Civil Engineering and Development Department

Contract No. ST/2013/01

Sha Tin New Town Stage II
Road T3 and Associated Roadworks –
Remaining Works, Phase III

Final Traffic Noise Monitoring Report
(Version 4.0)

November 2017

Certified By _____

(Environmental Team Leader)

REMARKS:

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

CINOTECH accepts no responsibility for changes made to this report by third parties.

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1. INTRODUCTION

1.1 "Road T3 and Associated Roadworks – Remaining Works, Phase III" (hereinafter referred to as "the Project") is the remaining works of "Sha Tin New Town – Stage II, Trunk Road T3 (Tai Wai)" which is a Schedule 2 Designated Project under the Environmental Impact Assessment Ordinance (Cap. 449). An Environmental Impact Assessment (EIA) Report was approved by the Environmental Protection Department (EPD) on March 1998 and the latest version Environmental Permit (EP) No. EP-135/2002/J was issued on 6 February 2014.

1.2 The Project includes the construction of an outstanding 1-lane slip road in the original Road T3 Scheme under the Environmental Permit EP-135/2002/J issued for Schedule 2 Project 'Sha Tin New Town, Stage II - Road T3 and associated roadworks' on 6 February 2014. The site layout plan is shown in **Figure 1**.

1.3 The major construction works of the Project was commenced on 19th June 2014 and the Environmental Monitoring and Audit (EM&A) Programme for Construction Phase was completed on 31 January 2016 on which all traffic lanes are open to normal traffic already. According to the EM&A Manual for the Project, operational traffic noise monitoring should be carried out twice at 6-month intervals within the first year upon completion of the Project. Therefore, the first monitoring was carried out in July 2016 while the 2nd monitoring was carried out in February 2017, which is slightly delayed due to liaison with premises owners of the monitoring stations, especially those at village houses who are difficult to contact with.

1.4 Cinotech Consultants Limited was commissioned by the Civil Engineering and Development Department (CEDD) (hereinafter called the "Project Proponent") as the Environmental Team (ET) to undertake the EM&A works for this Project.

1.5 In accordance with the requirements in the EM&A Manual and the approved Traffic Noise Monitoring Plan (TNMP) (version 5.0), operational traffic noise monitoring was conducted to assess the accuracy of traffic noise predictions by comparing the project noise impact predictions with the actual impacts.

1.6 This is the Final Traffic Noise Monitoring Report which aims to presents the monitoring results and findings of the mentioned operational traffic noise monitoring. Detail explanation will be given to justify if any discrepancies were observed. This monitoring report also presents the monitoring locations, methodology of noise monitoring including noise measurement procedures, traffic counts and speed checks, and methodology of comparison with the predicted levels under full provision of the mitigation measures.

1.7 This report is submitted to EPD but delayed mainly due to the following technical reasons:

- Vast amount of traffic flow monitoring data which requires lengthy processing and checking before addressing comments for verification of this report; and
- Technical difficulty in preparation, calibration, handling the noise modeling tool, which caused up to a few months of processing time.

2. TRAFFIC NOISE MONITORING

Monitoring Requirements

2.1 Traffic noise levels were measured in terms of $L_{10(30min)}$ dB(A) over three half hour periods at each of the selected representative noise monitoring points during peak hours twice (once at morning traffic peak hour, i.e. 07:30-09:30, & once at evening traffic peak hour, i.e. 17:30-19:30) on normal weekdays at 6-month intervals within the first year upon completion of the Project.

2.2 Other information such as traffic flow counts, percentage of heavy vehicles (all vehicles with an unladen weight exceeding 1525 kg) and average speed were also obtained during the same measurement period for both far-side and near-side of the road.

Monitoring Locations

2.3 Operational traffic noise monitoring was conducted at six monitoring stations as listed in **Table 2.1**. **Figures 2.1-2.4** show the location of monitoring stations.

Table 2.1 Noise Monitoring Stations

Monitoring Stations	Location	Floor	Monitoring Stations in accordance with EM&A Manual	Alternative Monitoring Stations (Floor)	Type of Measurement
N1	Tai Wai New Village – Block 20	1/F	Yes	N/A	Free field
		3/F	Yes	N/A	Free field
N2	Holford Garden – Fook Hey Court	10/F	No	Holford Garden – Fook Hey Court (1/F)	Free field
		20/F	No	Holford Garden –Fook Hey Court, Roof Top (31/F)	Façade
N3	38-46 Chik Chuen Street	3/F	No	N3(A) - 60 – 68 Chik Chuen Street – Tai Wai Cambridge Nursing Home (3/F)	Façade
		5/F	No	N3(A) - 60 – 68 Chik Chuen Street – Tai Wai Cambridge Nursing Home (5/F)	Façade
N4	Mei Fung House	10/F	Yes	N/A	Free field
		20/F	Yes	N/A	Façade
N5	27 Tung Lo Wan Village	1/F	Yes	N/A	Free field
		3/F	Yes	N/A	Free field
N6	Scenery Court Block 1	10/F	No	Scenery Court, Podium near Block 1 (4/F) (Refer to Section 2.4 – 2.5)	Façade
		23/F	No	Scenery Court Block 1, Roof Top (24/F)	Façade

Remarks:
- "Yes" - Monitoring station is the same as that stated in EM&A Manual
- No - Monitoring station is not the same as that stated in EM&A Manual. Request for carrying monitoring works at the monitoring stations stated in EM&A Manual was rejected by owner of premise.
- N/A - No alternative monitoring station is required.
- Alternative Monitoring Stations proposed are chosen based on the criteria stated in section 2.4 below.

2.4 As shown in Table 2.1, access to N2 (10/F and 20/F), N3 (3/F and 5/F) and N6 (10/F and 23/F) was denied. Therefore, monitoring was carried out on alternative monitoring stations N2 (1/F and 31/F), N3(A) (3/F and 5/F) and N6 (4/F and 24/F) respectively. The alternative monitoring locations were chosen based on the following criteria listed in the EM&A Manual:-

- alternative location shall be similarly exposed to potential noise impacts;
- it shall be close to the noise sensitive receivers; and
- it shall be located so as to cause minimal disturbance to the occupants.

Monitoring Equipment

2.5 Sound level meters, which comply with the International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1) specifications and acoustic calibrators, were used for the monitoring. The accuracy of the sound level meter was checked using an acoustic calibrator generating a known sound pressure level at a known frequency, immediately prior to and following each noise measurement. Measurements were accepted as valid only if the calibration level before and after the noise measurement are accurate to be within 1.0 dB(A).

2.6 **Table 2.2** summarizes the noise monitoring equipment model being used in the measurement. Copies of calibration certificates of noise monitoring equipments are shown in **Appendix A**.

Table 2.2 Noise Monitoring Equipment

Equipment	Model and Make	Quantity
July 2016		
Integrating Sound Level Meter	SVAN 955	2
	SVAN 957	3
Acoustical Calibrator	B&K 4231	1
February 2017		
Integrating Sound Level Meter	SVAN 955 / 977	2
	BSWA801	2
Acoustical Calibrator	SV30A	2

Monitoring Parameters, Frequency and Duration

2.7 Noise measurements each of 30 minutes duration (3 occasions per monitoring event) were carried out by the ET at each of the selected representative noise monitoring points during peak hours twice (once at morning traffic peak hour, i.e. 07:30-09:30, & once at evening traffic peak hour, i.e. 17:30-19:30) on normal weekdays at 6-month intervals within the first year upon completion of the Project.

Monitoring Methodology and QA/QC Procedures

2.8 The monitoring station was normally be at a point 1m from the exterior of the sensitive receivers building façade and be at a position 1.2m above the ground.

2.9 For free field measurement, the meter as positioned away from any nearby reflective surfaces. All records for free field noise levels was adjusted with a correction of +3 dB(A).

2.10 The battery condition was checked to ensure the correct functioning of the meter.

2.11 Parameters such as frequency weighting, the time weighting and the measurement time was set as follows:

- frequency weighting : A
- time weighting : Fast
- time measurement : 30 minutes

2.12 Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94 dB at 1000 Hz. If the difference in the calibration level before and after measurement was more than 1 dB(A), the measurement would be considered invalid and repeat of noise measurement would be required after re-calibration or repair of the equipment.

2.13 The wind speed was frequently checked with the portable wind meter.

2.14 At the end of the monitoring period, the $L_{10\ (30\text{-}min)}$ was recorded. A sample of field record sheet of this monitoring is shown in **Appendix G** in this Report.

2.15 Noise measurement was paused during periods of high intrusive noise if possible and observation was recorded when intrusive noise is not avoided.

2.16 Noise monitoring was cancelled in the presence of fog, rain, and wind with a steady speed exceeding 5 m/s, or wind with gusts exceeding 10 m/s.

Maintenance and Calibration

2.17 The microphone head of the sound level meter and calibrator was cleaned with soft cloth regularly.

2.18 The sound level meter and calibrator was checked and calibrated at yearly intervals

Traffic Counts

2.19 During the noise measurement, a concurrent traffic counts with percentage heavy vehicles was conducted for the road carriageways and the nearby existing road network. The average vehicle speed was estimated by timing a vehicle to travel a certain distant. The traffic count location and traffic flow directions are shown in **Appendix C**.

3. RESULTS AND OBSERVATIONS

3.1 The operational traffic noise monitoring for the Project was conducted on 15, 22 and 29 July 2016; and 23, 28 February and 2 March 2017. The detailed monitoring schedule is shown in **Appendix B**. Photos of monitoring locations are shown in **Appendix D**.

3.2 Summary of monitoring results (noise levels during peak hour) are tabulated in **Table 3.1.** Detailed noise monitoring results are presented in **Appendix F**.

