7.13	6.03	1.12	0.41	0.19	0.23	2.87	4.81	5.73	4.28
RSP	0.01	0.72	0.20	0.20	0.42	0.67	0.58	0.31	0.13	0.10	0.15	0.28	0.25	0.51	0.44	0.00

Road No.	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
29	00:00 ~ 01:00	435	36%	0%	2%	13%	1%	1%	3%	4%	4%	29%	3%	2%	0%	0%	0%	0%
	01:00 ~ 02:00	329	37%	0%	2%	13%	1%	1%	3%	4%	4%	29%	3%	2%	1%	0%	0%	0%
	02:00 ~ 03:00	224	37%	0%	2%	13%	1%	1%	3%	4%	4%	29%	3%	2%	0%	0%	0%	0%
	03:00 ~ 04:00	226	37%	0%	2%	12%	1%	1%	3%	4%	4%	29%	3%	2%	0%	0%	0%	0%
	04:00 ~ 05:00	113	37%	0%	3%	12%	2%	1%	3%	4%	4%	29%	3%	2%	0%	0%	0%	0%
	05:00 ~ 06:00	115	37%	0%	3%	12%	2%	1%	3%	4%	4%	30%	3%	2%	0%	0%	0%	0%
	06:00 ~ 07:00	234	37%	0%	2%	12%	1%	1%	2%	4%	5%	29%	3%	2%	0%	0%	0%	0%
	07:00 ~ 08:00	473	37%	0%	2%	12%	1%	1%	2%	4%	5%	30%	3%	2%	0%	0%	0%	0%
	08:00 ~ 09:00	720	37%	0%	2%	11%	2%	1%	2%	4%	5%	30%	3%	2%	0%	0%	0%	0%
	09:00 ~ 10:00	590	37%	0%	2%	12%	2%	1%	2%	4%	5%	30%	3%	2%	0%	0%	0%	0%
	10:00 ~ 11:00	579	37%	0%	2%	12%	1%	1%	2%	4%	5%	30%	3%	2%	0%	0%	0%	0%
	11:00 ~ 12:00	571	37%	0%	2%	12%	1%	1%	2%	4%	5%	29%	3%	2%	1%	0%	0%	0%
	12:00 ~ 13:00	449	37%	0%	2%	13%	1%	1%	2%	4%	4%	29%	3%	2%	0%	0%	0%	0%
	13:00 ~ 14:00	440	37%	0%	2%	13%	1%	1%	3%	4%	4%	29%	3%	2%	0%	0%	0%	0%
	14:00 ~ 15:00	432	36%	0%	2%	13%	1%	1%	3%	4%	4%	28%	3%	2%	0%	0%	0%	0%
	15:00 ~ 16:00	532	36%	0%	2%	14%	1%	1%	3%	4%	4%	28%	3%	2%	1%	0%	0%	0%
	16:00 ~ 17:00	519	36%	0%	2%	14%	1%	1%	3%	4%	4%	28%	3%	2%	1%	0%	0%	0%
	17:00 ~ 18:00	611	36%	0%	2%	15%	1%	1%	4%	4%	4%	28%	3%	2%	1%	0%	0%	0%
	18:00 ~ 19:00	600	36%	0%	2%	15%	1%	1%	4%	3%	4%	27%	3%	2%	1%	1%	0%	0%
	19:00 ~ 20:00	609	36%	0%	2%	15%	1%	1%	4%	3%	4%	27%	3%	2%	1%	0%	0%	0%
	20:00 ~ 21:00	616	36%	0%	2%	15%	1%	1%	3%	4%	4%	28%	3%	2%	1%	0%	0%	0%
	21:00 ~ 22:00	521	36%	0%	2%	14%	1%	1%	3%	4%	4%	28%	3%	2%	1%	0%	0%	0%
	22:00 ~ 23:00	531	36%	0%	2%	14%	1%	1%	3%	4%	4%	28%	3%	2%	1%	0%	0%	0%
	23:00 ~ 00:00	430	36%	0%	2%	14%	1%	1%	3%	4%	4%	28%	3%	2%	0%	0%	0%	0%
Max		720	37%	0%	3%	15%	2%	1%	4%	4%	5%	30%	3%	2%	1%	1%	0%	0%

Composite Emission Factor

Hour	NOx	RSP
00:00 ~ 01:00	0.88	0.13
01:00 ~ 02:00	0.88	0.13
02:00 ~ 03:00	0.90	0.13
03:00 ~ 04:00	0.90	0.13
04:00 ~ 05:00	0.86	0.13
05:00 ~ 06:00	0.85	0.13
06:00 ~ 07:00	0.87	0.13
07:00 ~ 08:00	0.84	0.13
08:00 ~ 09:00	0.84	0.13
09:00 ~ 10:00	0.84	0.13
10:00 ~ 11:00	0.85	0.13
11:00 ~ 12:00	0.87	0.13
12:00 ~ 13:00	0.87	0.13
13:00 ~ 14:00	0.88	0.13
14:00 ~ 15:00	0.89	0.14
15:00 ~ 16:00	0.92	0.14
16:00 ~ 17:00	0.91	0.14
17:00 ~ 18:00	0.93	0.14
18:00 ~ 19:00	0.93	0.14
19:00 ~ 20:00	0.94	0.14
20:00 ~ 21:00	0.92	0.14
21:00 ~ 22:00	0.91	0.14
22:00 ~ 23:00	0.91	0.14
23:00 ~ 00:00	0.89	0.14
Max	**0.94**	**0.14**

Remark:

1) The max EF for each vehicle type can be referred to Table MC1, MC2, TAXI1 and TAXI2 for this road

2) Under an extreme worst case scenario, the max composite EF of each road is selected to be the max hourly composite EF calculated by the max EF for each vehicle type by the following equation:

Composite Hourly Emission Factor (in g/veh-mile) = [% of PC x max EF in g/veh-mile of PC) + (% of LGV(3) x max EF in g/veh-mile of LGV(3)) + (% of LGV(4) x max EF in g/veh-mile of LGV(4)) + (% of PLB x max EF in g/veh-mile of PLB) + ...]

3) Max composite EF and max traffic flow are used to predict the air pollutant concentration from vehicle emission

Max Emissions Factor in g/veh-mile (for particular vehicle type within each hour out of 24 hours)

Max EF	Vehicle Type															
	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
NOx	0.20	1.41	0.39	0.21	3.15	5.95	7.13	6.03	1.12	0.41	0.19	0.23	2.87	4.81	5.73	4.28
RSP	0.01	0.72	0.20	0.20	0.42	0.67	0.58	0.31	0.13	0.10	0.16	0.28	0.25	0.51	0.44	0.00

Road No.	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
30	00:00 ~ 01:00	690	40%	0%	2%	14%	1%	0%	1%	2%	5%	31%	1%	1%	0%	0%	0%	0%
	01:00 ~ 02:00	513	40%	0%	2%	13%	1%	0%	1%	2%	5%	31%	2%	1%	0%	0%	0%	0%
	02:00 ~ 03:00	340	40%	0%	2%	13%	1%	1%	1%	2%	5%	31%	1%	1%	0%	0%	0%	0%
	03:00 ~ 04:00	337	40%	0%	2%	12%	1%	1%	1%	2%	5%	31%	1%	1%	0%	0%	0%	0%
	04:00 ~ 05:00	164	41%	0%	2%	12%	1%	1%	1%	2%	5%	32%	2%	1%	0%	0%	0%	0%
	05:00 ~ 06:00	162	41%	0%	2%	11%	1%	1%	1%	2%	5%	33%	2%	1%	0%	0%	0%	0%
	06:00 ~ 07:00	327	40%	0%	2%	10%	1%	1%	2%	3%	5%	32%	2%	1%	0%	0%	0%	0%
	07:00 ~ 08:00	644	40%	0%	2%	10%	1%	0%	1%	3%	5%	32%	2%	1%	0%	0%	0%	0%
	08:00 ~ 09:00	960	40%	0%	2%	9%	1%	1%	1%	3%	5%	32%	2%	1%	0%	0%	0%	0%
	09:00 ~ 10:00	812	40%	0%	2%	10%	1%	0%	1%	3%	5%	32%	2%	1%	0%	0%	0%	0%
	10:00 ~ 11:00	820	40%	0%	2%	11%	1%	0%	1%	3%	5%	32%	2%	1%	0%	0%	0%	0%
	11:00 ~ 12:00	830	40%	0%	2%	12%	1%	0%	1%	3%	5%	32%	2%	1%	0%	0%	0%	0%
	12:00 ~ 13:00	674	40%	0%	2%	12%	1%	0%	1%	2%	5%	32%	2%	1%	0%	0%	0%	0%
	13:00 ~ 14:00	683	40%	0%	2%	13%	1%	0%	1%	2%	5%	31%	1%	1%	0%	0%	0%	0%
	14:00 ~ 15:00	693	40%	0%	2%	14%	1%	0%	1%	2%	4%	31%	1%	1%	0%	0%	0%	0%
	15:00 ~ 16:00	876	40%	0%	2%	15%	1%	0%	1%	2%	4%	31%	1%	1%	0%	0%	0%	0%
	16:00 ~ 17:00	886	40%	0%	2%	15%	1%	0%	1%	2%	4%	31%	1%	1%	0%	0%	0%	0%
	17:00 ~ 18:00	1079	40%	0%	2%	16%	1%	0%	1%	1%	4%	30%	1%	1%	0%	0%	0%	0%
	18:00 ~ 19:00	1090	40%	0%	2%	17%	1%	0%	1%	1%	4%	30%	1%	1%	0%	0%	0%	0%
	19:00 ~ 20:00	1082	40%	0%	2%	16%	1%	0%	1%	1%	4%	30%	1%	1%	0%	0%	0%	0%
	20:00 ~ 21:00	1073	40%	0%	2%	16%	1%	0%	1%	1%	4%	31%	1%	1%	0%	0%	0%	0%
	21:00 ~ 22:00	884	40%	0%	2%	15%	1%	0%	1%	2%	4%	31%	1%	1%	0%	0%	0%	0%
	22:00 ~ 23:00	876	40%	0%	2%	15%	1%	0%	1%	2%	4%	31%	1%	1%	0%	0%	0%	0%
	23:00 ~ 00:00	697	40%	0%	2%	14%	1%	0%	1%	2%	4%	31%	1%	1%	0%	0%	0%	0%
Max		1090	41%	0%	2%	17%	1%	1%	2%	3%	5%	33%	2%	1%	0%	0%	0%	0%

Composite Emission Factor

Hour	NOx	RSP
00:00 ~ 01:00	0.63	0.11
01:00 ~ 02:00	0.63	0.11
02:00 ~ 03:00	0.66	0.12
03:00 ~ 04:00	0.68	0.11
04:00 ~ 05:00	0.62	0.11
05:00 ~ 06:00	0.62	0.11
06:00 ~ 07:00	0.71	0.11
07:00 ~ 08:00	0.70	0.11
08:00 ~ 09:00	0.72	0.11
09:00 ~ 10:00	0.70	0.11
10:00 ~ 11:00	0.68	0.11
11:00 ~ 12:00	0.66	0.11
12:00 ~ 13:00	0.64	0.11
13:00 ~ 14:00	0.64	0.11
14:00 ~ 15:00	0.63	0.11
15:00 ~ 16:00	0.61	0.11
16:00 ~ 17:00	0.59	0.11
17:00 ~ 18:00	0.59	0.12
18:00 ~ 19:00	0.57	0.12
19:00 ~ 20:00	0.58	0.12
20:00 ~ 21:00	0.59	0.12
21:00 ~ 22:00	0.59	0.11
22:00 ~ 23:00	0.60	0.11
23:00 ~ 00:00	0.62	0.11
Max	0.72	0.12

Remark:

1) The max EF for each vehicle type can be referred to Table MC1, MC2, TAXI and TAXI2 for this road

2) Under an extreme worst case scenario, the max composite EF of each road is selected to be the max hourly composite EF calculated by the max EF for each vehicle type by the following equation:

Composite Hourly Emission Factor (in g/veh-mile) = {% of PC1 x max EF in g/veh-mile of PC1 + {% of LGV(3) x max EF in g/veh-mile of LGV(3)} + {% of LGV(4) x max EF in g/veh-mile of LGV(4)} + {% of PLB x max EF in g/veh-mile of PLB} + ...}

3) Max composite EF and max traffic flow are used to predict the air pollutant concentration from vehicle emission

Max Emissions Factor in g/veh-mile (for particular vehicle type within each hour out of 24 hours)

Max EF	Vehicle Type															
	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
NOx	0.20	1.41	0.39	0.21	3.15	5.95	7.13	0.03	1.12	0.41	0.19	0.23	2.87	4.81	5.73	4.28
RSP	0.04	0.72	0.20	0.20	0.42	0.67	0.58	0.31	0.13	0.10	0.15	0.28	0.25	0.51	0.44	0.00

Road No.	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
53	00:00 ~ 01:00	435	36%	0%	2%	13%	1%	1%	3%	4%	4%	29%	3%	2%	0%	0%	0%	0%
	01:00 ~ 02:00	329	37%	0%	2%	13%	1%	1%	3%	4%	4%	29%	3%	2%	1%	0%	0%	0%
	02:00 ~ 03:00	224	37%	0%	2%	13%	1%	1%	3%	4%	4%	29%	3%	2%	0%	0%	0%	0%
	03:00 ~ 04:00	226	37%	0%	2%	12%	1%	1%	3%	4%	4%	29%	3%	2%	0%	0%	0%	0%
	04:00 ~ 05:00	113	37%	0%	3%	12%	2%	1%	3%	4%	4%	29%	3%	2%	0%	0%	0%	0%
	05:00 ~ 06:00	115	37%	0%	3%	12%	2%	1%	3%	4%	4%	30%	3%	2%	0%	0%	0%	0%
	06:00 ~ 07:00	234	37%	0%	2%	12%	1%	1%	2%	4%	5%	29%	3%	2%	0%	0%	0%	0%
	07:00 ~ 08:00	473	37%	0%	2%	12%	1%	1%	2%	4%	5%	30%	3%	2%	0%	0%	0%	0%
	08:00 ~ 09:00	720	37%	0%	2%	11%	2%	1%	2%	4%	5%	30%	3%	2%	0%	0%	0%	0%
	09:00 ~ 10:00	590	37%	0%	2%	12%	2%	1%	2%	4%	5%	30%	3%	2%	0%	0%	0%	0%
	10:00 ~ 11:00	579	37%	0%	2%	12%	1%	1%	2%	4%	5%	30%	3%	2%	0%	0%	0%	0%
	11:00 ~ 12:00	571	37%	0%	2%	12%	1%	1%	2%	4%	5%	29%	3%	2%	1%	0%	0%	0%
	12:00 ~ 13:00	449	37%	0%	2%	13%	1%	1%	2%	4%	4%	29%	3%	2%	0%	0%	0%	0%
	13:00 ~ 14:00	440	37%	0%	2%	13%	1%	1%	3%	4%	4%	29%	3%	2%	0%	0%	0%	0%
	14:00 ~ 15:00	432	36%	0%	2%	13%	1%	1%	3%	4%	4%	28%	3%	2%	0%	0%	0%	0%
	15:00 ~ 16:00	532	36%	0%	2%	14%	1%	1%	3%	4%	4%	28%	3%	2%	1%	0%	0%	0%
	16:00 ~ 17:00	519	36%	0%	2%	14%	1%	1%	3%	4%	4%	28%	3%	2%	1%	0%	0%	0%
	17:00 ~ 18:00	611	36%	0%	2%	15%	1%	1%	4%	4%	4%	28%	3%	2%	1%	0%	0%	0%
	18:00 ~ 19:00	600	36%	0%	2%	15%	1%	1%	4%	3%	4%	27%	3%	2%	1%	1%	0%	0%
	19:00 ~ 20:00	609	36%	0%	2%	15%	1%	1%	4%	3%	4%	27%	3%	2%	1%	0%	0%	0%
	20:00 ~ 21:00	616	36%	0%	2%	15%	1%	1%	3%	4%	4%	28%	3%	2%	1%	0%	0%	0%
	21:00 ~ 22:00	521	36%	0%	2%	14%	1%	1%	3%	4%	4%	28%	3%	2%	1%	0%	0%	0%
	22:00 ~ 23:00	531	36%	0%	2%	14%	1%	1%	3%	4%	4%	28%	3%	2%	1%	0%	0%	0%
	23:00 ~ 00:00	430	36%	0%	2%	14%	1%	1%	3%	4%	4%	28%	3%	2%	0%	0%	0%	0%
Max		720	37%	0%	3%	15%	2%	1%	4%	4%	5%	30%	3%	2%	1%	1%	0%	0%

Remark:

1) The max EF for each vehicle type can be referred to Table MC1, MC2, TAXI1 and TAXI2 for this road

2) Under an extreme worst case scenario, the max composite EF of each road is selected to be the max hourly composite EF calculated by the max EF for each vehicle type by the following equation:

Composite Hourly Emission Factor (in g/veh-mile) = [% of PC x max EF in g/veh-mile of PC] + [% of LGV(3) x max EF in g/veh-mile of LGV(3)] + [% of LGV(4) x max EF in g/veh-mile of LGV(4)] + [% of PLB x max EF in g/veh-mile of PLB] + ...]

3) Max composite EF and max traffic flow are used to predict the air pollutant concentration from vehicle emission

Composite Emission Factor

Hour	NOx	RSP
00:00 ~ 01:00	0.88	0.13
01:00 ~ 02:00	0.88	0.13
02:00 ~ 03:00	0.90	0.13
03:00 ~ 04:00	0.90	0.13
04:00 ~ 05:00	0.86	0.13
05:00 ~ 06:00	0.85	0.13
06:00 ~ 07:00	0.87	0.13
07:00 ~ 08:00	0.84	0.13
08:00 ~ 09:00	0.84	0.13
09:00 ~ 10:00	0.84	0.13
10:00 ~ 11:00	0.85	0.13
11:00 ~ 12:00	0.87	0.13
12:00 ~ 13:00	0.87	0.13
13:00 ~ 14:00	0.88	0.13
14:00 ~ 15:00	0.89	0.14
15:00 ~ 16:00	0.92	0.14
16:00 ~ 17:00	0.91	0.14
17:00 ~ 18:00	0.93	0.14
18:00 ~ 19:00	0.93	0.14
19:00 ~ 20:00	0.94	0.14
20:00 ~ 21:00	0.92	0.14
21:00 ~ 22:00	0.91	0.14
22:00 ~ 23:00	0.91	0.14
23:00 ~ 00:00	0.89	0.14
Max	0.94	0.14

Max Emissions Factor in g/veh-mile (for particular vehicle type within each hour out of 24 hours)

Max EF	Vehicle Type															
	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
NOx	0.20	1.41	0.39	0.21	3.15	5.95	7.13	6.03	1.12	0.41	0.19	0.23	2.87	4.81	5.73	4.28
RSP	0.04	0.72	0.20	0.20	0.42	0.67	0.58	0.31	0.13	0.10	0.15	0.28	0.25	0.51	0.44	0.00

Road No.	Hour	Total Vehicle	PC+LGV(1)	PC+LGV(3)	LGV(4)	PLB	LGV(6)	HGV(7)	HGV(8)	FBDD	MC	TAXI	PrLB(4)	PrLB(5)	NFB(6)	NFB(7)	NFB(8)	FBSD
54	00:00 ~ 01:00	690	40%	0%	2%	14%	1%	0%	1%	2%	5%	31%	1%	1%	0%	0%	0%	0%
	01:00 ~ 02:00	513	40%	0%	2%	13%	1%	0%	1%	2%	5%	31%	2%	1%	0%	0%	0%	0%
	02:00 ~ 03:00	340	40%	0%	2%	13%	1%	1%	1%	2%	5%	31%	1%	1%	0%	0%	0%	0%
	03:00 ~ 04:00	337	40%	0%	2%	12%	1%	1%	1%	2%	5%	31%	1%	1%	0%	0%	0%	0%
	04:00 ~ 05:00	164	41%	0%	2%	12%	1%	1%	1%	2%	5%	32%	2%	1%	0%	0%	0%	0%
	05:00 ~ 06:00	162	41%	0%	2%	11%	1%	1%	1%	2%	5%	33%	2%	1%	0%	0%	0%	0%
	06:00 ~ 07:00	327	40%	0%	2%	10%	1%	1%	2%	3%	5%	32%	2%	1%	0%	0%	0%	0%
	07:00 ~ 08:00	644	40%	0%	2%	10%	1%	0%	1%	3%	5%	32%	2%	1%	0%	0%	0%	0%
	08:00 ~ 09:00	960	40%	0%	2%	9%	1%	1%	1%	3%	5%	32%	2%	1%	0%	0%	0%	0%
	09:00 ~ 10:00	812	40%	0%	2%	10%	1%	0%	1%	3%	5%	32%	2%	1%	0%	0%	0%	0%
	10:00 ~ 11:00	820	40%	0%	2%	11%	1%	0%	1%	3%	5%	32%	2%	1%	0%	0%	0%	0%
	11:00 ~ 12:00	830	40%	0%	2%	12%	1%	0%	1%	3%	5%	32%	2%	1%	0%	0%	0%	0%
	12:00 ~ 13:00	674	40%	0%	2%	12%	1%	0%	1%	2%	5%	32%	2%	1%	0%	0%	0%	0%
	13:00 ~ 14:00	683	40%	0%	2%	13%	1%	0%	1%	2%	5%	31%	1%	1%	0%	0%	0%	0%
	14:00 ~ 15:00	693	40%	0%	2%	14%	1%	0%	1%	2%	4%	31%	1%	1%	0%	0%	0%	0%
	15:00 ~ 16:00	876	40%	0%	2%	15%	1%	0%	1%	2%	4%	31%	1%	1%	0%	0%	0%	0%
	16:00 ~ 17:00	886	40%	0%	2%	15%	1%	0%	1%	2%	4%	31%	1%	1%	0%	0%	0%	0%
	17:00 ~ 18:00	1079	40%	0%	2%	16%	1%	0%	1%	1%	4%	30%	1%	1%	0%	0%	0%	0%
	18:00 ~ 19:00	1090	40%	0%	2%	17%	1%	0%	1%	1%	4%	30%	1%	1%	0%	0%	0%	0%
	19:00 ~ 20:00	1082	40%	0%	2%	16%	1%	0%	1%	1%	4%	30%	1%	1%	0%	0%	0%	0%
	20:00 ~ 21:00	1073	40%	0%	2%	16%	1%	0%	1%	1%	4%	31%	1%	1%	0%	0%	0%	0%
	21:00 ~ 22:00	884	40%	0%	2%	15%	1%	0%	1%	2%	4%	31%	1%	1%	0%	0%	0%	0%
	22:00 ~ 23:00	876	40%	0%	2%	15%	1%	0%	1%	2%	4%	31%	1%	1%	0%	0%	0%	0%
	23:00 ~ 00:00	697	40%	0%	2%	14%	1%	0%	1%	2%	4%	31%	1%	1%	0%	0%	0%	0%
Max		1090	41%	0%	2%	17%	1%	1%	2%	3%	5%	33%	2%	1%	0%	0%	0%	0%

Composite Emission Factor

Hour	NOx	RSP
00:00 ~ 01:00	0.63	0.11
01:00 ~ 02:00	0.63	0.11
02:00 ~ 03:00	0.66	0.12
03:00 ~ 04:00	0.68	0.11
04:00 ~ 05:00	0.62	0.11
05:00 ~ 06:00	0.62	0.11
06:00 ~ 07:00	0.71	0.11
07:00 ~ 08:00	0.70	0.11
08:00 ~ 09:00	0.72	0.11
09:00 ~ 10:00	0.70	0.11
10:00 ~ 11:00	0.68	0.11
11:00 ~ 12:00	0.66	0.11
12:00 ~ 13:00	0.64	0.11
13:00 ~ 14:00	0.64	0.11
14:00 ~ 15:00	0.63	0.11
15:00 ~ 16:00	0.61	0.11
16:00 ~ 17:00	0.59	0.11
17:00 ~ 18:00	0.59	0.12
18:00 ~ 19:00	0.57	0.12
19:00 ~ 20:00	0.58	0.12
20:00 ~ 21:00	0.59	0.12
21:00 ~ 22:00	0.59	0.11
22:00 ~ 23:00	0.60	0.11
23:00 ~ 00:00	0.62	0.11
Max	0.72	0.32

Remark:

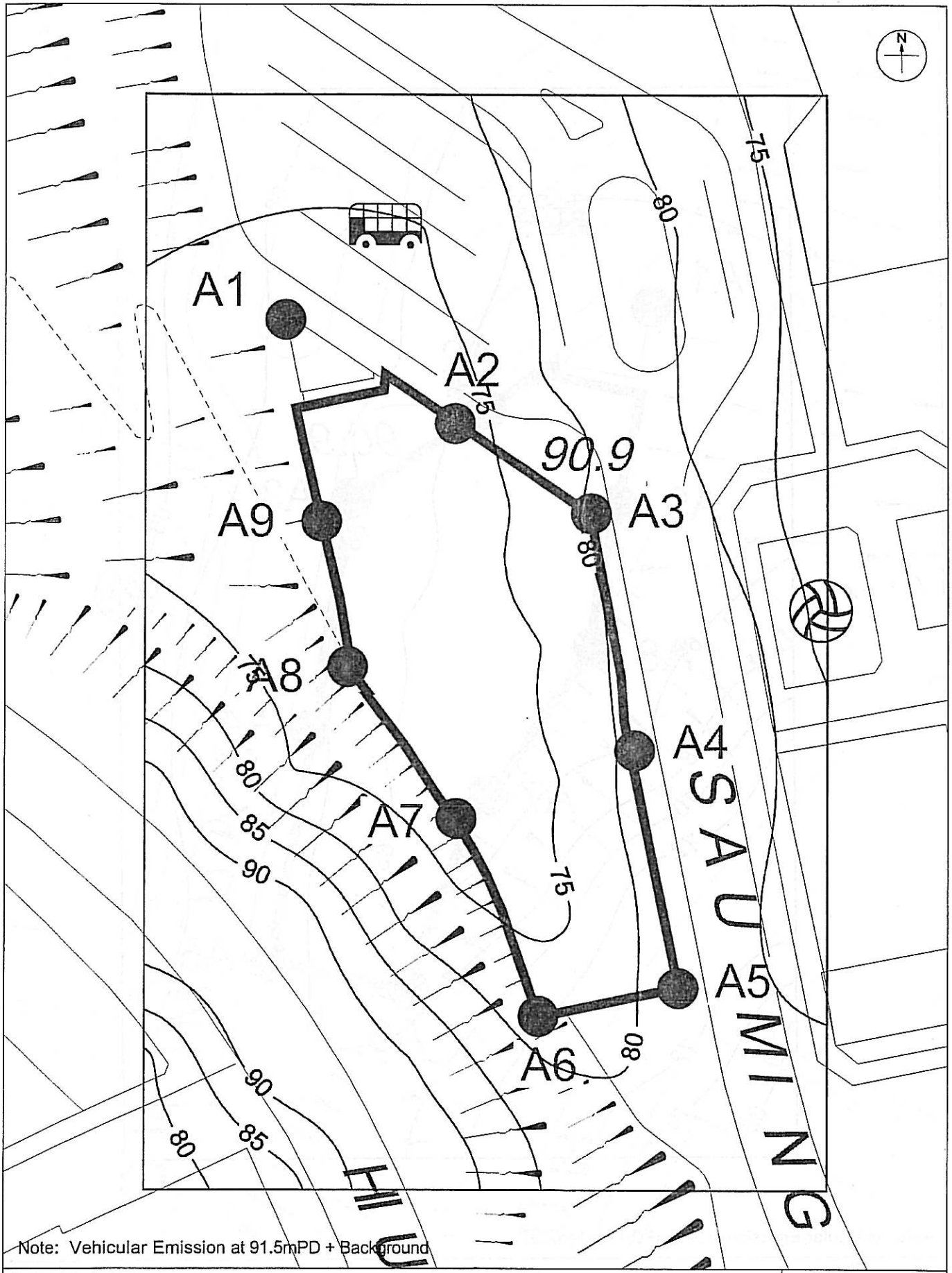
1) The max EF for each vehicle type can be referred to Table MC1, MC2, TAXI1 and TAXI2 for this road

2) Under an extreme worst case scenario, the max composite EF of each road is selected to be the max hourly composite EF calculated by the max EF for each vehicle type by the following equation:

Composite Hourly Emission Factor (in g/veh-mile) = {% of PC1 x max EF in g/veh-mile of PC1 + {% of LGV(3) x max EF in g/veh-mile of LGV(3)} + {% of LGV(4) x max EF in g/veh-mile of LGV(4)} + {% of PLB x max EF in g/veh-mile of PLB} + ...}

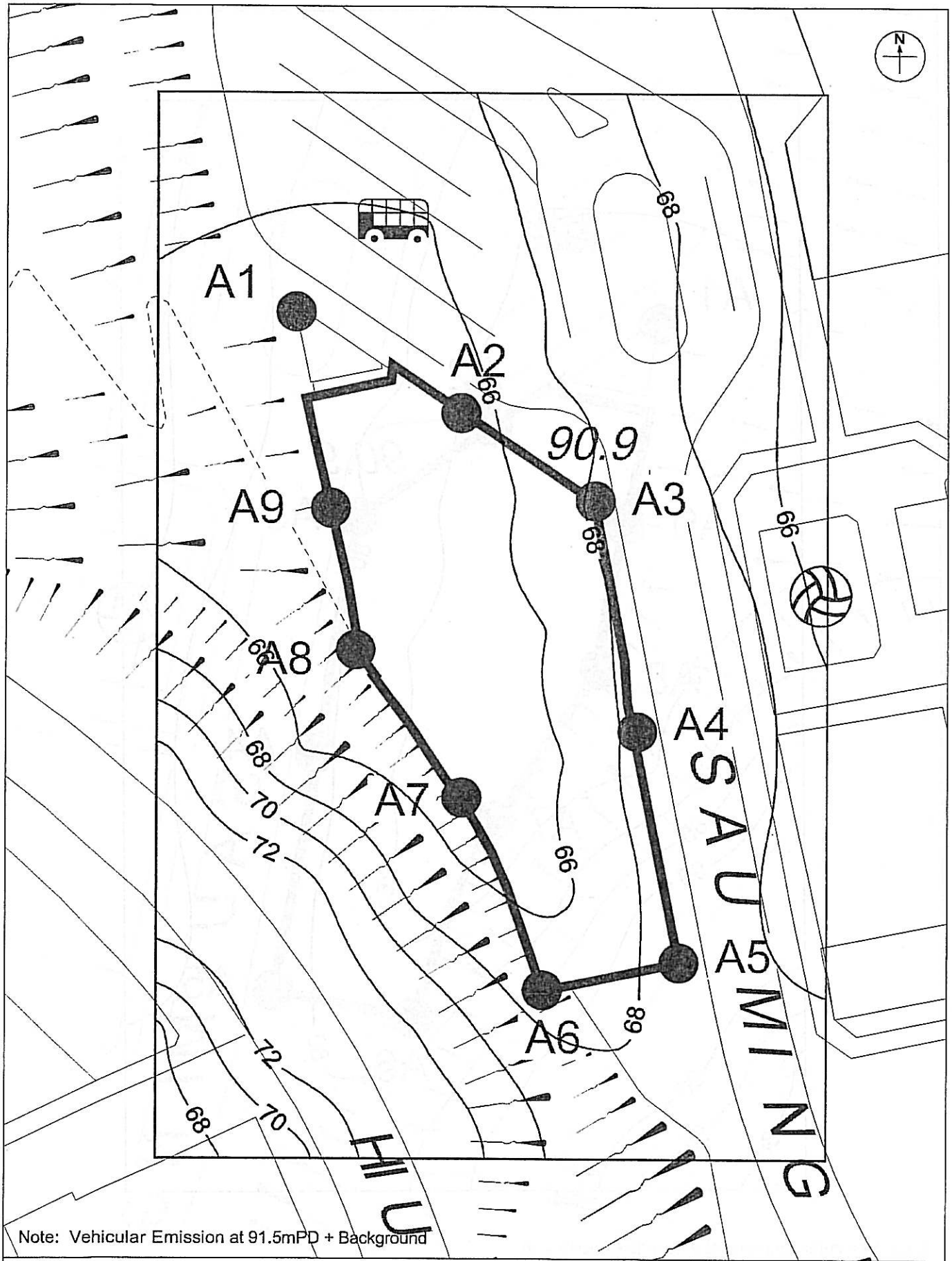
3) Max composite EF and max traffic flow are used to predict the air pollutant concentration from vehicle emission

Annex 4-8:
Vehicular Emission Impact Assessment Results



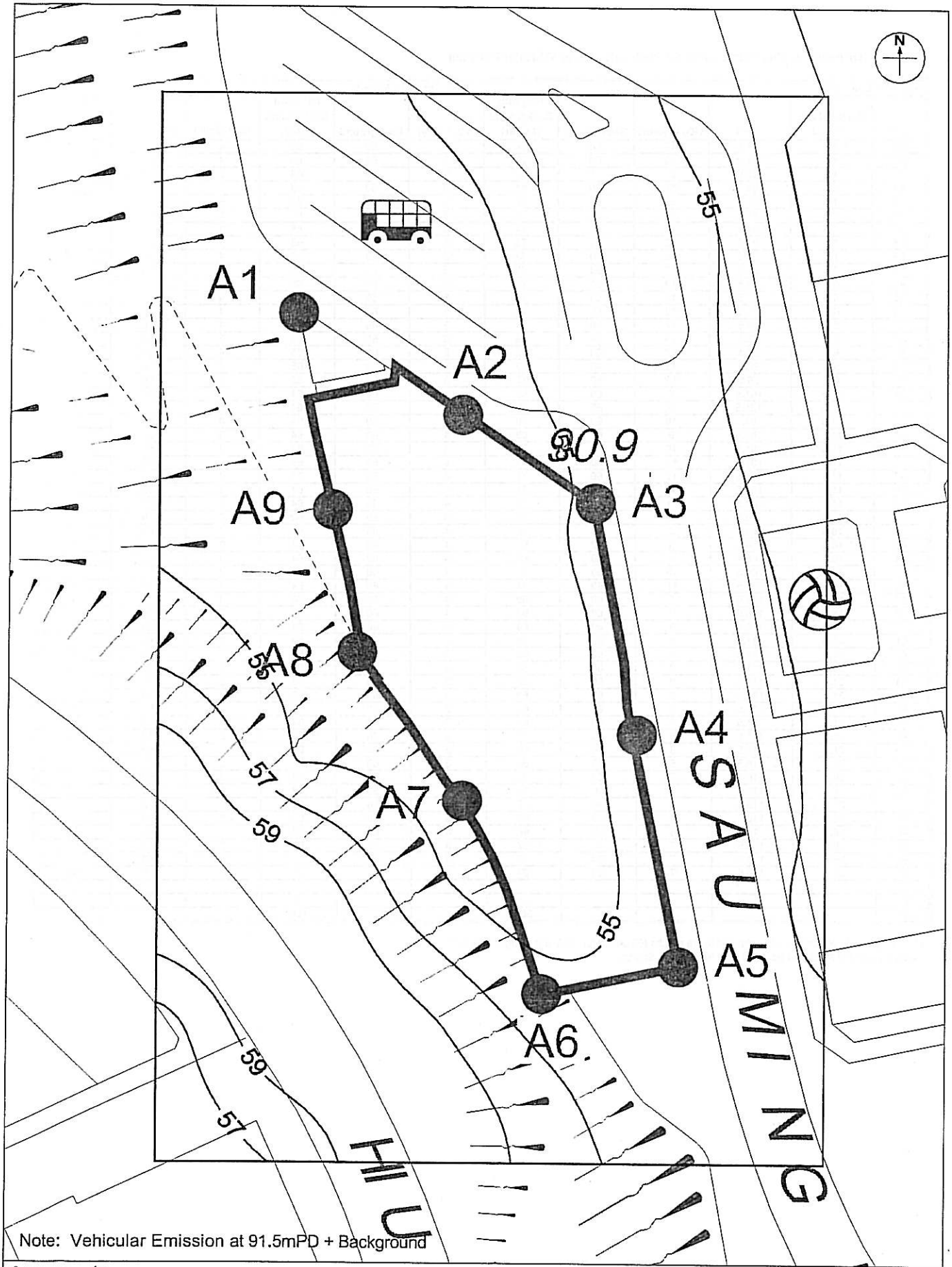
Note: Vehicular Emission at 91.5mPD + Background

Annex: 4a		ENVIRON
Title:	1 hour NO_2 Concentration Contour (µg/m³) at Worst Hit Level 91.5 mPD under a Conservative Worst Case Scenario (AQO: 300µg/m³) - Vehicular Emission	Drawn by: EC Checked by: TC
Project:	Environmental Assessment Study for Public Rental Housing Development at Sau Ming Road	Rev.: 4.0 Date: Sep 2011



Note: Vehicular Emission at 91.5mPD + Background

Annex: 4b	ENVIRON
Title: Daily NO_2 Concentration Contour (µg/m³) at Worst Hit Level 91.5 mPD under a Conservative Worst Case Scenario (AQO: 150 µg/m³) - Vehicular Emission	Drawn by: EC Checked by: TC
Project: Environmental Assessment Study for Public Rental Housing Development at Sau Ming Road	Rev.: 4.0 Date: Sep 2011



Note: Vehicular Emission at 91.5mPD + Background

Annex:	4c	ENVIRON
Title:	Daily RSP Concentration Contour (µg/m³) at Worst Hit Level 91.5 mPD under a Conservative Worst Case Scenario (AQO: 180 µg/m³) - Vehicular Emission	Drawn by: EC Checked by: TC
Project:	Environmental Assessment Study for Public Rental Housing Development at Sau Ming Road	Rev.: 4.0 Date: Sep 2011

Predicted Air Pollutant Concentrations at Selected ASRs due to Vehicular Emission

Vehicular Emission			Concentration (ug/m^3)								
ASR	Height above ground	mPD	NO_2 (1 hour)	Background	NO_2 with Background (1 hour)	NO_2 (daily)	Background	NO_2 with Background (daily)	RSP (daily)	Background	RSP with Background (daily)
A1	1.5	91.5	14	60	74	5	60	65	4	50	54
A2	1.5	91.5	13	60	73	5	60	65	4	50	54
A3	1.5	91.5	22	60	82	9	60	69	6	50	56
A4	1.5	91.5	21	60	81	9	60	69	6	50	56
A5	1.5	91.5	22	60	82	9	60	69	6	50	56
A6	1.5	91.5	18	60	78	7	60	67	6	50	56
A7	1.5	91.5	14	60	74	5	60	65	4	50	54
A8	1.5	91.5	13	60	73	5	60	65	4	50	54
A9	1.5	91.5	13	60	73	5	60	65	4	50	54
A1	6.5	96.5	12	60	72	5	60	65	3	50	53
A2	6.5	96.5	12	60	72	5	60	65	3	50	53
A3	6.5	96.5	14	60	74	6	60	66	4	50	54
A4	6.5	96.5	12	60	72	5	60	65	4	50	54
A5	6.5	96.5	14	60	74	6	60	66	4	50	54
A6	6.5	96.5	16	60	76	6	60	66	5	50	55
A7	6.5	96.5	12	60	72	5	60	65	4	50	54
A8	6.5	96.5	12	60	72	5	60	65	4	50	54
A9	6.5	96.5	12	60	72	5	60	65	4	50	54
A1	11.5	101.5	9	60	69	4	60	64	3	50	53
A2	11.5	101.5	9	60	69	4	60	64	3	50	53
A3	11.5	101.5	10	60	70	4	60	64	3	50	53
A4	11.5	101.5	9	60	69	4	60	64	3	50	53
A5	11.5	101.5	10	60	70	4	60	64	3	50	53
A6	11.5	101.5	14	60	74	6	60	66	4	50	54
A7	11.5	101.5	11	60	71	4	60	64	3	50	53
A8	11.5	101.5	11	60	71	4	60	64	3	50	53
A9	11.5	101.5	11	60	71	4	60	64	3	50	53
A1	16.5	106.5	6	60	66	3	60	63	2	50	52
A2	16.5	106.5	9	60	69	4	60	64	3	50	53
A3	16.5	106.5	9	60	69	4	60	64	3	50	53
A4	16.5	106.5	9	60	69	4	60	64	3	50	53
A5	16.5	106.5	10	60	70	4	60	64	3	50	53
A6	16.5	106.5	11	60	71	4	60	64	4	50	54
A7	16.5	106.5	9	60	69	4	60	64	3	50	53
A8	16.5	106.5	9	60	69	4	60	64	3	50	53
A9	16.5	106.5	9	60	69	4	60	64	3	50	53
A1	21.5	111.5	8	60	68	3	60	63	2	50	52
A2	21.5	111.5	8	60	68	3	60	63	2	50	52
A3	21.5	111.5	8	60	68	3	60	63	2	50	52
A4	21.5	111.5	8	60	68	3	60	63	2	50	52
A5	21.5	111.5	9	60	69	3	60	63	3	50	53
A6	21.5	111.5	9	60	69	3	60	63	3	50	53
A7	21.5	111.5	8	60	68	3	60	63	2	50	52
A8	21.5	111.5	8	60	68	3	60	63	2	50	52
A9	21.5	111.5	8	60	68	3	60	63	2	50	52
A1	26.5	116.5	6	60	66	3	60	63	2	50	52
A2	26.5	116.5	7	60	67	3	60	63	2	50	52
A3	26.5	116.5	7	60	67	3	60	63	2	50	52
A4	26.5	116.5	7	60	67	3	60	63	2	50	52
A5	26.5	116.5	8	60	68	3	60	63	2	50	52
A6	26.5	116.5	6	60	66	3	60	63	2	50	52
A7	26.5	116.5	7	60	67	3	60	63	2	50	52
A8	26.5	116.5	7	60	67	3	60	63	2	50	52
A9	26.5	116.5	7	60	67	3	60	63	2	50	52
Max					82			69			56
AQO					300			150			180