Table 3.1 Summary of Traffic Noise Monitoring Results

Monitoring Stations	Floor	Time (AM / PM)	Noise Level during peak hour (*)	
			1st Traffic Noise Monitoring	2nd Traffic Noise Monitoring
N1 - Tai Wai New Village – Block 20	1/F (#)	AM	67.6	64.3
		PM	63.0	65.6
	3/F (#)	AM	70.1	67.3
		PM	67.3	66.6
N2 - Holford Garden – Fook Hey Court	1/F (#)	AM	65.3	67.4
		PM	63.3	61.2
	31/F	AM	67.3	66.8
		PM	67.5	66.1
N3(A) - 60 – 68 Chik Chuen Street – Tai Wai Cambridge Nursing Home	3/F	AM	73.8	64.9
		PM	73.3	69.8
	5/F	AM	70.4	67.9
		PM	69.9	69.4
N4 - Mei Fung House	10/F (#)	AM	67.9	68.7
		PM	69.2	66.3
	20/F	AM	67.2	66.5
		PM	67.5	65.9
N5- 27 Tung Lo Wan Village	1/F (#)	AM	69.8	71.4
		PM	71.0	71.0
	3/F (#)	AM	71.5	71.4
		PM	72.4	70.4
N6 - Scenery Court Block 1	4/F	AM	69.5	78.5
		PM	66.0	72.9
	24/F	AM	71.6	72.8
		PM	71.6	72.3

Remarks:
(*) Measured noise levels during peak hour in $L_{10\ (1\text{-hour})}$ is represented by the highest level of set of 30-minutes L_{10} dB(A) recorded during peak hour of noise monitoring. Refer to Appendix F.
(#) Noise levels measured by free field measurement have been adjusted with a correction of +3 dB(A) in accordance with Section 2.9 above.

3.3 Other information including traffic count and percentage heavy vehicle are summarized in **Appendix C**.

3.4 During the traffic noise monitoring, no traffic jam was observed on the road carriageways and the nearby existing road network.

4. ASSESSMENT WORK

4.1 The measured noise levels from current traffic data is adjusted by using the calibrated in house noise model according to the detailed procedures presented in **Appendix E**.

4.2 By using the EIA traffic data in the calibrated model, the predicted noise levels of Year 2022 can be calculated and adjusted when the differences between measured and calculated noise levels for current traffic data was added. The predicted noise levels for Year 2022 are shown in **Table 4.1**.

Table 4.1 Measured Noise Level (Adjusted) [(a)]

Monitoring Station	Floor	Environmental Review Report Prediction, dB(A)		Measured Noise Level (Adjusted), dB(A)			
		Noise Level if Unmitigated	Predicted Noise Level with Mitigation Measures	1st Traffic Noise Monitoring, AM	1st Traffic Noise Monitoring, PM	2nd Traffic Noise Monitoring, AM	2nd Traffic Noise Monitoring, PM
N2	31/F	81 [(b)]	70 [(b)]	69	70	69	68
N4	10/F	78	68	69	70	69	66
	20/F	79	68	69	69	67	66
N5	1/F	76	73	69	71	71	71
	3/F	78	69	71		71	70
N6	4/F (Podium)	80 [(c)]	76 [(c)]	70	67		74
	24/F	79 [(c)]	77 [(c)]	72	73	73	73

Remarks:

(a) Invalid results are not presented in this Table. Refer to sections below for justifications.

(b) Predicted noise level at Holford Garden – Fook Hey Court (20/F) in the Environmental Review Report will be adopted for alternative monitoring station Holford Garden – Fook Hey Court, Roof Top (31/F).

(c) Predicted noise level at Scenery Court Block 1 (1/F and 23/F) in the Environmental Review Report will be adopted for alternative monitoring stations Scenery Court Block 1, Podium (4/F) and Roof Top (24/F) respectively.

4.3 It is observed that the Measured Noise Level (Adjusted) are generally in line with the predicted mitigated noise levels in the Environmental Review Report (ERR), based on the following reasons:

- Measured noise levels and the ERR predictions indicated that high traffic noise levels to be occurred at monitoring stations N6. High noise levels under full provision of the mitigation measures was predicted in the ERR at both floors of N6 (76 and 77 dB(A)). This has been indicated by the adjusted measured noise levels in this monitoring programme of which the highest noise levels recorded were at N6; and
- At other monitoring stations, such as 31/F of N2, N4 and 3/F of N5 adjusted measured noise levels are similar to the predicted noise levels in ERR.

In addition, it is observed that Measured Noise Level (Adjusted) at 1/F of N5 and N6 shown in Table 4.1 are below their respective predicted noise levels in ERR. It is considered that actual traffic noise impacts at these NSRs are well-controlled by the noise mitigation measures proposed in the ERR.

Discrepancies against ERR and Justifications for invalid results

4.4 As stated in section 7.2.14 of the Environmental Review Report, in case that discrepancies are observed from monitoring results, explanation should be given to justify these discrepancies.

4.5 According to observations during on-site monitoring, factors or constraints leading to deviation of adjusted measured noise level at Station N1, N2 (1/F), N3(A), N5 (3/F) and N6 (4/F) from the prediction in the ERR are presented below. It is considered that Measured Noise Level at the following monitoring stations are not representative of the actual road traffic noise situation and thus considered invalid. They are discarded for comparison with the Predicted Traffic Noise Level in 2022 in the ERR.

Station N1

4.6 Monitoring station N1 is a three-storey village house and therefore monitoring at both levels (1/F and 3/F) were set up near to or at ground levels. The part of Trunk Road T3 in vicinity of N1 is provided with full enclosure (except only one lane which is provided with 1.5m cantilever noise barriers) as shown in Photo 1.

4.7 Therefore, major noise source observed during monitoring was dominated by those at ground level instead of road traffic of Road T3. These noise source at ground level includes non-uniform vehicle speed due to carpark in vicinity as shown in Photo 2.

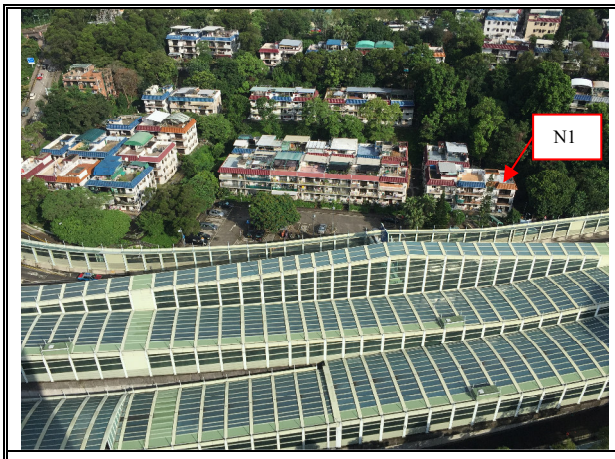


Photo 1 – Noise Mitigation Measures near N1

Photo 2 - Carpark near N1

Station N2 (1/F only)

4.8 1/F of Station N2 is located at a height of 13 mPD while the part of Road T3 in vicinity has been provided with full enclosure noise barrier reaching a height of 25 mPD (Photo 3). Therefore, major noise source during monitoring was not Road T3 traffic noise.

4.9 Based on site observation, noise monitoring were influenced by construction noise from construction site of other Project which is in close vicinity of the monitoring station (Photo 4).

	
Photo 3 – Full Enclosure near 1/F of Station N2	Photo 4 – Nearby Construction Site of Other Projects

Station N3(A)

4.10 Both monitoring floors 3/F and 5/F (19.6 and 25.6 mPD respectively) are positioned below Road T3 in vicinity, which is a flyover with the top of noise barrier reaching a height of about 30 mPD (Photo 5).

4.11 Based on site observation, major noise source during monitoring was dominated by road traffic of Tai Po Road (Tai Wai), which is closer to N3(A), instead of that of Road T3. In addition, noise levels collected at N3(A) were also influenced by non-uniform vehicle speed due to bus stop in vicinity (Photo 6).

	
Photo 5 – Position of N3 and Road T3	Photo 6 - Bus Stop near N3

Station N5 (3/F) (1st Monitoring, PM only)

4.12 The adjusted measured noise level in the afternoon of the 1st monitoring was largely deviated from the ERR prediction. Similar to station N3(A), it is considered that the monitoring is influenced by non-uniform vehicle speed due to bus stop and carpark in vicinity.

Photo 7 - Bus stop and Carpark near N5

Station N6 (4/F) (2nd Monitoring, AM only)

4.13 According to observations made during the morning of 2nd monitoring, it is observed that renovation works on Podium of Scenery Court was being carried out in vicinity of the monitoring location. It is considered that the monitoring event was influenced by continuous construction noise recorded. For other monitoring at Station N6, 4/F, no major construction noise was observed and the results remain unaffected.

Photo 8 - Renovation Works on Podium of Scenery Court

5. CONCLUSION

5.1 The construction work of "Road T3 and Associated Roadworks – Remaining Works, Phase III" commenced in June 2014 and completed on 31 January 2016 on which all traffic lanes are open to normal traffic already.. In accordance with the EM&A Manual of the Project, the two operational traffic noise monitoring for the Project was conducted in July 2016 and February 2017.

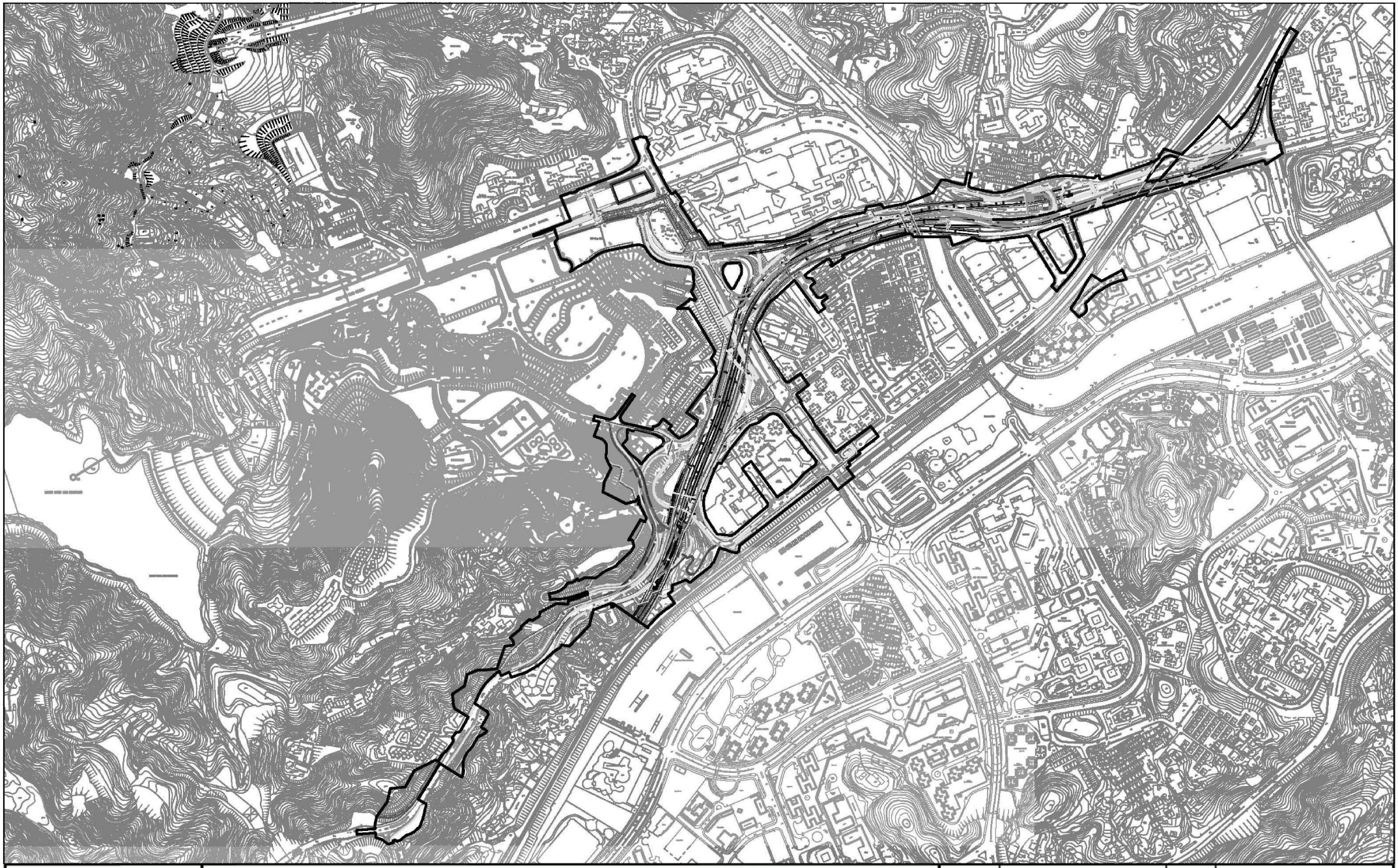
5.2 The comparison between the measured and predicted noise levels at the noise monitoring station under full provision of the mitigation measures was included in the report.

5.3 The noise levels differences between the measured and predicted noise levels in ERR arise from differences in traffic flow. The calibrated predicted traffic noise levels were conversed by the in-house noise model.

5.4 It is observed that the Measured Noise Level (Adjusted) are generally in line with the predicted mitigated noise levels in the ERR and Measured Noise Level (Adjusted) shown in Table 4.1 are below or comparable (within 1 dB(A)) to their respective predicted noise levels in ERR. Therefore, the traffic noise predictions in ERR are considered to be accurate and noise mitigation measures are considered to be effective.

5.5 For the other monitoring stations including N1, N2 (1/F), N3(A), N5 (3/F) and N6 (4/F), factors or constraints, which may lead to deviation of Measured Noise Level (Adjusted) from road traffic noise prediction in the ERR, are observed on-site during noise monitoring. The Measured Noise Level (Adjusted) collected are considered as invalid and discarded for comparison with the Predicted Traffic Noise Level in 2022 in the ERR.

FIGURE(S)



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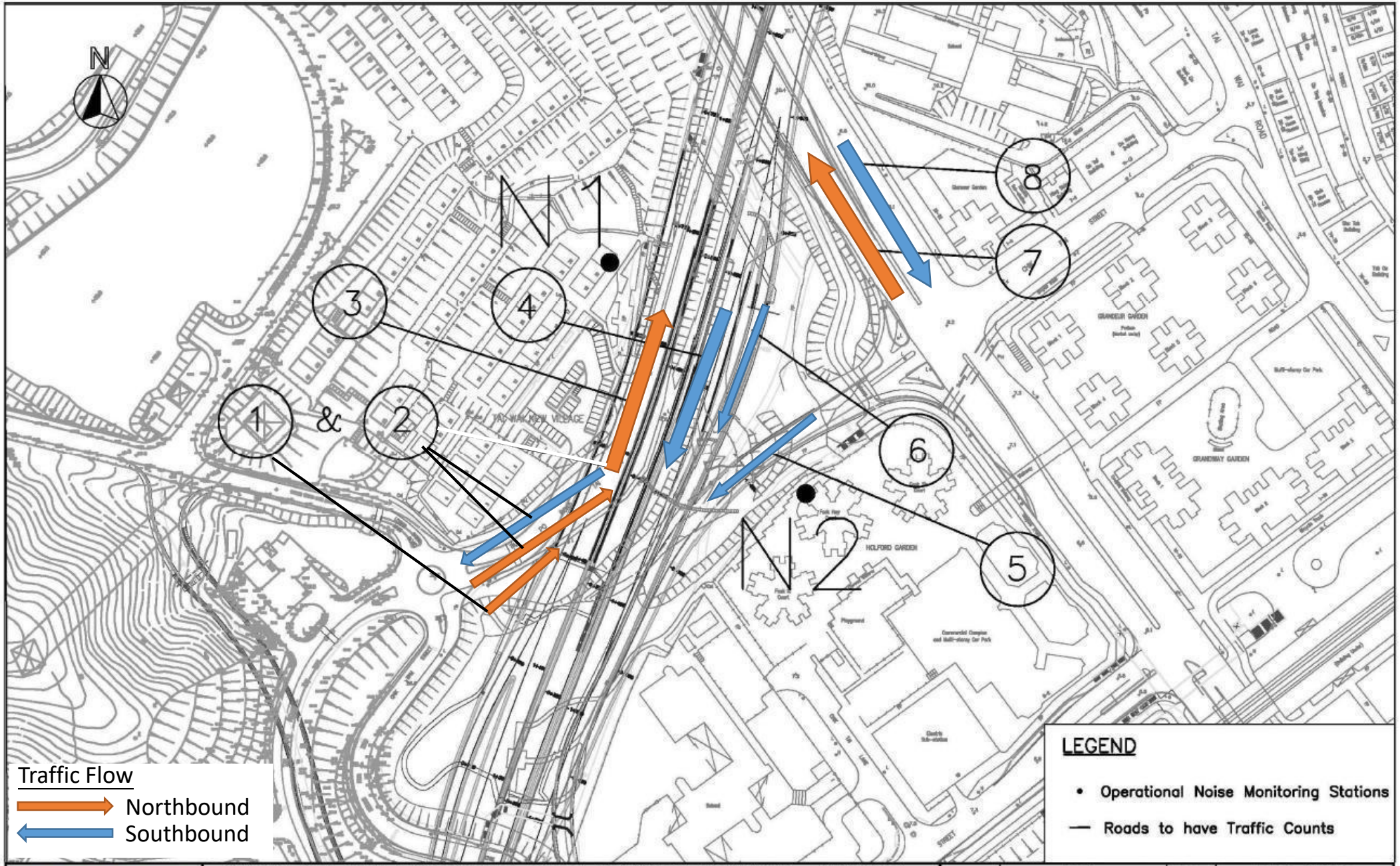
SHA TIN NEW TOWN STAGE II ROAD T3 AND ASSOCIATED ROADWORKS – REMAINING WORKS, PHASE III