N.B. Background pollutant levels inclueded in the results (60 ug/m3 for NO2 and 50 ug/m3 for RSP)
The background of NO2 and RSP are from Kwun Tong Station.

```
Sau Mau Ping Phase 10
4Particulate Matter
100.0  46.0  0.0  0.0  54  102  1.0  1  1  0.0
A1
A2
A3
A4
A5
A6
A7
A8
A9
A1
A2
A3
A4
A5
A6
A7
A8
A9
A1
A2
A3
A4
A5
A6
A7
A8
A9
A1
A2
A3
A4
A5
A6
A7
A8
A9
A1
A2
A3
A4
A5
A6
A7
A8
A9
841870.38  819967.23  1.5
841895.24  819952.1  1.5
841915.22  819938.99  1.5
841921.61  819904.29  1.5
841928.01  819869.6  1.5
841907.53  819865.42  1.5
841895.44  819894.31  1.5
841879.5  819916.54  1.5
841875.66  819937.82  1.5
841870.38  819967.23  6.5
841895.24  819952.1  6.5
```



```
841915.22  819938.99  6.5
841921.61  819904.29  6.5
841928.01  819869.6  6.5
841907.53  819865.42  6.5
841895.44  819894.31  6.5
841879.5  819916.54  6.5
841875.66  819937.82  6.5
841870.38  819967.23  11.5
841895.24  819952.1  11.5
841915.22  819938.99  11.5
841921.61  819904.29  11.5
841928.01  819869.6  11.5
841907.53  819865.42  11.5
841895.44  819894.31  11.5
841879.5  819916.54  11.5
841875.66  819937.82  11.5
841870.38  819967.23  16.5
841895.24  819952.1  16.5
841915.22  819938.99  16.5
841921.61  819904.29  16.5
841928.01  819869.6  16.5
841907.53  819865.42  16.5
841895.44  819894.31  16.5
841879.5  819916.54  16.5
841875.66  819937.82  16.5
841870.38  819967.23  21.5
841895.24  819952.1  21.5
841915.22  819938.99  21.5
841921.61  819904.29  21.5
841928.01  819869.6  21.5
841907.53  819865.42  21.5
841895.44  819894.31  21.5
841879.5  819916.54  21.5
841875.66  819937.82  21.5
841870.38  819967.23  26.5
841895.24  819952.1  26.5
841915.22  819938.99  26.5
841921.61  819904.29  26.5
841928.01  819869.6  26.5
841907.53  819865.42  26.5
841895.44  819894.31  26.5
841879.5  819916.54  26.5
841875.66  819937.82  26.5
Rd_7
Rd_8
Rd_9
Rd_9
Rd_9
Rd_9
Rd_10
Rd_10
Rd_10
Rd_10
Rd_13
Rd_13
Rd_13
Rd_13
Rd_14
Rd_14
Rd_14
Rd_14
Rd_15
Rd_15
Rd_16
Rd_16
Rd_17
Rd_17-1
Rd_17-1
```

Rd_17-1
Rd_18
Rd_18
Rd_18-1
Rd_18-1
Rd_19
Rd_20
Rd_25a
Rd_25a
Rd_25b
Rd_25b
Rd_25b
Rd_25c
Rd_25c
Rd_25c
Rd_25c
Rd_25c
Rd_25c
Rd_25c
Rd_25c
Rd_26a
Rd_26a
Rd_26b
Rd_26b
Rd_26b
Rd_26c
Rd_26c
Rd_26c
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Rd_26c
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Rd_53
Rd_53