THE SITE LAYOUT PLAN OF ROAD T3 PROJECT

SCALE	NTS	DATE	FEB 2015
CHECK	IT	DRAWN	HW
Project No.	MA13058	FIGURE NO. 1	REV –



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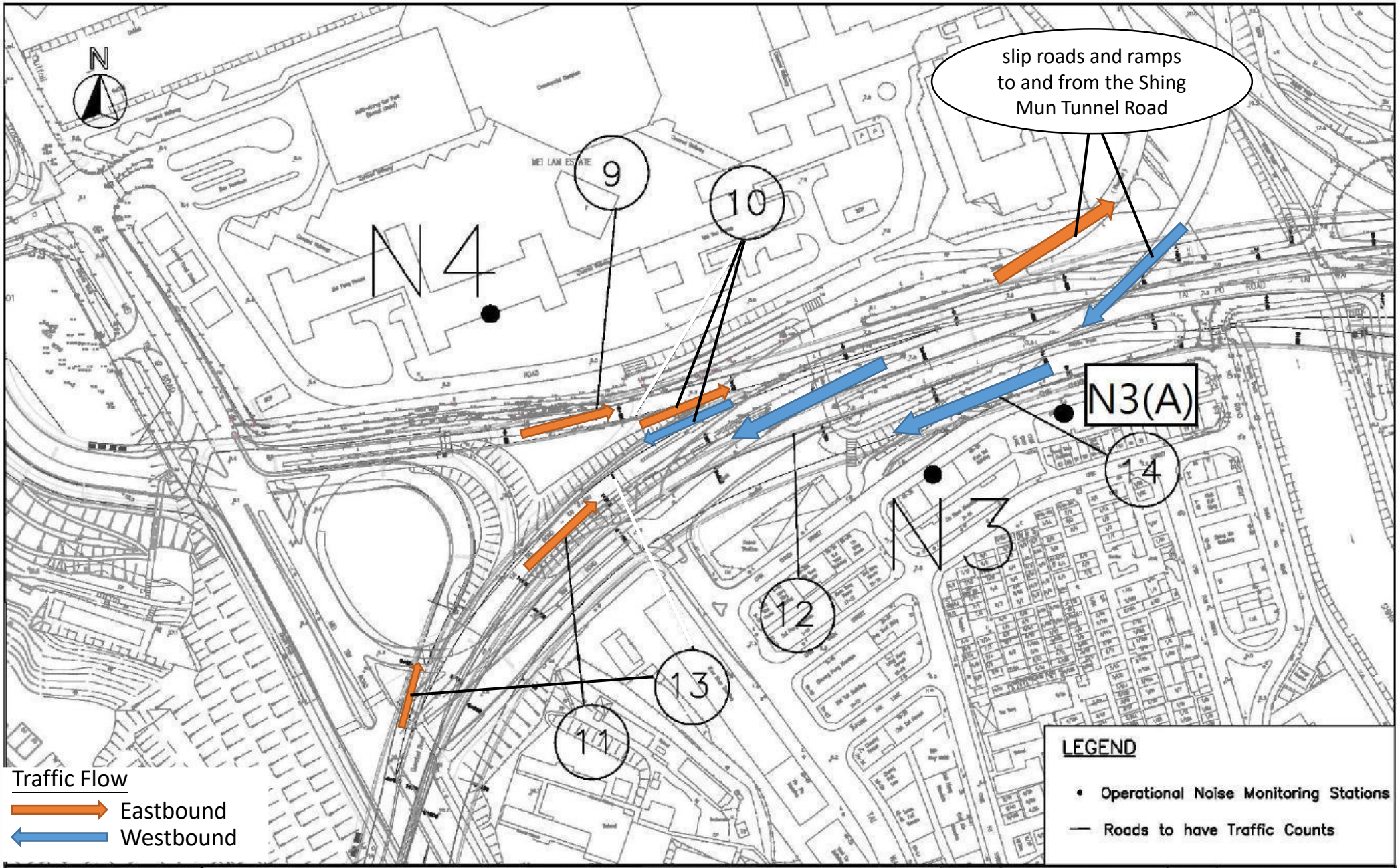
SHA TIN NEW TOWN STAGE II ROAD T3 AND ASSOCIATED ROADWORKS – REMAINING WORKS, PHASE III

LOCATIONS OF THE OPERATIONAL NOISE MONITORING STATIONS (N1 & N2)

SCALE	1:50	DATE	FEB 2015
CHECK	IT	DRAWN	HW
Project No	MA13058	FIGURE NO.	2.1
		REV	–



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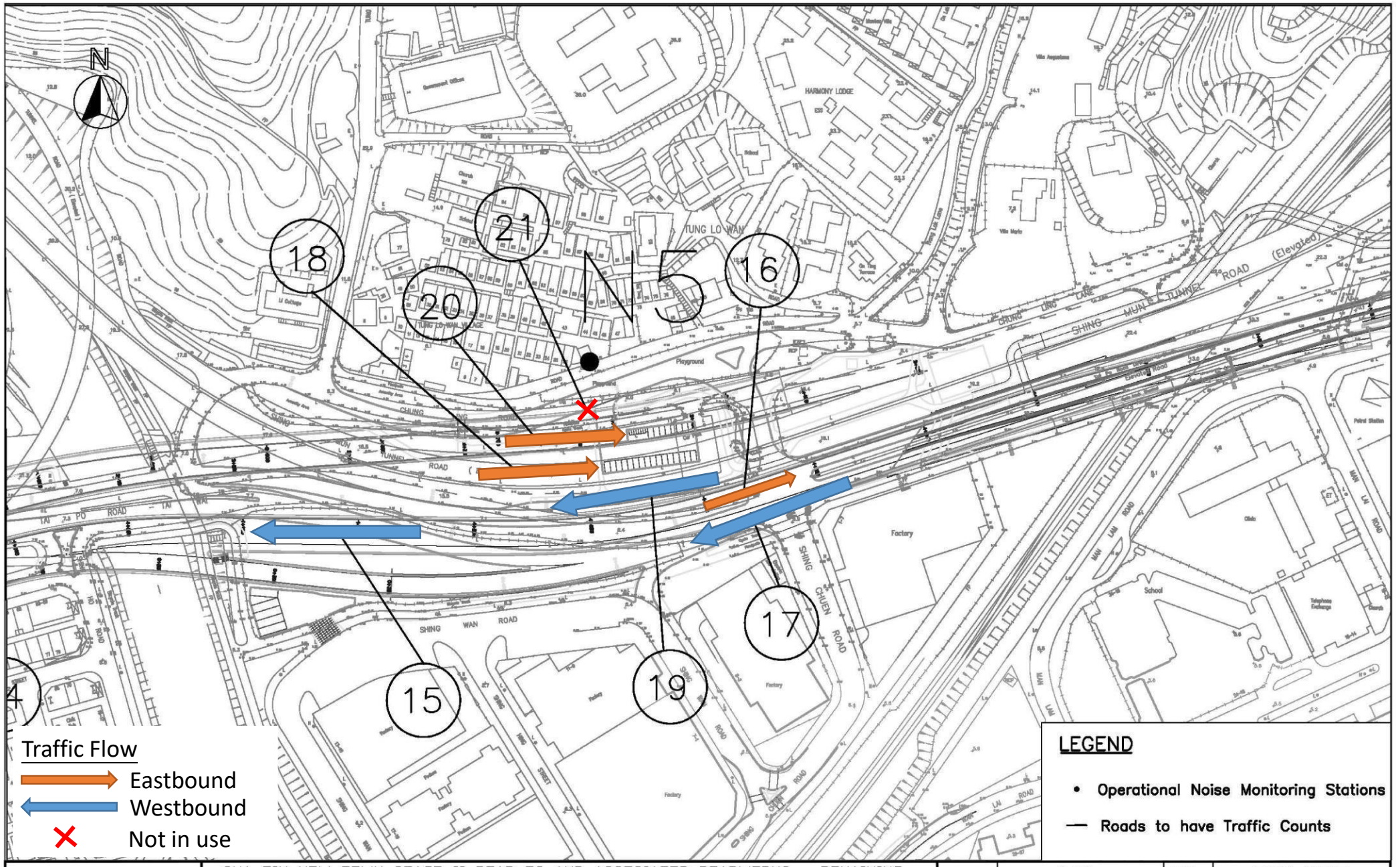
SHA TIN NEW TOWN STAGE II ROAD T3 AND ASSOCIATED ROADWORKS - REMAINING WORKS, PHASE III

LOCATIONS OF THE OPERATIONAL NOISE MONITORING STATIONS (N3 & N4)

SCALE	1:50	DATE	FEB 2015
CHECK	IT	DRAWN	HW
Project No.	MA13058	FIGURE NO.	2.2
		REV	-



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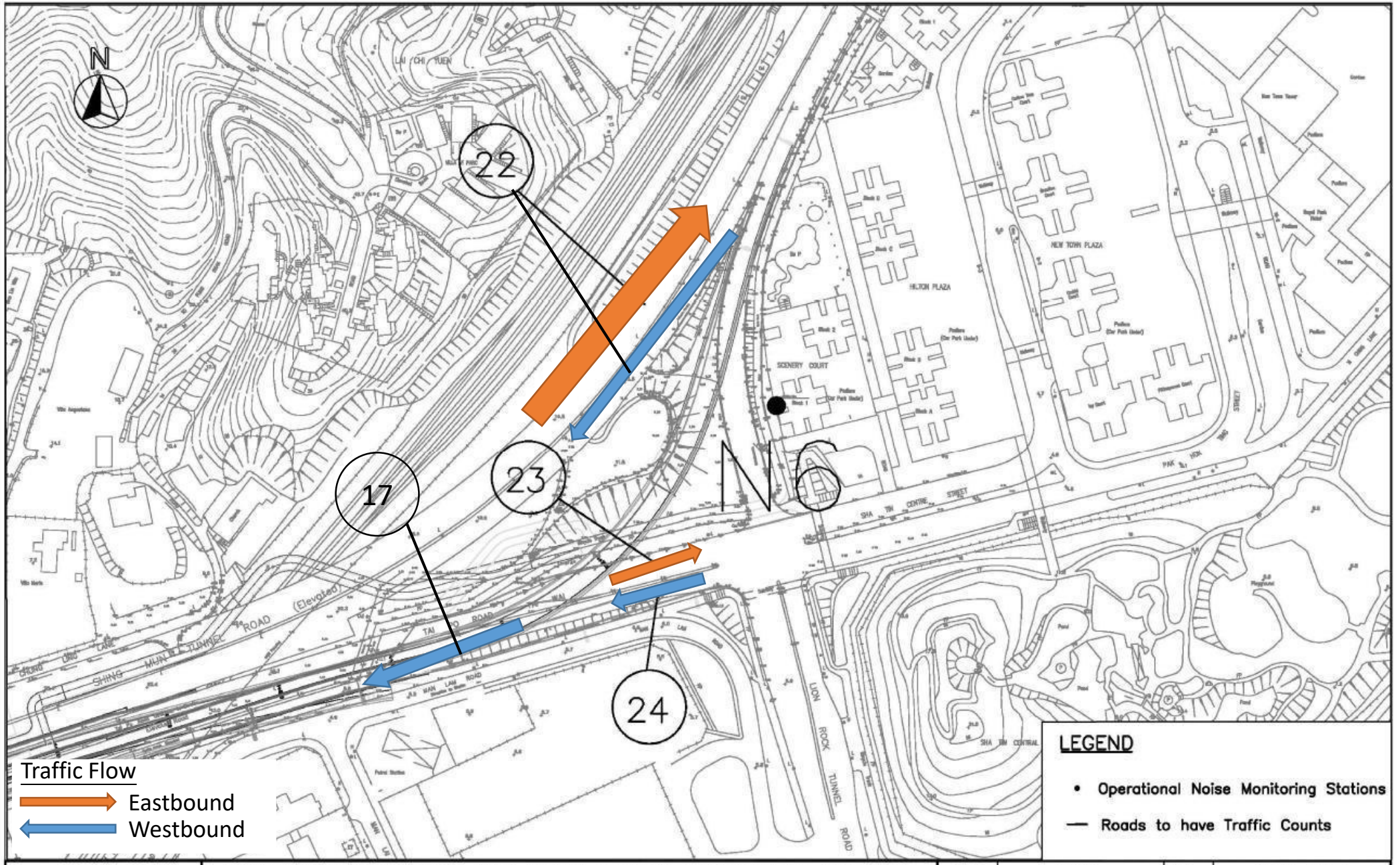
SHA TIN NEW TOWN STAGE II ROAD T3 AND ASSOCIATED ROADWORKS – REMAINING WORKS, PHASE III