Rd_53
Rd_53
Rd_53
Rd_54
Rd_54
Rd_54
Rd_54
Rd_54
Rd_54

1	841918.63	820462.98	842099.39	820224.3	0.0	13.6	0.0	0.0	0	1
1	841907.0	820462.99	842092.29	820216.92	0.0	13.6	0.0	0.0	0	1
1	842096.12	820218.72	842129.75	820237.32	0.0	11.2	0.0	0.0	0	1
1	842129.75	820237.32	842237.07	820224.6	0.0	11.2	0.0	0.0	0	1
1	842237.07	820224.6	842279.87	820196.26	0.0	11.2	0.0	0.0	0	1
1	842279.87	820196.26	842402.21	820066.91	0.0	11.2	0.0	0.0	0	1
1	842092.7	820225.57	842127.71	820243.07	0.0	11.2	0.0	0.0	0	1
1	842127.71	820243.07	842237.79	820229.27	0.0	11.2	0.0	0.0	0	1
1	842237.79	820229.27	842280.68	820204.45	0.0	11.2	0.0	0.0	0	1
1	842280.68	820204.45	842401.77	820075.02	0.0	11.2	0.0	0.0	0	1
1	842092.29	820216.92	842146.99	820146.07	0.0	13.6	0.0	0.0	0	1
1	842146.99	820146.07	842294.72	819996.94	0.0	13.6	0.0	0.0	0	1
1	842294.72	819996.94	842346.18	819994.74	0.0	13.6	0.0	0.0	0	1
1	842346.18	819994.74	842415.32	820011.51	0.0	13.6	0.0	0.0	0	1
1	842099.39	820224.3	842150.46	820155.9	0.0	13.6	0.0	0.0	0	1
1	842150.46	820155.9	842298.0	820007.07	0.0	13.6	0.0	0.0	0	1
1	842298.0	820007.07	842343.41	820003.94	0.0	13.6	0.0	0.0	0	1
1	842343.41	820003.94	842412.21	820024.36	0.0	13.6	0.0	0.0	0	1
1	842287.06	819902.41	842379.16	819948.75	0.0	18.5	0.0	0.0	0	1
1	842379.16	819948.75	842426.41	819953.78	0.0	18.5	0.0	0.0	0	1
1	842295.12	819889.48	842368.0	819933.11	0.0	14.6	0.0	0.0	0	1
1	842368.0	819933.11	842427.08	819942.29	0.0	18.6	0.0	0.0	0	1
1	841796.04	820454.96	842010.65	820170.8	0.0	12.6	0.0	0.0	0	1
1	842010.65	820170.8	842055.09	820136.96	0.0	14.1	0.0	0.0	0	1
1	842055.09	820136.96	842236.33	819956.25	0.0	13.0	0.0	0.0	0	1
1	842236.33	819956.25	842283.94	819887.38	0.0	14.3	0.0	0.0	0	1
1	841804.68	820458.48	841983.1	820217.94	0.0	12.6	0.0	0.0	0	1
1	841983.1	820217.94	842020.98	820182.36	0.0	15.2	0.0	0.0	0	1
1	842020.98	820182.36	842257.73	819945.76	0.0	13.0	0.0	0.0	0	1
1	842257.73	819945.76	842293.28	819893.23	0.0	13.0	0.0	0.0	0	1
1	842283.94	819887.38	842395.98	819668.07	0.0	13.0	0.0	0.0	0	1
1	842293.28	819893.23	842400.11	819675.52	0.0	13.0	0.0	0.0	0	1
1	841693.21	820425.2	841867.95	820200.66	0.0	11.0	0.0	0.0	0	1
1	841867.95	820200.66	841884.21	820122.99	0.0	11.2	0.0	0.0	0	1
1	841884.21	820122.99	841852.1	820068.35	0.0	11.1	0.0	0.0	0	1
1	841852.1	820068.35	841860.96	820028.48	0.0	13.5	0.0	0.0	0	1
1	841860.96	820028.48	841909.67	819992.1	0.0	12.8	0.0	0.0	0	1
1	841909.67	819992.1	841919.67	819944.22	0.0	13.2	0.0	0.0	0	1
1	841919.67	819944.22	841942.22	819836.61	0.0	11.1	0.0	0.0	0	1
1	841942.22	819836.61	841972.88	819789.97	0.0	11.2	0.0	0.0	0	1
1	841972.88	819789.97	842012.96	819761.96	0.0	11.2	0.0	0.0	0	1
1	842012.96	819761.96	842098.84	819726.32	0.0	11.2	0.0	0.0	0	1
1	842098.84	819726.32	842125.95	819701.41	0.0	11.2	0.0	0.0	0	1
1	842125.95	819701.41	842240.85	819506.61	0.0	11.2	0.0	0.0	0	1
1	841698.47	820428.37	841869.49	820207.21	0.0	11.0	0.0	0.0	0	1
1	841869.49	820207.21	841895.61	820127.05	0.0	11.2	0.0	0.0	0	1
1	841895.61	820127.05	841864.11	820077.64	0.0	11.1	0.0	0.0	0	1
1	841864.11	820077.64	841862.39	820039.25	0.0	13.5	0.0	0.0	0	1
1	841862.39	820039.25	841916.7	819998.24	0.0	12.8	0.0	0.0	0	1
1	841916.7	819998.24	841933.81	819975.14	0.0	13.2	0.0	0.0	0	1
1	841933.81	819975.14	841925.98	819948.53	0.0	13.2	0.0	0.0	0	1
1	841925.98	819948.53	841947.27	819838.88	0.0	11.1	0.0	0.0	0	1
1	841947.27	819838.88	841977.29	819794.8	0.0	11.2	0.0	0.0	0	1
1	841977.29	819794.8	842014.47	819767.44	0.0	11.2	0.0	0.0	0	1
1	842014.47	819767.44	842100.48	819731.03	0.0	11.2	0.0	0.0	0	1
1	842100.48	819731.03	842129.52	819703.99	0.0	11.2	0.0	0.0	0	1
1	842129.52	819703.99	842245.24	819509.2	0.0	11.2	0.0	0.0	0	1
1	842240.85	819506.61	842192.45	819485.17	0.0	9.8	0.0	0.0	0	1
1	842192.45	819485.17	842157.08	819496.88	0.0	9.8	0.0	0.0	0	1

```
1  842157.08  819496.88  842092.87  819573.51  0.0  9.9  0.0  0.0  0  1
1  842092.87  819573.51  842058.65  819614.34  0.0  11.9  0.0  0.0  0  1
1  842058.65  819614.34  841928.65  819718.94  0.0  11.8  0.0  0.0  0  1
1  841928.65  819718.94  841896.93  819775.56  0.0  12.0  0.0  0.0  0  1
1  841896.93  819775.56  841877.2  819843.58  0.0  12.1  0.0  0.0  0  1
1  841877.2  819843.58  841852.13  819883.23  0.0  12.1  0.0  0.0  0  1
1  841852.13  819883.23  841612.95  820043.52  0.0  12.3  0.0  0.0  0  1
1  841612.95  820043.52  841535.04  820154.54  0.0  12.5  0.0  0.0  0  1
1  841535.04  820154.54  841508.0  820162.47  0.0  12.5  0.0  0.0  0  1
1  841508.0  820162.47  841439.77  820131.73  0.0  12.2  0.0  0.0  0  1
1  842237.16  819512.86  842199.0  819492.89  0.0  13.6  0.0  0.0  0  1
1  842199.0  819492.89  842169.35  819496.45  0.0  13.6  0.0  0.0  0  1
1  842169.35  819496.45  842097.91  819577.45  0.0  13.8  0.0  0.0  0  1
1  842097.91  819577.45  842055.92  819625.07  0.0  11.9  0.0  0.0  0  1
1  842055.92  819625.07  841932.35  819722.75  0.0  11.8  0.0  0.0  0  1
1  841932.35  819722.75  841902.97  819777.28  0.0  12.0  0.0  0.0  0  1
1  841902.97  819777.28  841888.89  819833.56  0.0  12.1  0.0  0.0  0  1
1  841888.89  819833.56  841855.85  819886.81  0.0  12.1  0.0  0.0  0  1
1  841855.85  819886.81  841621.08  820046.27  0.0  12.3  0.0  0.0  0  1
1  841621.08  820046.27  841537.88  820161.08  0.0  12.5  0.0  0.0  0  1
1  841537.88  820161.08  841507.17  820168.67  0.0  12.5  0.0  0.0  0  1
1  841507.17  820168.67  841434.25  820138.72  0.0  12.2  0.0  0.0  0  1
1  841414.64  820170.41  841435.22  820133.33  0.0  12.5  0.0  0.0  0  1
1  841435.22  820133.33  841480.32  820041.35  0.0  12.6  0.0  0.0  0  1
1  841480.32  820041.35  841474.86  819993.26  0.0  12.4  0.0  0.0  0  1
1  841474.86  819993.26  841390.64  819793.42  0.0  12.6  0.0  0.0  0  1
1  841420.11  820177.3  841443.8  820136.3  0.0  12.5  0.0  0.0  0  1
1  841443.8  820136.3  841486.61  820043.13  0.0  12.6  0.0  0.0  0  1
1  841486.61  820043.13  841481.47  819992.44  0.0  12.4  0.0  0.0  0  1
1  841481.47  819992.44  841452.87  819926.63  0.0  12.4  0.0  0.0  0  1
1  841452.87  819926.63  841394.79  819784.03  0.0  12.6  0.0  0.0  0  1
1  841448.52  819915.96  841496.13  819901.05  0.0  11.9  0.0  0.0  0  1
1  841496.13  819901.05  841570.08  819911.96  0.0  11.5  0.0  0.0  0  1
1  841570.08  819911.96  841598.59  819897.41  0.0  12.0  0.0  0.0  0  1
1  841598.59  819897.41  841634.08  819835.87  0.0  11.4  0.0  0.0  0  1
1  841634.08  819835.87  841655.99  819766.03  0.0  12.7  0.0  0.0  0  1
1  841655.99  819766.03  841705.13  819394.99  0.0  11.6  0.0  0.0  0  1
1  841451.49  819923.23  841495.87  819907.19  0.0  11.9  0.0  0.0  0  1
1  841495.87  819907.19  841569.53  819917.54  0.0  11.5  0.0  0.0  0  1
1  841569.53  819917.54  841600.75  819903.95  0.0  12.0  0.0  0.0  0  1
1  841600.75  819903.95  841638.78  819839.97  0.0  11.4  0.0  0.0  0  1
1  841638.78  819839.97  841666.31  819761.75  0.0  12.7  0.0  0.0  0  1
1  841666.31  819761.75  841709.66  819395.96  0.0  11.6  0.0  0.0  0  1
31111
450.0  520.0  260.0  260.0
260.0  260.0  130.0  130.0
130.0  130.0  450.0  450.0
450.0  450.0  530.0  530.0
530.0  530.0  1530.0  1530.0
2450.0  2450.0  1070.0  1070.0
1070.0  1070.0  750.0  750.0
750.0  750.0  1450.0  1890.0
220.0  220.0  190.0  190.0
190.0  210.0  210.0  210.0
210.0  210.0  210.0  210.0
230.0  230.0  220.0  220.0
220.0  330.0  330.0  330.0
330.0  330.0  330.0  330.0
330.0  340.0  340.0  340.0
340.0  340.0  340.0  340.0
340.0  340.0  340.0  340.0
340.0  520.0  520.0  520.0
520.0  520.0  520.0  520.0
520.0  520.0  520.0  520.0
520.0  720.0  720.0  720.0
720.0  1090.0  1090.0  1090.0
1090.0  1090.0  720.0  720.0
720.0  720.0  720.0  720.0
```



```
1090.0  1090.0  1090.0  1090.0
1090.0  1090.0
0.172  0.158  0.117  0.117
0.117  0.117  0.101  0.101
0.101  0.101  0.176  0.176
0.176  0.176  0.171  0.171
0.171  0.171  0.16  0.16
0.168  0.168  0.165  0.165
0.165  0.165  0.172  0.172
0.172  0.172  0.156  0.155
0.188  0.188  0.198  0.198
0.198  0.198  0.198  0.198
0.198  0.198  0.198  0.198
0.192  0.192  0.199  0.199
0.199  0.156  0.156  0.156
0.156  0.156  0.156  0.156
0.156  0.207  0.207  0.207
0.207  0.207  0.207  0.207
0.207  0.207  0.207  0.207
0.207  0.189  0.189  0.189
0.189  0.189  0.189  0.189
0.189  0.189  0.189  0.189
0.189  0.141  0.141  0.141
0.141  0.115  0.115  0.115
0.115  0.115  0.141  0.141
0.141  0.141  0.141  0.141
0.115  0.115  0.115  0.115
0.115  0.115
0.0  1.0  6  500.0  6.0  0.0  25.5
** BREEZE
** PROJECTN  0 104 7 -177 0 0.9996 500000 0
** OUTFILE  Q:\Projects\MVATERMCEI00\MVASMP10EI00\VEIA\111018\Discrete\RSP.lst
** RAWFILE
```

```
Sau Mau Ping Phase 10
3Inert Gas
100.0  46.0  0.0  0.0  54  102  1.0  1  1  0.0
A1
A2
A3
A4
A5
A6
A7
A8
A9
A1
A2
A3
A4
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A5
A6
A7
A8
A9
A1
A2
A3
A4
A5
A6
A7
A8
A9
841870.38  819967.23  1.5
841895.24  819952.1  1.5
841915.22  819938.99  1.5
841921.61  819904.29  1.5
841928.01  819869.6  1.5
841907.53  819865.42  1.5
841895.44  819894.31  1.5
841879.5  819916.54  1.5
841875.66  819937.82  1.5
841870.38  819967.23  6.5
841895.24  819952.1  6.5
```



```
841915.22  819938.99  6.5
841921.61  819904.29  6.5
841928.01  819869.6  6.5
841907.53  819865.42  6.5
841895.44  819894.31  6.5
841879.5  819916.54  6.5
841875.66  819937.82  6.5
841870.38  819967.23  11.5
841895.24  819952.1  11.5
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1	842096.12	820218.72	842129.75	820237.32	0.0	11.2	0.0	0.0	0	1
1	842129.75	820237.32	842237.07	820224.6	0.0	11.2	0.0	0.0	0	1
1	842237.07	820224.6	842279.87	820196.26	0.0	11.2	0.0	0.0	0	1
1	842279.87	820196.26	842402.21	820066.91	0.0	11.2	0.0	0.0	0	1
1	842092.7	820225.57	842127.71	820243.07	0.0	11.2	0.0	0.0	0	1
1	842127.71	820243.07	842237.79	820229.27	0.0	11.2	0.0	0.0	0	1
1	842237.79	820229.27	842280.68	820204.45	0.0	11.2	0.0	0.0	0	1
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1	842092.29	820216.92	842146.99	820146.07	0.0	13.6	0.0	0.0	0	1
1	842146.99	820146.07	842294.72	819996.94	0.0	13.6	0.0	0.0	0	1
1	842294.72	819996.94	842346.18	819994.74	0.0	13.6	0.0	0.0	0	1
1	842346.18	819994.74	842415.32	820011.51	0.0	13.6	0.0	0.0	0	1
1	842099.39	820224.3	842150.46	820155.9	0.0	13.6	0.0	0.0	0	1
1	842150.46	820155.9	842298.0	820007.07	0.0	13.6	0.0	0.0	0	1
1	842298.0	820007.07	842343.41	820003.94	0.0	13.6	0.0	0.0	0	1
1	842343.41	820003.94	842412.21	820024.36	0.0	13.6	0.0	0.0	0	1
1	842287.06	819902.41	842379.16	819948.75	0.0	18.5	0.0	0.0	0	1
1	842379.16	819948.75	842426.41	819953.78	0.0	18.5	0.0	0.0	0	1
1	842295.12	819889.48	842368.0	819933.11	0.0	14.6	0.0	0.0	0	1
1	842368.0	819933.11	842427.08	819942.29	0.0	18.6	0.0	0.0	0	1
1	841796.04	820454.96	842010.65	820170.8	0.0	12.6	0.0	0.0	0	1
1	842010.65	820170.8	842055.09	820136.96	0.0	14.1	0.0	0.0	0	1
1	842055.09	820136.96	842236.33	819956.25	0.0	13.0	0.0	0.0	0	1
1	842236.33	819956.25	842283.94	819887.38	0.0	14.3	0.0	0.0	0	1
1	841804.68	820458.48	841983.1	820217.94	0.0	12.6	0.0	0.0	0	1
1	841983.1	820217.94	842020.98	820182.36	0.0	15.2	0.0	0.0	0	1
1	842020.98	820182.36	842257.73	819945.76	0.0	13.0	0.0	0.0	0	1
1	842257.73	819945.76	842293.28	819893.23	0.0	13.0	0.0	0.0	0	1
1	842283.94	819887.38	842395.98	819668.07	0.0	13.0	0.0	0.0	0	1
1	842293.28	819893.23	842400.11	819675.52	0.0	13.0	0.0	0.0	0	1
1	841693.21	820425.2	841867.95	820200.66	0.0	11.0	0.0	0.0	0	1
1	841867.95	820200.66	841884.21	820122.99	0.0	11.2	0.0	0.0	0	1
1	841884.21	820122.99	841852.1	820068.35	0.0	11.1	0.0	0.0	0	1
1	841852.1	820068.35	841860.96	820028.48	0.0	13.5	0.0	0.0	0	1
1	841860.96	820028.48	841909.67	819992.1	0.0	12.8	0.0	0.0	0	1
1	841909.67	819992.1	841919.67	819944.22	0.0	13.2	0.0	0.0	0	1
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1	841942.22	819836.61	841972.88	819789.97	0.0	11.2	0.0	0.0	0	1
1	841972.88	819789.97	842012.96	819761.96	0.0	11.2	0.0	0.0	0	1
1	842012.96	819761.96	842098.84	819726.32	0.0	11.2	0.0	0.0	0	1
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1	842125.95	819701.41	842240.85	819506.61	0.0	11.2	0.0	0.0	0	1
1	841698.47	820428.37	841869.49	820207.21	0.0	11.0	0.0	0.0	0	1
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1	841916.7	819998.24	841933.81	819975.14	0.0	13.2	0.0	0.0	0	1
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1	841977.29	819794.8	842014.47	819767.44	0.0	11.2	0.0	0.0	0	1
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1	842100.48	819731.03	842129.52	819703.99	0.0	11.2	0.0	0.0	0	1
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** RAWFILE
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Annex 5:
Industrial Emission Impact Emission Factors and Assessment Results

Emission Rate Calculation for Chimneys

NUM	CHIM_GX	CHIM_GY	GroundPD	HEIGHTAG(m)	TOPDIA (mm)	GTEMP_EXIT (°C)	GO_MRATE (L/hr)	Dia (m)	Exit vel (m/s)	SO2 Emission Rate(g/s)	NO2 Emission Rate(g/s)
4	841425	820492	66	31	812	190	185	0.81	9.0	4.32E-03	3.70E-02
7	841426	820492	61	89	500	190	415	0.50	9.0	9.68E-03	8.30E-02
8	841427	820492	61	89	500	190	415	0.50	9.0	9.68E-03	8.30E-02
9	841428	820492	61	89	500	190	415	0.50	9.0	9.68E-03	8.30E-02

SO2 Emission rate = Fuel Consumption Rate * sulphur content /molar mass of S * molar mass of SO2 (as a conservative approach, 0.005% sulphur content is assumed)
According to the latest Air Pollution (Fuel Restriction) Regulation, the sulphur content of liquid fuel is not allowed to exceed 0.005% or a viscosity of more than 6 centistokes at 40oC
NO2 Emission rate = Fuel Consumption Rate * Emission Factor * 0.3 (0.3 is the conversion factor of NOx to NO2)
Emission factor of NOx is made reference to AP42 Chapter 1.3 Table 1.3.1

Predicted Air Pollutant Concentrations at Selected ASRs due to Industrial Emission

ASR	Height above ground (m)	Concentration with Background NO_2 (µg/m³)		
		Hourly	Daily	Annual
A1	1.5	64	60	60
A2	1.5	64	60	60
A3	1.5	64	60	60
A4	1.5	64	60	60
A5	1.5	64	60	60
A6	1.5	64	60	60
A7	1.5	64	60	60
A8	1.5	64	60	60
A9	1.5	64	60	60
A1	6.5	64	60	60
A2	6.5	64	60	60
A3	6.5	64	60	60
A4	6.5	64	60	60
A5	6.5	64	60	60
A6	6.5	64	60	60
A7	6.5	64	60	60
A8	6.5	64	60	60
A9	6.5	64	60	60
A1	11.5	64	60	60
A2	11.5	64	60	60
A3	11.5	64	60	60
A4	11.5	64	60	60
A5	11.5	64	60	60
A6	11.5	64	60	60
A7	11.5	64	60	60
A8	11.5	64	60	60
A9	11.5	64	60	60
A1	16.5	64	60	60
A2	16.5	64	60	60
A3	16.5	64	60	60
A4	16.5	64	60	60
A5	16.5	64	60	60
A6	16.5	64	60	60
A7	16.5	64	60	60
A8	16.5	64	60	60
A9	16.5	64	60	60
A1	21.5	65	60	60
A2	21.5	65	60	60
A3	21.5	65	60	60
A4	21.5	65	60	60
A5	21.5	65	60	60
A6	21.5	65	60	60
A7	21.5	65	60	60
A8	21.5	65	60	60
A9	21.5	65	60	60
A1	26.5	65	60	60
A2	26.5	65	60	60
A3	26.5	65	60	60
A4	26.5	65	60	60
A5	26.5	65	60	60
A6	26.5	65	60	60
A7	26.5	65	60	60