LOCATIONS OF THE OPERATIONAL NOISE MONITORING STATIONS (N5)

SCALE	1:50	DATE	FEB 2015
CHECK	IT	DRAWN	HW
Project No.	MA13058	FIGURE NO. 2.3	REV –



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SHA TIN NEW TOWN STAGE II ROAD T3 AND ASSOCIATED ROADWORKS – REMAINING WORKS, PHASE III

LOCATIONS OF THE OPERATIONAL NOISE MONITORING STATIONS (N6)

SCALE	1:50	DATE	FEB 2015
CHECK	IT	DRAWN	HW
Project No.	MA13058	FIGURE NO.	2.4
		REV	–

APPENDIX A
COPIES OF CALIBRATION CERTIFICATES

WELLAB 匯力 Testing & Research

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
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Shatin, NT, Hong Kong

Test Report No.:	C/N/150918/1
Date of Issue:	2015-09-21
Date Received:	2015-09-18
Date Tested:	2015-09-18
Date Completed:	2015-09-21
Next Due Date:	2016-09-20
Page:	1 of 1

ATTN: **Mr. W.K. Tang**

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 955
Serial No.	: 12553
Microphone No.	: 35222
Equipment No.	: N-08-02

Test conditions:

Room Temperatre	: 25 degree Celsius
Relative Humidity	: 58%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
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ATTN: **Mr. W.K. Tang**

Test Report No.:	C/N/150918/2
Date of Issue:	2015-09-21
Date Received:	2015-09-18
Date Tested:	2015-09-18
Date Completed:	2015-09-21
Next Due Date:	2016-09-20
Page:	1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 955
Serial No.	: 12563
Microphone No.	: 34377
Equipment No.	: N-08-03

Test conditions:

Room Temperatre	: 25 degree Celsius
Relative Humidity	: 58%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

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TEST REPORT

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Test Report No.:	C/N/150828/1
Date of Issue:	2015-08-31
Date Received:	2015-08-28
Date Tested:	2015-08-28
Date Completed:	2015-08-31
Next Due Date:	2016-08-30

ATTN: **Mr. W.K. Tang** Page: 1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 957
Serial No.	: 21455
Microphone No.	: 43730
Equipment No.	: N-08-07

Test conditions:

Room Temperatre	: 24 degree Celsius
Relative Humidity	: 58%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
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ATTN: **Mr. W.K. Tang**

Test Report No.:	C/N/151127/1
Date of Issue:	2015-11-30
Date Received:	2015-11-27
Date Tested:	2015-11-27
Date Completed:	2015-11-30
Next Due Date:	2016-11-29
Page:	1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 957
Serial No.	: 23853
Microphone No.	: 48530
Equipment No.	: N-08-10

Test conditions:

Room Temperatre	: 24 degree Celsius
Relative Humidity	: 62%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

WELLAB LIMITED
Rms 816, 1516 & 1701, Technology Park,
18 On Lai Street, Shatin, N.T, Hong Kong.
Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/151127/3
Date of Issue:	2015-11-30
Date Received:	2015-11-27
Date Tested:	2015-11-27
Date Completed:	2015-11-30
Next Due Date:	2016-11-29

ATTN: **Mr. W.K. Tang**

Page: 1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 957
Serial No.	: 23851
Microphone No.	: 48532
Equipment No.	: N-08-12

Test conditions:

Room Temperatre	: 24 degree Celsius
Relative Humidity	: 62%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

Patrick Tse

PATRICK TSE
Laboratory Manager

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/151106/1
Date of Issue:	2015-11-07
Date Received:	2015-11-06
Date Tested:	2015-11-06
Date Completed:	2015-11-07
Next Due Date:	2016-11-06

ATTN: **Mr. W.K. Tang**

Page: 1 of 1

Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: Brüel & Kjær
Model No.	: 4231
Serial No.	: 2326353
Equipment No.	: N-02-01

Test conditions:

Room Temperatre	: 23 degree Celsius
Relative Humidity	: 56 %

Methodology:

The sound calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

Patrick Tse

PATRICK TSE
Laboratory Manager

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Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/160917C
Date of Issue:	2016-09-19
Date Received:	2016-09-17
Date Tested:	2016-09-17
Date Completed:	2016-09-19
Next Due Date:	2017-09-18
Page:	1 of 1

ATTN: **Mr. W.K. Tang**

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 955
Serial No.	: 12563
Microphone No.	: 34377
Equipment No.	: N-08-03

Test conditions:

Room Temperatre	: 24 degree Celsius
Relative Humidity	: 57%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

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Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

ATTN: **Mr. W.K. Tang**

Test Report No.:	C/N/160919
Date of Issue:	2016-09-21
Date Received:	2016-09-19
Date Tested:	2016-09-19
Date Completed:	2016-09-21
Next Due Date:	2017-09-20
Page:	1 of 1

Certificate of Calibration

Item for calibration:

Description	: 'SVANTEK' Integrating Sound Level Meter
Manufacturer	: SVANTEK
Model No.	: SVAN 977
Serial No.	: 45467
Microphone No.	: 62838
Equipment No.	: N-08-13

Test conditions:

Room Temperatre	: 22 degree Celsius
Relative Humidity	: 56%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

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Laboratory Manager

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Tel: 2898 7388 Fax: 2898 7076
Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/161216
Date of Issue:	2016-12-19
Date Received:	2016-12-16
Date Tested:	2016-12-16
Date Completed:	2016-12-19
Next Due Date:	2017-12-15
Page:	1 of 1

ATTN: **Mr. W. K. Tang**

Certificate of Calibration

Item for calibration:

Description	: Sound & Vibration Analyser
Manufacturer	: BSWA
Model No.	: BSWA 801
Serial No.	: 35924
Equipment No.	: N-13-01

Test conditions:

Room Temperatre	: 21 degree Celsius
Relative Humidity	: 60 %

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

Patrick Tse

PATRICK TSE
Laboratory Manager

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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

ATTN: **Mr. W. K. Tang**

Test Report No.:	C/N/161216A
Date of Issue:	2016-12-19
Date Received:	2016-12-16
Date Tested:	2016-12-16
Date Completed:	2016-12-19
Next Due Date:	2017-12-15
Page:	1 of 1

Certificate of Calibration

Item for calibration:

Description	: Sound & Vibration Analyser
Manufacturer	: BSWA
Model No.	: BSWA 801
Serial No.	: 35921
Equipment No.	: N-13-02

Test conditions:

Room Temperatre	: 23 degree Celsius
Relative Humidity	: 56%

Test Specifications:

Performance checking at 94 and 114 dB

Methodology:

In-house method, according to manufacturer instruction manual

Results:

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

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Website: www.wellab.com.hk

TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/160930B
Date of Issue:	2016-10-03
Date Received:	2016-09-30
Date Tested:	2016-09-30
Date Completed:	2016-10-03
Next Due Date:	2017-10-02

ATTN: **Mr. W.K. Tang**

Page: 1 of 1

Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: SVANTEK
Model No.	: SV30A
Serial No.	: 24791
Equipment No.	: N-09-04

Test conditions:

Room Temperatre	: 25 degree Celsius
Relative Humidity	: 60%

Methodology:

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
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TEST REPORT

APPLICANT: **Cinotech Consultants Limited**
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong

Test Report No.:	C/N/160930C
Date of Issue:	2016-10-03
Date Received:	2016-09-30
Date Tested:	2016-09-30
Date Completed:	2016-10-03
Next Due Date:	2017-10-02

ATTN: **Mr. W.K. Tang**

Page: 1 of 1

Item for calibration:

Description	: Acoustical Calibrator
Manufacturer	: SVANTEK
Model No.	: SV30A
Serial No.	: 24780
Equipment No.	: N-09-05

Test conditions:

Room Temperatre	: 25 degree Celsius
Relative Humidity	: 60%

Methodology:

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard(s) and instrument(s) which are recommended by the manufacturer, or equivalent.

Results:

Sound Pressure Level (1kHz)	Measured SPL	Tolerance
At 94 dB SPL	94.0	94.0 ± 0.1 dB
At 114 dB SPL	114.0	114.0 ± 0.1 dB

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**

PATRICK TSE
Laboratory Manager

APPENDIX B
TRAFFIC NOISE MONITORING SCHEDULE

Contract No. ST/2013/01 Sha Tin New Town Stage II Road T3 and Associated Roadworks – Remaining Works, Phase III
Traffic Noise Monitoring Schedule in July 2016

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1-Jul	2-Jul
3-Jul	4-Jul	5-Jul	6-Jul	7-Jul	8-Jul	9-Jul
10-Jul	11-Jul	12-Jul	13-Jul	14-Jul	15-Jul	16-Jul
					Noise Monitoring at N1, N2	
17-Jul	18-Jul	19-Jul	20-Jul	21-Jul	22-Jul	23-Jul
					Noise Monitoring at N3(A), N4	
24-Jul	25-Jul	26-Jul	27-Jul	28-Jul	29-Jul	30-Jul
					Noise Monitoring at N5, N6	
31-Jul						

*Traffic Noise Monitoring will be conducted over three half hour periods during peak hours twice
(once at morning traffic peak hour, i.e. 07:30-09:30, & once at evening traffic peak hour, i.e. 17:30-19:30)

Noise Monitoring Stations

N1 - Tai Wai New Village –Block 20 (1/F and 3/F)
N2 - Holford Garden – Fook Hey Court (1/F and 31/F)
N3(A) - 60 – 68 Chik Chuen Street –Tai Wai Cambridge Nursing Home (3/F and 5/F)
N4 - Mei Fung House (10/F and 20/F)
N5 - 27 Tung Lo Wan Village (1/F and 3/F)
N6 - Scenery Court Block 1 (4/F and 24/F)

Contract No. ST/2013/01 Sha Tin New Town Stage II Road T3 and Associated Roadworks – Remaining Works, Phase III
Traffic Noise Monitoring Schedule in February - March 2017

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1-Feb	2-Feb	3-Feb	4-Feb
5-Feb	6-Feb	7-Feb	8-Feb	9-Feb	10-Feb	11-Feb
12-Feb	13-Feb	14-Feb	15-Feb	16-Feb	17-Feb	18-Feb
19-Feb	20-Feb	21-Feb	22-Feb	23-Feb	24-Feb	25-Feb
				Noise Monitoring at N3(A), N4		
26-Feb	27-Feb	28-Feb	1-Mar	2-Mar	3-Mar	4-Mar
		Noise Monitoring at N5, N6		Noise Monitoring at N1, N2		

*Traffic Noise Monitoring will be conducted over three half hour periods during peak hours twice
(once at morning traffic peak hour, i.e. 07:30-09:30, & once at evening traffic peak hour, i.e. 17:30-19:30)

Noise Monitoring Stations

N1 - Tai Wai New Village –Block 20 (1/F and 3/F)
N2 - Holford Garden – Fook Hey Court (1/F and 31/F)
N3(A) - 60 – 68 Chik Chuen Street –Tai Wai Cambridge Nursing Home (3/F and 5/F)
N4 - Mei Fung House (10/F and 20/F)
N5 - 27 Tung Lo Wan Village (1/F and 3/F)
N6 - Scenery Court Block 1 (4/F and 24/F)

APPENDIX C
TRAFFIC COUNT DATA AND
PERCENTAGE OF HEAVY VEHICLE

Appendix C - Summary of Traffic Count and Percentage of Heavy Vehicle

Date : 15 July 2016 for Road Segments in vicinity of Monitoring Stations N1, N2

Bold, Italic and Underline – Peak Hour

Road Segment No. / Road Name	Time	Northbound(1)				Southbound(1)			
		No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)	No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)
1 / Northbound ramp approaching Tsing Sha Highway	07:30 - 07:45	11	53	17	47	-	-	-	-
	07:45 - 08:00	8	35	19	45	-	-	-	-
	08:00 - 08:15	5	24	17	45	-	-	-	-
	08:15 – 08:30	10	54	16	45	-	-	-	-
	08:30 – 08:45	13	50	21	47	-	-	-	-
	08:45 – 09:00	13	11	54	45	-	-	-	-
	Peak Hour flow (veh/h)	**41**	**139**	**27%**	**46**	**-**	**-**	**-**	**-**
	17:30 – 17:45	5	13	28	47	-	-	-	-
	17:45 – 18:00	3	16	16	51	-	-	-	-
	18:00 – 18:15	3	18	14	32	-	-	-	-
	18:15 – 18:30	2	9	18	45	-	-	-	-
	18:30 – 18:45	5	15	25	45	-	-	-	-
	18:45 – 19:00	2	5	29	42	-	-	-	-
	Peak Hour flow (veh/h)	**12**	**47**	**22%**	**41**	**-**	**-**	**-**	**-**
2 / Ying Wan Lane	07:30 - 07:45	1	2	33	45	1	2	33	40
	07:45 - 08:00	1	1	50	41	0	2	0	40
	08:00 - 08:15	0	1	0	50	0	3	0	45
	08:15 – 08:30	0	4	0	33	1	3	25	45
	08:30 – 08:45	0	1	0	41	0	1	0	45
	08:45 – 09:00	0	0	0	45	0	1	0	36
	Peak Hour flow (veh/h)	**0**	**6**	**0%**	**42**	**1**	**8**	**6%**	**42**
	17:30 – 17:45	0	1	0	28	0	1	0	45
	17:45 – 18:00	0	1	0	45	0	3	0	28
	18:00 – 18:15	0	2	0	34	0	2	0	40
	18:15 – 18:30	1	4	20	34	0	2	0	34
	18:30 – 18:45	0	1	0	50	0	2	0	45
	18:45 – 19:00	0	2	0	33	0	1	0	28
	Peak Hour flow (veh/h)	**1**	**9**	**3%**	**38**	**0**	**7**	**0%**	**37**
3 / Tsing Sha	07:30 - 07:45	35	77	31	65	-	-	-	-

Road Segment No. / Road Name	Time	Northbound(1)				Southbound(1)			
		No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)	No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)
Highway	07:45 - 08:00	37	98	27	68	-	-	-	-
	08:00 - 08:15	50	97	34	65	-	-	-	-
	08:15 – 08:30	39	99	28	68	-	-	-	-
	08:30 – 08:45	43	82	34	69	-	-	-	-
	08:45 – 09:00	55	82	40	69	-	-	-	-
	Peak Hour flow (veh/h)	**187**	**360**	**34%**	**68**	**-**	**-**	**-**	**-**
	17:30 – 17:45	52	141	27	65	-	-	-	-
	17:45 – 18:00	48	146	25	61	-	-	-	-
	18:00 – 18:15	56	179	24	78	-	-	-	-
	18:15 – 18:30	28	198	12	73	-	-	-	-
	18:30 – 18:45	43	186	19	69	-	-	-	-
	18:45 – 19:00	14	49	22	65	-	-	-	-
	Peak Hour flow (veh/h)	**141**	**612**	**19%**	**71**	**-**	**-**	**-**	**-**
3a / Ramp from Tsing Sha Highway to Tai Po Road	07:30 - 07:45	-	-	-	-	35	167	17	65
	07:45 - 08:00	-	-	-	-	46	182	20	65
	08:00 - 08:15	-	-	-	-	40	157	20	65
	08:15 – 08:30	-	-	-	-	36	148	20	53
	08:30 – 08:45	-	-	-	-	37	137	21	65
	08:45 – 09:00	-	-	-	-	19	139	12	53
	Peak Hour flow (veh/h)	**-**	**-**	**-**	**-**	**132**	**581**	**18%**	**59**
	17:30 – 17:45	-	-	-	-	45	171	21	65
	17:45 – 18:00	-	-	-	-	47	179	21	65
	18:00 – 18:15	-	-	-	-	42	164	20	58
	18:15 – 18:30	-	-	-	-	32	154	17	65
	18:30 – 18:45	-	-	-	-	35	148	19	72
	18:45 – 19:00	-	-	-	-	60	129	32	65
	Peak Hour flow (veh/h)	**-**	**-**	**-**	**-**	**169**	**595**	**22 %**	**65**
4 / Tsing Sha Highway	07:30 - 07:45	-	-	-	-	151	470	24	71
	07:45 - 08:00	-	-	-	-	167	424	28	71
	08:00 - 08:15	-	-	-	-	168	406	29	71
	08:15 – 08:30	-	-	-	-	147	361	29	63
	08:30 – 08:45	-	-	-	-	163	292	36	75
	08:45 – 09:00	-	-	-	-	160	240	40	63

Road Segment No. / Road Name	Time	Northbound(1)				Southbound(1)			
		No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)	No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)
	Peak Hour flow (veh/h)	**-**	**-**	**-**	**-**	**638**	**1299**	**34%**	**68**
	17:30 – 17:45	-	-	-	-	102	247	29	85
	17:45 – 18:00	-	-	-	-	101	245	29	67
	18:00 – 18:15	-	-	-	-	97	258	27	79
	18:15 – 18:30	-	-	-	-	88	278	24	79
	18:30 – 18:45	-	-	-	-	79	267	23	77
	18:45 – 19:00	-	-	-	-	102	237	30	80
	Peak Hour flow (veh/h)	**-**	**-**	**-**	**-**	**366**	**1040**	**26%**	**79**
5 / Southbound ramp approaching Tsing Sha Highway	07:30 - 07:45	-	-	-	-	13	8	62	41
	07:45 - 08:00	-	-	-	-	11	14	44	33
	08:00 - 08:15	-	-	-	-	14	6	70	33
	08:15 – 08:30	-	-	-	-	12	10	55	33
	08:30 – 08:45	-	-	-	-	12	11	52	33
	08:45 – 09:00	-	-	-	-	16	15	52	36
	Peak Hour flow (veh/h)	**-**	**-**	**-**	**-**	**54**	**42**	**57%**	**34**
	17:30 – 17:45	-	-	-	-	2	18	10	31
	17:45 – 18:00	-	-	-	-	3	17	15	41
	18:00 – 18:15	-	-	-	-	4	15	21	36
	18:15 – 18:30	-	-	-	-	2	22	8	41
	18:30 – 18:45	-	-	-	-	1	18	5	36
	18:45 – 19:00	-	-	-	-	2	16	11	38
	Peak Hour flow (veh/h)	**-**	**-**	**-**	**-**	**9**	**71**	**11%**	**38**
6 / Tsing Sha Highway	07:30 - 07:45	-	-	-	-	8	49	14	69
	07:45 - 08:00	-	-	-	-	6	43	12	70
	08:00 - 08:15	-	-	-	-	5	37	12	72
	08:15 – 08:30	-	-	-	-	8	33	20	69
	08:30 – 08:45	-	-	-	-	11	22	33	55
	08:45 – 09:00	-	-	-	-	4	20	17	66
	Peak Hour flow (veh/h)	**-**	**-**	**-**	**-**	**28**	**112**	**20%**	**65**
	17:30 – 17:45	-	-	-	-	26	28	48	69
	17:45 – 18:00	-	-	-	-	11	40	22	72
	18:00 – 18:15	-	-	-	-	25	40	38	69