A8	26.5	65	60	60
A9	26.5	65	60	60
A1	31.5	66	60	60
A2	31.5	66	60	60
A3	31.5	66	60	60
A4	31.5	66	60	60
A5	31.5	65	60	60
A6	31.5	65	60	60
A7	31.5	65	60	60
A8	31.5	66	60	60
A9	31.5	66	60	60

ASR	Height above ground (m)	Concentration with Background NO_2 (µg/m³)		
		Hourly	Daily	Annual
A1	36.5	67	60	60
A2	36.5	66	60	60
A3	36.5	66	60	60
A4	36.5	66	60	60
A5	36.5	66	60	60
A6	36.5	66	60	60
A7	36.5	66	60	60
A8	36.5	66	60	60
A9	36.5	66	60	60
A1	41.5	67	60	60
A2	41.5	67	60	60
A3	41.5	67	60	60
A4	41.5	67	60	60
A5	41.5	66	60	60
A6	41.5	66	60	60
A7	41.5	66	60	60
A8	41.5	67	60	60
A9	41.5	67	60	60
A1	46.5	68	61	60
A2	46.5	68	60	60
A3	46.5	67	60	60
A4	46.5	67	60	60
A5	46.5	67	60	60
A6	46.5	67	60	60
A7	46.5	67	60	60
A8	46.5	67	60	60
A9	46.5	68	60	60
A1	51.5	69	61	60
A2	51.5	68	61	60
A3	51.5	68	61	60
A4	51.5	68	60	60
A5	51.5	67	60	60
A6	51.5	67	60	60
A7	51.5	67	60	60
A8	51.5	68	60	60
A9	51.5	68	60	60
A1	56.5	70	61	60
A2	56.5	69	61	60
A3	56.5	68	61	60
A4	56.5	68	60	60
A5	56.5	68	60	60
A6	56.5	68	60	60
A7	56.5	68	60	60
A8	56.5	68	60	60
A9	56.5	69	60	60
A1	61.5	70	61	60
A2	61.5	70	61	60
A3	61.5	69	61	60
A4	61.5	69	60	60
A5	61.5	68	60	60
A6	61.5	68	60	60
A7	61.5	68	60	60
A8	61.5	69	60	60
A9	61.5	70	61	60
Max		70	61	60
AQO		300	150	80

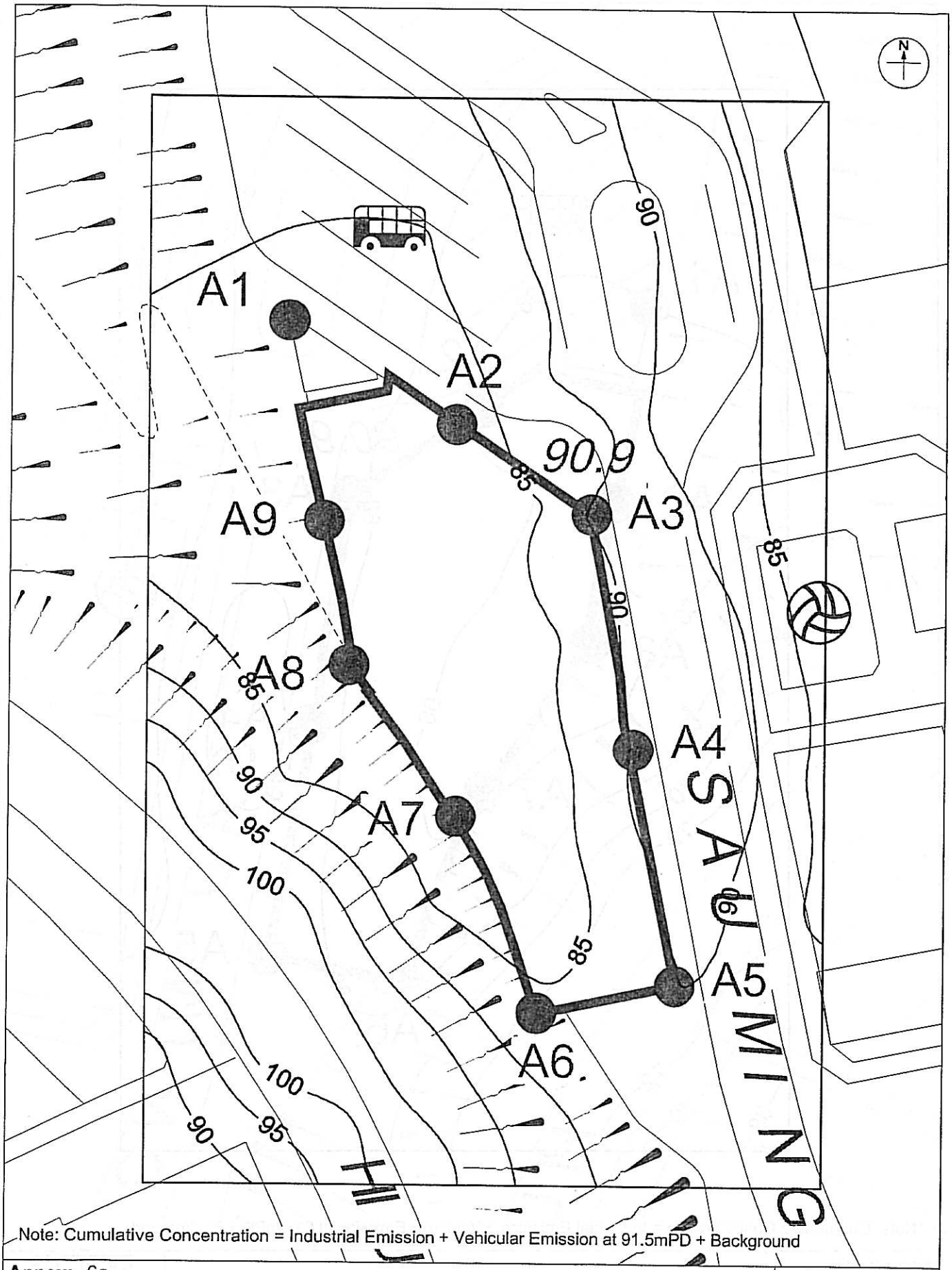
Predicted Cumulative SO2 Pollution due to Industrial Emission with Background

ASR	Height above ground (m)	SO_2 Concentration (µg/m³)					
		Industrial Emission			Cumulative Emission		
		Hourly	Daily	Annual	Hourly	Daily	Annual
A1	1.5	0.4	0.0	0.00	16	15	15
A2	1.5	0.4	0.0	0.00	16	15	15
A3	1.5	0.4	0.0	0.00	16	15	15
A4	1.5	0.5	0.0	0.00	16	15	15
A5	1.5	0.5	0.0	0.00	16	15	15
A6	1.5	0.4	0.0	0.00	16	15	15
A7	1.5	0.4	0.0	0.00	16	15	15
A8	1.5	0.4	0.0	0.00	16	15	15
A9	1.5	0.4	0.0	0.00	16	15	15
A1	6.5	0.4	0.0	0.00	16	15	15
A2	6.5	0.4	0.0	0.00	16	15	15
A3	6.5	0.4	0.0	0.00	16	15	15
A4	6.5	0.5	0.0	0.00	16	15	15
A5	6.5	0.5	0.0	0.00	16	15	15
A6	6.5	0.5	0.0	0.00	16	15	15
A7	6.5	0.4	0.0	0.00	16	15	15
A8	6.5	0.4	0.0	0.00	16	15	15
A9	6.5	0.4	0.0	0.00	16	15	15
A1	11.5	0.5	0.0	0.00	16	15	15
A2	11.5	0.5	0.0	0.00	16	15	15
A3	11.5	0.5	0.0	0.00	16	15	15
A4	11.5	0.5	0.0	0.00	16	15	15
A5	11.5	0.5	0.0	0.00	16	15	15
A6	11.5	0.5	0.0	0.00	16	15	15
A7	11.5	0.5	0.0	0.00	16	15	15
A8	11.5	0.5	0.0	0.00	16	15	15
A9	11.5	0.5	0.0	0.00	16	15	15
A1	16.5	0.5	0.0	0.00	16	15	15
A2	16.5	0.5	0.0	0.00	16	15	15
A3	16.5	0.5	0.0	0.00	16	15	15
A4	16.5	0.5	0.0	0.00	16	15	15
A5	16.5	0.5	0.0	0.00	16	15	15
A6	16.5	0.5	0.0	0.00	16	15	15
A7	16.5	0.5	0.0	0.00	16	15	15
A8	16.5	0.5	0.0	0.00	16	15	15
A9	16.5	0.5	0.0	0.00	16	15	15
A1	21.5	0.6	0.0	0.00	16	15	15
A2	21.5	0.5	0.0	0.00	16	15	15
A3	21.5	0.5	0.0	0.00	16	15	15
A4	21.5	0.6	0.0	0.00	16	15	15
A5	21.5	0.5	0.0	0.00	16	15	15
A6	21.5	0.5	0.0	0.00	16	15	15
A7	21.5	0.5	0.0	0.00	16	15	15
A8	21.5	0.5	0.0	0.00	16	15	15
A9	21.5	0.6	0.0	0.00	16	15	15
A1	26.5	0.6	0.0	0.00	16	15	15
A2	26.5	0.6	0.0	0.00	16	15	15
A3	26.5	0.6	0.0	0.00	16	15	15
A4	26.5	0.6	0.0	0.00	16	15	15
A5	26.5	0.6	0.0	0.00	16	15	15
A6	26.5	0.6	0.0	0.00	16	15	15
A7	26.5	0.6	0.0	0.00	16	15	15
A8	26.5	0.6	0.0	0.00	16	15	15
A9	26.5	0.6	0.0	0.00	16	15	15
A1	31.5	0.7	0.0	0.00	16	15	15
A2	31.5	0.7	0.0	0.00	16	15	15
A3	31.5	0.6	0.0	0.00	16	15	15
A4	31.5	0.7	0.0	0.00	16	15	15
A5	31.5	0.6	0.0	0.00	16	15	15
A6	31.5	0.6	0.0	0.00	16	15	15
A7	31.5	0.6	0.0	0.00	16	15	15
A8	31.5	0.6	0.0	0.00	16	15	15
A9	31.5	0.7	0.0	0.00	16	15	15

ASR	Height above ground (m)	SO_2 Concentration (µg/m³)					
		Industrial Emission			Cumulative Emission		
		Hourly	Daily	Annual	Hourly	Daily	Annual
A1	36.5	0.8	0.1	0.00	16	15	15
A2	36.5	0.7	0.1	0.00	16	15	15
A3	36.5	0.7	0.1	0.00	16	15	15
A4	36.5	0.7	0.0	0.00	16	15	15
A5	36.5	0.7	0.0	0.00	16	15	15
A6	36.5	0.7	0.0	0.00	16	15	15
A7	36.5	0.7	0.0	0.00	16	15	15
A8	36.5	0.7	0.0	0.00	16	15	15
A9	36.5	0.7	0.0	0.00	16	15	15
A1	41.5	0.9	0.1	0.00	16	15	15
A2	41.5	0.8	0.1	0.00	16	15	15
A3	41.5	0.8	0.1	0.00	16	15	15
A4	41.5	0.8	0.0	0.00	16	15	15
A5	41.5	0.7	0.0	0.00	16	15	15
A6	41.5	0.7	0.0	0.00	16	15	15
A7	41.5	0.7	0.0	0.00	16	15	15
A8	41.5	0.8	0.0	0.00	16	15	15
A9	41.5	0.8	0.1	0.00	16	15	15
A1	46.5	0.9	0.1	0.00	16	15	15
A2	46.5	0.9	0.1	0.00	16	15	15
A3	46.5	0.9	0.1	0.00	16	15	15
A4	46.5	0.9	0.1	0.00	16	15	15
A5	46.5	0.8	0.0	0.00	16	15	15
A6	46.5	0.8	0.0	0.00	16	15	15
A7	46.5	0.8	0.0	0.00	16	15	15
A8	46.5	0.8	0.0	0.00	16	15	15
A9	46.5	0.9	0.1	0.00	16	15	15
A1	51.5	1.0	0.1	0.00	16	15	15
A2	51.5	1.0	0.1	0.00	16	15	15
A3	51.5	0.9	0.1	0.00	16	15	15
A4	51.5	0.9	0.1	0.00	16	15	15
A5	51.5	0.9	0.0	0.00	16	15	15
A6	51.5	0.9	0.0	0.00	16	15	15
A7	51.5	0.9	0.0	0.00	16	15	15
A8	51.5	0.9	0.1	0.00	16	15	15
A9	51.5	1.0	0.1	0.00	16	15	15
A1	56.5	1.1	0.1	0.00	16	15	15
A2	56.5	1.0	0.1	0.00	16	15	15
A3	56.5	1.0	0.1	0.00	16	15	15
A4	56.5	1.0	0.1	0.00	16	15	15
A5	56.5	0.9	0.0	0.00	16	15	15
A6	56.5	0.9	0.0	0.00	16	15	15
A7	56.5	0.9	0.0	0.00	16	15	15
A8	56.5	1.0	0.1	0.00	16	15	15
A9	56.5	1.0	0.1	0.00	16	15	15
A1	61.5	1.2	0.1	0.00	16	15	15
A2	61.5	1.1	0.1	0.00	16	15	15
A3	61.5	1.0	0.1	0.00	16	15	15
A4	61.5	1.0	0.1	0.00	16	15	15
A5	61.5	1.0	0.1	0.00	16	15	15
A6	61.5	1.0	0.0	0.00	16	15	15
A7	61.5	1.0	0.1	0.00	16	15	15
A8	61.5	1.0	0.1	0.00	16	15	15
A9	61.5	1.1	0.1	0.00	16	15	15
Max		1	0	0	16	15	15
AQO		800	350	80	800	350	80

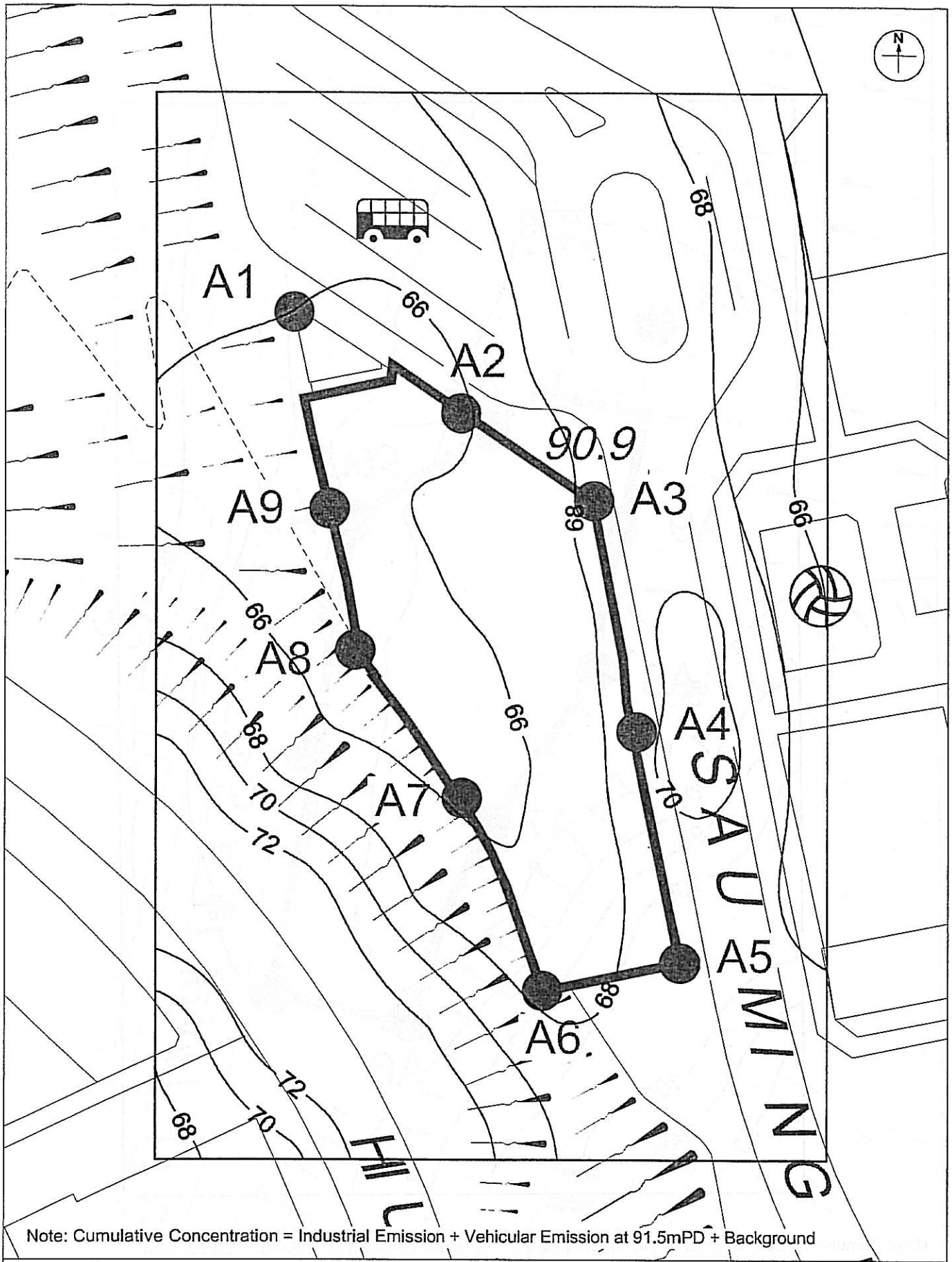
note: Cumulative Emission = Industrial Emission + Background

Annex 6:
Cumulative NO_2 Concentration Result from Vehicular Emission and Chimney Emission



Note: Cumulative Concentration = Industrial Emission + Vehicular Emission at 91.5mPD + Background

Annex: 6a		ENVIRON
Title:	Cumulative 1 hour NO_2 Concentration Contour (µg/m³) at Worst Hit Level 151.5 mPD under a Conservative Worst Case Scenario (AQO: 300 µg/m³)	Drawn by: EC Checked by: TC
Project:	Environmental Assessment Study for Public Rental Housing Development at Sau Ming Road	Rev.: 5.0 Date: Oct 2011



Note: Cumulative Concentration = Industrial Emission + Vehicular Emission at 91.5mPD + Background

Annex: 6b		ENVIRON
Title:	Cumulative Daily NO_2 Concentration Contour (µg/m³) at Worst Hit Level 151.5 mPD under a Conservative Worst Case Scenario (AQO: 150 µg/m³)	Drawn by: EC Checked by: TC
Project:	Environmental Assessment Study for Public Rental Housing Development at Sau Ming Road	Rev.: 5.0 Date: Oct 2011

Predicted Cumulative NO2 Pollution due to Industrial Emission, Vehicular Emission with Background

ASR	Height above ground (m)	mPD Level	NO_2 Concentration (µg/m³)					
			Industrial Emission		Vehicular Emission		Cumulative Emission	
			Hourly	Daily	Hourly	Daily	Hourly	Daily
A1	1.5	91.5	3.7	0.4	13.5	5.4	77.2	65.8
A2	1.5	91.5	3.7	0.3	12.8	5.1	76.5	65.5
A3	1.5	91.5	3.7	0.3	21.8	8.7	85.5	69.1
A4	1.5	91.5	3.9	0.3	21.4	8.6	85.3	68.9
A5	1.5	91.5	3.9	0.3	21.8	8.7	85.7	69.0
A6	1.5	91.5	3.8	0.3	17.7	7.1	81.5	67.3
A7	1.5	91.5	3.7	0.3	13.5	5.4	77.2	65.7
A8	1.5	91.5	3.6	0.3	13.2	5.3	76.8	65.6
A9	1.5	91.5	3.7	0.3	13.2	5.3	76.9	65.6
A1	6.5	96.5	3.8	0.4	13.5	5.4	77.3	65.8
A2	6.5	96.5	3.8	0.3	12.8	5.1	76.6	65.5
A3	6.5	96.5	3.8	0.3	21.8	8.7	85.6	69.1
A4	6.5	96.5	4.0	0.3	21.4	8.6	85.4	68.9
A5	6.5	96.5	4.0	0.3	21.8	8.7	85.8	69.0
A6	6.5	96.5	3.9	0.3	17.7	7.1	81.5	67.3
A7	6.5	96.5	3.8	0.3	13.5	5.4	77.3	65.7
A8	6.5	96.5	3.7	0.3	13.2	5.3	76.9	65.6
A9	6.5	96.5	3.8	0.3	13.2	5.3	77.0	65.6
A1	11.5	101.5	4.0	0.4	13.5	5.4	77.5	65.8
A2	11.5	101.5	4.0	0.4	12.8	5.1	76.8	65.5
A3	11.5	101.5	4.0	0.3	21.8	8.7	85.8	69.1
A4	11.5	101.5	4.2	0.3	21.4	8.6	85.6	68.9
A5	11.5	101.5	4.1	0.3	21.8	8.7	85.9	69.0
A6	11.5	101.5	4.0	0.3	17.7	7.1	81.7	67.4
A7	11.5	101.5	3.9	0.3	13.5	5.4	77.5	65.7
A8	11.5	101.5	3.9	0.3	13.2	5.3	77.1	65.6
A9	11.5	101.5	4.0	0.3	13.2	5.3	77.2	65.6
A1	16.5	106.5	4.3	0.4	13.5	5.4	77.9	65.8
A2	16.5	106.5	4.3	0.4	12.8	5.1	77.1	65.5
A3	16.5	106.5	4.2	0.4	21.8	8.7	86.1	69.1
A4	16.5	106.5	4.4	0.3	21.4	8.6	85.9	68.9
A5	16.5	106.5	4.3	0.3	21.8	8.7	86.2	69.0
A6	16.5	106.5	4.3	0.3	17.7	7.1	81.9	67.4
A7	16.5	106.5	4.2	0.3	13.5	5.4	77.7	65.7
A8	16.5	106.5	4.2	0.3	13.2	5.3	77.3	65.6
A9	16.5	106.5	4.3	0.3	13.2	5.3	77.5	65.6
A1	21.5	111.5	4.8	0.4	13.5	5.4	78.3	65.8
A2	21.5	111.5	4.7	0.4	12.8	5.1	77.5	65.5
A3	21.5	111.5	4.6	0.4	21.8	8.7	86.4	69.1
A4	21.5	111.5	4.8	0.3	21.4	8.6	86.2	68.9
A5	21.5	111.5	4.7	0.3	21.8	8.7	86.5	69.0
A6	21.5	111.5	4.6	0.3	17.7	7.1	82.2	67.4
A7	21.5	111.5	4.5	0.3	13.5	5.4	78.1	65.7
A8	21.5	111.5	4.5	0.3	13.2	5.3	77.7	65.6
A9	21.5	111.5	4.7	0.4	13.2	5.3	77.9	65.6
A1	26.5	116.5	5.3	0.4	13.5	5.4	78.9	65.8
A2	26.5	116.5	5.2	0.4	12.8	5.1	78.0	65.5
A3	26.5	116.5	5.1	0.4	21.8	8.7	86.9	69.1
A4	26.5	116.5	5.2	0.4	21.4	8.6	86.6	68.9
A5	26.5	116.5	5.0	0.3	21.8	8.7	86.8	69.1
A6	26.5	116.5	4.9	0.3	17.7	7.1	82.6	67.4
A7	26.5	116.5	4.9	0.3	13.5	5.4	78.5	65.8
A8	26.5	116.5	5.0	0.3	13.2	5.3	78.2	65.6
A9	26.5	116.5	5.2	0.4	13.2	5.3	78.4	65.6
A1	31.5	121.5	5.9	0.4	13.5	5.4	79.5	65.8
A2	31.5	121.5	5.8	0.4	12.8	5.1	78.5	65.5
A3	31.5	121.5	5.6	0.4	21.8	8.7	87.4	69.1
A4	31.5	121.5	5.7	0.4	21.4	8.6	87.1	69.0
A5	31.5	121.5	5.4	0.3	21.8	8.7	87.3	69.1
A6	31.5	121.5	5.4	0.3	17.7	7.1	83.1	67.4
A7	31.5	121.5	5.4	0.3	13.5	5.4	78.9	65.8
A8	31.5	121.5	5.5	0.4	13.2	5.3	78.7	65.6
A9	31.5	121.5	5.8	0.4	13.2	5.3	78.9	65.7

ASR	Height above ground (m)	mPD Level	NO_2 Concentration (µg/m³)					
			Industrial Emission		Vehicular Emission		Cumulative Emission	
			Hourly	Daily	Hourly	Daily	Hourly	Daily
A1	36.5	126.5	6.6	0.5	13.5	5.4	80.2	65.9
A2	36.5	126.5	6.4	0.4	12.8	5.1	79.2	65.6
A3	36.5	126.5	6.1	0.4	21.8	8.7	87.9	69.2
A4	36.5	126.5	6.2	0.4	21.4	8.6	87.6	69.0
A5	36.5	126.5	5.9	0.4	21.8	8.7	87.7	69.1
A6	36.5	126.5	5.8	0.3	17.7	7.1	83.5	67.4
A7	36.5	126.5	5.9	0.4	13.5	5.4	79.4	65.8
A8	36.5	126.5	6.1	0.4	13.2	5.3	79.2	65.6
A9	36.5	126.5	6.4	0.4	13.2	5.3	79.6	65.7
A1	41.5	131.5	7.3	0.5	13.5	5.4	80.9	65.9
A2	41.5	131.5	7.0	0.5	12.8	5.1	79.8	65.6
A3	41.5	131.5	6.7	0.5	21.8	8.7	88.5	69.2
A4	41.5	131.5	6.7	0.4	21.4	8.6	88.2	69.0
A5	41.5	131.5	6.4	0.4	21.8	8.7	88.2	69.1
A6	41.5	131.5	6.3	0.3	17.7	7.1	84.0	67.4
A7	41.5	131.5	6.4	0.4	13.5	5.4	80.0	65.8
A8	41.5	131.5	6.7	0.4	13.2	5.3	79.8	65.7
A9	41.5	131.5	7.0	0.4	13.2	5.3	80.2	65.7
A1	46.5	136.5	8.1	0.5	13.5	5.4	81.6	65.9
A2	46.5	136.5	7.7	0.5	12.8	5.1	80.5	65.6
A3	46.5	136.5	7.3	0.5	21.8	8.7	89.1	69.2
A4	46.5	136.5	7.3	0.4	21.4	8.6	88.7	69.0
A5	46.5	136.5	6.9	0.4	21.8	8.7	88.7	69.1
A6	46.5	136.5	6.8	0.4	17.7	7.1	84.5	67.4
A7	46.5	136.5	7.0	0.4	13.5	5.4	80.5	65.8
A8	46.5	136.5	7.3	0.4	13.2	5.3	80.4	65.7
A9	46.5	136.5	7.7	0.5	13.2	5.3	80.9	65.7
A1	51.5	141.5	8.8	0.5	13.5	5.4	82.4	66.0
A2	51.5	141.5	8.4	0.5	12.8	5.1	81.1	65.6
A3	51.5	141.5	7.9	0.5	21.8	8.7	89.7	69.2
A4	51.5	141.5	7.8	0.5	21.4	8.6	89.3	69.0
A5	51.5	141.5	7.4	0.4	21.8	8.7	89.2	69.1
A6	51.5	141.5	7.3	0.4	17.7	7.1	85.0	67.4
A7	51.5	141.5	7.5	0.4	13.5	5.4	81.0	65.8
A8	51.5	141.5	7.8	0.4	13.2	5.3	81.0	65.7
A9	51.5	141.5	8.4	0.5	13.2	5.3	81.5	65.7
A1	56.5	146.5	9.5	0.6	13.5	5.4	83.1	66.0
A2	56.5	146.5	9.0	0.5	12.8	5.1	81.8	65.7
A3	56.5	146.5	8.5	0.5	21.8	8.7	90.3	69.3
A4	56.5	146.5	8.3	0.5	21.4	8.6	89.8	69.1
A5	56.5	146.5	7.8	0.4	21.8	8.7	89.6	69.1
A6	56.5	146.5	7.8	0.4	17.7	7.1	85.5	67.5
A7	56.5	146.5	8.0	0.4	13.5	5.4	81.5	65.8
A8	56.5	146.5	8.4	0.5	13.2	5.3	81.6	65.7
A9	56.5	146.5	9.0	0.5	13.2	5.3	82.2	65.8
A1	61.5	151.5	10.2	0.6	13.5	5.4	83.7	66.0
A2	61.5	151.5	9.5	0.6	12.8	5.1	82.3	65.7
A3	61.5	151.5	9.0	0.5	21.8	8.7	90.8	69.3
A4	61.5	151.5	8.8	0.5	21.4	8.6	90.2	69.1
A5	61.5	151.5	8.2	0.4	21.8	8.7	90.0	69.2
A6	61.5	151.5	8.2	0.4	17.7	7.1	85.9	67.5
A7	61.5	151.5	8.4	0.4	13.5	5.4	82.0	65.9
A8	61.5	151.5	8.9	0.5	13.2	5.3	82.1	65.7
A9	61.5	151.5	9.6	0.5	13.2	5.3	82.7	65.8
Max			10.2	0.6	21.8	8.7	90.8	69.3
AQO			300.0	150.0	300.0	150.0	300	150

Note: Cumulative Emission = Industrial Emission + Maximum of Vehicular Emission at 91.5m aboveground + Background
Maximum Emission Concentration is at 61.5m above ground, i.e. 151.5 m.P.D.

Proposed Public Rental Housing Development at Sau Ming Road

Visual Impact Assessment Study Report

1 INTRODUCTION

1.1 This Visual Impact Assessment ("**VIA**") is prepared in support of a proposed Public Rental Housing (PRH) development (the "**Proposed Development**") at a "Government, Institution or Community" ("**G/IC**") site on Sau Ming Road, Sau Mau Ping (the "**Site**").

1.2 Point (g) of the Para. 2.3 of the *Town Planning Board Guidelines No. 41 - Guidelines on submissions of Visual Impact Assessment for Planning Applications to the Town Planning Board* ("**TPB PG No. 41**") states that a VIA is required when "the proposal may affect existing visually sensitive areas, visual amenities and visual resources on-site or off-site enjoyed by the public due to its nature, scale, location, visual prominence, design, relationship to the site context, etc."

1.3 The Site is situated on Sau Ming Road, Sau Mau Ping. It is zoned G/IC on the Approved Kwun Tong (South) Outline Zoning Plan No. S/K14S/16 (the "**Approved OZP**") (***Figure 1*** refers).

1.4 Hong Kong Housing Authority ("**HKHA**") intends to develop the Site for 18 storeys of Public Rental Housing over two storeys community facilities. The Architectural Scheme is provided at **Appendix 1**. Community facilities in the form of, inter alia, a community hall, a small library and a study area. The Proposed Development will also provide adequate Local Open Space according to Hong Kong Planning Standards and Guidelines ("**HKPSG**") requirement for the enjoyment of future residents.

1.5 In order to enhance cross air ventilation, voids and appropriate landscape treatments have been incorporated at the lower and upper levels of the building block according to the recommendation of the Air Ventilation Assessment ("**AVA**") study (**Figure 5a** and **Plans 4-7 of Appendix 1** refer). These voids will also enhance visual impacts of the Proposed Development and soften the visual bulk overall bulkiness and physical outlook of the building. To further enhance the visual impact of the proposed development, other ways to refine the built-form will be explored as far as possible in the detailed design stage.

1.6 This VIA evaluates the visual compatibility and degree of anticipated visual impacts of the Proposed Development with the proposed mitigation measures on the Visually Sensitive Receivers ("**VSRs**") from public Vantage Points ("**VPs**"). Based on the assessments, the VIA comments on the visual acceptability of the Proposed Development.

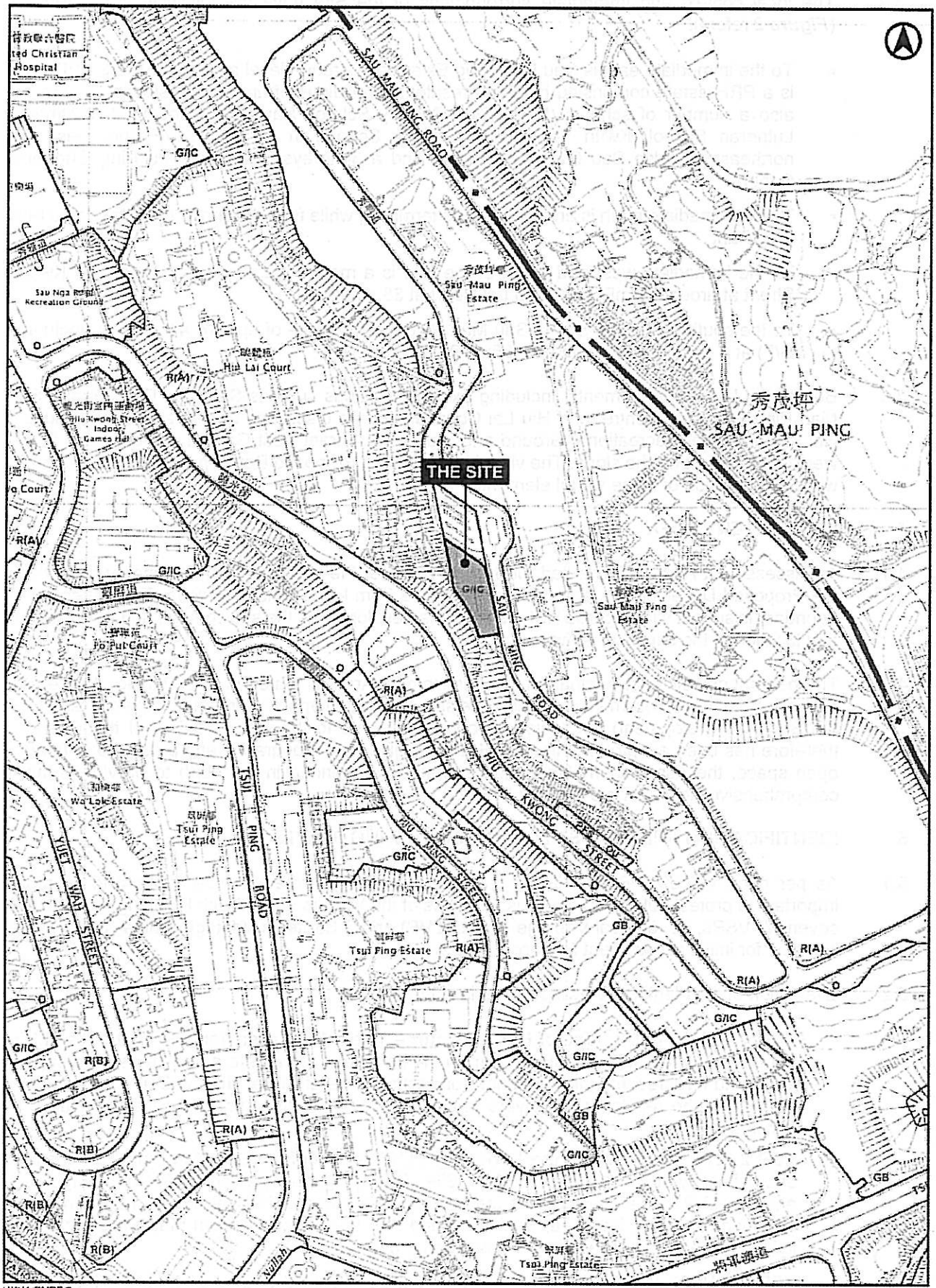
2 OUTLINE OF THE VISUAL ASSESSMENT

2.1 The outline for this VIA is set out below:

- Section 3 outlines the visual context and visual elements of the Site;
- Section 4 identifies the Assessment Area;