Road Segment No. / Road Name	Time	Northbound(1)				Southbound(1)			
		No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)	No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)
	18:15 – 18:30	-	-	-	-	11	28	28	69
	18:30 – 18:45	-	-	-	-	8	46	15	76
	18:45 – 19:00	-	-	-	-	14	57	20	63
	Peak Hour flow (veh/h)	**-**	**-**	**-**	**-**	**58**	**171**	**25%**	**69**
7 / Mei Tin Road	07:30 - 07:45	94	67	58	44	-	-	-	-
	07:45 - 08:00	61	80	43	44	-	-	-	-
	08:00 - 08:15	73	69	51	44	-	-	-	-
	08:15 – 08:30	53	72	42	47	-	-	-	-
	08:30 – 08:45	45	78	37	50	-	-	-	-
	08:45 – 09:00	55	73	43	54	-	-	-	-
	Peak Hour flow (veh/h)	**226**	**292**	**43%**	**49**	**-**	**-**	**-**	**-**
	17:30 – 17:45	78	84	48	50	-	-	-	-
	17:45 – 18:00	71	75	49	49	-	-	-	-
	18:00 – 18:15	59	76	44	51	-	-	-	-
	18:15 – 18:30	67	72	48	54	-	-	-	-
	18:30 – 18:45	69	84	45	44	-	-	-	-
	18:45 – 19:00	52	82	39	39	-	-	-	-
	Peak Hour flow (veh/h)	**247**	**314**	**44%**	**47**	**-**	**-**	**-**	**-**
8 / Mei Tin Road	07:30 - 07:45	-	-	-	-	81	91	47	46
	07:45 - 08:00	-	-	-	-	74	107	41	46
	08:00 - 08:15	-	-	-	-	79	112	41	52
	08:15 – 08:30	-	-	-	-	73	128	36	52
	08:30 – 08:45	-	-	-	-	87	163	35	46
	08:45 – 09:00	-	-	-	-	85	141	38	47
	Peak Hour flow (veh/h)	**-**	**-**	**-**	**-**	**324**	**544**	**38%**	**49**
	17:30 – 17:45	-	-	-	-	76	117	39	46
	17:45 – 18:00	-	-	-	-	91	101	47	49
	18:00 – 18:15	-	-	-	-	79	147	35	44
	18:15 – 18:30	-	-	-	-	95	142	40	49
	18:30 – 18:45	-	-	-	-	72	135	35	49
	18:45 – 19:00	-	-	-	-	76	122	38	49
	Peak Hour flow (veh/h)	**-**	**-**	**-**	**-**	**322**	**546**	**37%**	**48**

Note:
[1] – As the road segments are located between two monitoring stations, there are no clear distinction between far side and near side of the roads. Therefore, traffic count data are presented in eastbound and westbound of the road segments.

Date : 22 July 2016 for Road Segments in vicinity of Monitoring Stations N3(A), N4

Bold, Italic and Underline – Peak Hour

Road Segment No.	Time	Eastbound[1]				Westbound[1]			
		No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)	No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)
9 / Eastbound ramp approaching Tsing Sha Highway	07:30 - 07:45	15	39	28	43	-	-	-	-
	07:45 - 08:00	19	42	31	44	-	-	-	-
	08:00 - 08:15	18	40	31	45	-	-	-	-
	08:15 – 08:30	14	31	31	44	-	-	-	-
	08:30 – 08:45	16	32	33	47	-	-	-	-
	08:45 – 09:00	17	35	33	38	-	-	-	-
	Peak Hour flow (veh/h)	**65**	**138**	**32%**	**43**	**-**	**-**	**-**	**-**
	17:30 – 17:45	10	26	28	45	-	-	-	-
	17:45 – 18:00	13	28	32	45	-	-	-	-
	18:00 – 18:15	8	31	21	44	-	-	-	-
	18:15 – 18:30	7	30	19	40	-	-	-	-
	18:30 – 18:45	11	29	28	39	-	-	-	-
	18:45 – 19:00	9	27	25	38	-	-	-	-
	Peak Hour flow (veh/h)	**35**	**117**	**23%**	**40**	**-**	**-**	**-**	**-**
10 / Tai Po Road (Tai Wai)[2]	07:30 - 07:45	19	65	23	32	15	46	25	32
	07:45 - 08:00	23	45	34	35	10	43	19	36
	08:00 - 08:15	15	57	21	32	22	38	37	33
	08:15 – 08:30	15	43	26	32	22	39	36	35
	08:30 – 08:45	24	45	35	29	21	42	33	35
	08:45 – 09:00	19	54	26	28	17	41	29	33
	Peak Hour flow (veh/h)	**73**	**199**	**27%**	**30**	**82**	**160**	**30%**	**34**
	17:30 – 17:45	23	50	32	34	23	36	39	40
	17:45 – 18:00	17	41	29	36	15	38	28	39
	18:00 – 18:15	20	25	44	36	17	28	38	37
	18:15 – 18:30	18	47	28	35	16	25	39	42
	18:30 – 18:45	17	35	33	36	23	39	37	37
	18:45 – 19:00	26	48	35	30	18	26	41	35
	Peak Hour flow (veh/h)	**81**	**155**	**35%**	**34**	**74**	**118**	**39%**	**38**
11 / Tsing Sha Highway	07:30 - 07:45	148	512	22	75	-	-	-	-
	07:45 - 08:00	167	634	21	87	-	-	-	-

Road Segment No.	Time	Eastbound(1)				Westbound(1)			
		No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)	No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)
	08:00 - 08:15	148	559	21	94	-	-	-	-
	08:15 – 08:30	133	539	20	62	-	-	-	-
	08:30 – 08:45	109	486	18	75	-	-	-	-
	08:45 – 09:00	153	560	21	78	-	-	-	-
	Peak Hour flow (veh/h)	**543**	**2144**	**20%**	**77**	**-**	**-**	**-**	**-**
	17:30 – 17:45	302	222	58	71	-	-	-	-
	17:45 – 18:00	436	438	50	75	-	-	-	-
	18:00 – 18:15	226	358	39	94	-	-	-	-
	18:15 – 18:30	177	319	36	87	-	-	-	-
	18:30 – 18:45	101	327	24	75	-	-	-	-
	18:45 – 19:00	99	329	23	75	-	-	-	-
	Peak Hour flow (veh/h)	**603**	**1333**	**30%**	**83**	**-**	**-**	**-**	**-**
12 / Tsing Sha Highway	07:30 - 07:45	-	-	-	-	48	111	30	75
	07:45 - 08:00	-	-	-	-	40	118	25	87
	08:00 - 08:15	-	-	-	-	56	108	34	75
	08:15 – 08:30	-	-	-	-	45	139	24	87
	08:30 – 08:45	-	-	-	-	35	120	23	75
	08:45 – 09:00	-	-	-	-	44	137	24	75
	Peak Hour flow (veh/h)	**-**	**-**	**-**	**-**	**180**	**504**	**26%**	**78**
	17:30 – 17:45	-	-	-	-	35	75	32	87
	17:45 – 18:00	-	-	-	-	56	190	23	80
	18:00 – 18:15	-	-	-	-	36	185	16	87
	18:15 – 18:30	-	-	-	-	51	148	26	80
	18:30 – 18:45	-	-	-	-	44	140	24	80
	18:45 – 19:00	-	-	-	-	42	132	24	75
	Peak Hour flow (veh/h)	**-**	**-**	**-**	**-**	**173**	**605**	**22%**	**80**
13 / Slip road from Tsing Sha Highway to Mei Tin Road	07:30 - 07:45	12	34	26	33	-	-	-	-
	07:45 - 08:00	12	50	19	34	-	-	-	-
	08:00 - 08:15	9	52	15	27	-	-	-	-
	08:15 – 08:30	7	54	11	31	-	-	-	-
	08:30 – 08:45	10	57	15	34	-	-	-	-
	08:45 – 09:00	12	49	20	31	-	-	-	-
	Peak Hour flow	**38**	**212**	**15%**	**30**	**-**	**-**	**-**	**-**