- Section 5 identifies and classifies viewing points;
- Section 6 assesses the overall visual impact of the Proposed Development; and
- Section 7 concludes the VIA.

3 VISUAL CONTEXT AND VISUAL ELEMENTS

3.1 Sitting in the midst of PRH estates (Sau Mau Ping Estate and Sau Mau Ping South Estate), the Site currently consists of 6-storeys Sau Mau Ping (Centre) Estate Community Centre and a temporary open-air car park. The Site is at a level of approx. 90.2 metres above principal datum (mPD).



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FIGURE 1 OZP EXTRACT
SCALE 1 : 5,000

3.2 The local context and immediate surroundings of the Site have the following characteristics (***Figure 2*** refers):

- To the immediate east is Sau Mau Ping Estate at a ground level of approx. 113.5mPD. This is a PRH estate comprising high-rise residential buildings of approx. 40 storeys. There are also a number of schools (Holm Glad Primary School, Sau Ming School, St. Matthew's Lutheran School, Kwun Tong Gov't Primary School) in the vicinity. Further east and northeast are also Sau Mau Ping Estate and a 3-storeys high Sau Mau Ping Shopping Centre;
- To the immediate north is an open-air bus terminus, while further north of the Site is Sau Mau Ping Park;
- To the immediate west and south of the Site is a man-made slope, leading to Hiu Kwong Street at around 67mPD with Hiu Lai Court at 38 storeys;
- To the southeast of the Site is Sau Mau Ping South Estate of approx. 41 storeys (including G/F) at a ground level of approx. 85mPD.

3.3 Beside the key visual elements, including existing buildings such as Sau Mau Ping Estate, Sau Mau Ping Shopping Centre, and Hiu Lai Court, which are discussed above, attractors including Hiu Kwong Street Recreational Ground and Hiu Kwong Street Rest Garden can be found to the west of the Site down the slope. The visual impact of the Proposed Development will be assessed with consideration of these visual elements.

4 ASSESSMENT AREA

4.1 An Assessment Area is delineated for the VIA to cover the area of visual influence within which the Proposed Development is pronouncedly visible from key sensitive viewers. The assessment boundary is set out with regards to the size of the development, the site context, and the distance and location of the sensitive viewers.

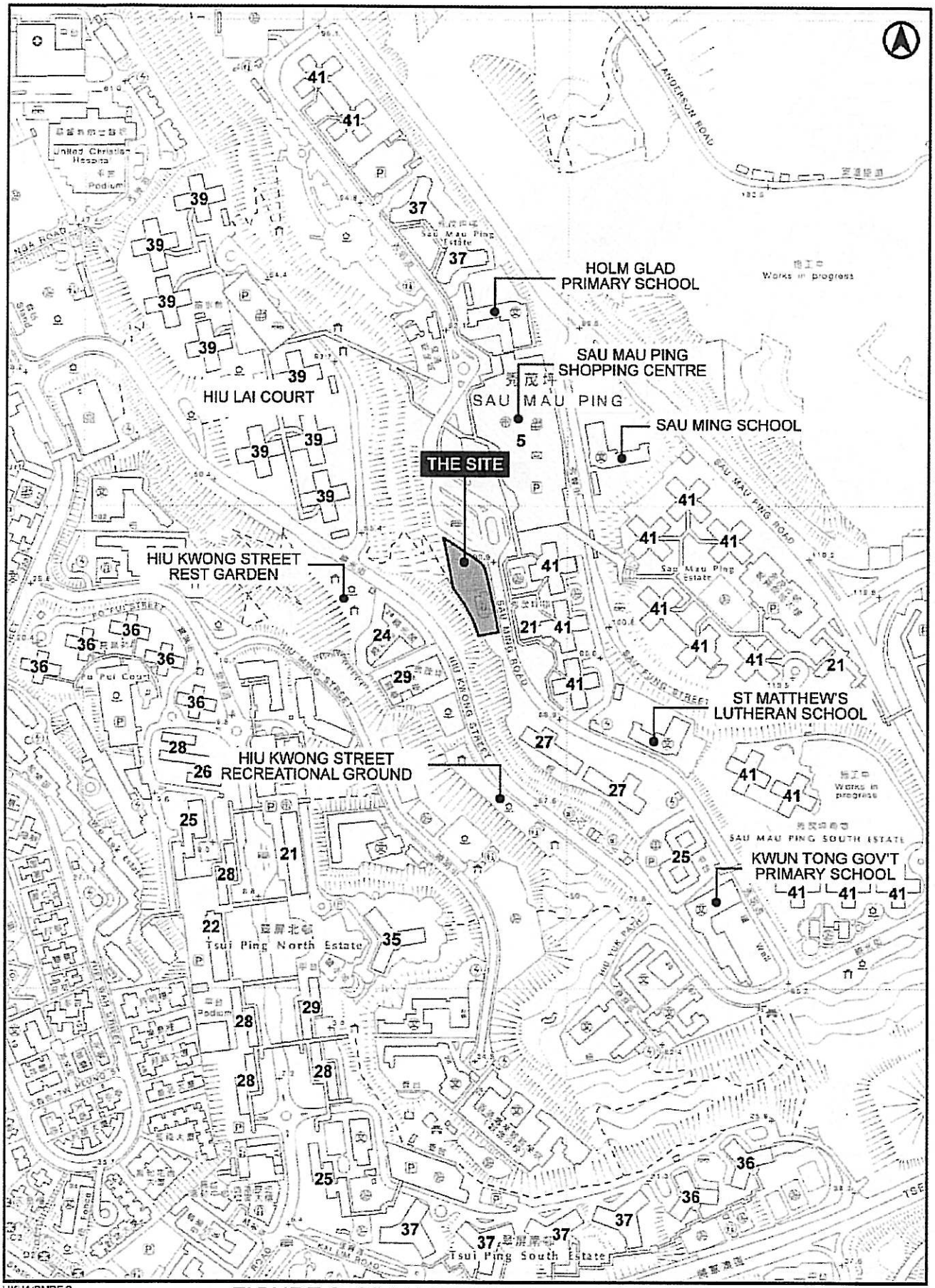
4.2 The general guideline for setting out the Assessment Area as stated in TPB PG No. 41 (i.e. the distance from the Assessment Area distance should equal to approx. three times the overall BH of the Subject Development) is considered appropriate due to the visual context of the Site and therefore has been adopted in this VIA. However, given the topography and presence of nearby open space, the Assessment Area has been slightly extended in the north to provide a more comprehensive view analysis (***Figure 3*** refers).

5 IDENTIFICATION AND CLASSIFICATION OF VIEWING POINTS

5.1 As per para. 4.5 of TPB PG No.41, it is not practical to protect private views and its more important to protect public views as it is the focus of the VIA. As agreed with Planning Department, seven (7) VSRs, i.e. 5 Local Vantage Points (LVP) and 2 Strategic Vantage Points (SVP), were selected for initial assessment (***Figure 4*** refers).

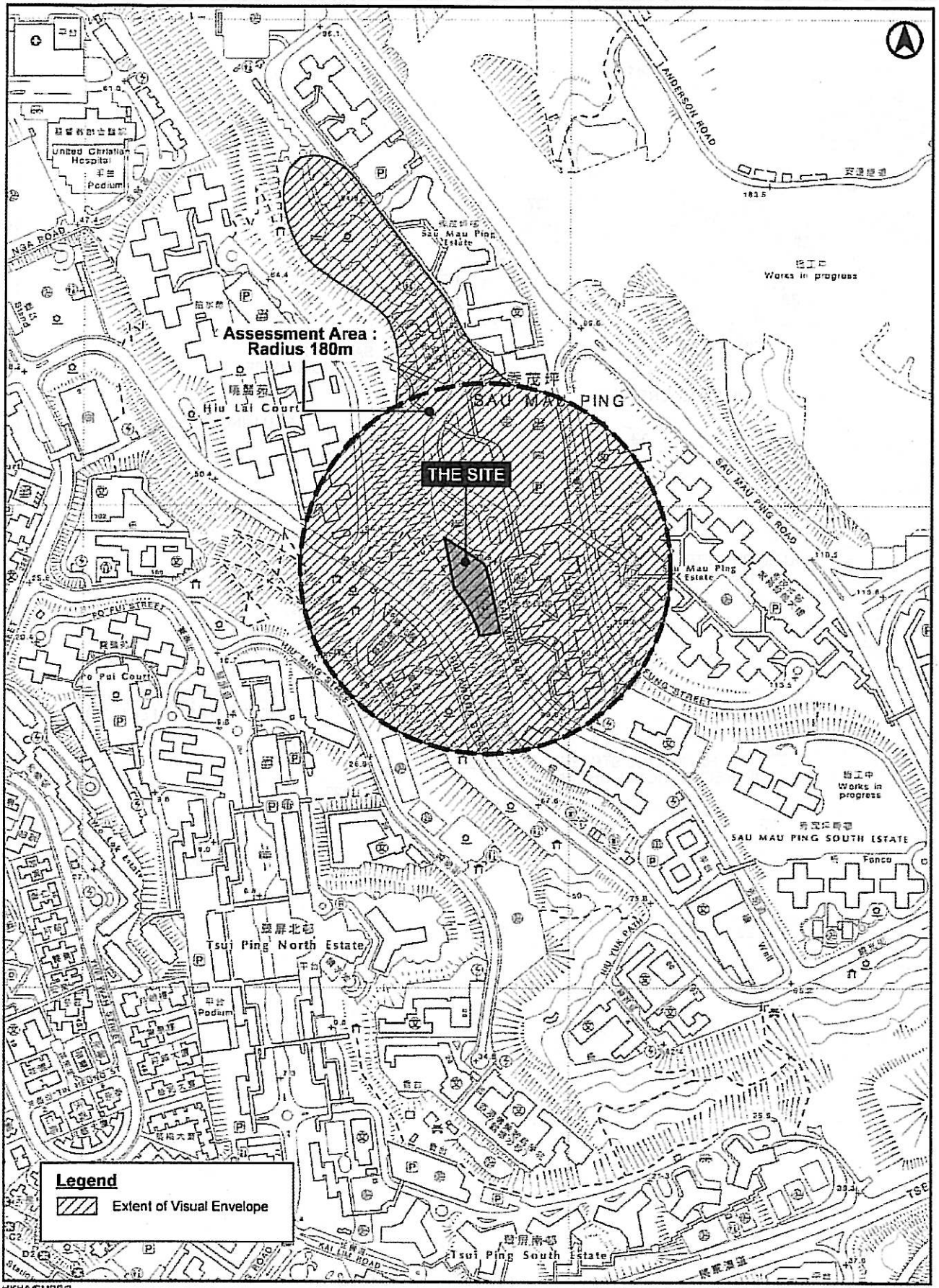
5.2 Evaluation of the Identified Viewing Points is set out below.

- **VSR 1 (LVP1): Footbridge of Hiu Lai Court** – This LVP is taken from the footbridge of Hiu Lai Court located approximately 150m to the northwest of the Site at the same topographic level, and it represents the viewpoint from sensitive receivers at Hiu Lai Court. As this LVP represents the residential receivers in close proximity to the Site, the visual sensitivity is considered **high**.
- **VSR 2 (LVP2): Sau Mau Ping Park** – This LVP is taken from Sau Mau Ping Park located approximately 200m to the north of the Site. This is a public open space on Sau Ming Road and this LVP can also represent the views of the other residential developments nearby, including Sau Nga, Sau Yee, Sau Hong and Sau Lok Houses of Sau Mau Ping Estate. In light of this, the visual sensitivity is considered **high**.
- **VSR 3 (LVP3): Sau Mau Ping Shopping Centre** – This LVP is taken from the balcony of Sau Mau Ping Shopping Centre on 1/F to the north of the Site. This LVP has been selected owing to its proximity to the Site (i.e. 120m from the Site) and its direct views of the Proposed Development. Despite this is a short range LVP, indoor shopping activities are considered less sensitive to visual changes and the sensitivity of this LVP is considered **low**.



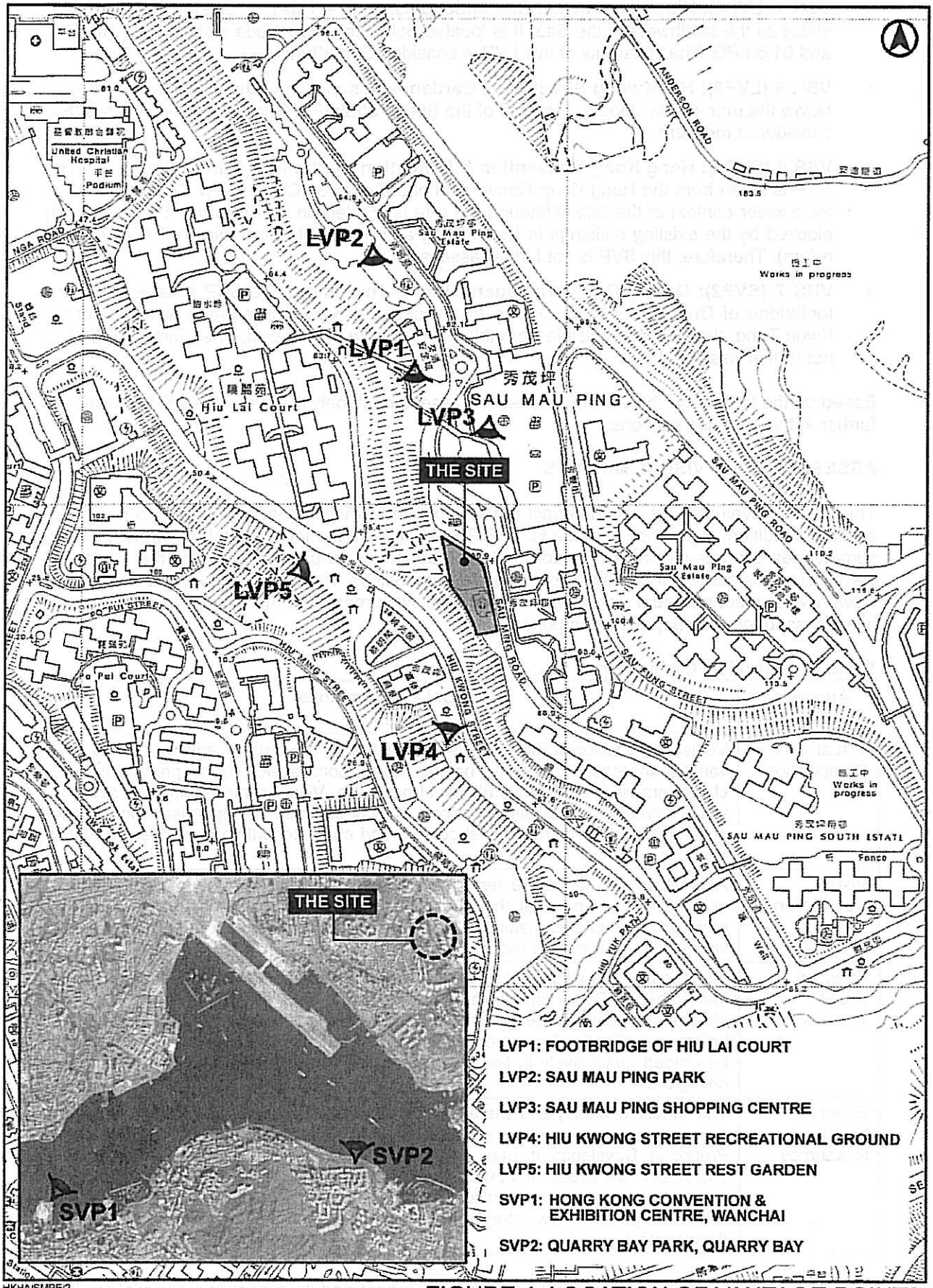
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FIGURE 2 SITE LOCATION PLAN (NUMBER OF STOREYS OF SURROUNDING DEVELOPMENT IS SHOWN)
SCALE 1 : 5,000



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FIGURE 3 VISUAL ENVELOPE
SCALE 1 : 5,000



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FIGURE 4 LOCATION OF VANTAGE POINTS
SCALE 1 : 5,000

- **VSR 4 (LVP4): Hiu Kwong Street Recreational Ground** – This LVP is taken from the open space to the southwest of the Site. It is located below the man-made slope next to the Site and 61.6mPD. The sensitivity of this LVP is considered **medium**.
- **VSR 5 (LVP5): Hiu Kwong Street Rest Garden** – This medium range LVP is also located below the man-made slope to the west of the Site at 55.2mPD. The sensitivity of this LVP is considered **medium**.
- **VSR 6 (SVP1): Hong Kong Convention & Exhibition Centre New Wing, Wanchai** – This SVP is taken from the Hong Kong Convention and Exhibition Centre New Wing in Wanchai for a wider context of the Site. Although the Site is located on a hilly slope, it is completely blocked by the existing buildings in Kwun Tong and not visible from this SVP (***Figure 4(a)*** refers). Therefore, this SVP is not further assessed.
- **VRS 7 (SVP2): Quarry Bay Park, Quarry Bay** – This long range SVP is taken from the footbridge of Quarry Bay Park. Due to the blockage of views by existing development in Kwun Tong, the Site is not visible from this SVP (***Figure 4(a)*** refers). Therefore, this SVP is not further assessed.

5.3 Based on the findings of the aforementioned VP assessment, only the five LVPs will be assessed further in the following sections.

6 ASSESSMENT OF VISUAL IMPACTS

6.1 This Section evaluates the visual impact of the Proposed Development by comparing it with the existing condition. Reference is made to TPB PG No. 41 and the following table (Table 1 refers) summarises the relevant appraisal components. Generally, visual appraisal for the Proposed Development is carried out on the basis of visual composition, visual obstruction, effect on public viewers and effect on visual resources. The table below summarises the major considerations to be discussed for each appraisal components.

Table 1 Appraisal Components

Appraisal Components	Major Considerations
Visual Composition	Visual composition is the total visual effect of all the visual elements due to their variation in locations, massing, heights, dispositions, scales, forms, proportions and characters vis-à-vis the overall visual backdrop. Visual composition may result in visual balance, compatibility, harmony, unity or contrast. The appraisal should have due regard to the overall visual context and character within the wider and local contexts.
Visual Obstruction	A development may cause views in its foreground or background to be intercepted or blocked. The appraisal should assess the degree of visual obstruction and loss of views or visual openness due to the Proposed Development from all key public viewing points within the assessment area.
Effect on Public Viewers	The effects of visual changes from key public viewing points with direct sightlines to the Proposed Development should be assessed and demonstrated in VIA. The changes in views to the existing and future public viewers should be compared before and after the Proposed Development. The effects of the visual changes can be graded qualitatively in terms of magnitude as substantial, moderate, slight or negligible.
Effect on Visual Resources	The condition, quality and character of the assessment area may change positively or negatively as a result of a development. The applicant should appraise if the Proposed Development may improve or degrade the condition, quality and character of the assessment area and any on-site and off-site visual impact such as that on the visual resources, visual amenities, area of special character, natural and built heritage, sky view, streetscape, townscape and public realm related to the development.

6.2 TPB PG No. 41 sets out the classifications of visual impact and its associated description. The classifications are tabulated below (**Table 2** refers) to appraise the Overall Visual Resultant Impact of the Proposed Development on the Visual Sensitive Receivers at the VPs. (Para. 4.11 of TPB PG No. 41 refers)

Site is completely blocked by the existing buildings in Kwun Tong



SVP1 : Vantage point from Hong Kong Convention & Exhibition Centre New Wing, Wanchai

Site is completely blocked by the existing buildings in Kwun Tong



SVP2 : Vantage point from Quarry Bay Park, Quarry Bay

HKHA/SMPS/2

FIGURE 4(a) LOCATION OF STRATEGIC VANTAGE POINTS

Table 2 Classification of Overall Resultant Visual Impact

Classification of Overall Resultant Visual Impact	Description
Enhanced	If the Proposed Development in overall term will improve the visual quality and complement the visual character of its setting from most of the identified key public viewing points.
Partly Enhanced/Partly Adverse	If the Proposed Development will exhibit enhanced visual effects to some of the identified key public viewing points and at the same time, with or without mitigation measures, exhibit adverse visual effects to some other key public viewing points.
negligible	If the Proposed Development will, with or without mitigation measures, in overall term have insignificant visual effects to most of the identified key public viewing points, or the visual effects would be screened or filtered by other distracting visual elements in the assessment area.
slightly adverse	If the Proposed Development will, with or without mitigation measures, result in overall term some negative visual effects to most of the identified key public viewing points.
moderately adverse	If the Proposed Development will, with or without mitigation measures, result in overall term negative visual effects to most of the key identified key public viewing points.
significantly adverse	If the Proposed Development will in overall term cause serious and detrimental visual effects to most of the identified key public viewing points even with mitigation measures.

6.3 This Section evaluates the visual impact of the Indicative Development Scheme in respect of the identified VSRs. In order to soften the visual bulk of the development, voids and landscape treatment have been incorporated in the building to enhance visual impacts (**Figure 5a** refers).

LVP 1: Footbridge of Hiu Lai Court (***Figure 5*** refers)

6.3.1 This LVP represents the views of pedestrians at street level as well as the residential receivers of Hiu Lai Court to the northwest of the Site.

6.3.2 In terms of visual composition, the visual elements include majority of the Sau Mau Ping Estate, the existing Bus Terminus, as well as the public open space on Hiu Kwong Street. The building storey profile of the Proposed Development, with a maximum building height of 18 storeys over a library, will be highly compatible with the surrounding public rental housing estate/residential developments of approx. 18-40 storeys, i.e. Sau Mau Ping Estate on the left hand side and Hiu Kwong on the right hand side.

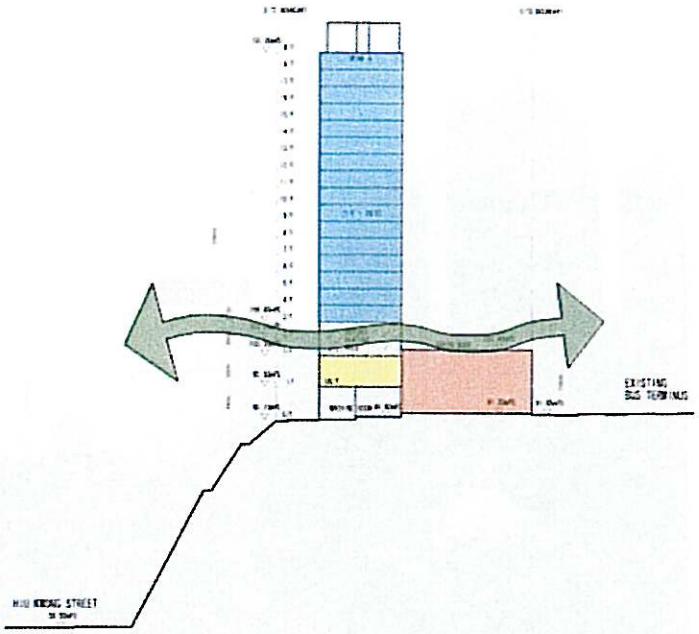
6.3.3 In terms of visual obstruction, the Proposed Development will only cause minor obstruction of the existing open view. The Building Height ("**BH**") is the same as the Annex Block of Sau Yat House of the Sau Mau Ping Estate, which will not breach any ridgeline.

6.3.4 In terms of the effect on public viewers, the Proposed Development will only cause slight visual changes rather than dramatic changes. Importantly, the mid rise nature of the Proposed Development will maintain the original neighbourhood identity in Sau Mau Ping Estate and the residential character. Not least the proposed library under and community hall adjacent to the Proposed Public Rental Housing block on the Site will enhance recreational opportunities for local residents and school students in the vicinity.

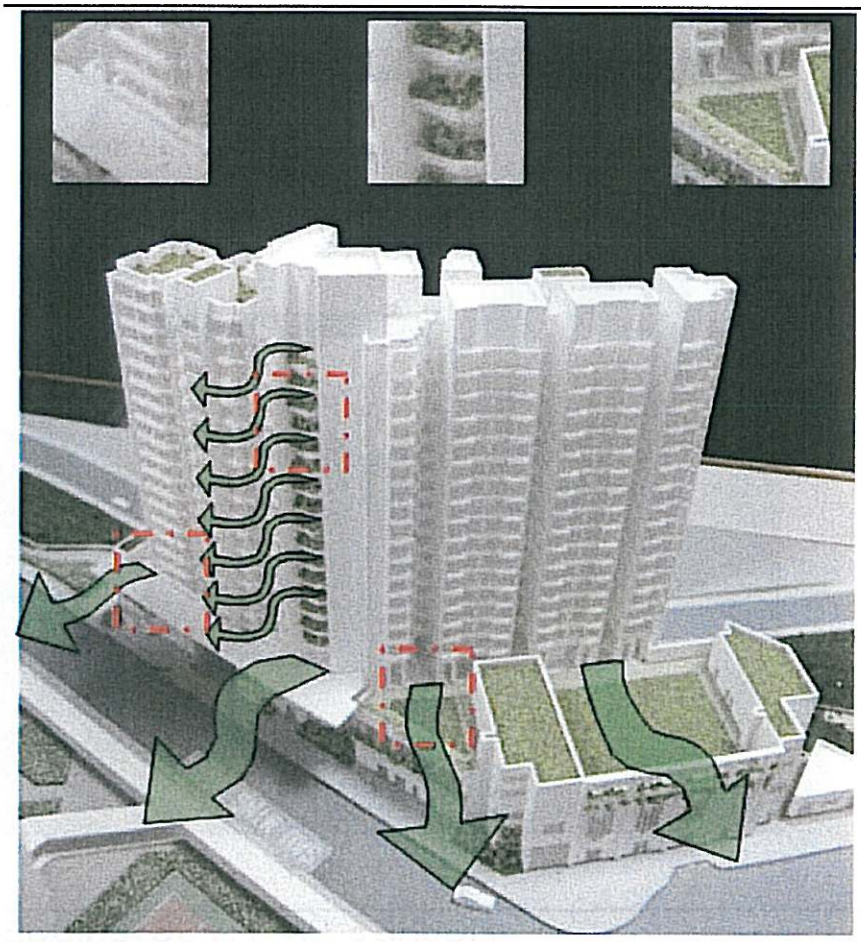
6.3.5 With regards to the effect on visual resources, the Proposed Development will be viewed as the extension of the Sau Mau Ping Estate cluster. Given its same BH as the Annex Block of Sau Yat House, it blends in well with the existing building profile. Thus it will not degrade/adversely affect the condition, quality or character of the assessment area. In short, the Proposed Development will only have **negligible** impact to the area given the appropriate scale.

6.3.6 Therefore, the visual impact resulted from the Proposed Development is considered **acceptable** from LVP1.

Figure 5a Voids and landscape treatment on upper and lower floors of the building



Section



Model Photo

EXISTING CONDITION



WITH PROPOSED DEVELOPMENT



HKHA/SMPE/2

FIGURE 5 LVP 1 : FOOTBRIDGE OF HIU LAI COURT

LVP 2: Sau Mau Ping Park (***Figure 6*** refers)

6.3.7 This LVP represents the residents/public in and around the park to the north of the Site.

6.3.8 In terms of visual composition, the visual elements include Sau Mau Ping Estate, Sau Mau Ping Park, and the residential developments on both sides. Furthermore, the main visual feature from this LVP is the densely planted vegetation within the park which dominates the visual foreground. In the background, the massive building blocks of Sau Mau Ping Estate will assimilate the building bulk of the Proposed Development.

6.3.9 In terms of visual obstruction, the Proposed Development will maintain the existing visual permeability as it has a relatively low BH compared to the existing buildings on both sides. The Proposed Development does not obstruct any important views from this LVP.

6.3.10 In terms of the effect on public viewers, the visual impact is considered to be minimal due to the screening by vegetation and the distance of the Site. As illustrated in the Photomontage of ***Figure 6***, the building mass of the Proposed Development is highly compatible with the surrounding buildings and will not be intrusive.

6.3.11 With regards to the effect on visual resources, the Proposed Development will be integrated into the local setting and will not cause any adverse impact to the condition, quality or character of the assessment area. Moreover, there is no on-site or off-site visual impact given the relatively low BH.

6.3.12 In view of the above, the Proposed Development will result in **negligible visual impact** as viewed from LVP2.

LVP 3: Sau Mau Ping Shopping Centre (***Figure 7*** refers)

6.3.13 This LVP represents the views of the residents and shoppers from the Sau Mau Ping Shopping Centre to the north of the Site. This short range LVP overlooks the entire Site.

6.3.14 In terms of visual composition, the visual elements of this LVP include part of the Sau Mau Ping Shopping Centre and Sau Mau Ping Estate, existing bus terminus, as well as other high rise residential developments on Hiu Kwong Street. The Proposed Development will have a contrast in terms of BH and massing to the existing community centre; however, it will blend in with the local context where a number of high rise public rental housing blocks are present.

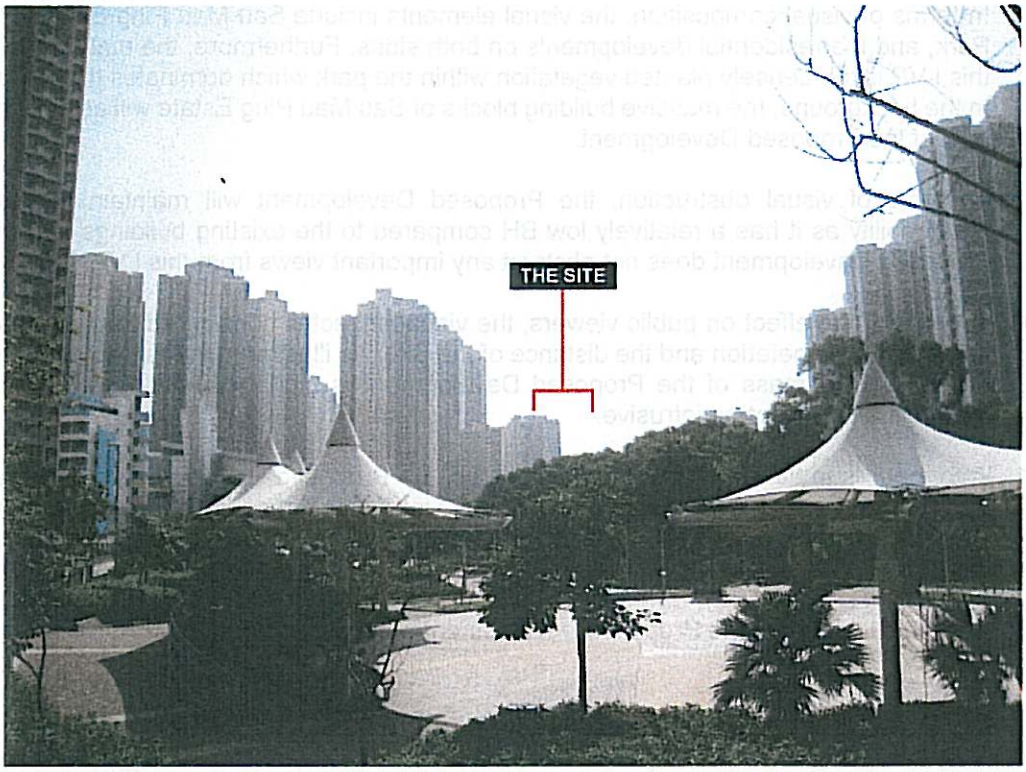
6.3.15 In regards to visual obstruction, the Proposed Development will be clearly visible in the foreground of this LVP. However, it will be viewed as the natural extension of the Sau Mau Ping Estate given the similar BH as the Annex Block of Sau Yat House. These are however no important view corridors or ridgelines that are affected. In addition, proposed mitigation measures, such as voids at the lower part of the podium and appropriate landscape treatment on the podium, will help to soften views of the Proposed Development.

6.3.16 In terms of the effect on public viewers, the Proposed Development will cause slight visual changes. However, the Proposed Development will allow visual permeability on both sides of the building mass. The existing neighbourhood identity and residential character of Sau Mau Ping will also be maintained as the landuse of the Proposed Development is similar to those developments in the surroundings. It is noted the visual sensitivity of this LVP is low given the temporal and transient activity of shoppers.

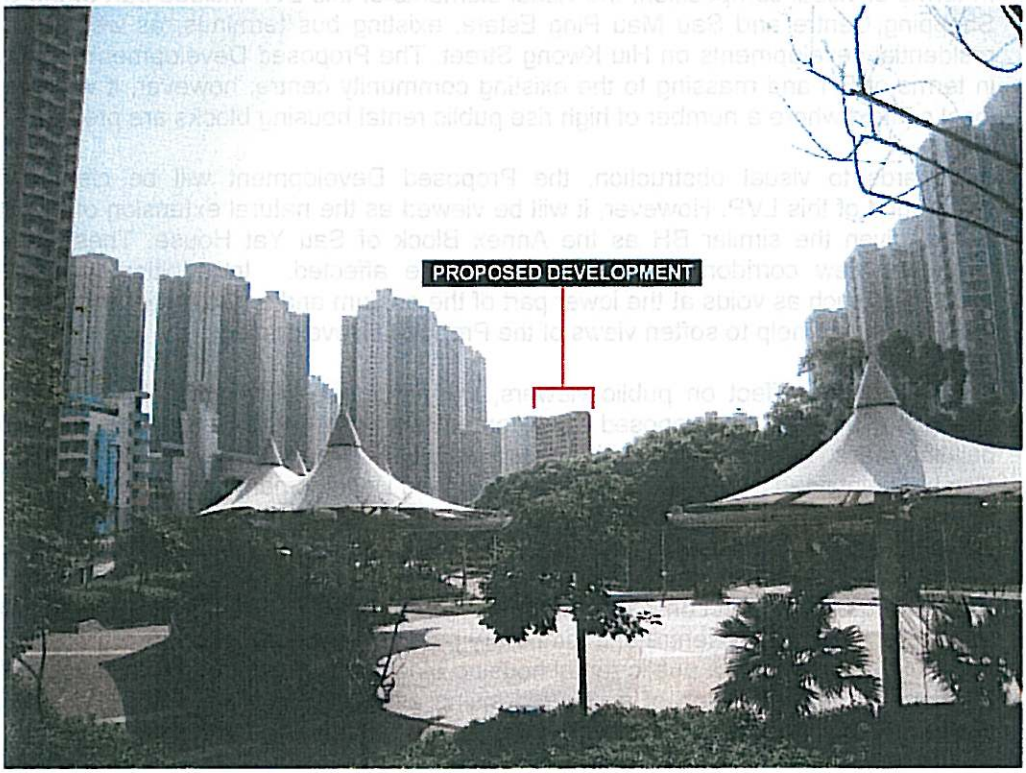
6.3.17 With regards to the effect on visual resources, the Proposed Development will remove the existing abandoned community centre and temporary parking lots on the site with a brand new community hall, public library, and a public rental housing block. A more vibrant streetscape will be resulted. Furthermore, the provision of a covered sitting area and green roof will offer additional leisure space for the residents and therefore enhance the visual amenity for the area.

6.3.18 Given that there is a cluster of high-rise developments adjacent to the Proposed Development, and no important visual resources, such as view corridors and ridgelines, will be affected, the existing neighourhood character will be maintained. visual impact resulted from the Proposed Development is considered **acceptable** from LVP3.

EXISTING CONDITION



WITH PROPOSED DEVELOPMENT



HKHA/SMPE/2

FIGURE 6 LVP 2 : SAU MAU PING PARK

EXISTING CONDITION



WITH PROPOSED DEVELOPMENT



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FIGURE 7 LVP 3 : SAU MAU PING SHOPPING CENTRE

LVP 4: Hiu Kwong Street Recreational Ground (***Figure 8*** refers)

6.3.19 This VP represents the views of the pedestrians at street level on Hiu Kwong Street to the west of the Site.

6.3.20 In terms of visual composition, the visual elements of this LVP include the man-made slope next to Hiu Kwong Street, and a part of Sau Mau Ping Estate. The Proposed Development is partly blocked by the vegetation on the artificial slope; furthermore its BH and massing are similar to the Annex Block of Sau Yat House, thus it is considered to be compatible with the local context. No adverse visual impact is anticipated.

6.3.21 In regards to visual obstruction, only part of the sky view will be blocked by the Proposed Development. However, it will be viewed as the natural continuity of the Sau Mau Ping Estate and will not cause any major obstruction given the similar BH as the Annex Block of Sau Yat House. The Proposed Development will not breach any ridgeline and will not obstruct any important views from this LVP.

6.3.22 In terms of the effect on public viewers, the neighbourhood identity and character will be maintained as the Proposed Development is located on a different street level. The Proposed Development will cause slight visual changes given the comparatively low BH and similar building form to the Sau Mau Ping Estate.

6.3.23 With regards to the effect on visual resources, given the highly compatible BH, scale, and massing, no adverse impact on the condition, quality or character of the assessment area is generated from the Proposed Development.

6.3.24 To conclude, there are several high-rise developments of similar use in the surrounding, and no important visual resources will be affected. Thus, the Proposed Development will not have any adverse visual impact as viewed from LVP4. In addition, incorporation of the proposed mitigation measures mentioned in Para. 1.5 will soften the visual appearance of the Proposed Development and thus further improve its visual quality.

LVP 5: Hiu Kwong Street Rest Garden (***Figure 9*** refers)

6.3.25 This VP represents the views of the pedestrians at street level on Hiu Kwong Street to the west of the Site.

6.3.26 In terms of visual composition, the visual elements of this LVP include Sau Mau Ping Estate, vegetation within the Rest Garden, as well as other high rise residential developments on Hiu Kwong Street. Given the massive and high rise form of Sau Mau Ping Estate as a backdrop, the Proposed Development will blend in with the local context and no adverse visual impact is anticipated.

6.3.27 In regards to visual obstruction, the Proposed Development will be viewed as part of the Sau Mau Ping Estate, given the similar BH as the Annex Block of Sau Yat House. The Proposed Development will not cause any obstruction as the BH is relatively low which will not breach the existing BH profile. Moreover, the visual openness from this LVP is not affected.

6.3.28 In terms of the effect on public viewers, the neighbourhood identity and character will be maintained as the Proposed Development is located in front of the massive Sau Mau Ping Estate cluster. As illustrated in ***Figure 9***, the Proposed Development is merged into the Sau Mau Ping Estate and the effect of visual change is negligible.

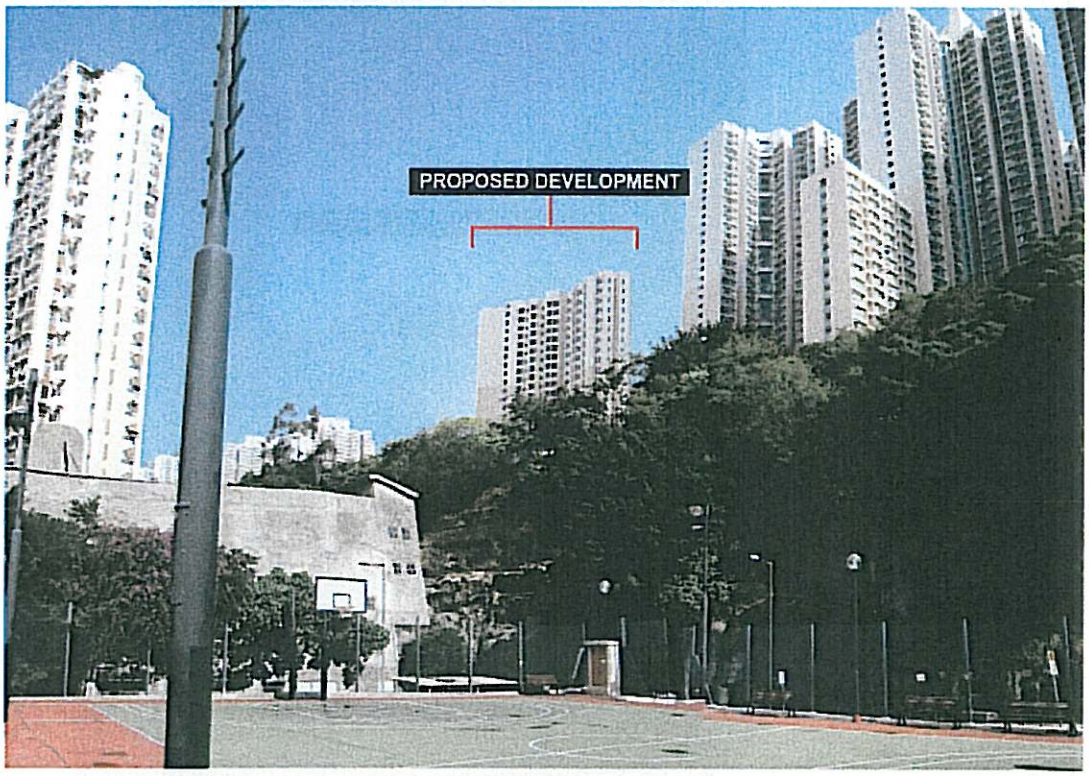
6.3.29 With regards to the effect on visual resources, the BH, scale, and massing of the Proposed Development are much lower than that of Sau Mau Ping Estate. Thus, the Proposed Development will not degrade/adversely affect the condition, quality or character of the assessment area. It is anticipated that on-site and off-site visual impact on the visual resources, visual amenities, streetscape, townscape and public realm in relation to the Proposed Development is negligible when viewed from LVP5.

6.3.30 Therefore, the Proposed Development is considered to have **negligible visual impact** on the surrounding from LVP5.

EXISTING CONDITION



WITH PROPOSED DEVELOPMENT



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FIGURE 8 LVP 4 : HIU KWONG STREET RECREATIONAL GROUND

EXISTING CONDITION



WITH PROPOSED DEVELOPMENT



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FIGURE 9 LVP 5 : HIU KWONG STREET REST GARDEN

CONCLUSION

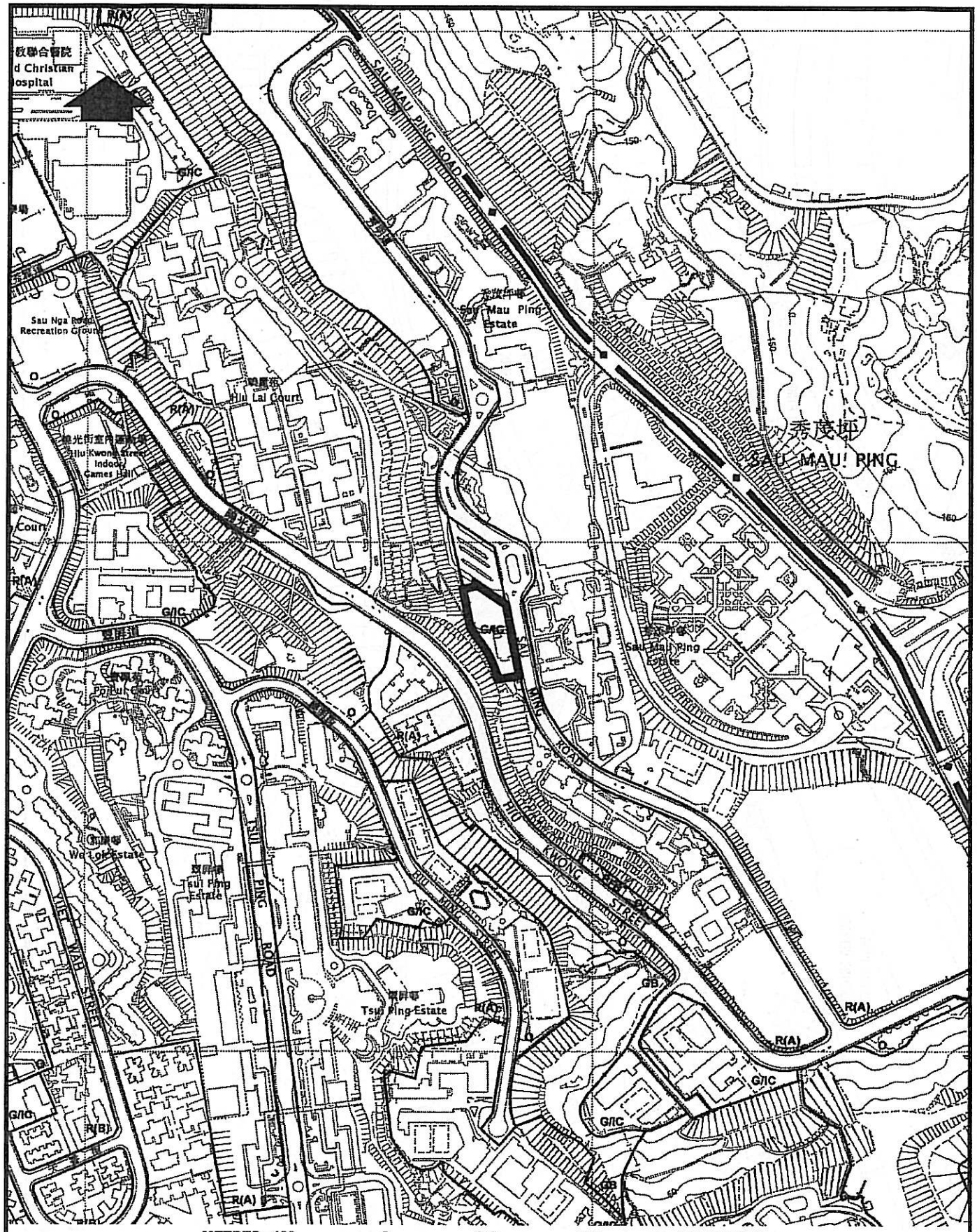
6.4 Based on the findings of this VIA, the Proposed Development is considered to be fully acceptable in terms of visual impact for the following main reasons:

- The relatively low BH of the Proposed Development is compatible with the surrounding neighbourhood (i.e. Sau Mau Ping Estate) and serves as a natural extension of the Sau Mau Ping Estate to the east of the Site;
- The height of the Proposed Development (20 storeys) is much lower than the surrounding high-rise residential blocks (40 storeys), thus it will have negligible visual impact on the surrounding neighbourhood;
- The BH, scale, and massing of the Proposed Development will ensure integration with the existing residential setting;
- Adequate greenery will be provided at ground and medium levels in order to complement the green spaces extending from Sau Mau Ping Park towards the man-made slope adjacent to the Proposed Development; and
- Provision of community facilities with the Proposed Development will result in a more vibrant streetscape compared to the existing situation of the sub-standard community centre and temporary parking lots.

6.5 It can therefore be concluded that the visual impact of the Proposed Development on the VPs will not only be **acceptable**, but will also have a **positive influence**.

Date: **3 February 2012**

APPENDIX 1
ARCHITECTURAL SCHEME
(as at December 2011)



LOCATION PLAN
PROPOSED PUBLIC RENTAL HOUSING DEVELOPMENT AT SAU MING ROAD

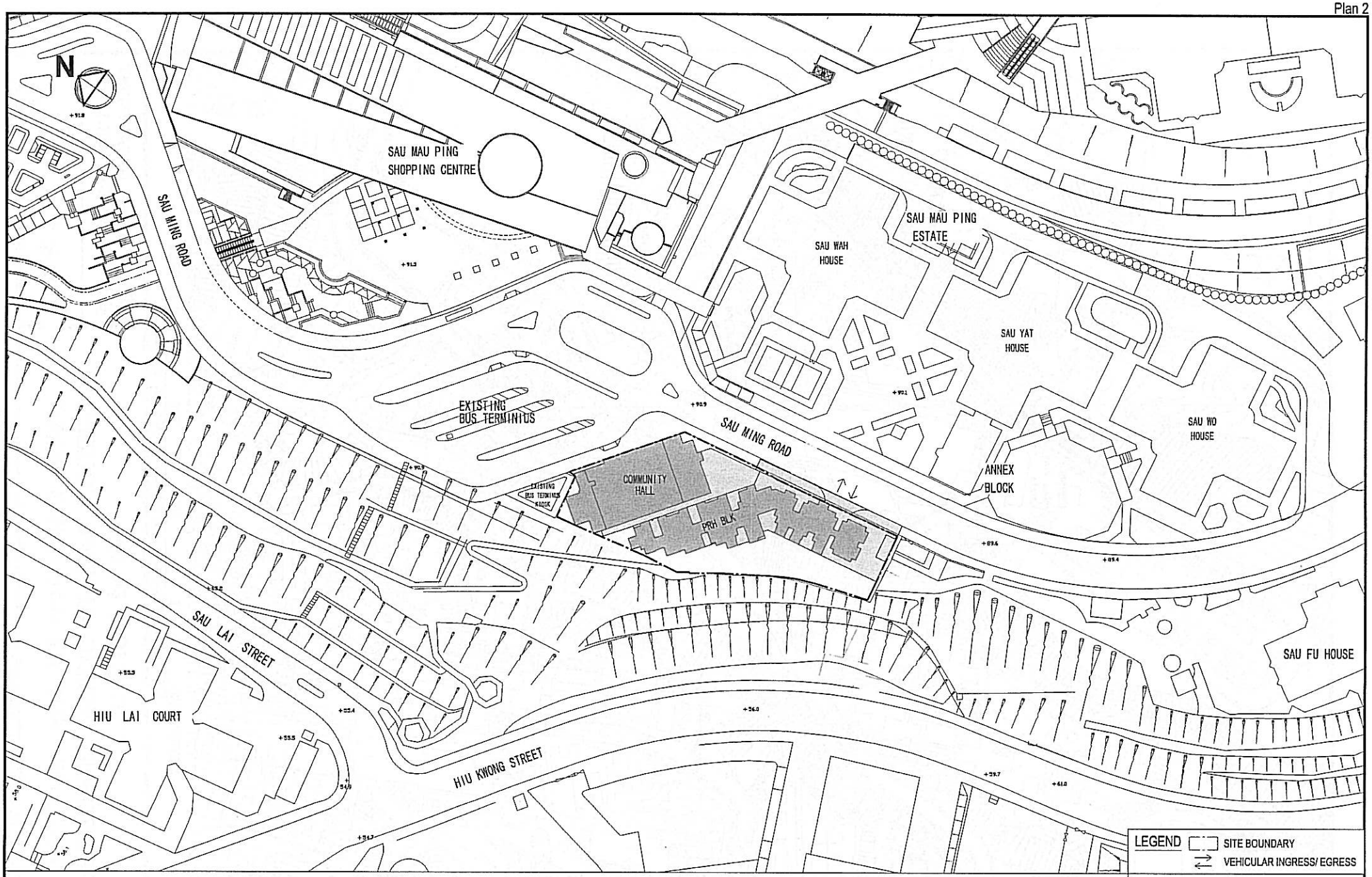
HOUSING DEPARTMENT
PLANNING SECTION

PLAN 1

DATE : DEC 2011

BASE EXTRACTED FROM OZP No. S/K14S/16

11_0915KLN_Plan1



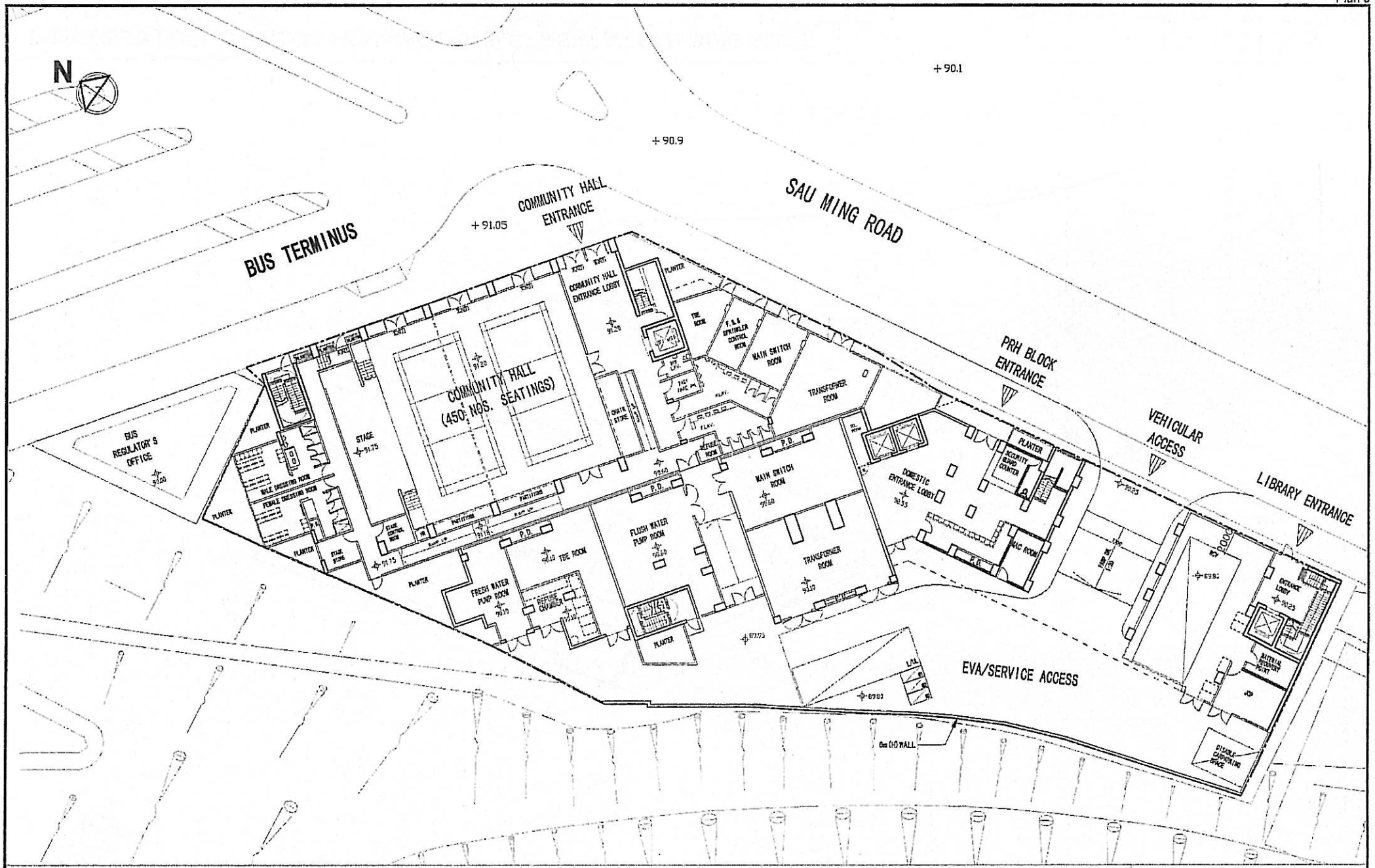
PROPOSED PUBLIC RENTAL HOUSING DEVELOPMENT AT SAU MING ROAD

SCHEMATIC PLAN

SCALE 1:1000 (A3)

房屋署
HOUSING DEPARTMENT

圖號 PLAN No.	日期 DATE:
KT16NR/A/SK-01	14/12/2011



PROPOSED PUBLIC RENTAL HOUSING DEVELOPMENT AT SAU MING ROAD

G/F PLAN

SCALE 1:300 (A3)

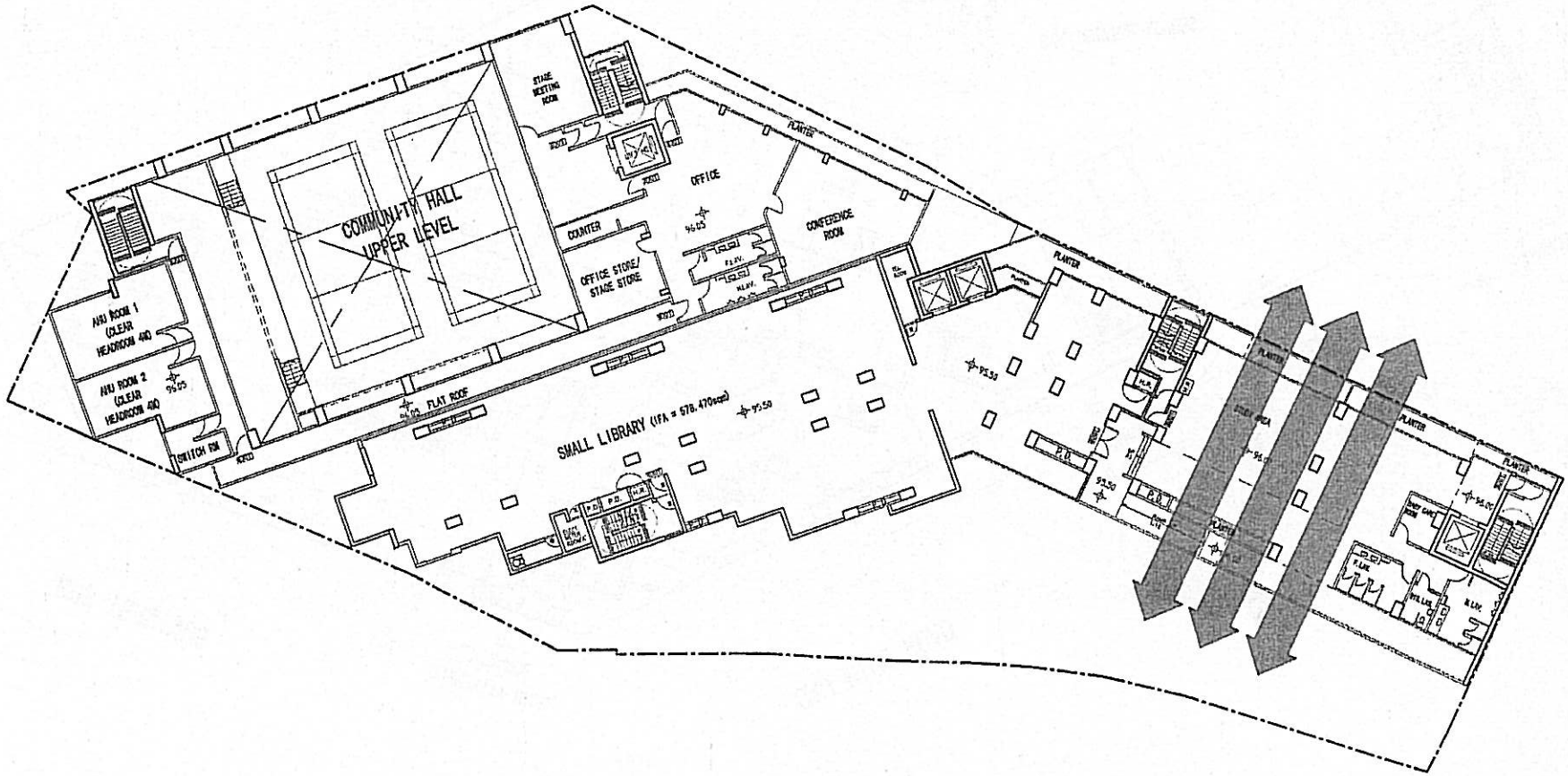
房屋署 HOUSING DEPARTMENT

圖號 PLAN No. KT18NR/A/SK-02

日期 DATE: 14/12/2011

N

VOID IS DESIGNED AT PODIUM LEVEL
TO FACILITATE CROSS VENTILATION



PROPOSED PUBLIC RENTAL HOUSING DEVELOPMENT AT SAU MING ROAD

L1 PLAN

SCALE 1:300 (A3)

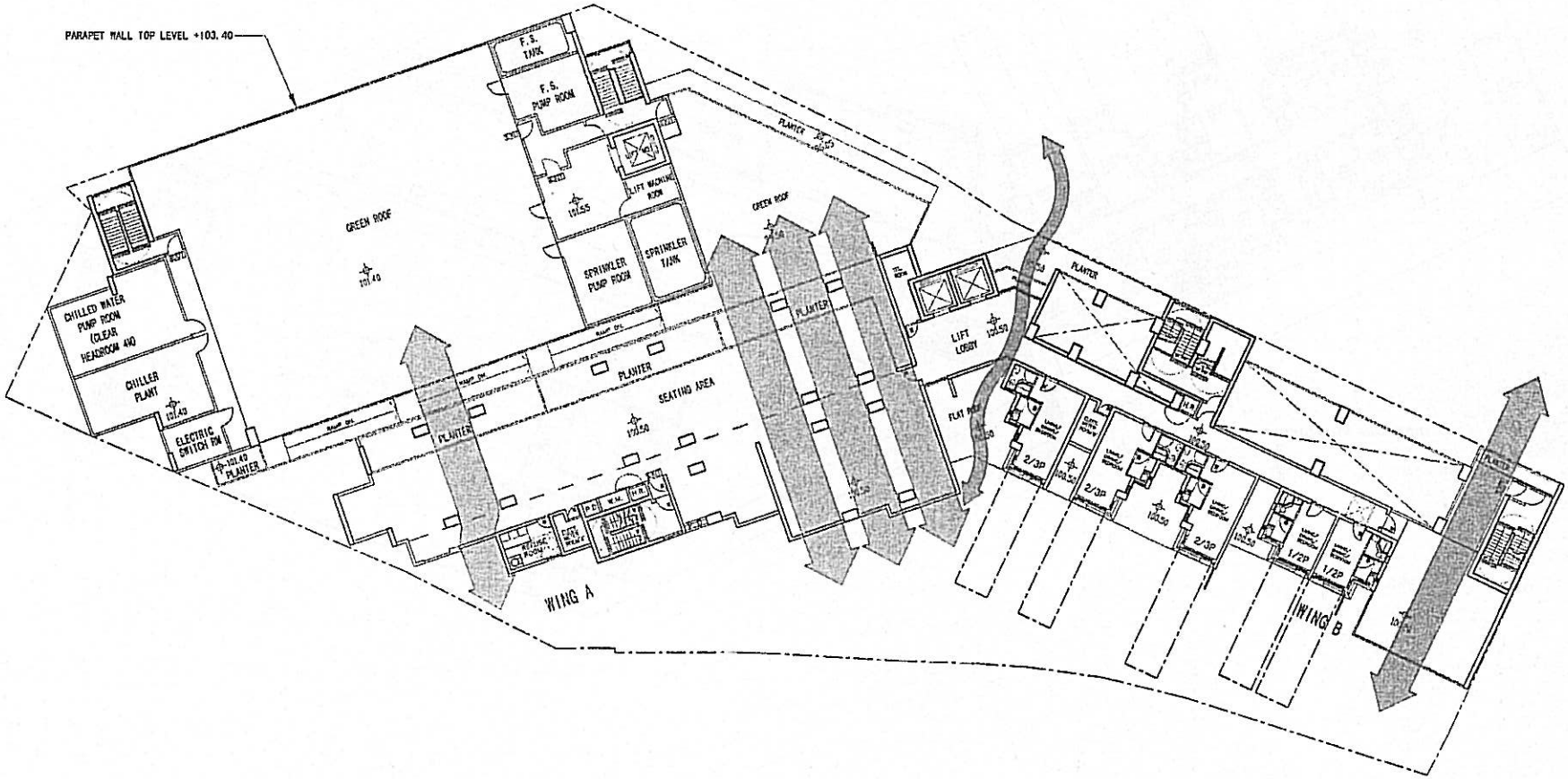
房屋署
HOUSING DEPARTMENT

圖號 PLAN No. KT16NR/A/SK-03

日期 DATE: 14/12/2011

N

VOID IS DESIGNED AT PODIUM LEVEL
TO FACILITATE CROSS VENTILATION



PROPOSED PUBLIC RENTAL HOUSING DEVELOPMENT AT SAU MING ROAD

1/F PLAN

SCALE 1:300 (A3)

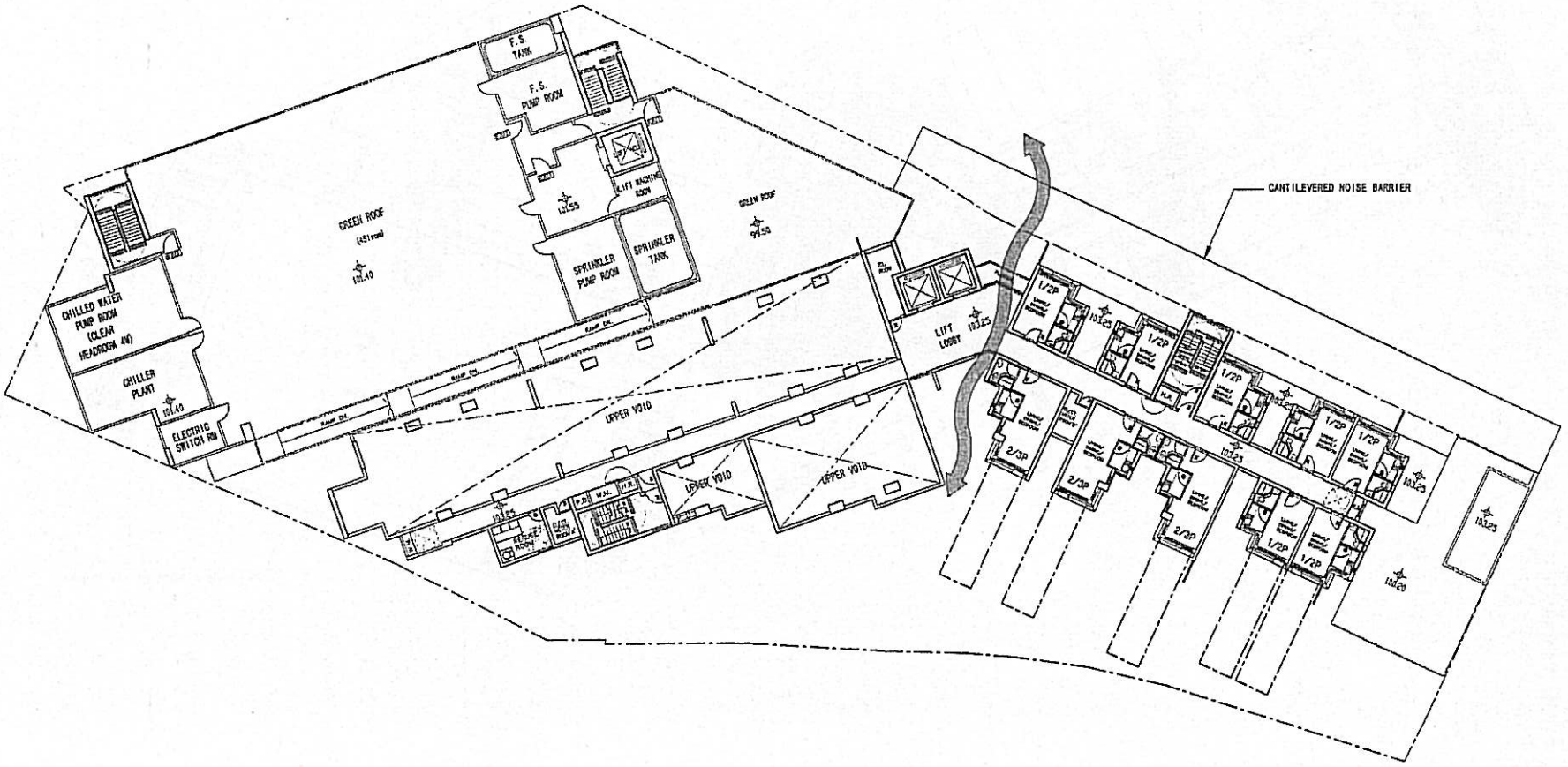
房屋署
HOUSING DEPARTMENT

圖號 PLAN No. KT16NR/A/SK-04

日期 DATE. 14/12/2011

N

VOID IS DESIGNED AT DOMESTIC TYPICAL FLOORS LEVEL TO FACILITATE CROSS VENTILATION



PROPOSED PUBLIC RENTAL HOUSING DEVELOPMENT AT SAU MING ROAD

2/F PLAN

SCALE 1:300 (A3)

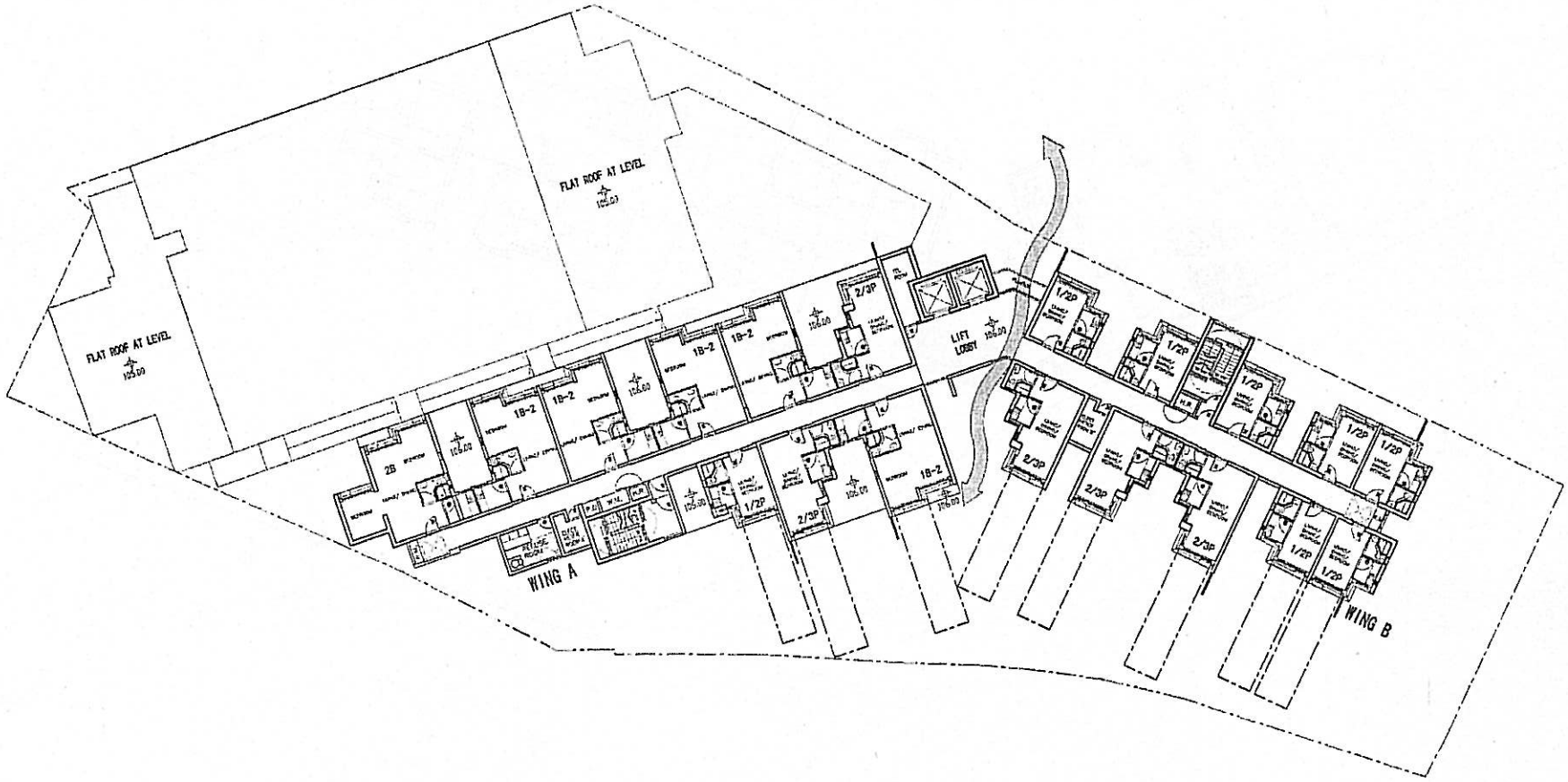
房屋署 HOUSING DEPARTMENT

圖則 PLAN No. KT16NR/A/SK-05

日期 DATE. 14/12/2011

N

VOID IS DESIGNED AT DOMESTIC TYPICAL FLOORS LEVEL TO FACILITATE CROSS VENTILATION



PROPOSED PUBLIC RENTAL HOUSING DEVELOPMENT AT SAU MING ROAD

3/F - 18/F (TYPICAL FLOOR PLAN)

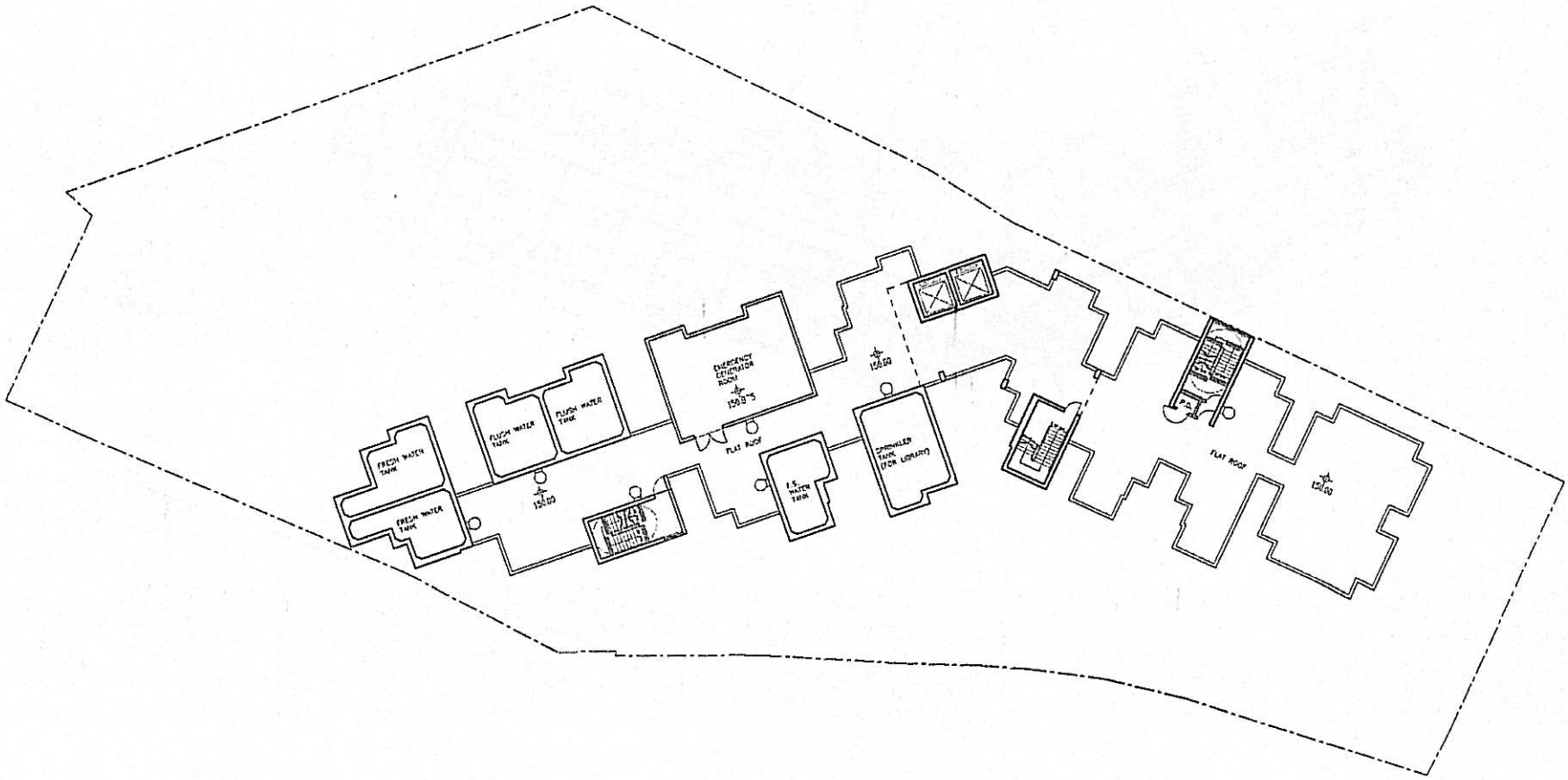
SCALE 1:300 (A3)

房屋署 HOUSING DEPARTMENT

圖號 PLAN No. KT16NR/A/SK-06

日期 DATE: 14/12/2011

N



PROPOSED PUBLIC RENTAL HOUSING DEVELOPMENT AT SAU MING ROAD

ROOF PLAN

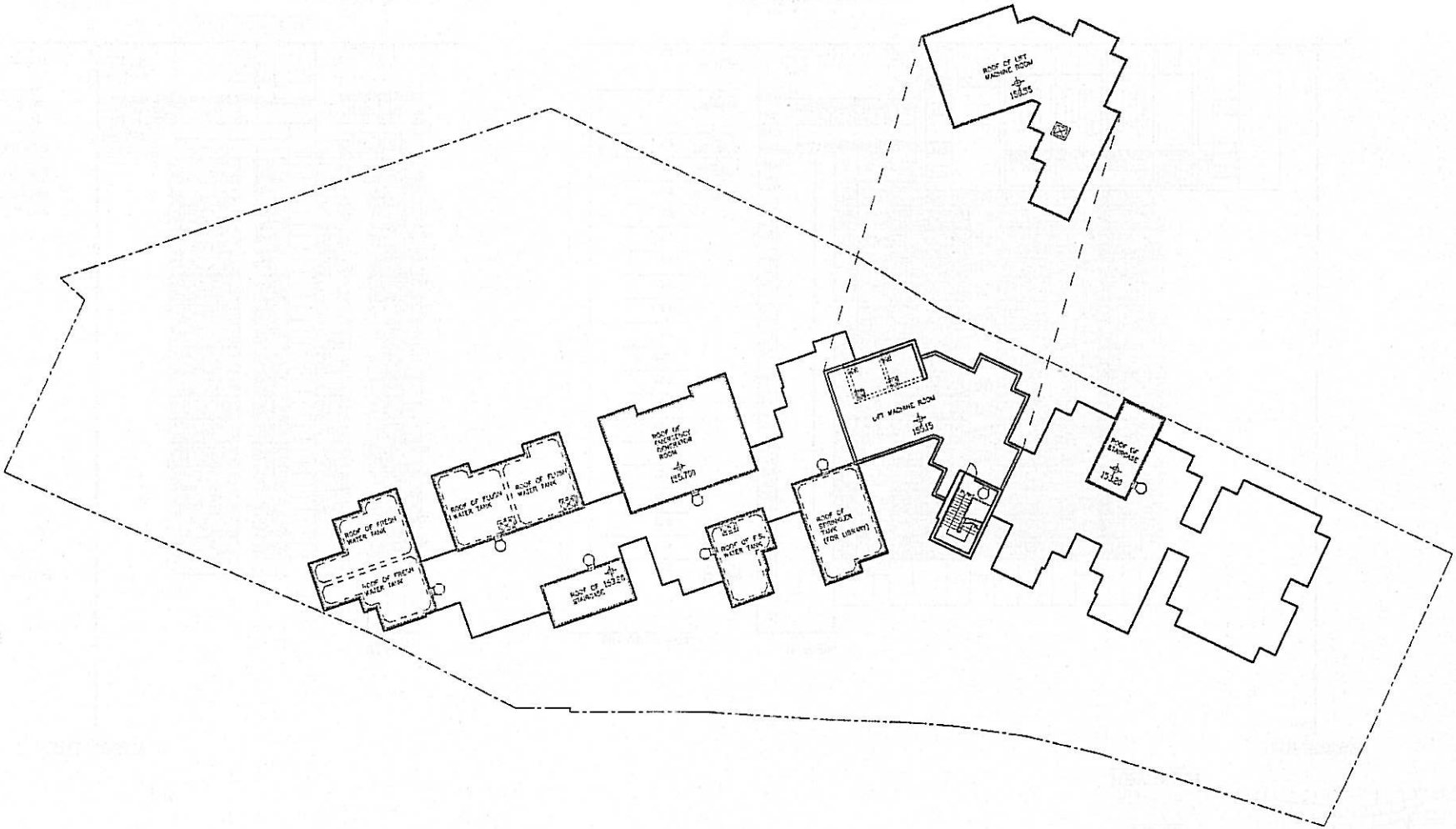
SCALE 1:300 (A3)

房屋署 HOUSING DEPARTMENT

圖號 PLAN No. KT16NR/A/SK-07

日期 DATE: 14/12/2011

N



PROPOSED PUBLIC RENTAL HOUSING DEVELOPMENT AT SAU MING ROAD

UPPER ROOF PLAN

SCALE 1:300 (A3)

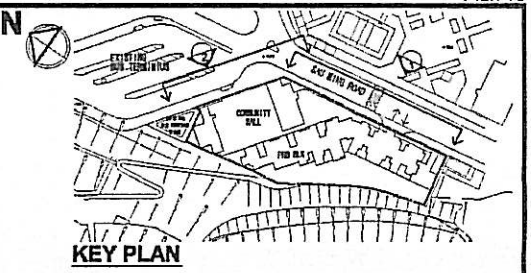
房屋署 HOUSING DEPARTMENT

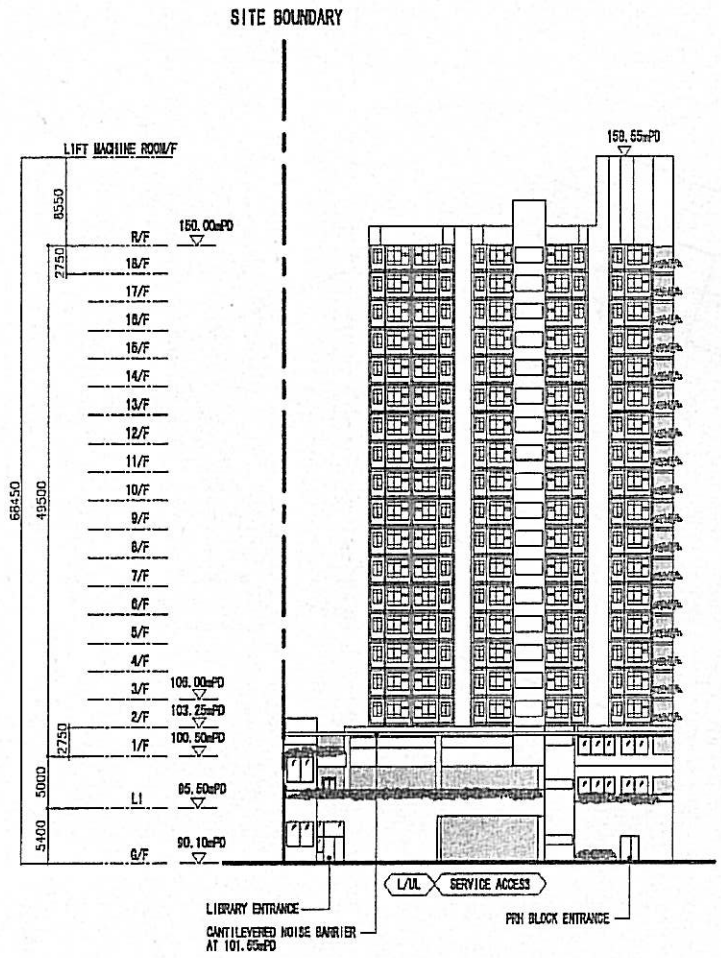
圖號 PLAN No. KT16NR/A/SK-08

日期 DATE: 14/12/2011

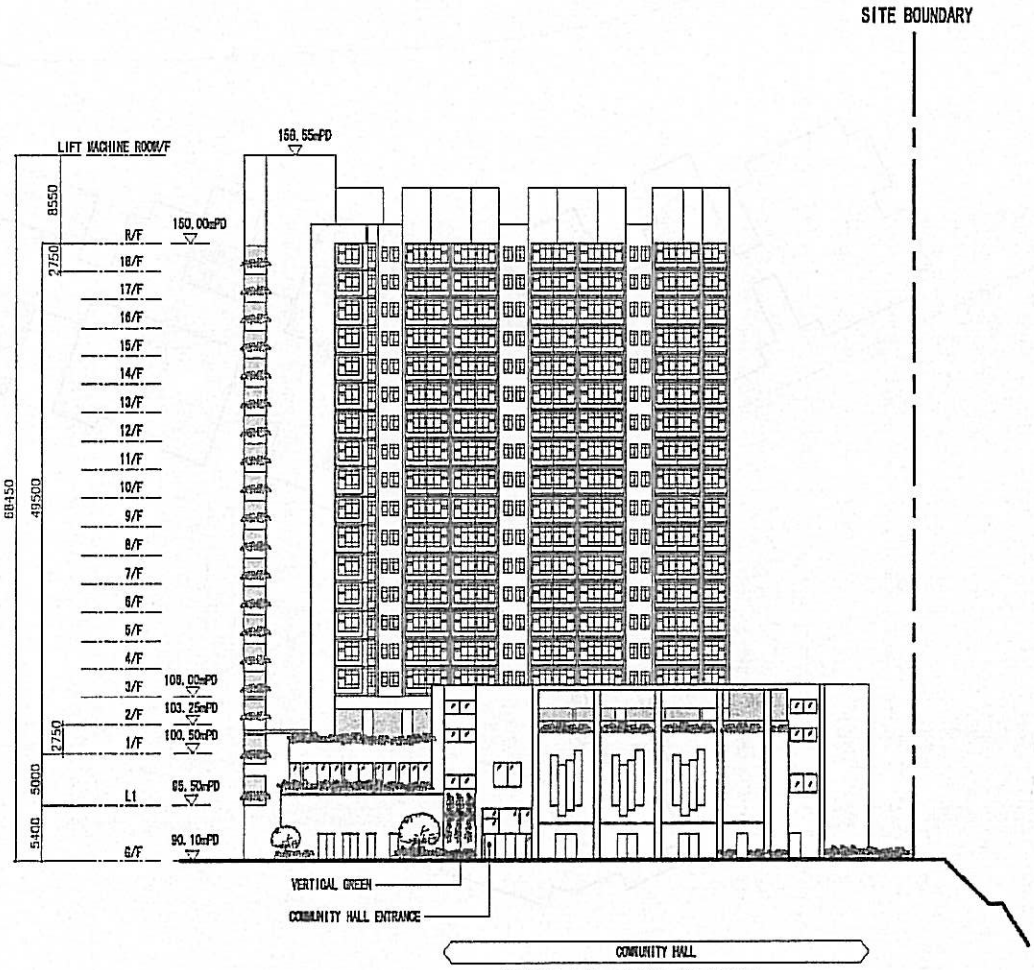
'VOIDS' AT LOWER LEVELS

'VOIDS' AT DOMESTIC TYPICAL FLOORS





SITE ELEVATION 1
(FACING SAU MAU PING ROAD)



SITE ELEVATION 2
(FACING EXISTING BUS TERMINUS)

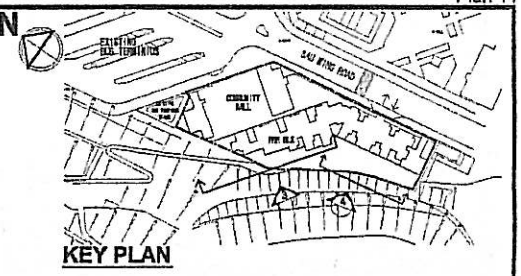
PROPOSED PUBLIC RENTAL HOUSING DEVELOPMENT AT SAU MING ROAD

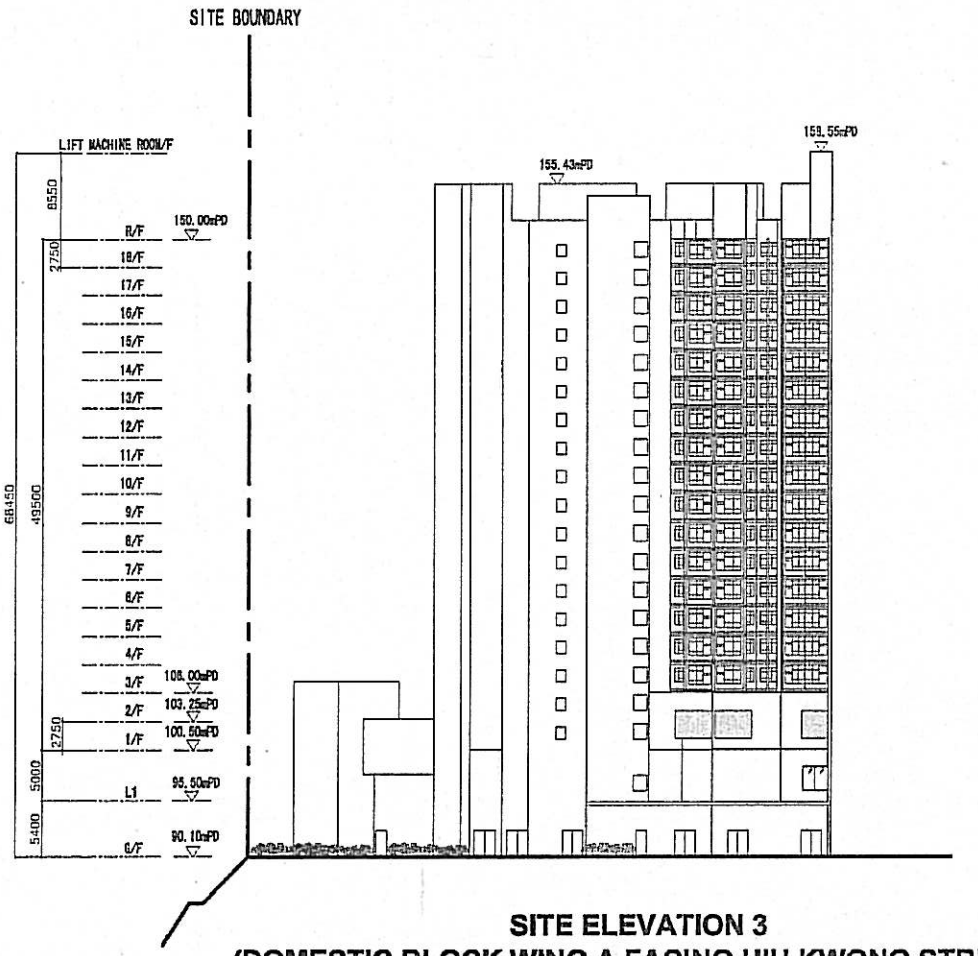
SITE ELEVATION 1 & 2

房屋署 HOUSING DEPARTMENT

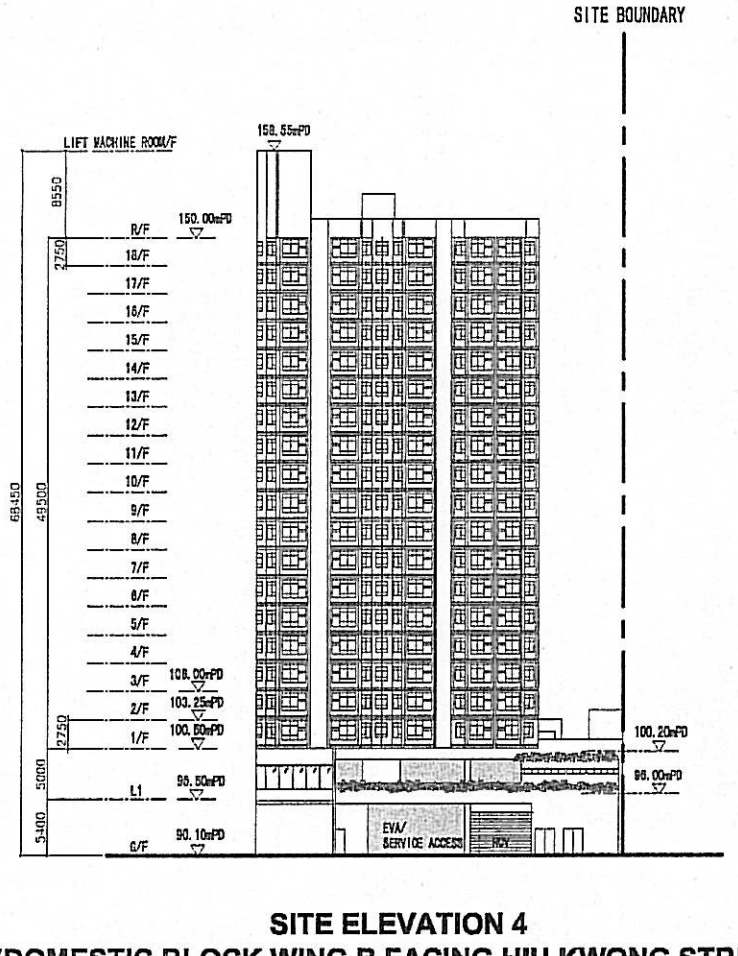
圖號 PLAN No.	日期 DATE:
KT16NR/A/SK-09	14/12/2011

'VOIDS' AT LOWER LEVELS





SITE ELEVATION 3
(DOMESTIC BLOCK WING A FACING HIU KWONG STREET)



SITE ELEVATION 4
(DOMESTIC BLOCK WING B FACING HIU KWONG STREET)

PROPOSED PUBLIC RENTAL HOUSING DEVELOPMENT AT SAU MING ROAD

SITE ELEVATION 3 & 4

SCALE 1:500 (A3)

房屋署 HOUSING DEPARTMENT

圖號 PLAN No. KT1GNR/A/SK-10

日期 DATE: 14/12/2011

Proposed Public Rental Housing Development at Sau Ming Road

Air Ventilation Assessment
Initial Study Report

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Appendices

Appendix A

Directional Velocity Ratio Contour Plot

Appendix B

Directional Vector Plot

Appendix C

Velocity Ratio

Executive Summary

Introduction

Ove Arup & Partners Hong Kong Ltd (Arup) was commissioned by the Hong Kong Housing Authority (HKHA) to carry out an Air Ventilation Assessment (AVA) – Initial Study for the PRH Redevelopment at Sau Ming Road (The Development) to assess the ventilation performance of its surrounding associated with the proposed design. The objective of the Study is to compare the air ventilation performance between the following two schemes:

1. **Baseline Scheme** – This is an existing condition, Sau Mau Ping (central) Estate community centre with 6-storey high.
2. **Proposed Scheme** – Newly proposed development schemes consists of two wings, with a joint-user 1-storey community hall, library and study area. The alignment of the building is in "L" shape with 18 storeys.

Methodology

The Technical Circular No. 1/06 – Air Ventilation Assessment (Technical Circular) was issued jointly by Housing, Planning and Land Bureau (HPLB) and Environment, Transport and Works Bureau (ETWB) on 19 July 2006. It addresses the technical and implementation issues of AVA in Hong Kong. The guidance given in the circular has been adopted for this AVA study. Computational Fluid Dynamics (CFD) and an advanced turbulence modelling technique, SST k - ω turbulence model, were used to model air movement.

Outcome of the assessment

- The Site spatial average Velocity Ratios (SVR) and the Local spatial average Velocity Ratios (LVR) are both higher for the Baseline Scheme than that of the Proposed Scheme;
- Due to the small project site area, the ventilation performance of the study area is mainly governed by the topography and the surround existing building arrangement. The Proposed development would only affect limited area and the ventilation performance of the Sau Ming Road and Hiu Kwong Street are similar for both existing condition and the Proposed Scheme.
- The ventilation performance of the Sau Mau Ping Estate is shown to be better in the Proposed Scheme, due to the down wash effect of the proposed development. There is improvement in ventilation performance of Sau Mau Ping Estate by around 9.1%;
- The void podium design in the Development helps to improve the ventilation performance of the surrounding area. This increases the permeability of the whole development and enhances the local ventilation environment.

1 Introduction

1.1 Project Background

Ove Arup & Partners Hong Kong Ltd (Arup) was commissioned by the Hong Kong Housing Authority (HKHA) to carry out an Air Ventilation Assessment (AVA) – Initial Study for the PRH Redevelopment at Sau Ming Road Site (The Development) to assess the ventilation performance of its surrounding associated with the proposed design.

1.2 Objective of the Study

The purpose of this study is to assess the ventilation performance of the proposed development with reference to a baseline case using the methodology of Air Ventilation Assessment as stipulated in the "Housing, Planning and Lands Bureau – Technical Circular No. 1/06, Environment, Transport and Works Bureau - Technical Circular No. 1/06" issued on 19th July 2006 (Technical Circular) and Annex A of Technical Circular - "Technical Guide for Air Ventilation Assessment for Development in Hong Kong" (Technical Guide).

1.3 Scope of the Study

This Air Ventilation Assessment (AVA) Initial Study was carried out for two scenarios:

1. **Baseline Scheme** – This is an existing condition, Sau Mau Ping (central) Estate community centre with 6-storey high.
2. **Proposed Scheme** – Newly proposed development schemes consists of two wings, with a joint-user 1-storey community hall, library and study area. The alignment of the building is in "L" shape with 18 storeys.

The deliverables of current study can be summarised as follows:

- Evaluation of the wind microclimate to determine the wind characteristics of the site
- Identification of air ventilation performance of the Development and surrounding area.

2 Background

2.1 Site Characteristics

The site is located at the Sau Mau Ping which is surrounded by some high rise residential buildings with a hilly topology. It is surrounded by high rise public development at the east (Sau Mau Ping Estate) and a non-building area slope at its west and south. A relative low rise commercial centre locates at its north.

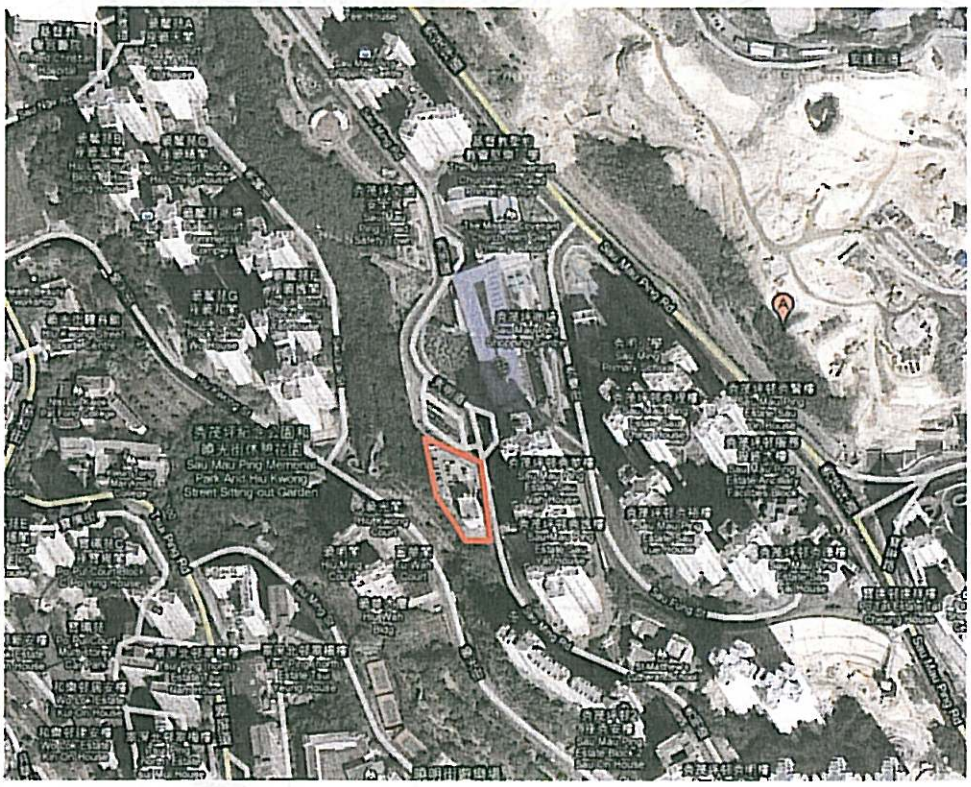


Figure 1 Locations of the Study Area and major surrounding developments

2.2 Studied Scenarios

Totally two cases were investigated in the AVA study which includes

Baseline Scheme – This is an existing condition, Sau Mau Ping (central) Estate community centre with 6-storey high.

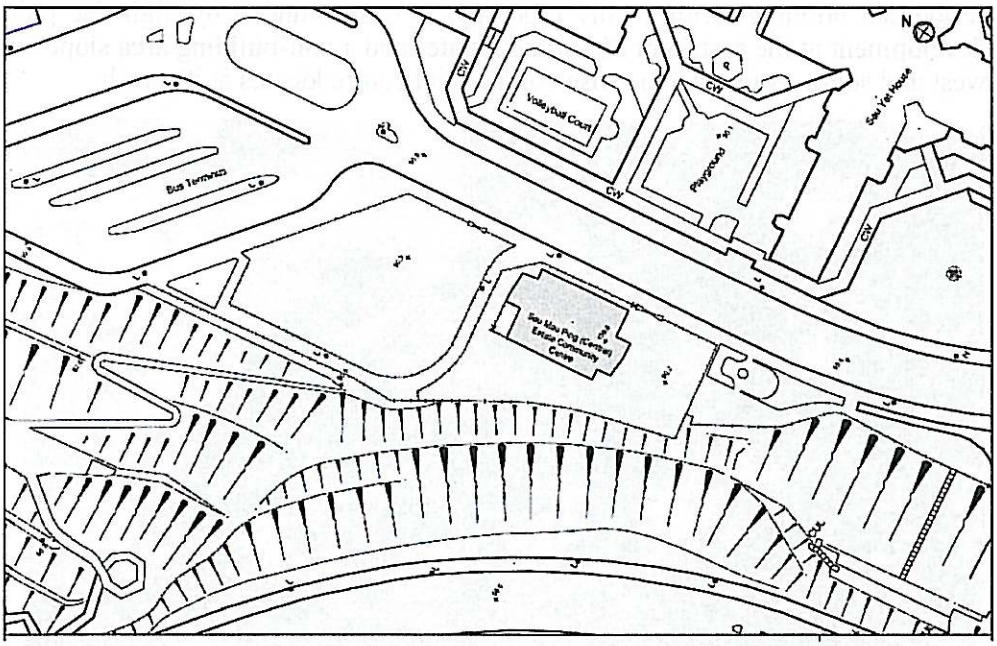


Figure 2 Master layout plan for the Baseline scheme

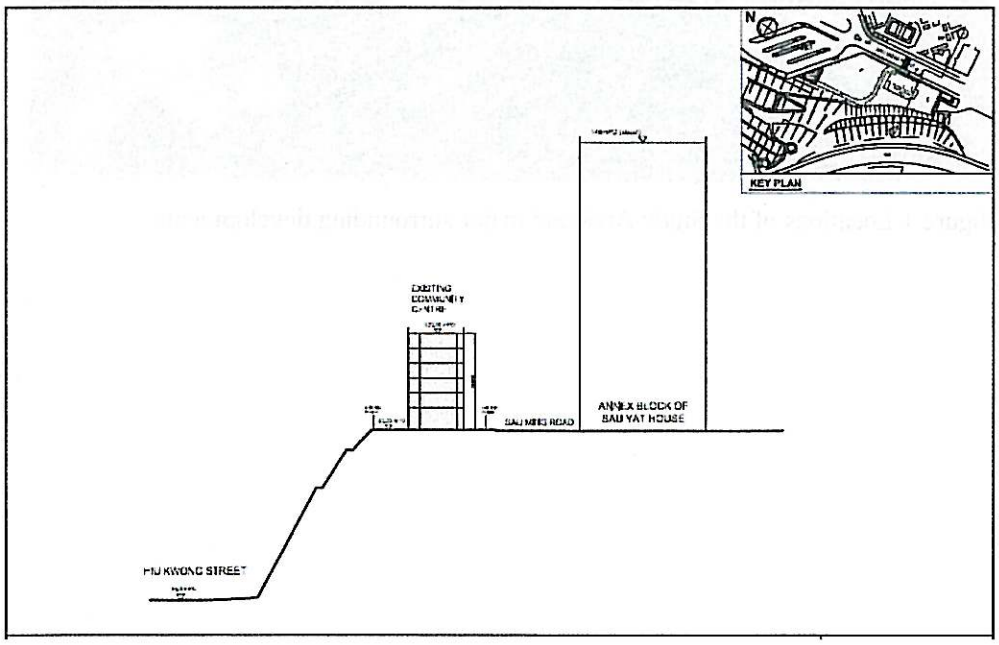


Figure 3 Schematic Section for the Baseline Scheme.

Proposed Scheme – Newly proposed development schemes consists of two wings, with a joint-user 1-storey community hall, library and study area. The alignment of the building is in "L" shape with 18 storeys.

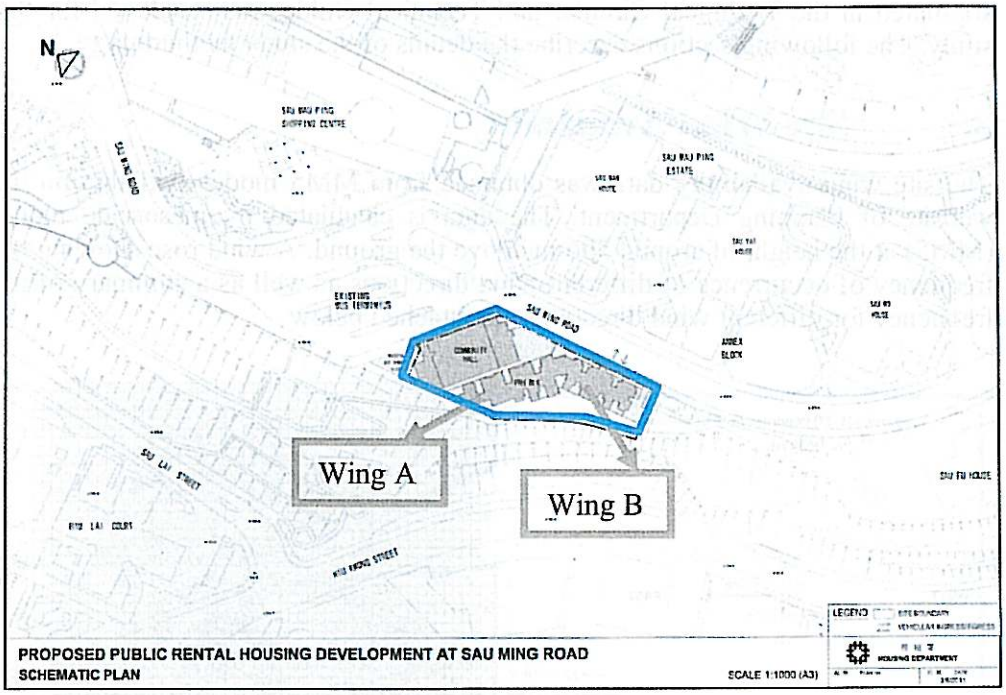


Figure 4 Master layout plan for the Proposed Scheme

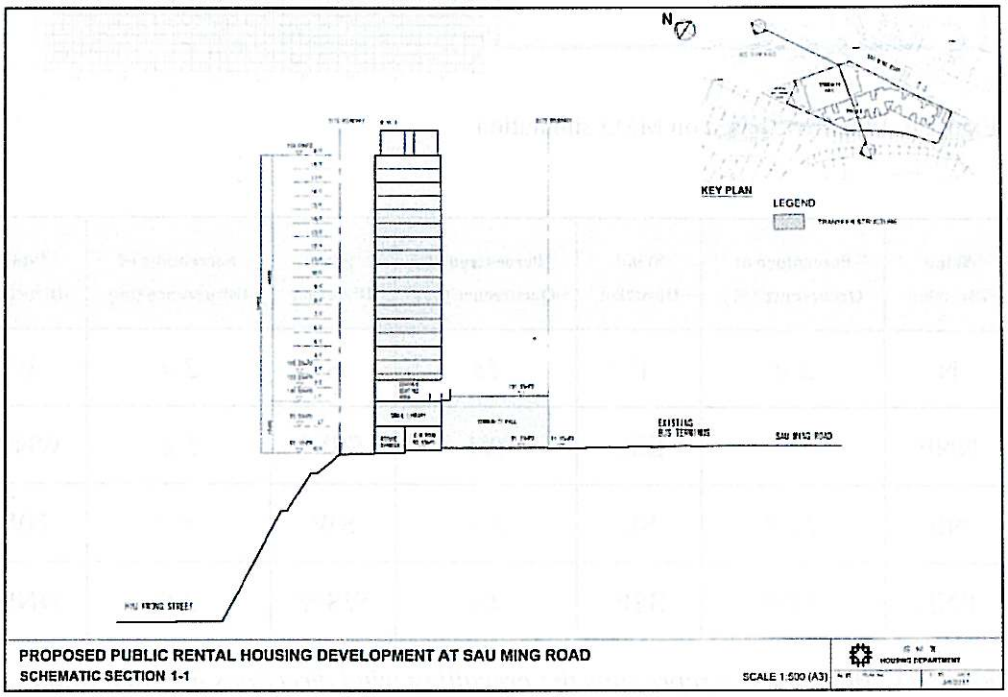


Figure 5 Schematic Section for the Proposed Scheme.

3 Methodology of AVA

The Air Ventilation Assessment (AVA) methodology for initial study as stipulated in the Technical Circular and Technical Guide was employed for this study. The following sections describe the details of the study methodology.

3.1 Site Wind Availability

The site wind availability data was obtained from MM5 model available on the website of Planning Department. The data is calculated by mesoscale model (MM5) at the height of around 596 m above the ground. A wind rose showing the frequency of occurrence of different wind directions as well as a summary of the frequency for different wind directions are attached below.

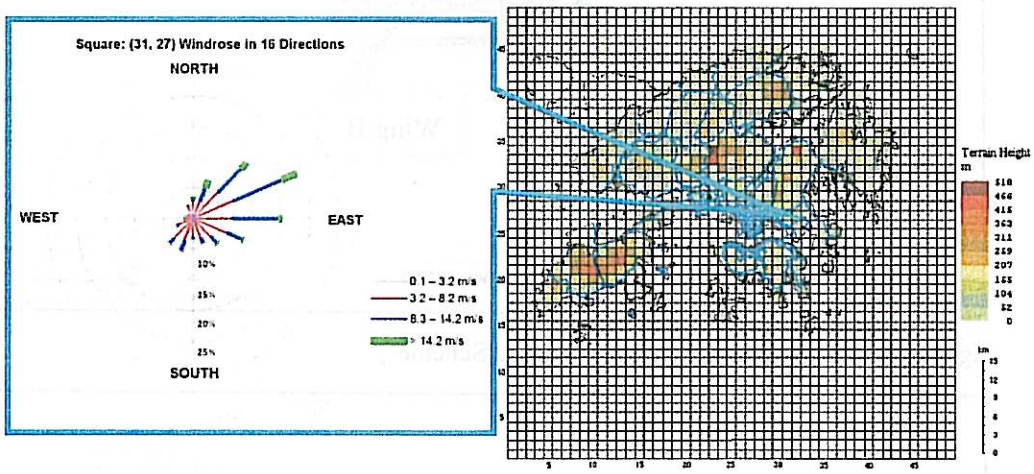


Figure 6. Wind rose based on MM5 simulation

Wind Direction	Percentage of Occurrence (%)	Wind Direction	Percentage of Occurrence (%)	Wind Direction	Percentage of Occurrence (%)	Wind Direction	Percentage of Occurrence (%)
N	*3.4*	E	***15***	S	*3.4*	W	*1.6*
NNE	***6.7***	ESE	***9.1***	SSW	***5.6***	WNW	*1.3*
NE	***12.7***	SE	***5.8***	SW	***5.7***	NW	*1.0*
ENE	***18.9***	SSE	*4.4*	WSW	*3.0*	NNW	*2.3*

Remarks: Blue number represents the prevailing wind directions for simulation with occurrence exceeding 75% of time of a year

Table 1. Annual wind frequency

Results show that the prevailing wind directions **NNE, NE, ENE, E, ESE, SE, SSW** and **SW** are having corresponding frequency of occurrences of 6.7%, 12.7%, 18.9%, 15.0%, 9.1%, 5.8%, 5.6% and 5.7% respectively. Total wind frequency is 79.5% over a year, i.e. exceeding 75% of annual wind frequency as required by the Technical Circular of AVA.

3.2 Wind Profile

The wind profiles, including the mean wind speed and the turbulence intensity were taken as input parameters in the CFD models. As required by the Technical Circular, the wind profiles can be assumed by the power law for specific terrains as following equation:

$$\frac{U_z}{U_G} = \left(\frac{Z}{Z_G}\right)^n$$, where

U_G = reference velocity at height z_G

U_z = velocity at height z

Z_G = reference height

Z = height above ground

n = power law exponent

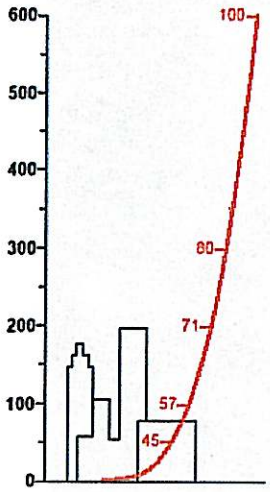


Figure 7 Wind Profile applied in the AVA Initial Study

The power n is related to the ground roughness, which is determined by terrain types. A larger value of the power n represents the higher roughness of the ground i.e. the dense city. Alternatively, smaller n represents the lower ground roughness i.e. the sea surface.

Terrain crossed by approaching wind	n-value
Sea and open space	~0.15
Suburban or mid-rise	~0.35
City center or high-rise	~ 0.50

As the study area is in urban area, n-value for the eight-most frequent wind directions is 0.35. Based on this power law, the wind profiles is shown in the Figure 7, where the normalized wind characteristics of mean wind speed represented the mean wind speed at the different heighst above the site against wind speed at the height of 596m.

3.3 Project Assessment and Surrounding Areas

With reference to the Technical Guide, the area of evaluation and assessment includes all areas within the Development site, as well as a belt up to 1H (H being the height of the tallest building within the Development which is ~60m) from the site boundary (Assessment Area). Further, the model area was built to include another 60m (2H) beyond the Assessment Area (Surrounding Area). Nearby prominent topographical features beyond the Surrounding Area were also included in the model to take into account the topographic effect.

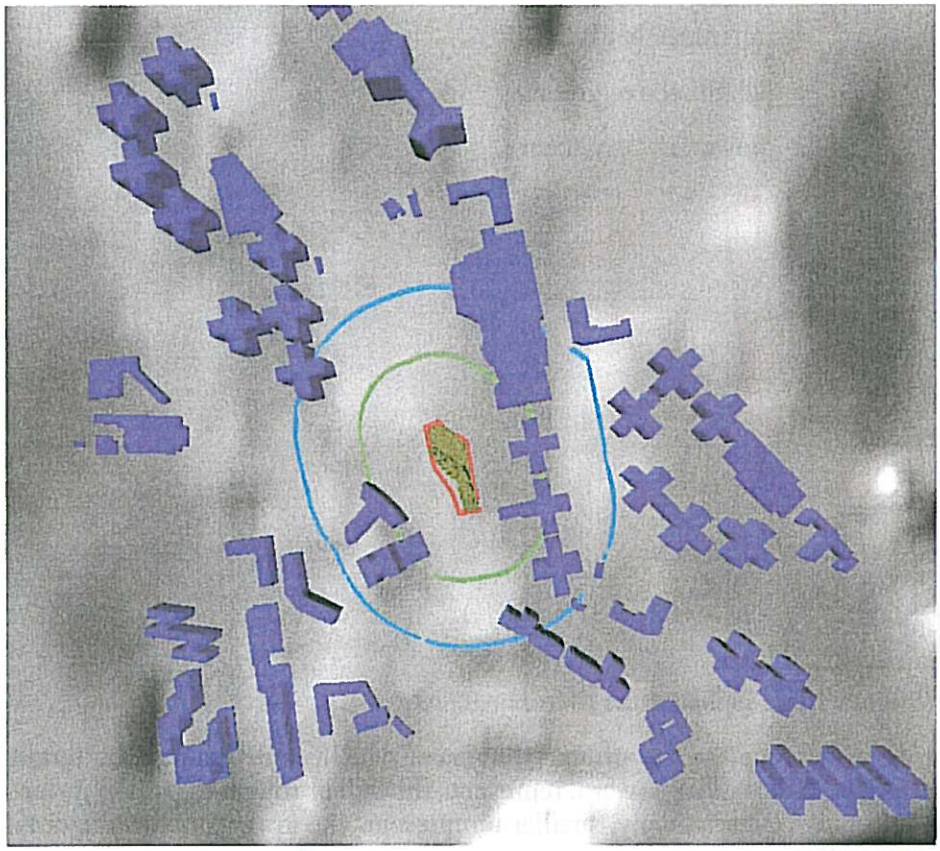


Figure 8 Site boundary (red), Assessment Area (green) and Surrounding Area (blue)

3.4 Assessment parameter

The Velocity Ratio (VR) as proposed by the Technical Circular for AVA was employed to assess the impact of the proposed development and to the surroundings. High VR across the development implies less impact associated with the proposed development. The calculation of VR is given by the following formula:

$$VR = \frac{V_p}{V_\infty}$$

V_∞ = the wind velocity at the top of the wind boundary layer (typically assumed to be around 596m above the centre of the site of concern, or at a height where wind is unaffected by the urban roughness below).

V_p = the wind velocity at the pedestrian level (2m above ground) after taking into account the effect of buildings.

3.5 Test Points for Local and Site Ventilation Assessment

Monitoring test points are placed within the Development site to determine the ventilation performance. There are three types of test points:

3.5.1 Perimeter Test Points

Perimeter test points are the points positioned on the project site boundary. According to the Technical Circular for AVA, 15 perimeter points *(blue spots)* are positioned on the project site boundary and each point is around 10-50m in between.

3.5.2 Overall Test Points

Overall test points are those points evenly positioned within the Assessment Area in the open space on the streets and places where pedestrian frequently access. According to the Technical Circular for AVA 27 overall test points *(red spots)* are selected and shown in Figure 9.

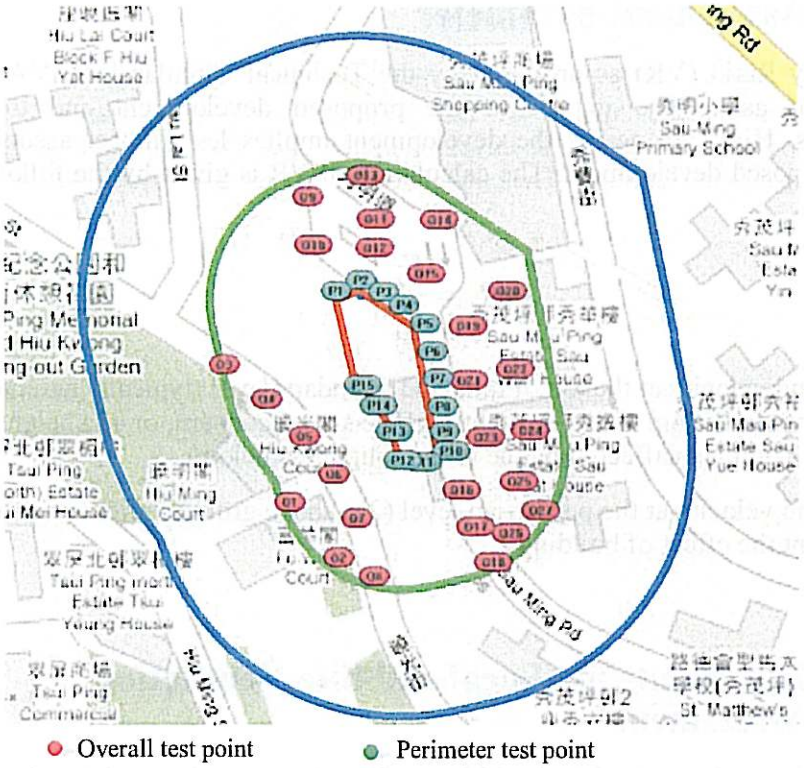


Figure 9 Demarcation of the test locations for site air ventilation assessment

3.6 Assessment Tool

Computational Fluid Dynamics (CFD) technique was utilized for this Study. With the use of three-dimensional CFD method, the local airflow distribution can be visualized in details. The velocity distribution within the flow domain, being affected by the site-specific design and the nearby topography, was simulated under the prevailing wind conditions considered.

3.6.1 CFD Model

Following the Air Ventilation Technical Circular, buildings within surrounding area (Figure 8) need to be built in the CFD model. In order to simulate the approaching wind turbulence effect more accurately, the CFD model is built to include the buildings that may affect the approaching wind. In addition, the model is built further large to eliminate edge effect of air acceleration. Therefore, the buildings size of CFD models of the Development for 2 schemes are approximately 1800m(L) x 1500m(W) x 1000m(H) (Figure 10) and each contain more than 3,500,000 cells. It covers the entire development and provides sufficient consideration on surrounding topography. The model contains information of the surrounding buildings and site topography via Geographical Information System (GIS) platform. The 3D model for the Baseline Scheme and Proposed Scheme with different viewing angle is shown in Figure 11 to Figure 18. Body-fitted unstructured grid technique is used to fit the geometry and reflect the complexity of the development geometry. A prism layer of 2m above ground

(totally 4 layers and each layer is 0.5m) is incorporated in the meshing so as to better capture the approaching wind (Figure 19). The expansion ratio is 1.5 while the blockage ratio is 4.2%.

By referring to the CAD drawings of the Baseline and Proposed Scheme given, the CFD model is constructed as shown below.

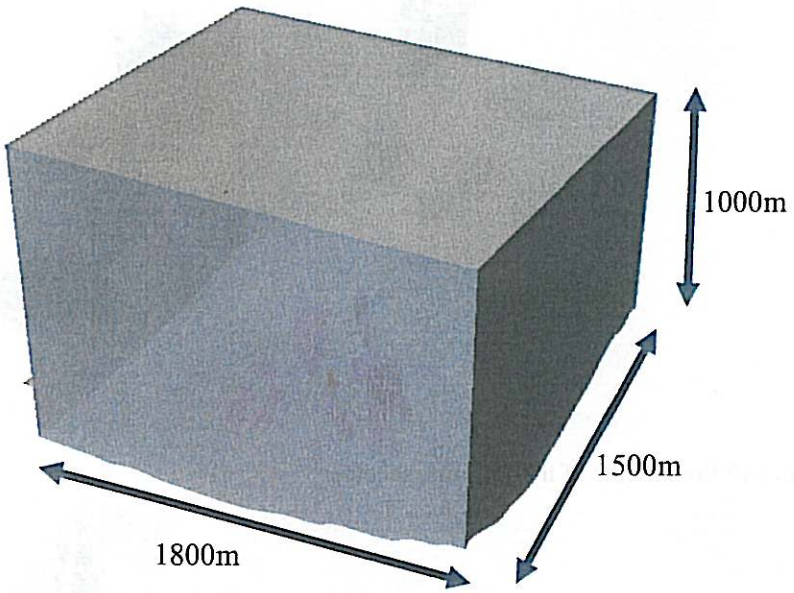


Figure 10 Domain of the CFD model

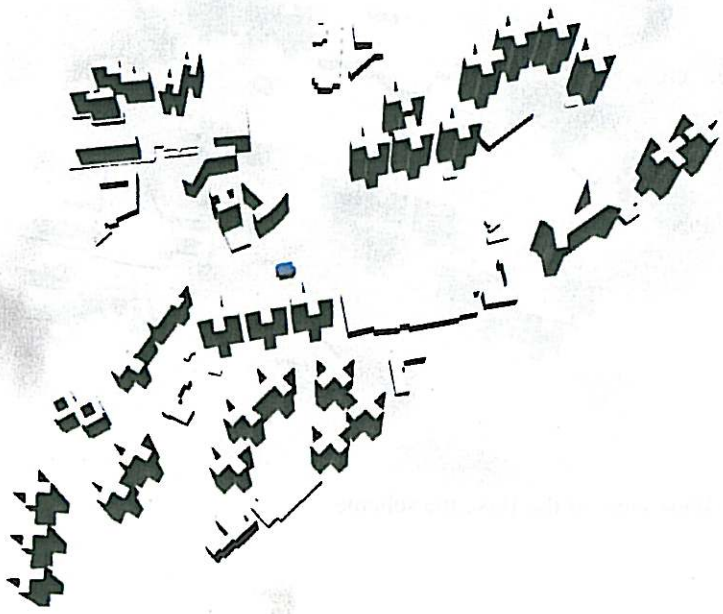


Figure 11 East view of the Baseline scheme

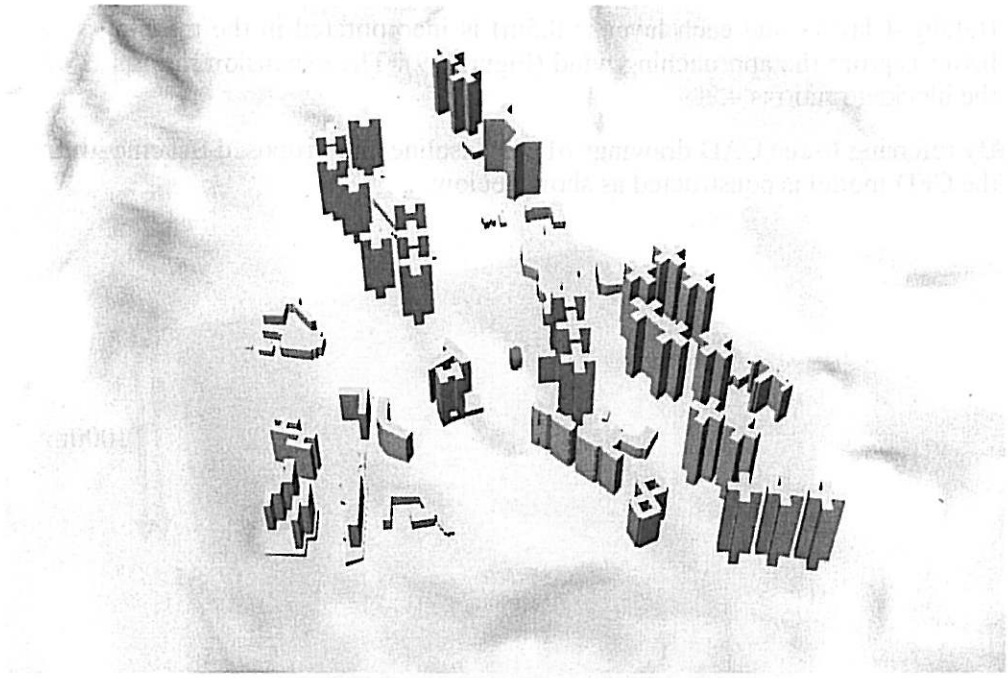


Figure 12 South view of the Baseline scheme

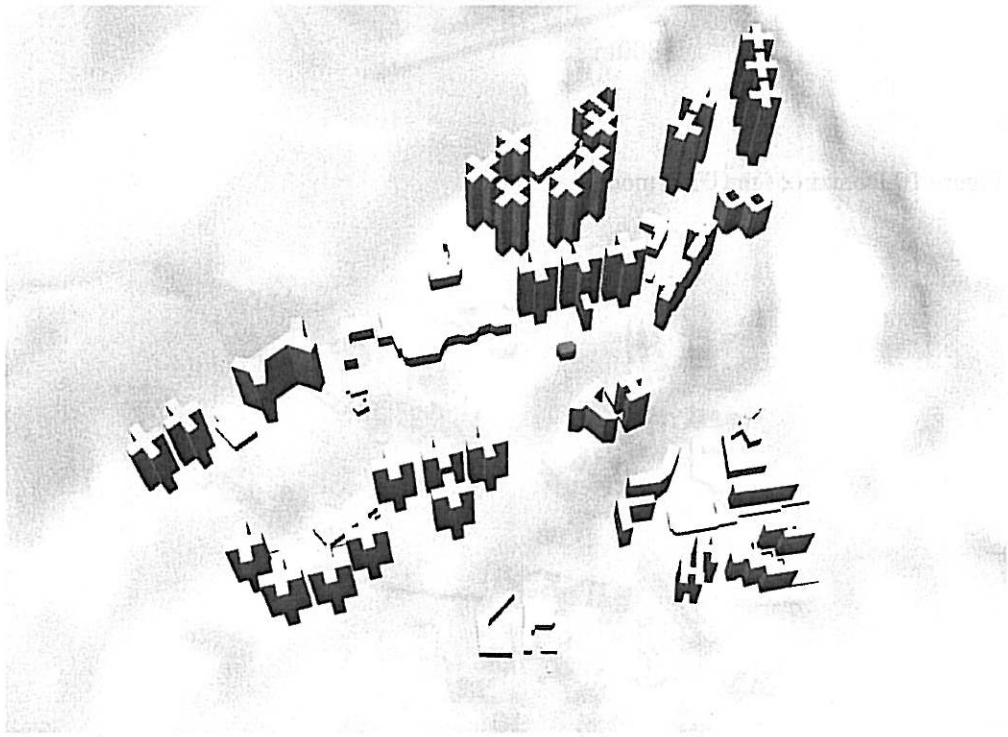


Figure 13 West view of the Baseline scheme



Figure 14 North view of the Baseline scheme



Figure 15 East view of the Proposed Scheme.

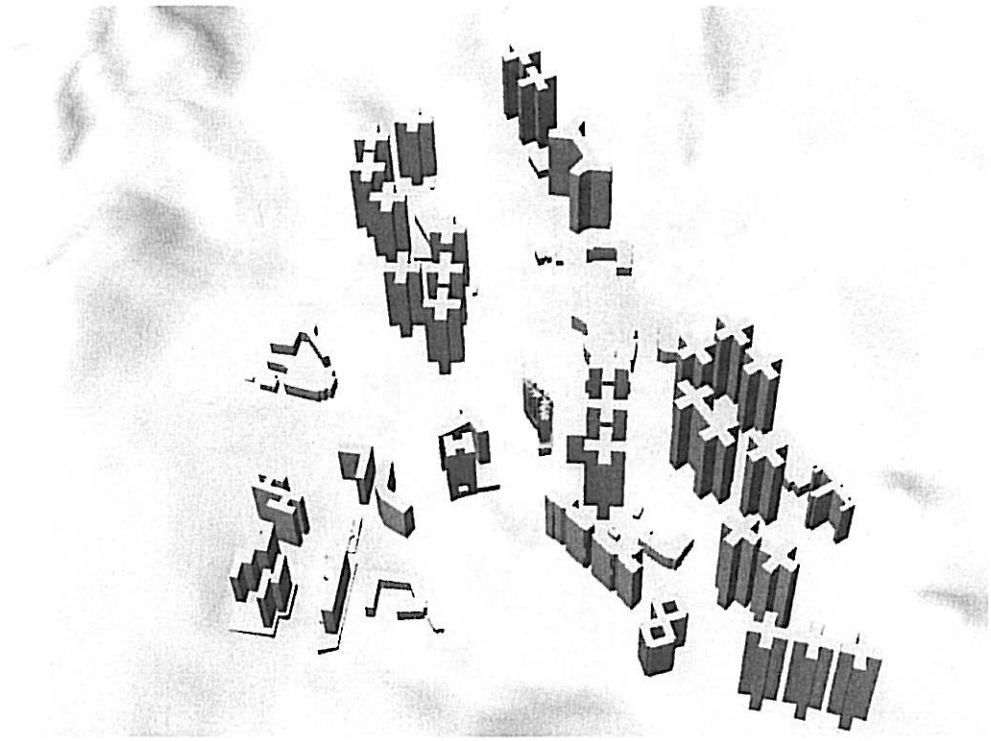


Figure 16 South view of the Proposed Scheme.

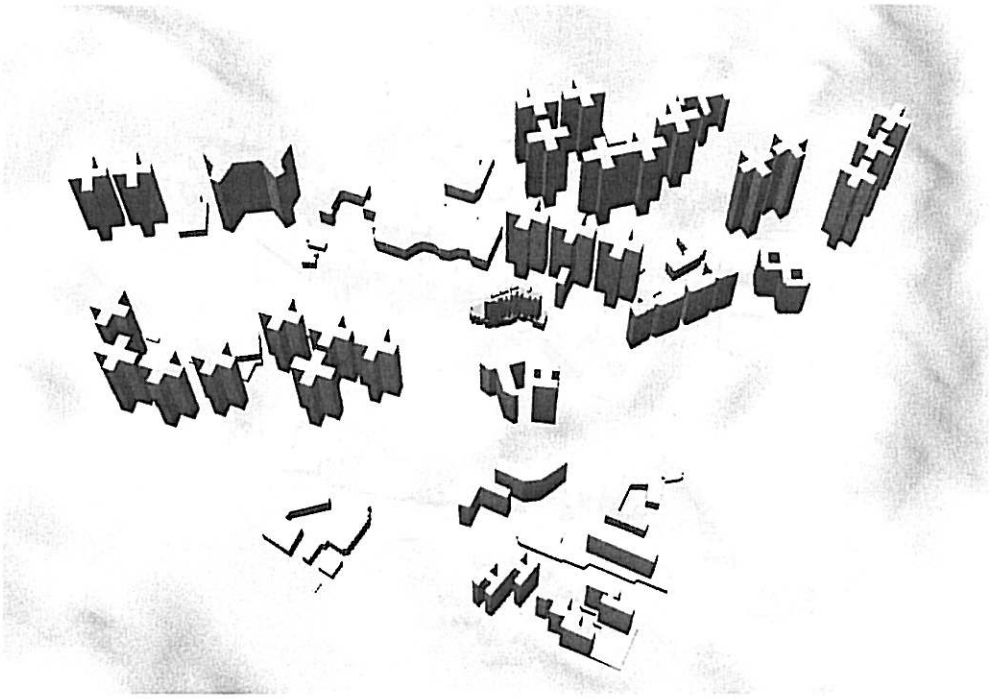


Figure 17 West view of the Proposed Scheme.

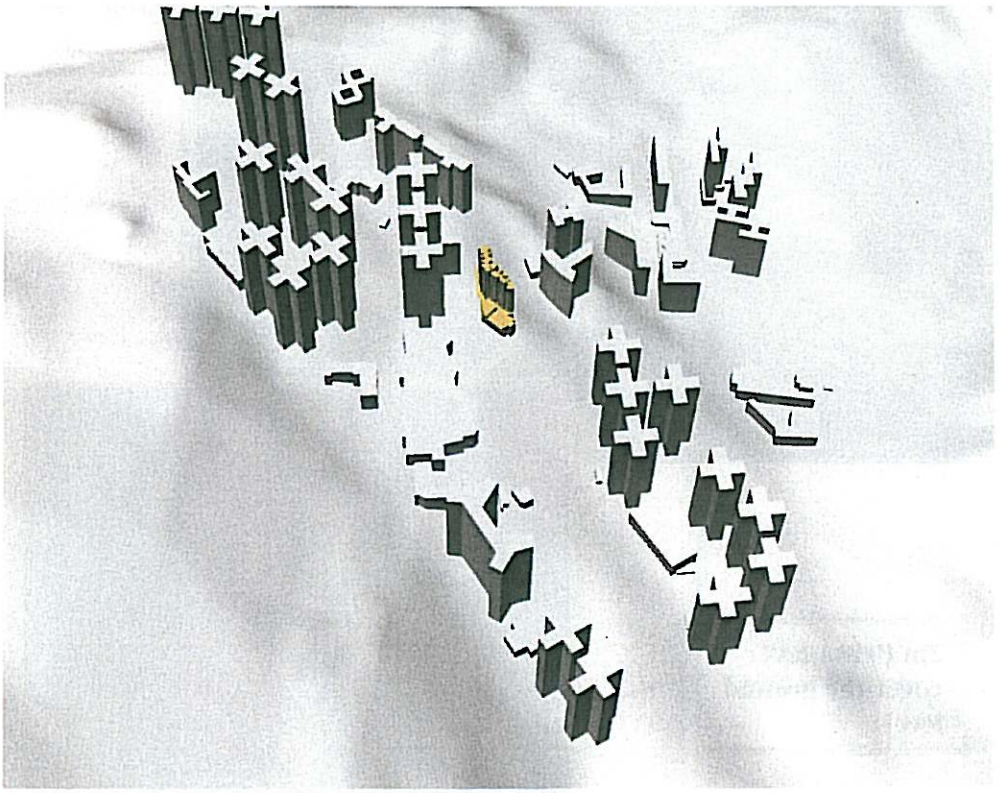


Figure 18 North view of the Proposed Scheme.

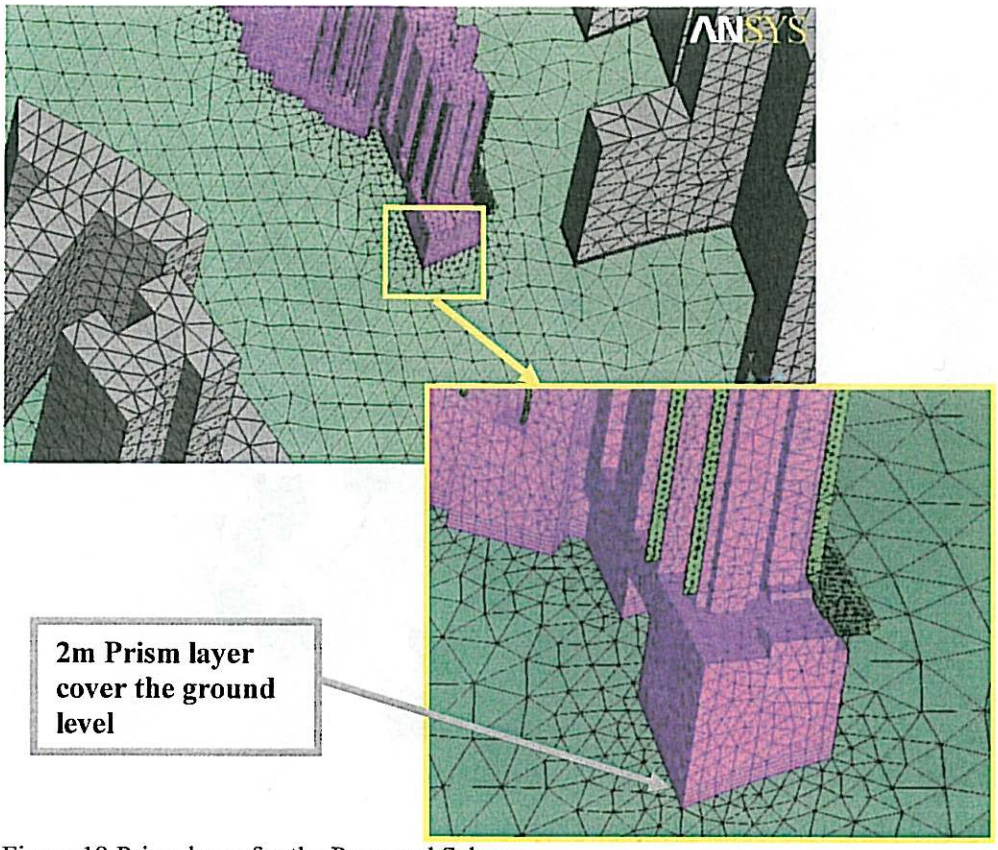


Figure 19 Prism layer for the Proposed Scheme

3.6.2 Turbulence Model

As highlighted in recent academic and industrial research literatures by CFD practitioners, the widely used standard k - ε turbulence model technique may not adequately model the effects of large scale turbulence around buildings and ignores the wind gusts leading to the relatively poor prediction in the recirculation regions around building. Therefore in this simulation, SST k – ω turbulence modelling method is applied. This technique provides more accurate representation of the levels of turbulence that can be expected in an urban environment.

3.6.3 Calculation Method

The SIMPLE algorithm was adopted to solve the pressure-velocity linked equations. The SFCD differencing scheme was applied to discretize the momentum equation and other equations. The convergence criterion is 0.0005 on mass conservation. The calculation loop will repeat until the total errors satisfy this convergence criterion.

The prevailing wind direction is set to inlet boundary with wind profile as mentioned in Section 3.2. The downwind boundary is set to pressure with value of atmospheric pressure. The top and side boundaries are set to symmetry. In addition, to eliminate the boundary effects, the model domain is built beyond the Surrounding Area as required by the Technical Circular (refer to Figure 10).

4 Result and Discussion

4.1 Overall Pattern of Ventilation Performance

In order to provide an overall picture of the wind environment for this AVA study, contour plots of the average VR are plotted at 2m above the ground. This, in comparison with the results at the discrete test points, provides a more complete picture as it shows the overall pattern of ventilation performance and it is easier to assess the physical reasons for some of the predictions of the VR results of the test points. Figure 20 and Figure 21 show the contour maps of VR for the Baseline Scheme and Proposed Scheme respectively.



Figure 20 Contour map of the average VR for the Baseline Scheme



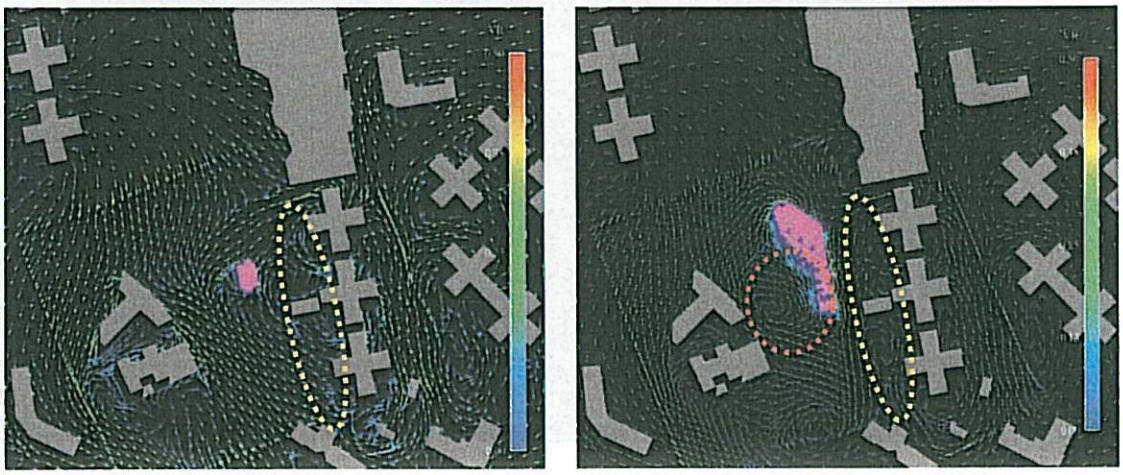
Figure 21 Contour map of the average VR for the Proposed Scheme

The ventilation condition within the Sau Mau Ping Estate under the Proposed Scheme is a little bit better than that of Baseline Scheme. It may be benefit by part of downwash effect of the high rise proposed development.

In the following, the general prevailing wind directions are discussed to compare the Baseline Scheme and the Proposed Scheme

North-easterly wind directions

In the Baseline Scheme, under such prevailing wind direction, there is a zone with weak ventilation performance along the Sau Ming Road due to the high rise high density Sau Mau Ping Estate. In the Proposed Scheme, there is an obvious improvement in such region as the proposed development downdraft the upper wind to the pedestrian level. On the other hand, as the building bulk of the Proposed Scheme is much larger than the Baseline Scheme, therefore the wake region (red circles area) created is larger than that of Baseline Scheme.

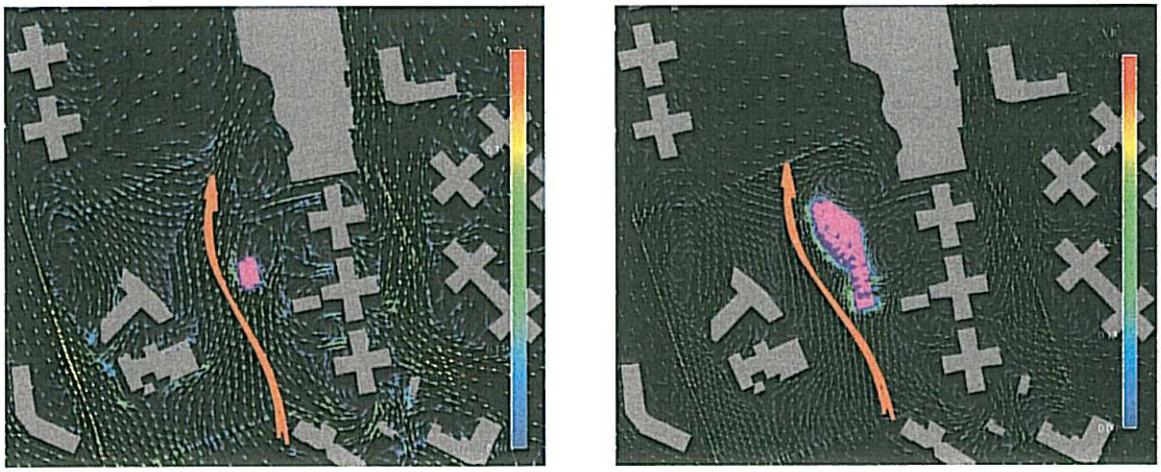


Baseline Scheme Proposed Scheme

Figure 22 Vector plot of the Baseline Scheme and the Proposed Scheme under NE wind

South-easterly wind directions

Under the south-easterly wind, the open area at the south of the site acts as a major wind corridor. This wind corridor works effectively in both Baseline Scheme and Proposed Scheme to allow wind to ventilate the surrounding area. Due to the larger building volume of the Proposed Scheme, it results in a relatively lower VR at part of the Sau Ming Road and bus terminus area.

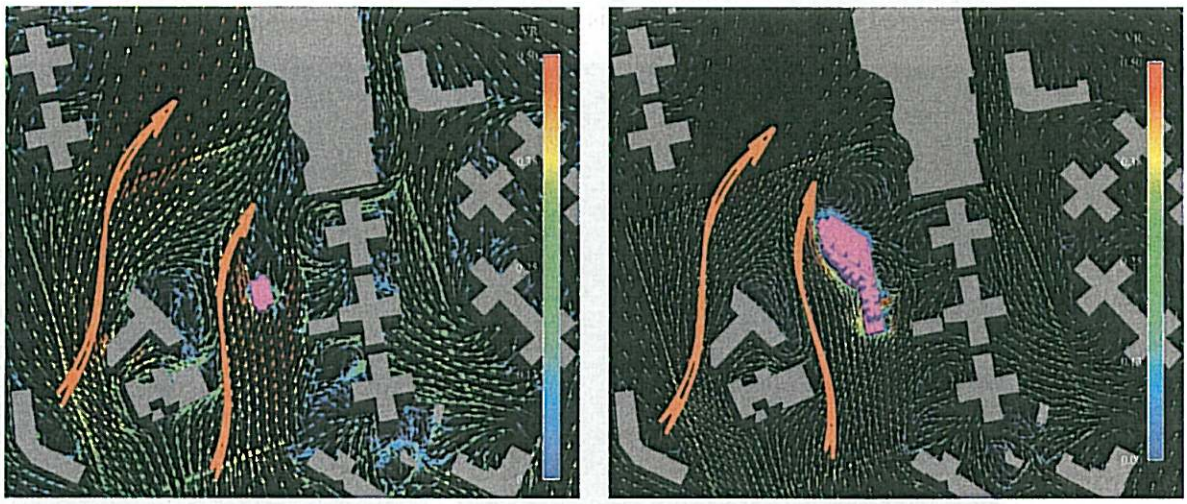


Baseline Scheme Proposed Scheme

Figure 23 Vector plot of Baseline Scheme and Proposed Scheme under SE wind

South-westerly wind directions

The open area at the South of the site acts as a major wind corridor during the south-westerly wind condition as shown in Figure 24. The alignment of the building can maintain the wind corridor and let airflow ventilate to the downstream area. However, under such prevailing wind direction, part of the Bus Terminus falls within the wind shadow of the tower and result a lower VR.



Baseline Scheme Proposed Scheme

Figure 24 Vector plot of Baseline and Proposed Scheme under SSW wind.

4.2 SVR and LVR

As specified in the Technical Guide, two ratios were determined to give a simple quantity to summarize the ventilation performance:

- **Site spatial average Velocity Ratio (SVR)** - This gives a hint of how the development proposal impacts the wind environment of its immediate vicinity. This is the average of VR values of all perimeter test points (blue points as shown in Figure 9).
- **Local spatial average velocity ratio (LVR)** - This gives a hint of how the proposed development impacts the wind environment of the local area. This is the average of VR values of all overall and perimeter test points (red and blue points as shown in Figure 9).

The following table summarizes the values of SVR and LVR for the two studied schemes.

	Baseline scheme	Proposed scheme
SVR	0.20	0.17
LVR	0.17	0.16

Results show that both SVR and LVR of the Baseline Scheme are slightly higher than the Proposed Scheme. This implies that the proposed development would have some impacts to the ventilation performance of its surroundings. Hence, the impacts in focus area would be further studied in the next section.

4.3 Focus Areas

To further assess the impact of the Development on the wind environment of its immediate vicinity, several focus areas were identified. The following figure indicated the locations of the focus areas and the relevant test points.

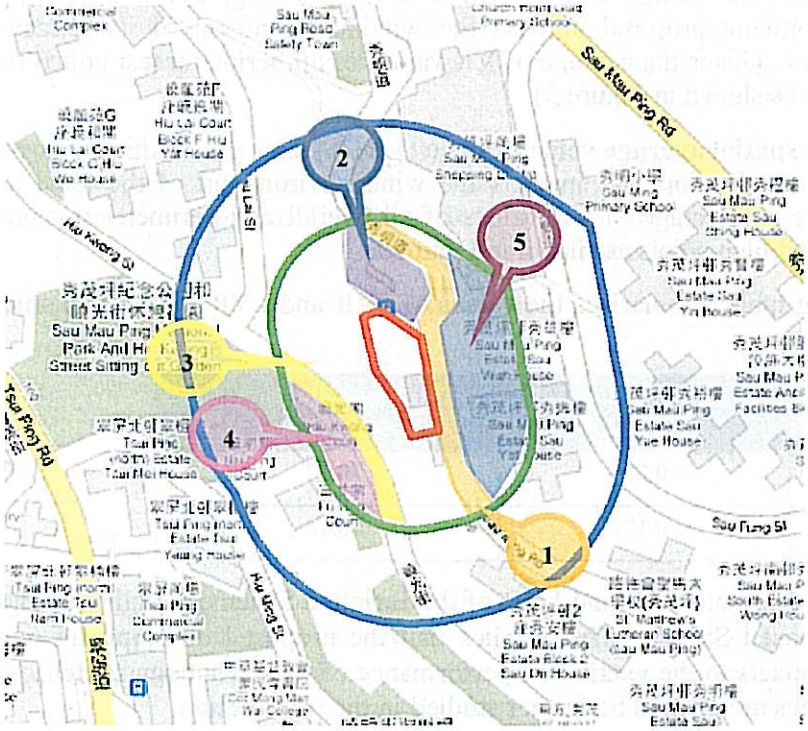


Figure 25 Locations of the focus areas and relevant test points

	Focus Area	Test point	Average Velocity Ratio	
			Baseline Scheme	Proposed Scheme
1	Sau Ming Road 秀明道	P5-P10, O13-O18	0.16	0.16
2	Bus Terminus 巴士站	O9-O12	0.23	0.21
3	Hiu Kwong Street 曉光街	O3-O8	0.22	0.22
4	Hiu Kwong Court, Fu Wah Court 曉光閣, 富華閣	O1-O2	0.12	0.12
5	Sau Mau Ping Estate 秀茂坪村	O19-O27	0.10	0.11

Table 2. Spatial average VR of different focus areas

Result shows that the ventilation performance of the Sau Ming Road, Hiu Kwong Court, Fu Wah Court and the Hiu Kwong Street are similar for the Baseline Scheme and the Proposed Scheme. There is an improvement in ventilation performance of the Sau Mau Ping Estate by around 9.1%. This in case help the worst ventilated focus area to improve the ventilation performance. Although the wind performance of the bus terminus in the Proposed Scheme is reduced by 8.7%

when compared to the existing condition, the VR value of the bus terminus is still higher than the averaged wind performance of the site (LVR=0.17) which shows that the ventilation condition in that area is still acceptable.

4.4 Wind enhancement feature

According to the Urban Design Guidelines, the provision for higher permeability of building mass can be achieved by creating gaps between the podium and the building blocks built atop (Figure 26).The void podium deck design (Figure 27) increase the permeability of the Development. As shown in Figure 28, the void podium allows the annual dominant wind (North Easterly wind) flow through it and ventilates the downstream area.

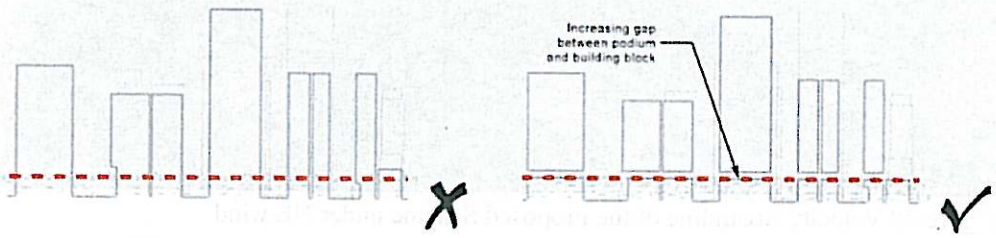


Figure 26 Gaps between the podium and the building blocks to enhance air permeability

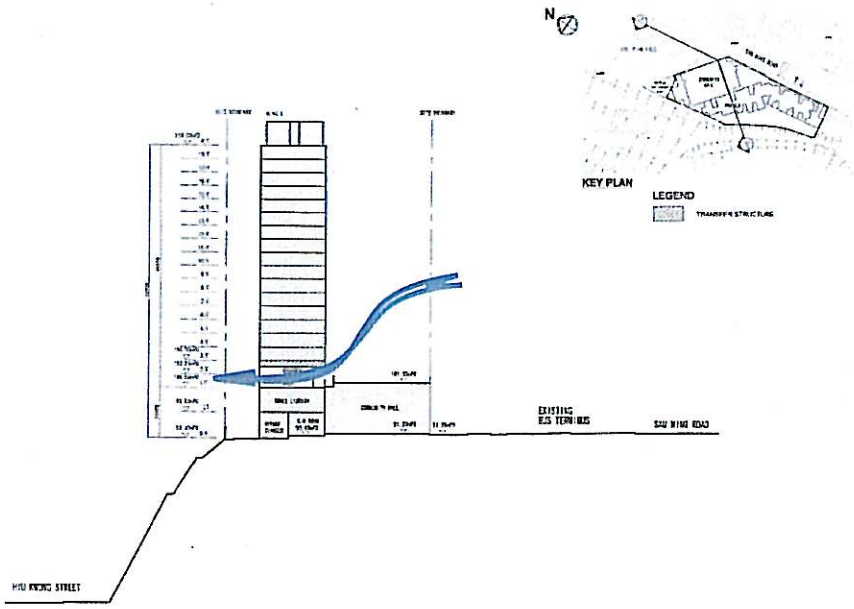


Figure 27 Void podium deck enhance the local ventilation environment

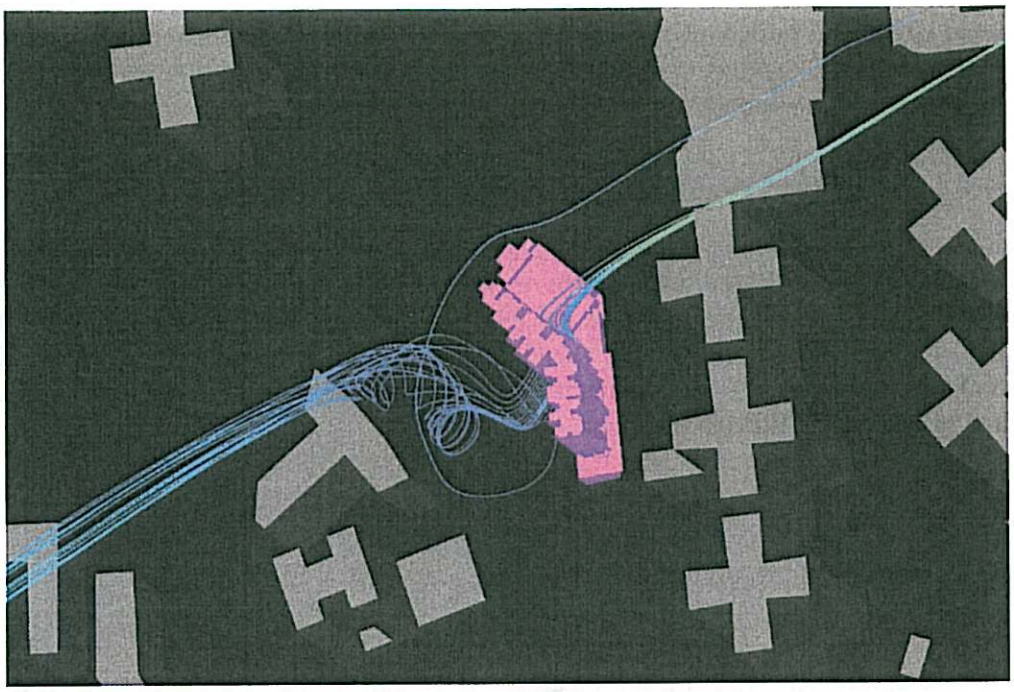


Figure 28 Velocity streamline of the Proposed Scheme under NE wind

5 Conclusion

The development is located at the Sau Mau Ping which is surrounded by some high rise residential buildings with a hilly topology. It is surrounded by high rise public development at the east (Sau Mau Ping Estate) and a non-building area slope at its west and south. A relative low rise commercial centre locates at its north.

A series of CFD simulations using SST k – ω turbulence modelling were performed using the Air Ventilation Assessment (AVA) methodology for initial study as stipulated in the Technical Circular and Technical Guide. Eight wind directions were selected: NNE, NE, ENE, E, ESE, SE, SSW and SW, which totally cover 79.5% of wind availability in a year, i.e. exceeding 75% of annual wind frequency as required by the Technical Circular of AVA. Two scenarios, namely the Baseline Scheme and Proposed Scheme, were studied.

The Velocity Ratio (VR) as proposed by the Technical Circular was employed to assess the ventilation performances of the Development and surrounding environment. With reference to the Technical Guide, totally 15 Perimeter test points, 27 Overall test points were selected to assess the air ventilation performance at the surrounding existing development.

The major findings of this study could be summarized as follows:

- The Site spatial average Velocity Ratios (SVR) and the Local spatial average Velocity Ratios (LVR) are both a little bit higher for the Baseline Scheme than that of the Proposed Scheme;
- Due to the small project site area, the ventilation performance of the study area is mainly governed by the topography and the surround existing building arrangement. The Proposed development would only affect limited area and the ventilation performance of the Sau Ming Road, Hiu Kwong Court, Fu Wah Court and Hiu Kwong Street are similar for both existing condition and the Proposed Scheme.
- The ventilation performance of the Sau Mau Ping Estate is shown to be better in the Proposed Scheme, due to the down wash effect of the proposed development. There is improvement in ventilation performance of Sau Mau Ping Estate by around 9.1%;

The void podium design in the Development helps to improve the ventilation performance of the surrounding area. This increases the permeability of the whole development and enhances the local ventilation environment.

Appendix A

Directional Velocity Ratio Contour Plot

A1 VR contour map for Baseline scheme

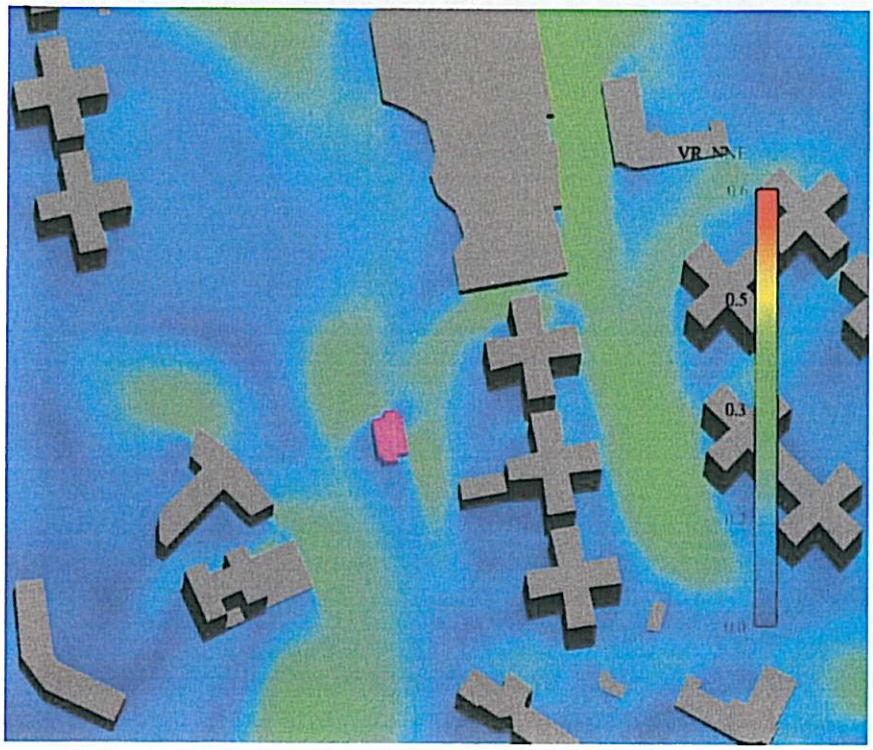


Figure A 1 Baseline Scheme (NNE wind)

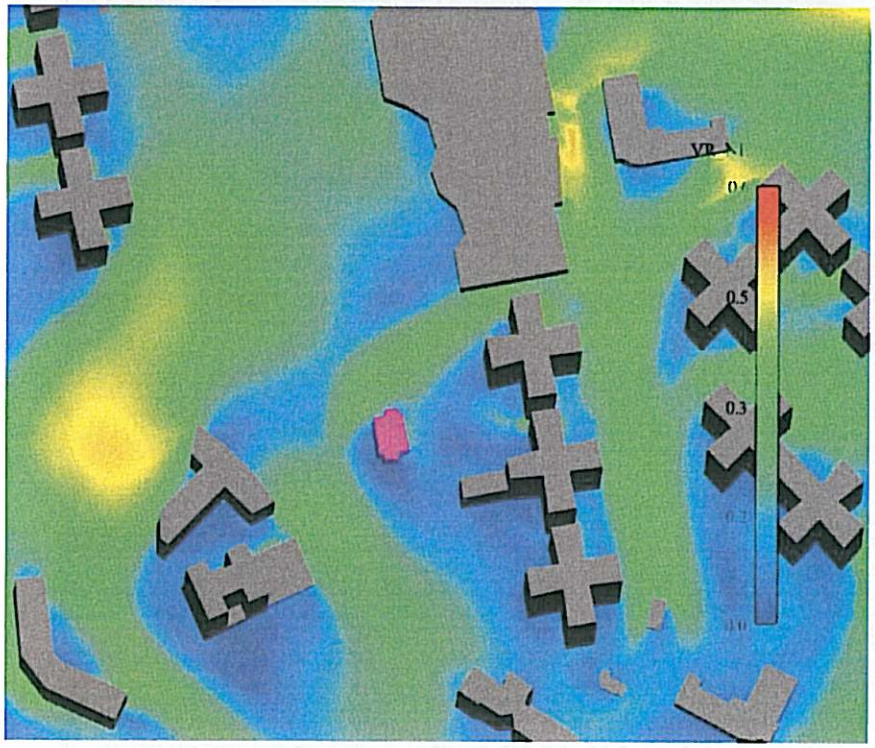


Figure A 2 Baseline Scheme (NE wind)

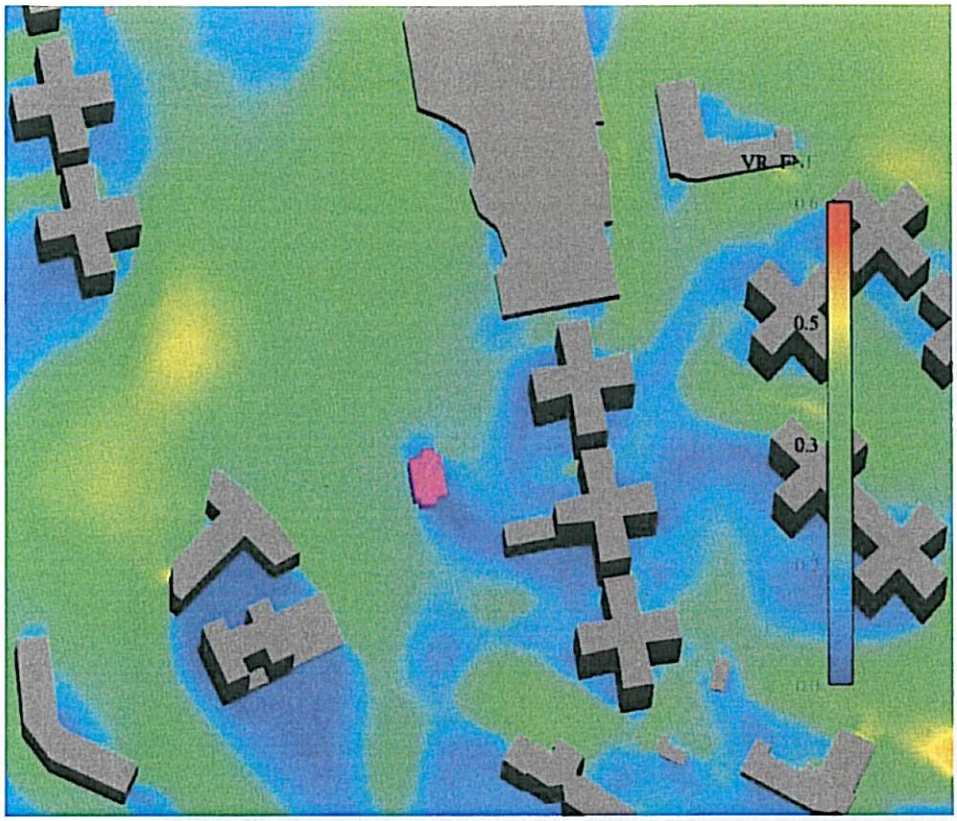


Figure A 3 Baseline Scheme (ENE wind)

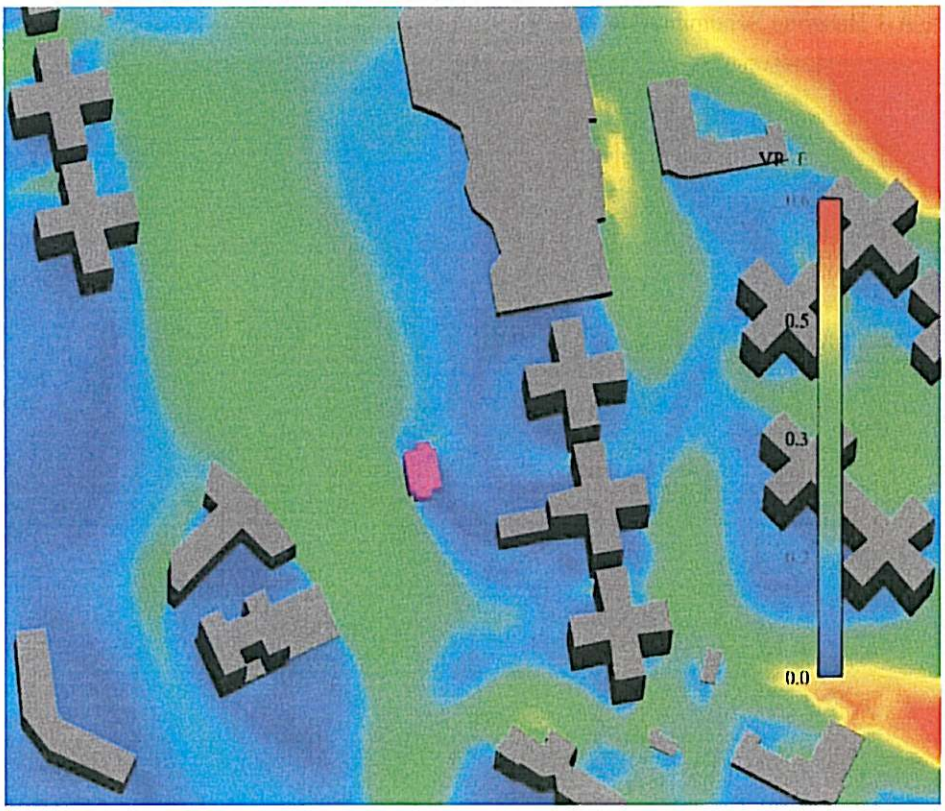


Figure A 4 Baseline Scheme (E wind)

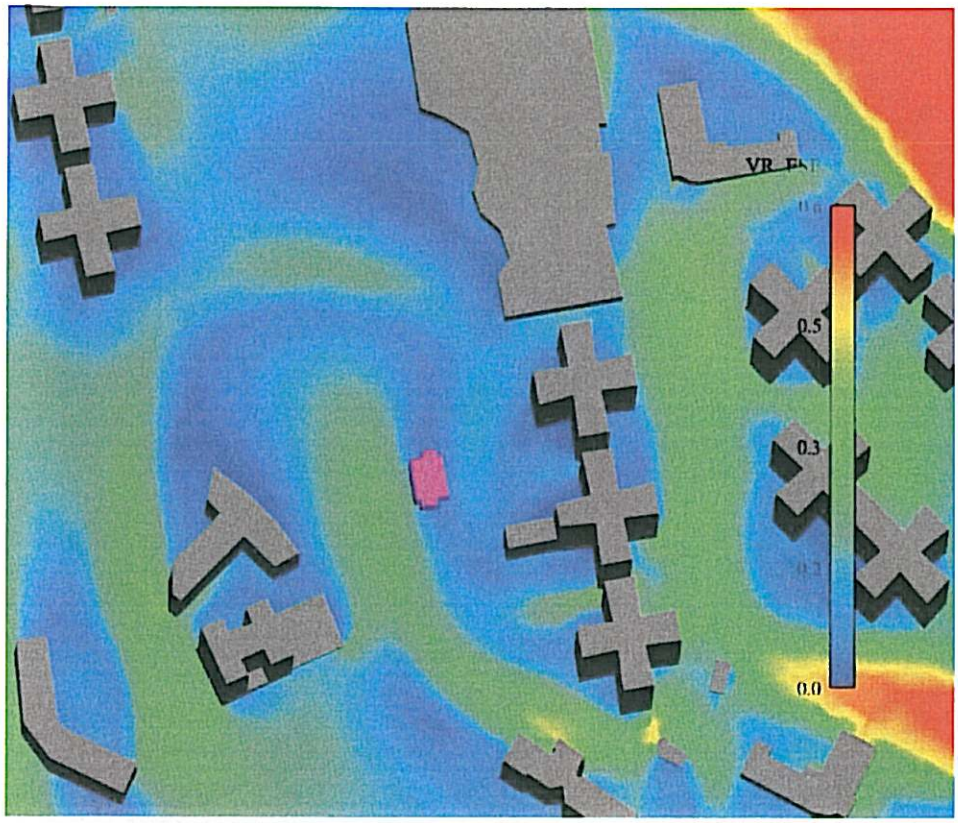


Figure A 5 Baseline Scheme (ESE wind)

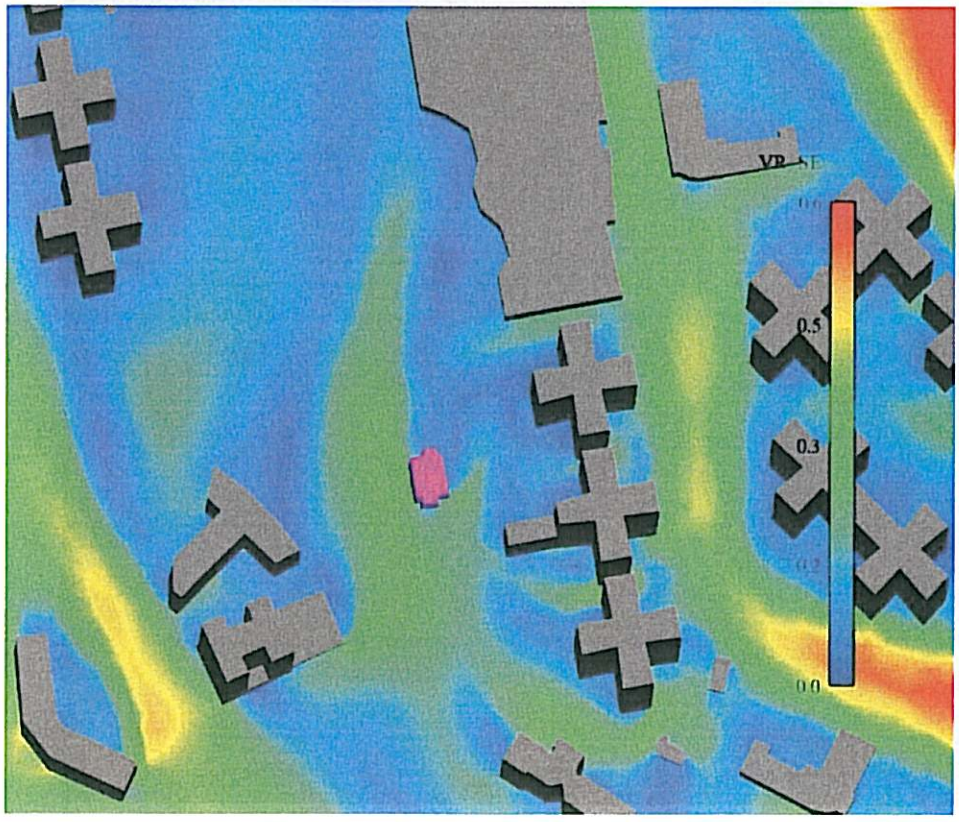


Figure A 6 Baseline Scheme (SE wind)

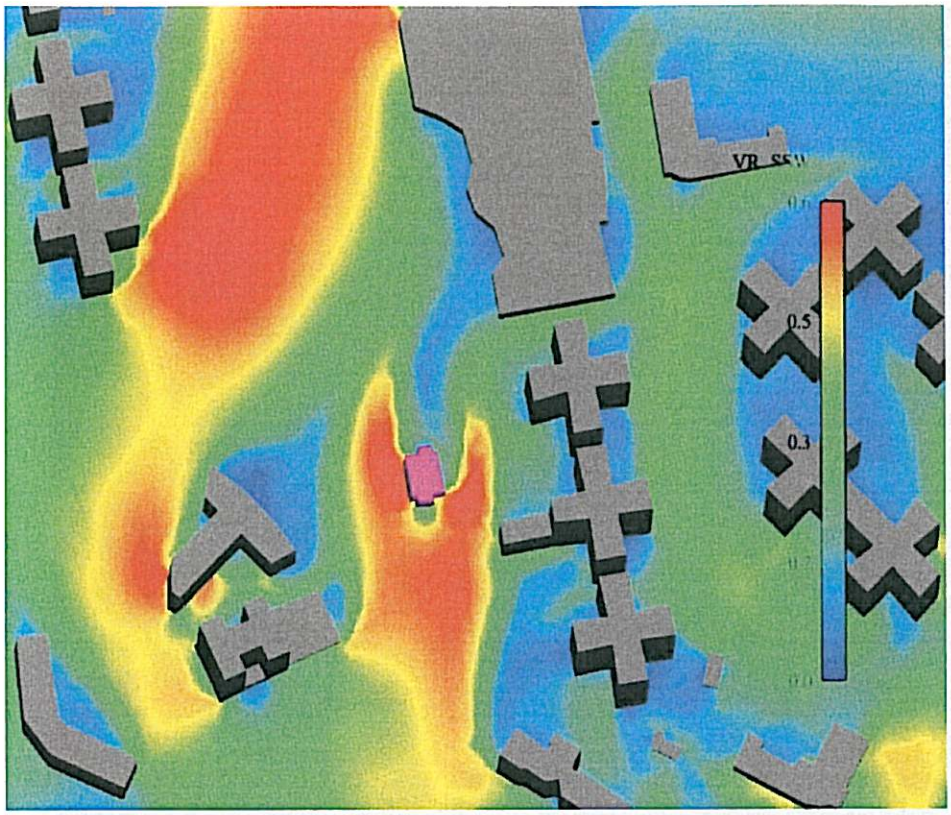


Figure A 7 Baseline Scheme (SSW wind)

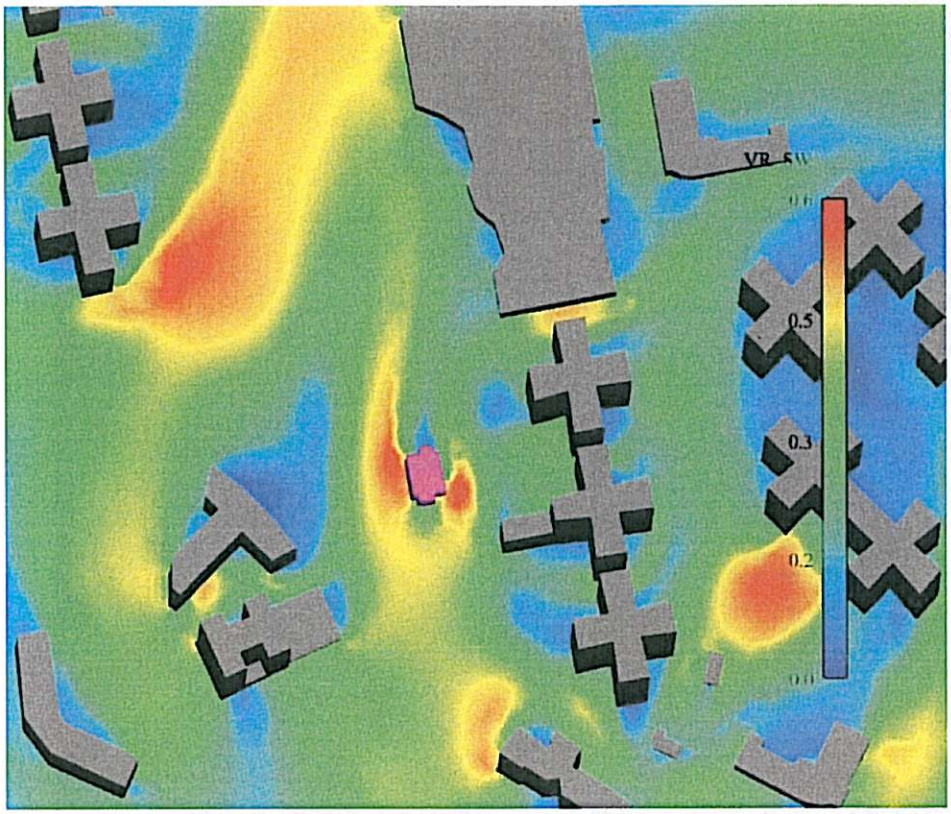


Figure A 8 Baseline Scheme (SW wind)

A2 VR contour map for Proposed Scheme

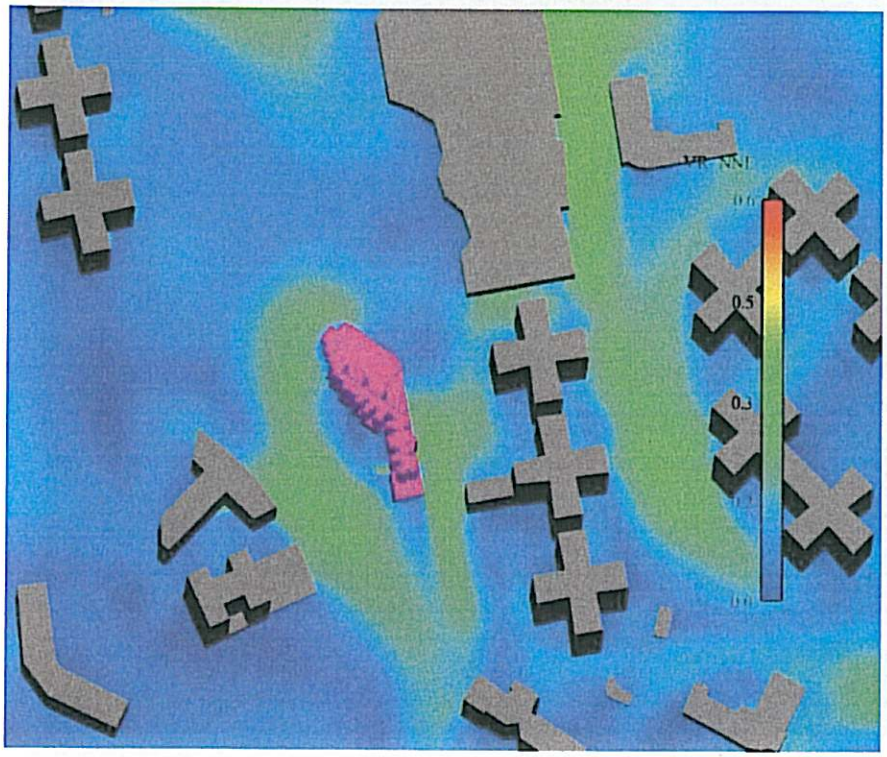


Figure A 9 Proposed Scheme (NNE wind)

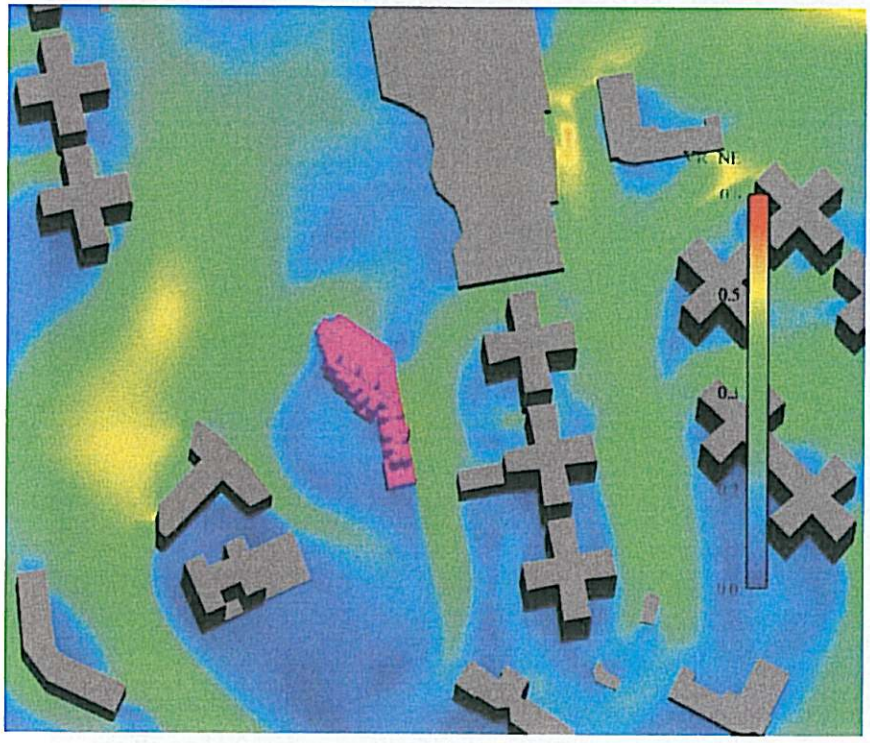


Figure A 10 Proposed Scheme (NE wind)

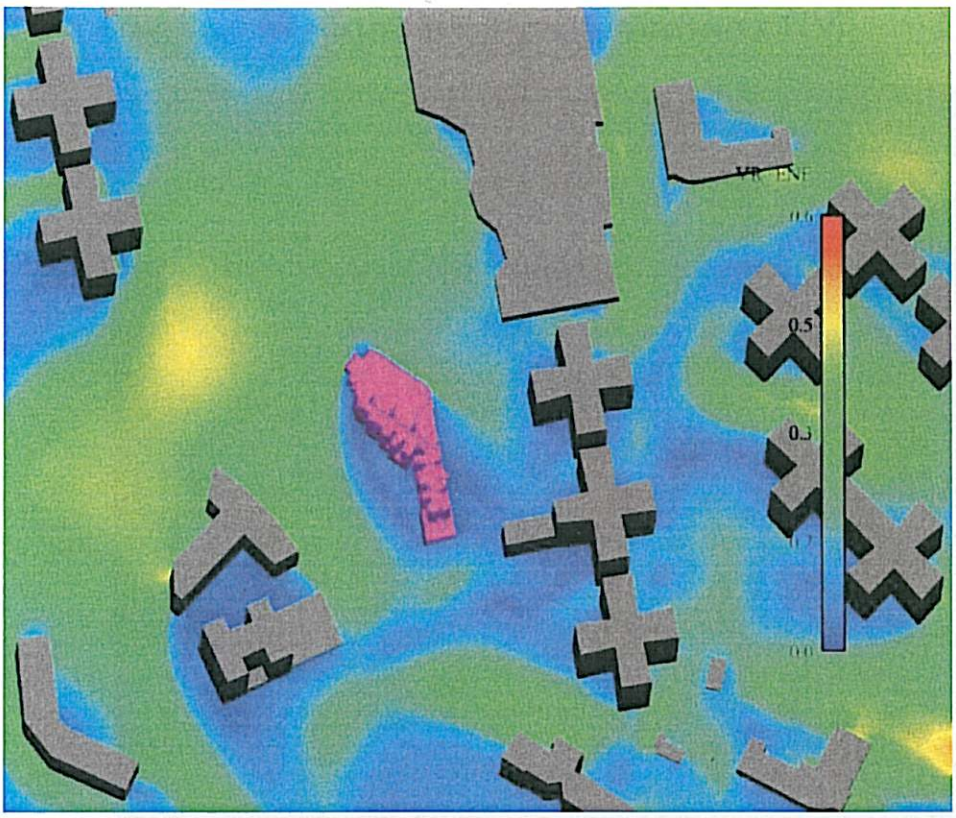


Figure A 11 Proposed Scheme (ENE wind)

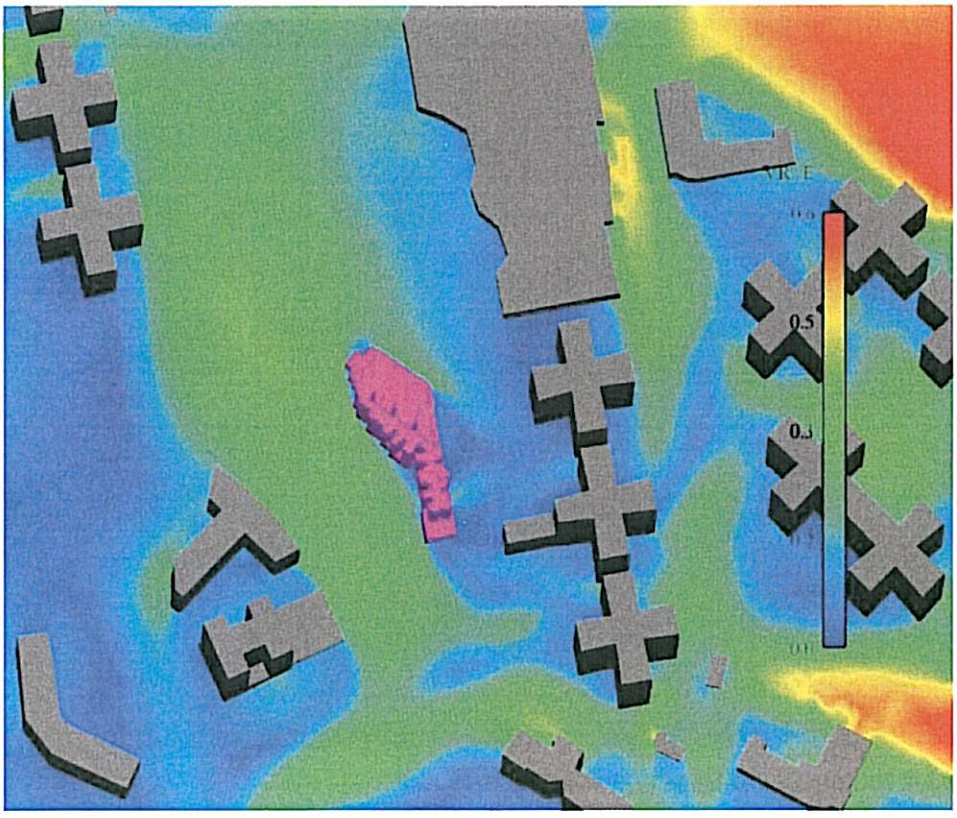


Figure A 12 Proposed Scheme (E wind)

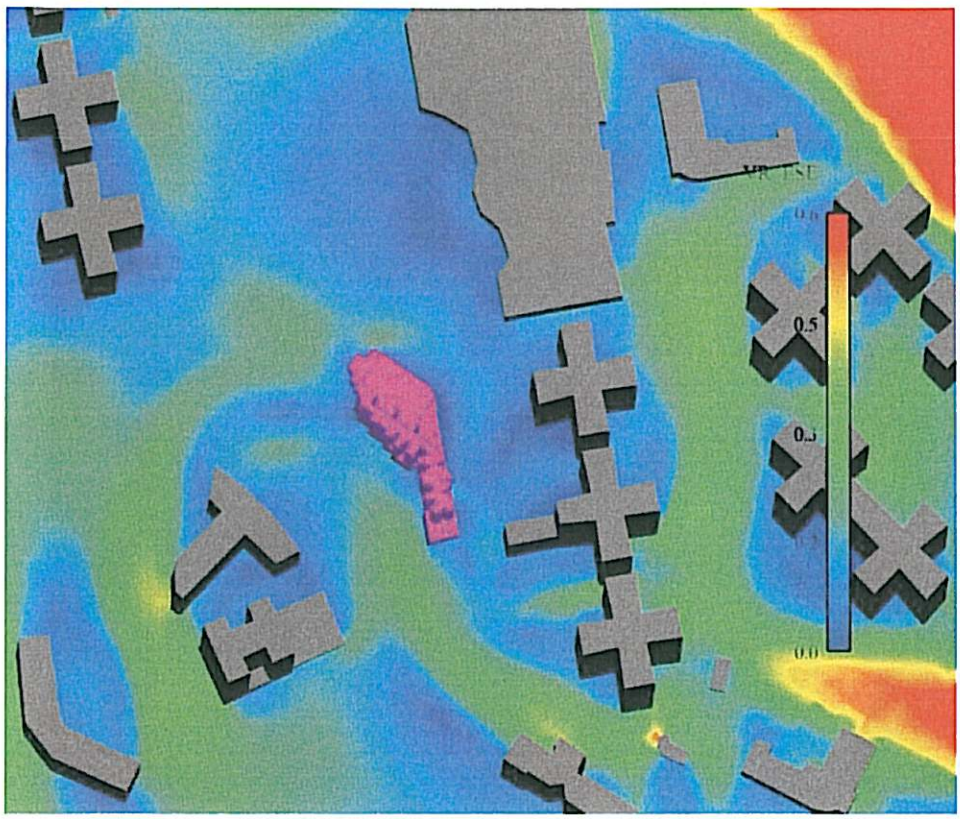


Figure A 13 Proposed Scheme (ESE wind)

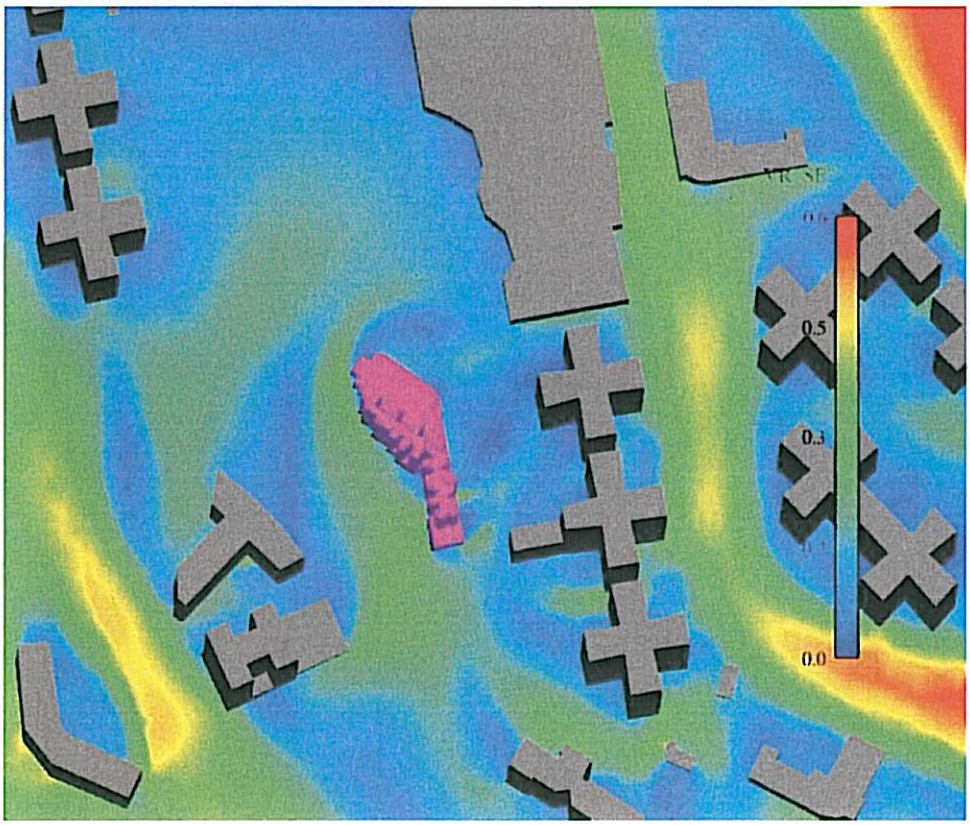


Figure A 14 Proposed Scheme (SE wind)

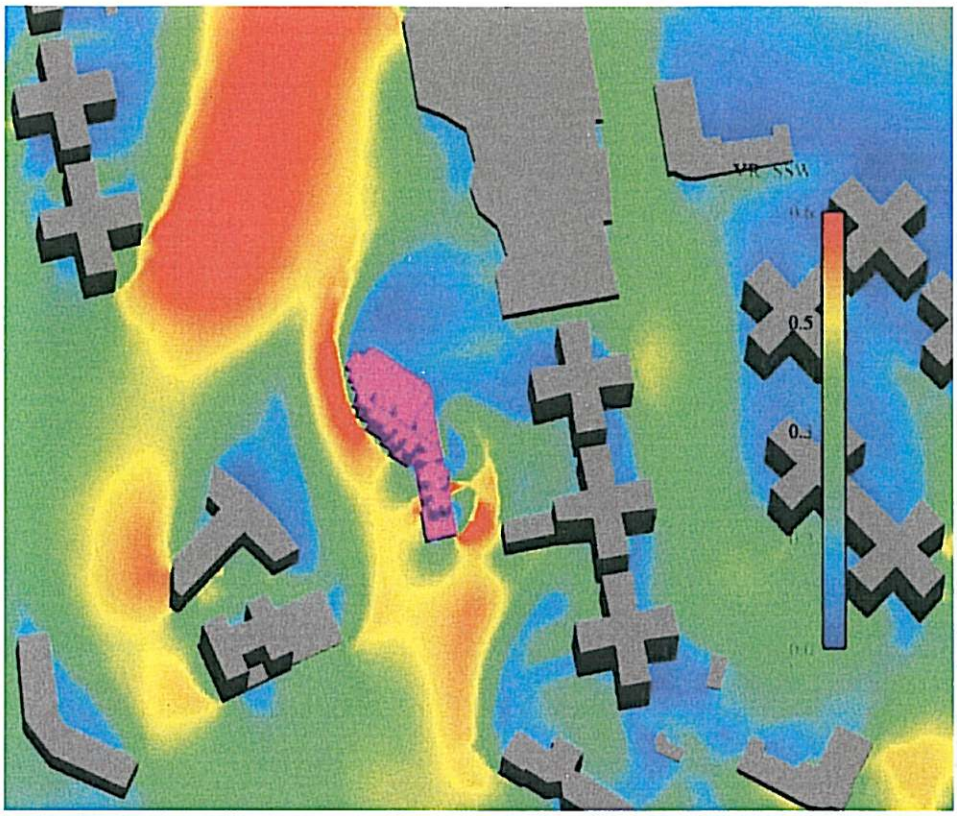


Figure A 15 Proposed Scheme (SSW wind)

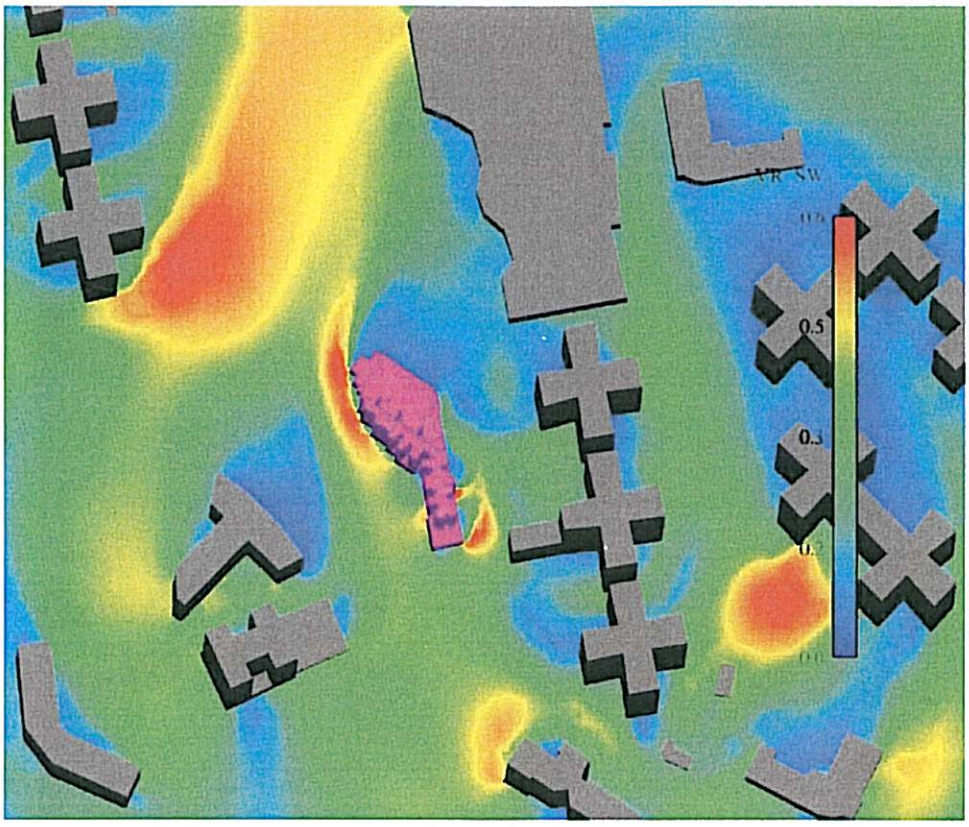


Figure A 16 Proposed Scheme (SW wind)

Appendix B

Directional Vector Plot

B1 VR vector plot for Baseline scheme

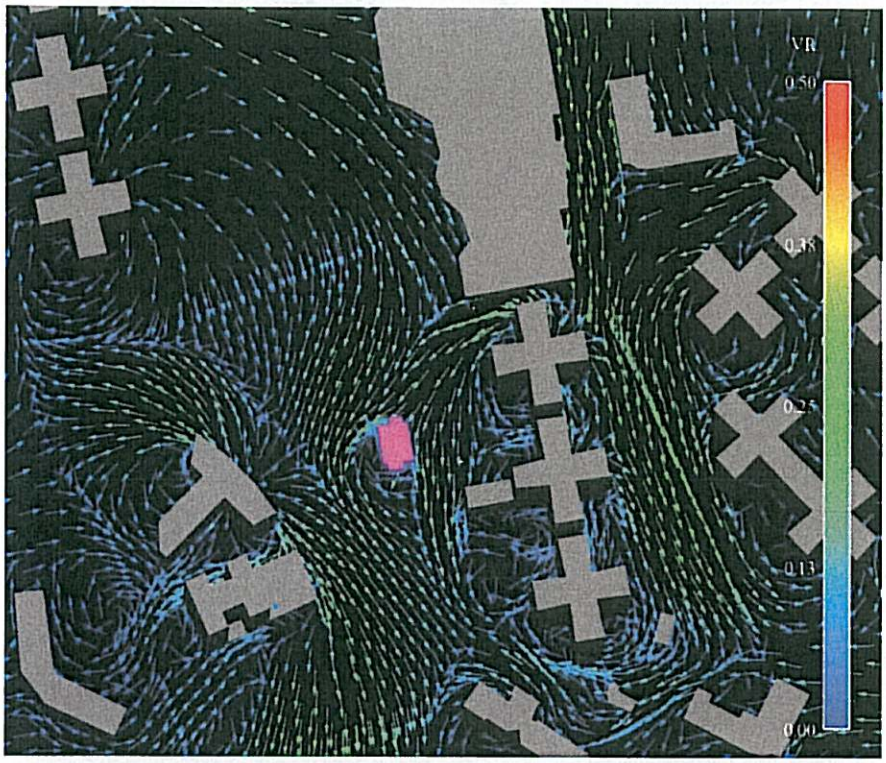


Figure B 1 Baseline Scheme (NNE wind)

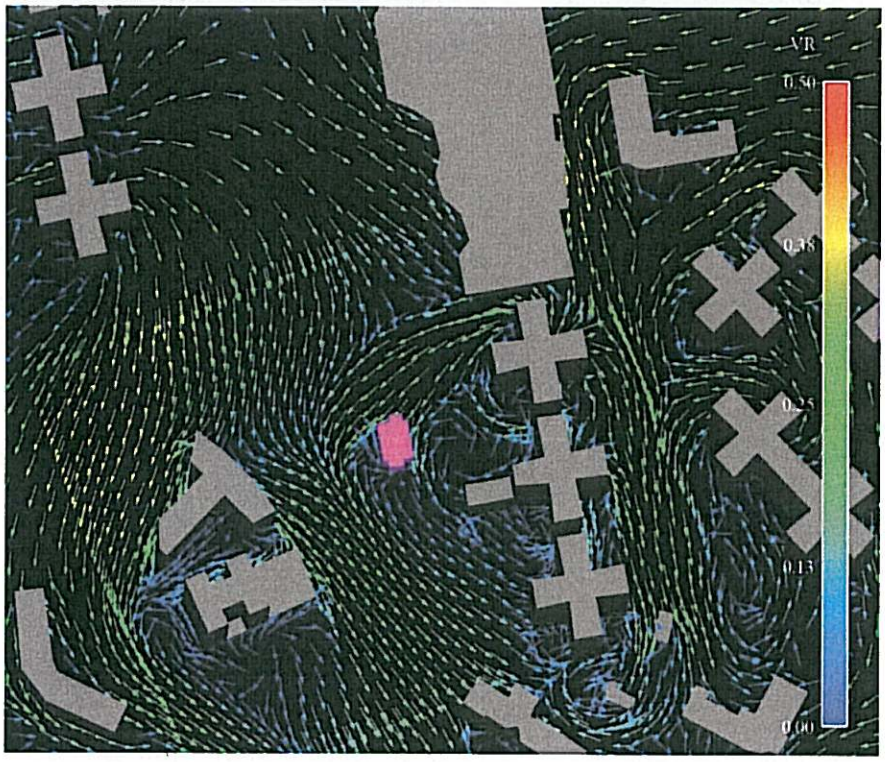


Figure B 2 Baseline Scheme (NE wind)

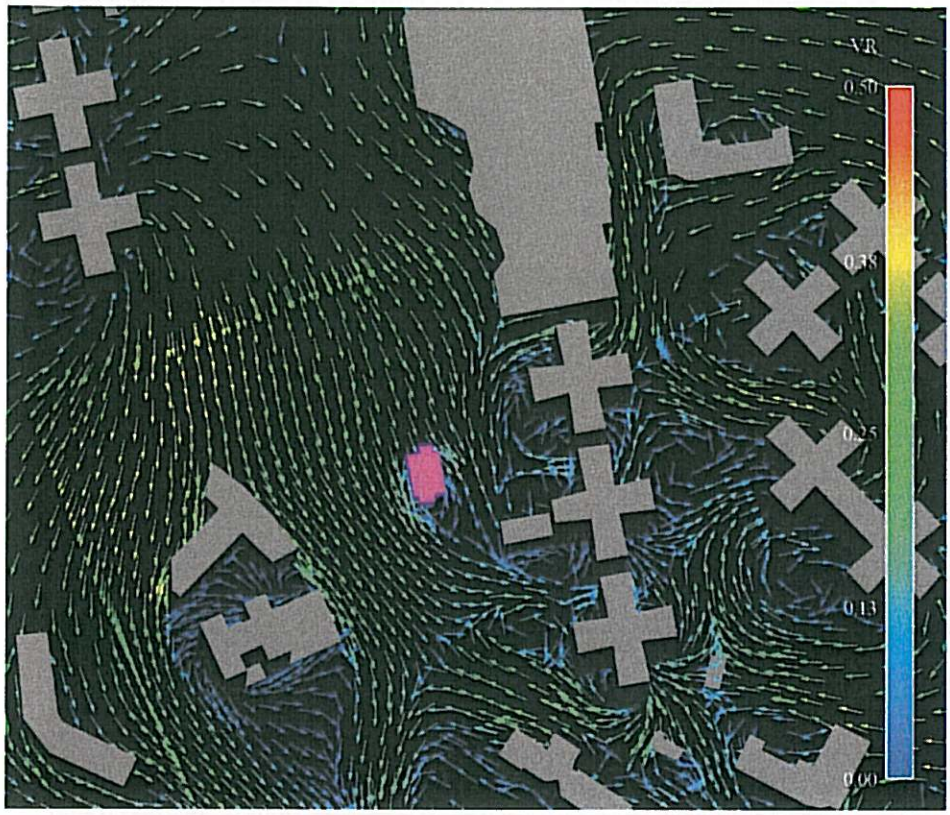


Figure B 3 Baseline Scheme (ENE wind)

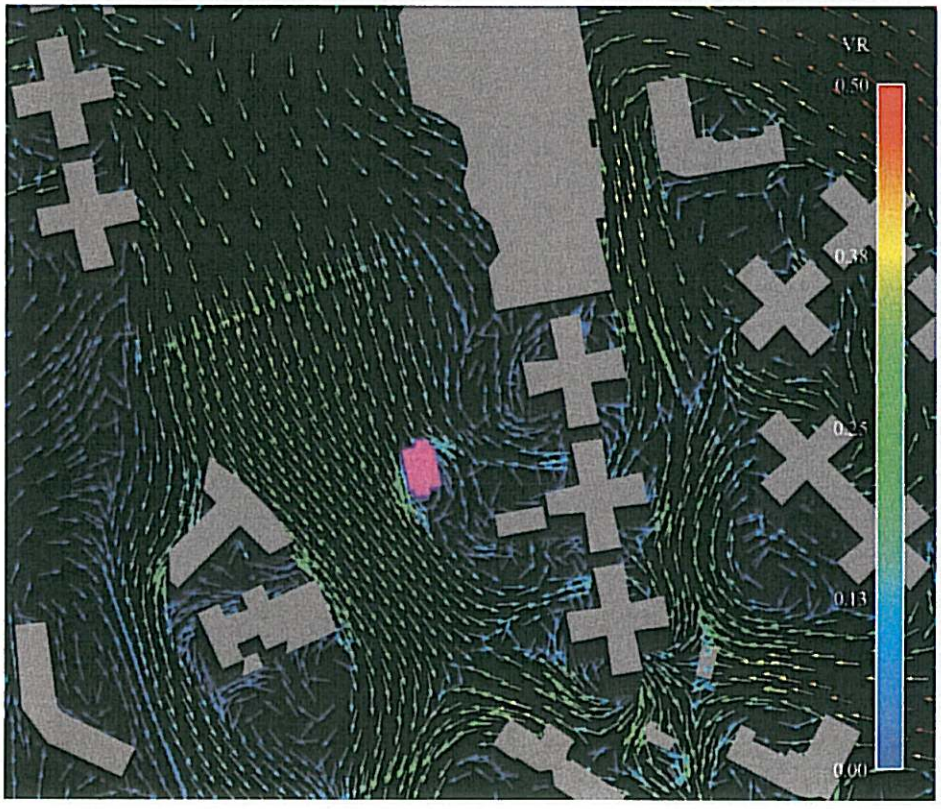


Figure B 4 Baseline Scheme (E wind)

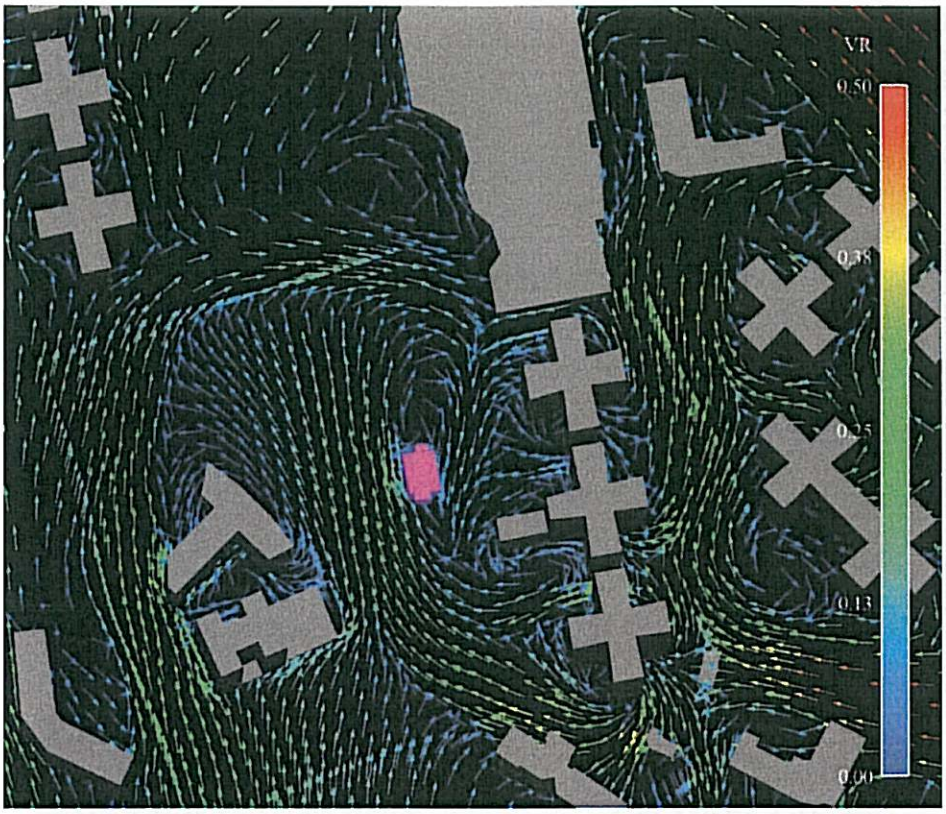


Figure B 5 Baseline Scheme (ESE wind)

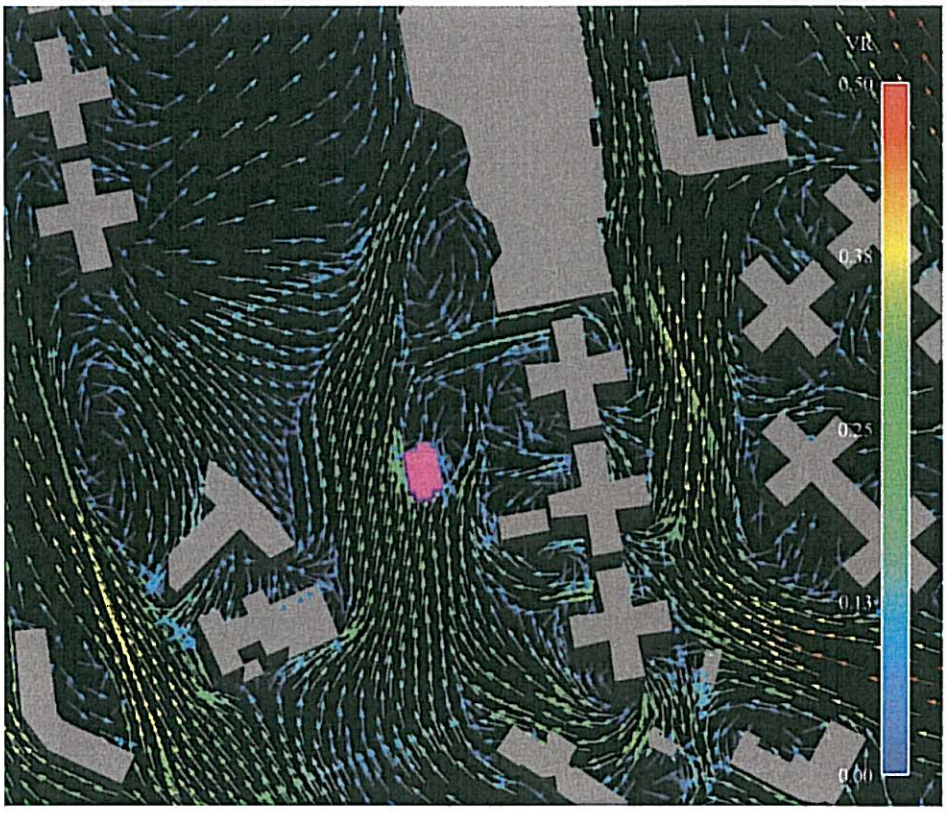


Figure B 6 Baseline Scheme (SE wind)

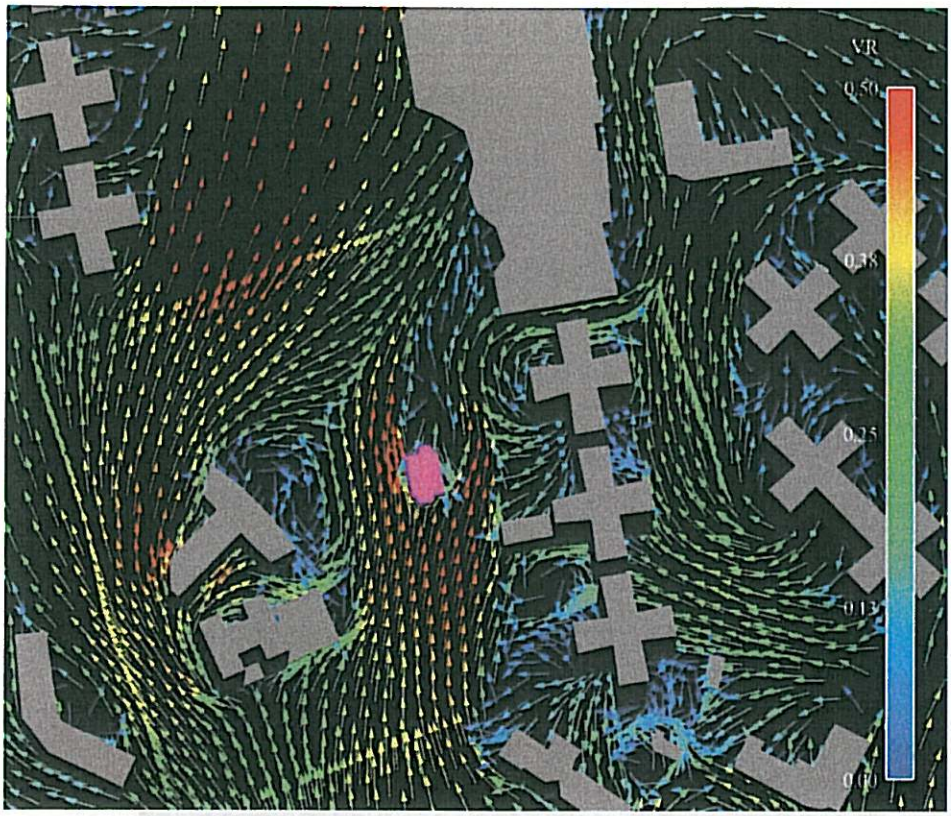


Figure B 7 Baseline Scheme (SSW wind)

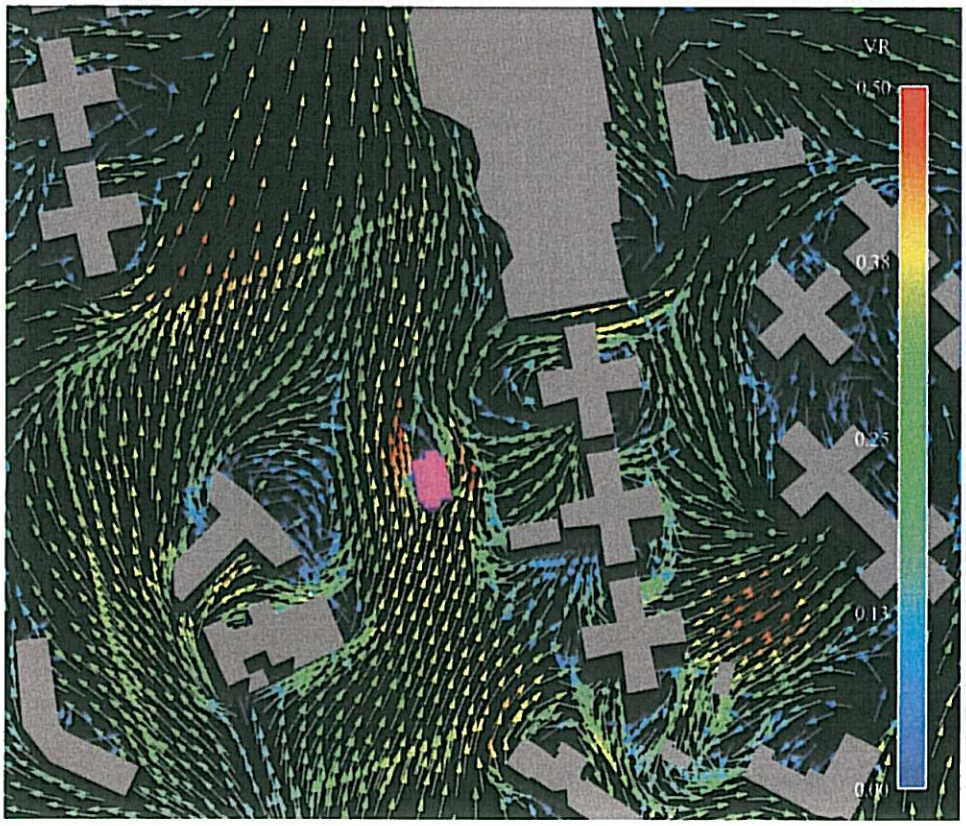


Figure B 8 Baseline Scheme (SW wind)

B2 VR vector plot for Proposed Scheme

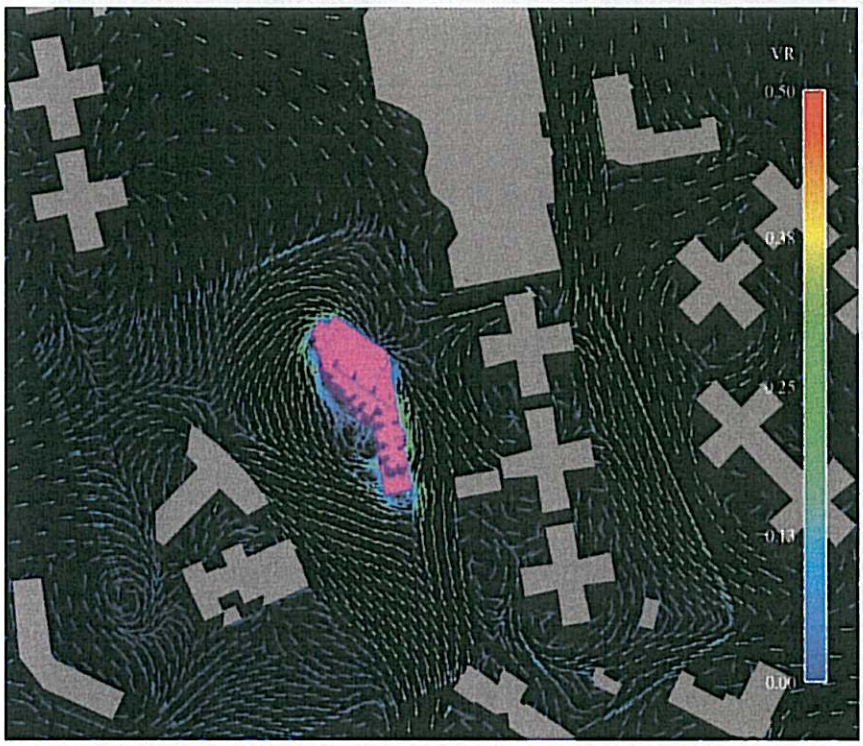


Figure B 9 Proposed Scheme (NNE wind)



Figure B 10 Proposed Scheme (NE wind)



Figure B 11 Proposed Scheme (ENE wind)

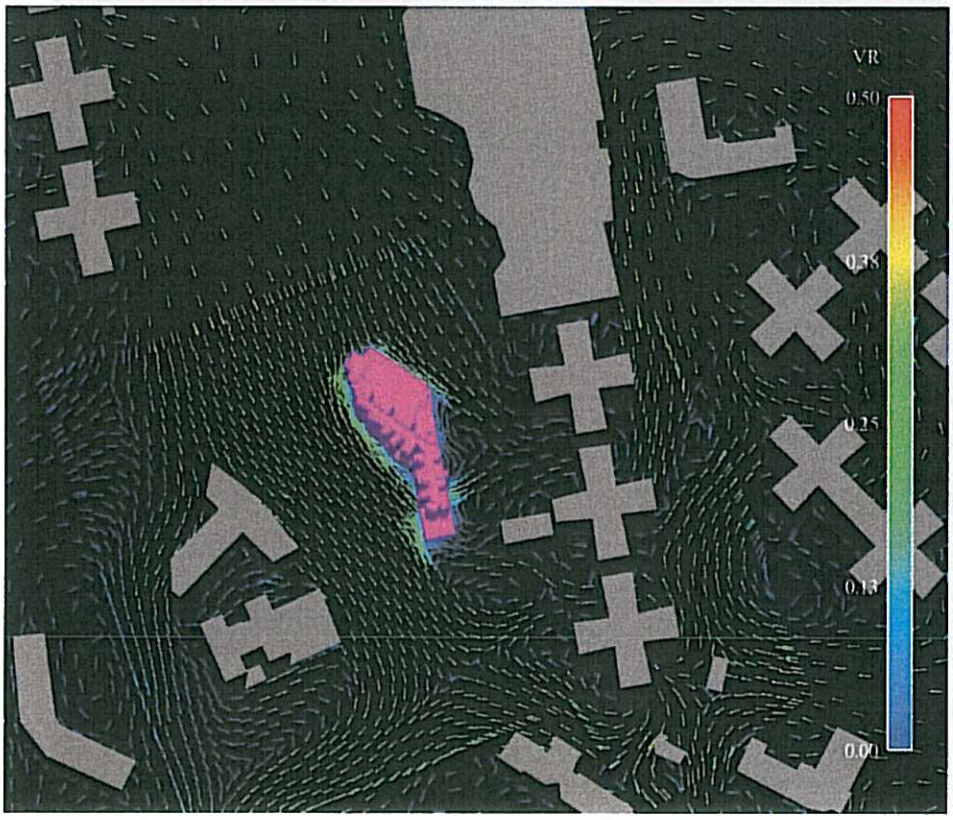


Figure B 12 Proposed Scheme (E wind)

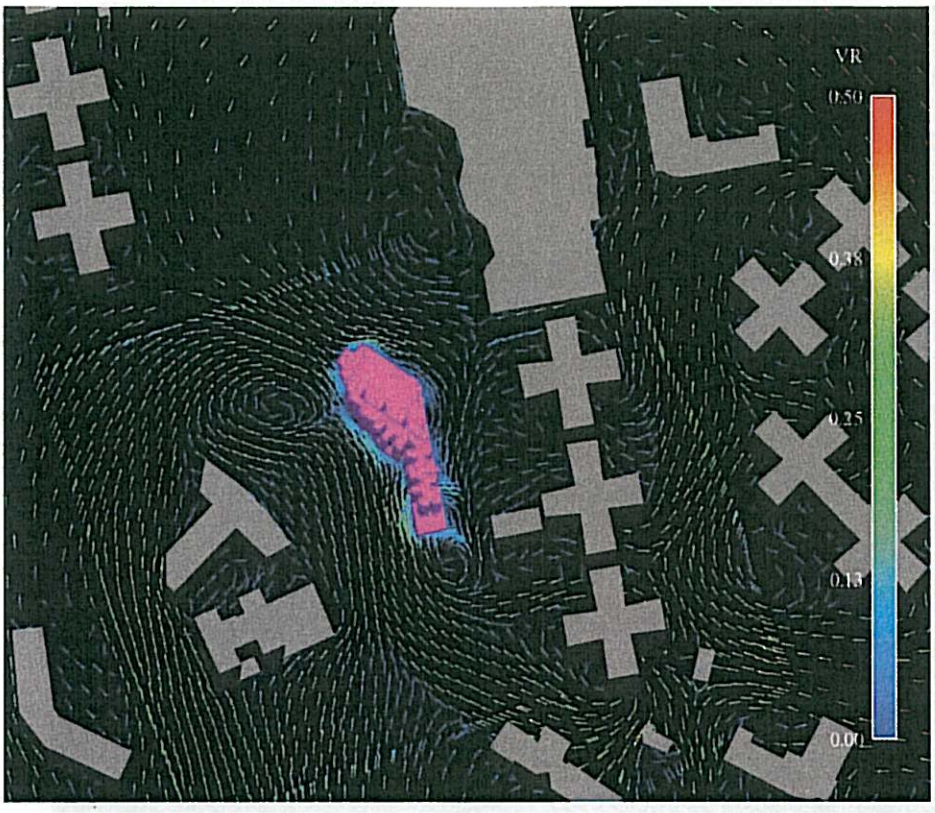


Figure B 13 Proposed Scheme (ESE wind)

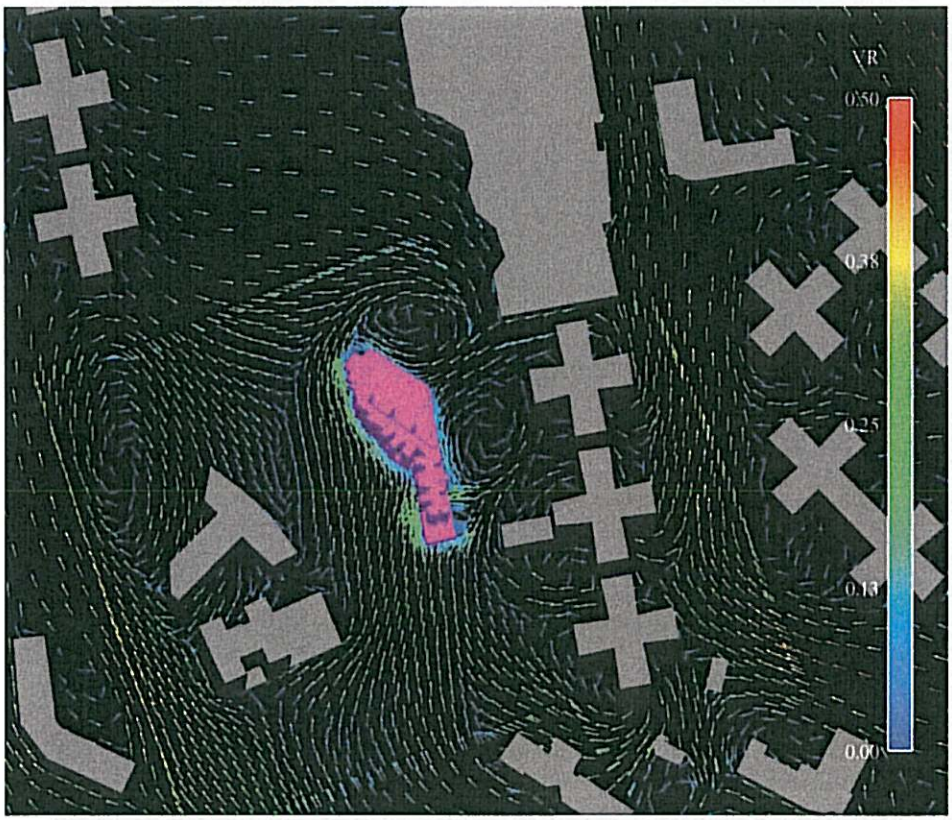


Figure B 14 Proposed Scheme (SE wind)

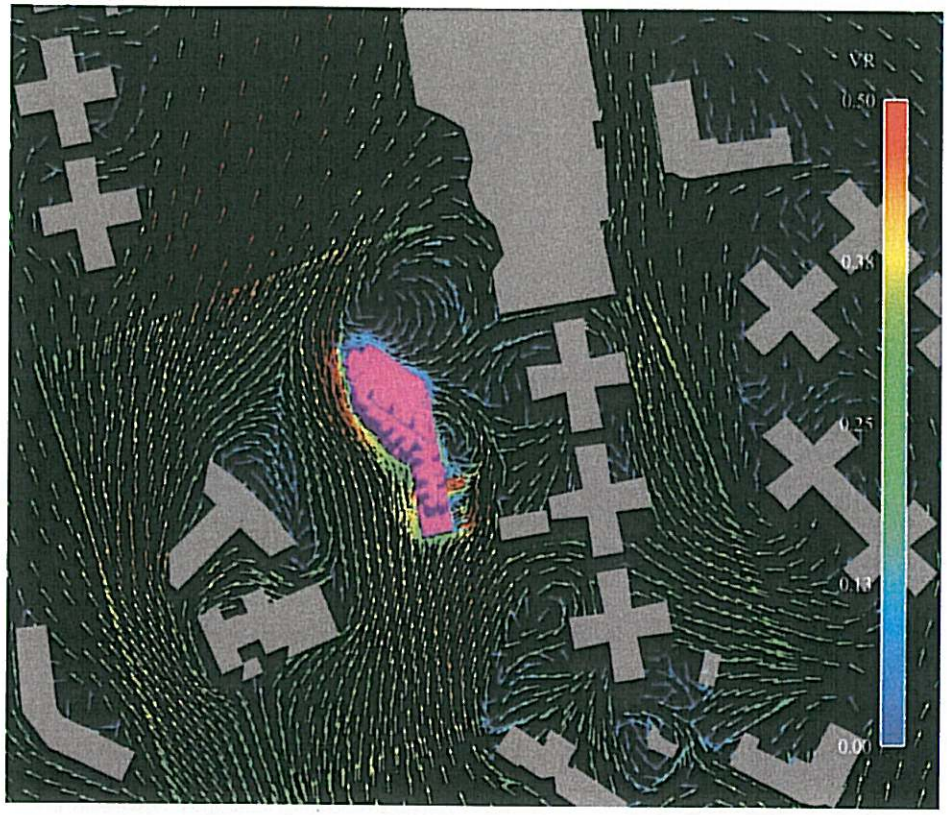


Figure B 15 Proposed Scheme (SSW wind)

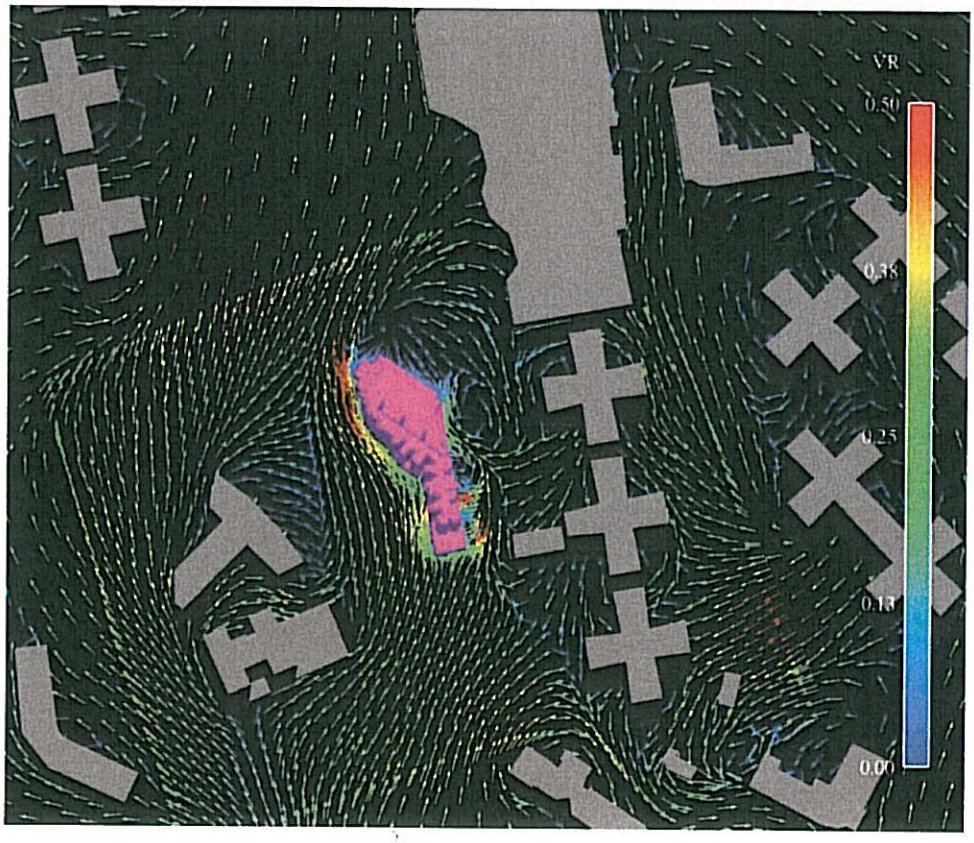


Figure B 16 Proposed Scheme (SW wind)

Appendix C

Velocity Ratio

C1 Baseline scheme

C1.1 Overall test point

	NNE	NE	ENE	E	ESE	SE	SW	SSW	Combine
Frequency	0.067	0.127	0.189	0.15	0.091	0.058	0.057	0.056	**0.795**
O1	0.14	0.12	0.04	0.04	0.05	0.09	0.35	0.33	**0.11**
O2	0.09	0.05	0.05	0.05	0.16	0.21	0.35	0.36	**0.12**
O3	0.20	0.28	0.34	0.24	0.03	0.15	0.28	0.42	**0.25**
O4	0.15	0.06	0.25	0.28	0.04	0.06	0.06	0.03	**0.15**
O5	0.12	0.20	0.28	0.32	0.10	0.08	0.06	0.07	**0.20**
O6	0.19	0.28	0.28	0.32	0.16	0.09	0.29	0.28	**0.25**
O7	0.21	0.27	0.25	0.29	0.21	0.22	0.30	0.40	**0.26**
O8	0.19	0.20	0.19	0.22	0.10	0.17	0.35	0.40	**0.21**
O9	0.09	0.21	0.29	0.26	0.16	0.09	0.42	0.52	**0.25**
O10	0.08	0.22	0.32	0.30	0.14	0.09	0.34	0.45	**0.25**
O11	0.11	0.15	0.29	0.15	0.16	0.21	0.40	0.31	**0.21**
O12	0.13	0.13	0.29	0.17	0.16	0.21	0.40	0.30	**0.22**
O13	0.12	0.18	0.30	0.12	0.03	0.18	0.39	0.34	**0.20**
O14	0.06	0.07	0.18	0.05	0.03	0.08	0.16	0.07	**0.09**
O15	0.11	0.06	0.21	0.09	0.12	0.08	0.20	0.08	**0.13**
O16	0.15	0.09	0.16	0.08	0.05	0.16	0.30	0.49	**0.15**
O17	0.11	0.14	0.17	0.17	0.12	0.13	0.23	0.29	**0.16**
O18	0.08	0.16	0.24	0.13	0.16	0.17	0.32	0.06	**0.17**
O19	0.17	0.20	0.16	0.06	0.13	0.05	0.13	0.25	**0.14**
O20	0.17	0.19	0.13	0.04	0.09	0.10	0.31	0.22	**0.14**
O21	0.14	0.08	0.12	0.06	0.09	0.12	0.25	0.40	**0.13**
O22	0.04	0.09	0.07	0.04	0.04	0.05	0.35	0.20	**0.09**
O23	0.07	0.08	0.09	0.04	0.04	0.06	0.19	0.15	**0.08**
O24	0.06	0.04	0.09	0.03	0.01	0.04	0.23	0.12	**0.07**
O25	0.03	0.04	0.04	0.06	0.05	0.11	0.18	0.14	**0.07**
O26	0.06	0.09	0.10	0.11	0.11	0.07	0.10	0.11	**0.10**
O27	0.05	0.04	0.08	0.10	0.23	0.23	0.20	0.18	**0.12**

C1.2 Perimeter test point

	NNE	NE	ENE	E	ESE	SE	SW	SSW	Combine
Frequency	0.067	0.127	0.189	0.15	0.091	0.058	0.057	0.056	**0.795**
P1	0.13	0.20	0.32	0.29	0.12	0.16	0.26	0.31	**0.24**
P2	0.15	0.15	0.31	0.23	0.09	0.22	0.37	0.31	**0.23**
P3	0.17	0.09	0.28	0.19	0.08	0.18	0.44	0.37	**0.21**
P4	0.15	0.16	0.24	0.15	0.06	0.06	0.27	0.09	**0.16**
P5	0.16	0.28	0.20	0.11	0.08	0.08	0.26	0.15	**0.17**
P6	0.17	0.23	0.18	0.10	0.11	0.06	0.31	0.21	**0.17**
P7	0.15	0.15	0.18	0.11	0.12	0.07	0.42	0.28	**0.17**
P8	0.20	0.12	0.12	0.08	0.12	0.18	0.55	0.52	**0.18**
P9	0.22	0.10	0.04	0.03	0.10	0.22	0.50	0.61	**0.16**
P10	0.20	0.08	0.04	0.03	0.08	0.18	0.41	0.55	**0.13**
P11	0.09	0.05	0.15	0.17	0.11	0.24	0.44	0.54	**0.18**
P12	0.12	0.11	0.19	0.27	0.20	0.26	0.43	0.51	**0.23**
P13	0.06	0.03	0.20	0.26	0.21	0.25	0.45	0.51	**0.22**
P14	0.11	0.13	0.20	0.25	0.23	0.30	0.54	0.60	**0.25**
P15	0.20	0.23	0.22	0.27	0.23	0.29	0.48	0.55	**0.28**

C2 Proposed scheme

C2.1 Overall test point

	NNE	NE	ENE	E	ESE	SE	SW	SSW	Combine
Frequency	0.067	0.127	0.189	0.15	0.091	0.058	0.057	0.056	**0.795**
O1	0.06	0.02	0.04	0.09	0.07	0.10	0.34	0.32	**0.10**
O2	0.05	0.05	0.09	0.09	0.17	0.22	0.34	0.36	**0.14**
O3	0.08	0.34	0.36	0.24	0.12	0.18	0.23	0.31	**0.26**
O4	0.09	0.22	0.27	0.30	0.17	0.09	0.09	0.05	**0.20**
O5	0.23	0.23	0.30	0.35	0.07	0.11	0.05	0.07	**0.22**
O6	0.26	0.21	0.28	0.34	0.10	0.10	0.25	0.22	**0.24**
O7	0.21	0.15	0.22	0.30	0.19	0.23	0.27	0.34	**0.23**
O8	0.11	0.07	0.17	0.21	0.11	0.17	0.32	0.37	**0.18**
O9	0.07	0.18	0.29	0.29	0.10	0.18	0.43	0.50	**0.25**
O10	0.13	0.16	0.32	0.32	0.14	0.17	0.41	0.47	**0.26**
O11	0.07	0.08	0.27	0.18	0.07	0.16	0.18	0.18	**0.16**
O12	0.11	0.15	0.26	0.19	0.11	0.18	0.06	0.04	**0.16**
O13	0.07	0.10	0.29	0.15	0.04	0.16	0.30	0.35	**0.18**
O14	0.04	0.06	0.16	0.07	0.04	0.09	0.13	0.16	**0.09**
O15	0.11	0.13	0.18	0.13	0.11	0.11	0.10	0.11	**0.13**
O16	0.25	0.31	0.11	0.08	0.11	0.14	0.26	0.48	**0.19**
O17	0.22	0.26	0.09	0.20	0.13	0.11	0.22	0.42	**0.19**
O18	0.17	0.12	0.20	0.15	0.16	0.16	0.31	0.13	**0.17**
O19	0.14	0.24	0.18	0.07	0.09	0.05	0.19	0.08	**0.14**
O20	0.21	0.25	0.14	0.04	0.09	0.10	0.11	0.09	**0.13**
O21	0.20	0.20	0.14	0.05	0.04	0.05	0.28	0.38	**0.15**
O22	0.07	0.10	0.05	0.04	0.03	0.05	0.35	0.22	**0.09**
O23	0.11	0.15	0.06	0.06	0.06	0.07	0.20	0.22	**0.10**
O24	0.10	0.09	0.07	0.02	0.01	0.03	0.19	0.14	**0.07**
O25	0.04	0.07	0.04	0.09	0.06	0.10	0.16	0.31	**0.09**
O26	0.05	0.09	0.07	0.11	0.09	0.07	0.10	0.18	**0.09**
O27	0.04	0.09	0.14	0.12	0.24	0.21	0.19	0.22	**0.14**

C2.2 Perimeter test point

	NNE	NE	ENE	E	ESE	SE	SW	SSW	Combine
Frequency	0.067	0.127	0.189	0.15	0.091	0.058	0.057	0.056	**0.795**
P1	0.24	0.26	0.25	0.24	0.13	0.23	0.42	0.33	**0.25**
P2	0.21	0.26	0.21	0.20	0.17	0.07	0.08	0.07	**0.18**
P3	0.13	0.21	0.22	0.21	0.14	0.13	0.07	0.09	**0.17**
P4	0.07	0.14	0.21	0.20	0.07	0.13	0.06	0.14	**0.15**
P5	0.07	0.07	0.22	0.19	0.05	0.09	0.15	0.12	**0.14**
P6	0.13	0.26	0.13	0.05	0.06	0.10	0.21	0.23	**0.14**
P7	0.21	0.34	0.06	0.04	0.07	0.09	0.32	0.09	**0.14**
P8	0.25	0.37	0.03	0.11	0.07	0.12	0.39	0.37	**0.18**
P9	0.23	0.34	0.05	0.05	0.07	0.06	0.33	0.23	**0.15**
P10	0.27	0.33	0.04	0.02	0.09	0.21	0.54	0.61	**0.20**
P11	0.04	0.03	0.05	0.05	0.10	0.10	0.17	0.21	**0.07**
P12	0.17	0.07	0.07	0.28	0.22	0.26	0.37	0.42	**0.19**
P13	0.14	0.10	0.04	0.25	0.19	0.26	0.42	0.46	**0.19**
P14	0.04	0.13	0.04	0.28	0.14	0.19	0.37	0.39	**0.17**
P15	0.08	0.12	0.04	0.31	0.14	0.20	0.45	0.48	**0.19**