Road Segment No.	Time	Eastbound[1]				Westbound[1]			
		No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)	No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)
	(veh/h)								
	17:30 – 17:45	18	50	26	34	-	-	-	-
	17:45 – 18:00	13	66	16	33	-	-	-	-
	18:00 – 18:15	10	90	10	34	-	-	-	-
	18:15 – 18:30	8	94	8	29	-	-	-	-
	18:30 – 18:45	9	88	9	33	-	-	-	-
	18:45 – 19:00	12	140	8	34	-	-	-	-
	Peak Hour flow (veh/h)	**39**	**412**	**9%**	**32**	**-**	**-**	**-**	**-**
14 / Westbound ramp approaching Tsing Sha Highway	07:30 - 07:45	-	-	-	-	54	136	28	87
	07:45 - 08:00	-	-	-	-	61	127	32	87
	08:00 - 08:15	-	-	-	-	41	150	21	87
	08:15 – 08:30	-	-	-	-	43	139	24	67
	08:30 – 08:45	-	-	-	-	44	147	23	79
	08:45 – 09:00	-	-	-	-	58	100	37	79
	Peak Hour flow (veh/h)	**-**	**-**	**-**	**-**	**186**	**536**	**26%**	**78**
	17:30 – 17:45	-	-	-	-	25	82	23	87
	17:45 – 18:00	-	-	-	-	56	137	29	79
	18:00 – 18:15	-	-	-	-	48	134	26	79
	18:15 – 18:30	-	-	-	-	42	161	21	87
	18:30 – 18:45	-	-	-	-	41	185	18	79
	18:45 – 19:00	-	-	-	-	42	143	23	74
	Peak Hour flow (veh/h)	**-**	**-**	**-**	**-**	**173**	**623**	**22%**	**80**
Slip roads and ramps to and from the Shing Mun Tunnel Road [2]	07:30 - 07:45	10	33	23	32	16	47	25	32
	07:45 - 08:00	11	23	32	35	11	43	20	36
	08:00 - 08:15	7	29	19	32	22	39	36	33
	08:15 – 08:30	7	22	24	32	23	40	37	35
	08:30 – 08:45	12	23	34	29	21	42	33	35
	08:45 – 09:00	9	27	25	28	18	41	31	33
	Peak Hour flow (veh/h)	**35**	**101**	**26%**	**30**	**84**	**162**	**34%**	**34**
	17:30 – 17:45	11	25	31	34	23	36	39	40
	17:45 – 18:00	8	20	29	36	15	38	28	39
	18:00 – 18:15	10	13	43	36	17	28	38	37
	18:15 – 18:30	9	24	27	35	17	26	40	42

Road Segment No.	Time	Eastbound[1]				Westbound[1]			
		No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)	No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)
	18:30 – 18:45	8	17	32	36	23	39	37	37
	18:45 – 19:00	7	17	29	30	19	27	41	35
	Peak Hour flow (veh/h)	**34**	**71**	**33%**	**34**	**76**	**120**	**39%**	**38**

Note:
[1] – As the road segments are located between two monitoring stations, there are no clear distinction between far side and near side of the roads. Therefore, traffic count data are presented in eastbound and westbound of the road segments.

[2] – The slip roads and ramps to and from the Shing Mun Tunnel Road comprises 1 of 3 lanes of eastbound directions of Tai Po Road (Tai Wai) (i.e. Road Segment No. 10), and 2 of 4 lanes of westbound direction. Based on on-site observation, traffic using the slips and ramps was in proportion of lanes of Road Segment No. 10. Therefore, traffic count data of these slips and ramps are adopted from Road Segment No. 10 on proportion (i.e. one-third of eastbound direction of Road Section No. 10 and half of westbound direction of Road Section No. 10).

Date : 29 July 2016 for Road Segments in vicinity of Monitoring Stations N5, N6

Bold, Italic and Underline – Peak Hour

Road Segment No.	Time	Eastbound(1)				Westbound(1)			
		No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)	No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)
15 / Tsing Sha Highway	07:30 - 07:45	-	-	-	-	177	371	32	75
	07:45 - 08:00	-	-	-	-	113	363	24	84
	08:00 - 08:15	-	-	-	-	137	319	30	87
	08:15 – 08:30	-	-	-	-	138	324	30	77
	08:30 – 08:45	-	-	-	-	107	315	25	68
	08:45 – 09:00	-	-	-	-	129	320	29	68
	Peak Hour flow (veh/h)	**-**	**-**	**-**	**-**	**511**	**1278**	**28%**	**75**
	17:30 – 17:45	-	-	-	-	137	415	25	87
	17:45 – 18:00	-	-	-	-	104	406	20	84
	18:00 – 18:15	-	-	-	-	93	388	19	87
	18:15 – 18:30	-	-	-	-	120	396	23	72
	18:30 – 18:45	-	-	-	-	155	317	33	80
	18:45 – 19:00	-	-	-	-	106	412	20	68
	Peak Hour flow (veh/h)	**-**	**-**	**-**	**-**	**454**	**1605**	**22%**	**82**
16 / Eastbound ramp approaching Tsing Sha Highway	07:30 - 07:45	27	45	38	87	-	-	-	-
	07:45 - 08:00	26	45	37	87	-	-	-	-
	08:00 - 08:15	32	38	46	71	-	-	-	-
	08:15 – 08:30	15	45	25	72	-	-	-	-
	08:30 – 08:45	35	55	39	60	-	-	-	-
	08:45 – 09:00	38	45	46	80	-	-	-	-
	Peak Hour flow (veh/h)	**120**	**183**	**39%**	**71**	**-**	**-**	**-**	**-**
	17:30 – 17:45	30	83	27	87	-	-	-	-
	17:45 – 18:00	26	100	21	87	-	-	-	-
	18:00 – 18:15	27	106	20	80	-	-	-	-
	18:15 – 18:30	27	106	20	60	-	-	-	-
	18:30 – 18:45	22	118	16	80	-	-	-	-
	18:45 – 19:00	22	96	19	77	-	-	-	-
	Peak Hour flow (veh/h)	**110**	**395**	**25%**	**78**	**-**	**-**	**-**	**-**
17 / Tsing Sha Highway	07:30 - 07:45	-	-	-	-	114	403	22	65
	07:45 - 08:00	-	-	-	-	152	420	27	72

Road Segment No.	Time	Eastbound(1)				Westbound(1)			
		No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)	No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)
	08:00 - 08:15	-	-	-	-	162	417	28	68
	08:15 – 08:30	-	-	-	-	185	360	34	73
	08:30 – 08:45	-	-	-	-	181	357	34	67
	08:45 – 09:00	-	-	-	-	205	325	39	70
	Peak Hour flow (veh/h)	**-**	**-**	**-**	**-**	**655**	**996**	**40%**	**69**
	17:30 – 17:45	-	-	-	-	138	354	28	88
	17:45 – 18:00	-	-	-	-	137	394	26	66
	18:00 – 18:15	-	-	-	-	143	406	26	77
	18:15 – 18:30	-	-	-	-	143	406	26	64
	18:30 – 18:45	-	-	-	-	143	385	27	75
	18:45 – 19:00	-	-	-	-	103	355	22	73
	Peak Hour flow (veh/h)	**-**	**-**	**-**	**-**	**561**	**1560**	**26%**	**69**
18 / Shing Mun Tunnel Road	07:30 - 07:45	136	244	36	80	-	-	-	-
	07:45 - 08:00	138	293	32	83	-	-	-	-
	08:00 - 08:15	166	265	39	74	-	-	-	-
	08:15 – 08:30	169	274	38	74	-	-	-	-
	08:30 – 08:45	157	249	39	80	-	-	-	-
	08:45 – 09:00	163	208	44	72	-	-	-	-
	Peak Hour flow (veh/h)	**655**	**996**	**40%**	**69**	**-**	**-**	**-**	**-**
	17:30 – 17:45	149	256	37	72	-	-	-	-
	17:45 – 18:00	131	251	34	72	-	-	-	-
	18:00 – 18:15	131	269	33	49	-	-	-	-
	18:15 – 18:30	131	269	33	59	-	-	-	-
	18:30 – 18:45	101	295	26	60	-	-	-	-
	18:45 – 19:00	124	224	85	59	-	-	-	-
	Peak Hour flow (veh/h)	**542**	**1045**	**34%**	**63**	**-**	**-**	**-**	**-**
19 / Shing Mun Tunnel Road	07:30 - 07:45	-	-	-	-	103	302	25	79
	07:45 - 08:00	-	-	-	-	156	301	34	84
	08:00 - 08:15	-	-	-	-	153	289	35	97
	08:15 – 08:30	-	-	-	-	159	254	38	95
	08:30 – 08:45	-	-	-	-	152	249	38	89
	08:45 – 09:00	-	-	-	-	140	246	36	99
	Peak Hour flow	**-**	**-**	**-**	**-**	**604**	**1038**	**37%**	**95**

Road Segment No.	Time	Eastbound[1]				Westbound[1]			
		No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)	No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)
	(veh/h)								
	17:30 – 17:45	-	-	-	-	151	333	31	93
	17:45 – 18:00	-	-	-	-	118	334	26	89
	18:00 – 18:15	-	-	-	-	118	317	27	83
	18:15 – 18:30	-	-	-	-	118	317	27	80
	18:30 – 18:45	-	-	-	-	110	283	28	86
	18:45 – 19:00	-	-	-	-	110	276	28	94
	Peak Hour flow (veh/h)	**-**	**-**	**-**	**-**	**505**	**1301**	**28%**	**86**
20 / Tsing Sha Road Eastbound	07:30 - 07:45	142	259	35	80	-	-	-	-
	07:45 - 08:00	172	238	42	83	-	-	-	-
	08:00 - 08:15	190	334	36	74	-	-	-	-
	08:15 – 08:30	185	358	34	74	-	-	-	-
	08:30 – 08:45	178	308	37	80	-	-	-	-
	08:45 – 09:00	204	298	41	72	-	-	-	-
	Peak Hour flow (veh/h)	**757**	**1298**	**37%**	**75**	**-**	**-**	**-**	**-**
	17:30 – 17:45	154	500	24	80	-	-	-	-
	17:45 – 18:00	141	522	21	68	-	-	-	-
	18:00 – 18:15	144	586	20	70	-	-	-	-
	18:15 – 18:30	144	586	20	74	-	-	-	-
	18:30 – 18:45	126	557	18	72	-	-	-	-
	18:45 – 19:00	104	567	15	72	-	-	-	-
	Peak Hour flow (veh/h)	**583**	**2194**	**21%**	**73**	**-**	**-**	**-**	**-**
21[2] / Shing Mun Tunnel Road	07:30 - 07:45	0	0	-	-	0	0	-	-
	07:45 - 08:00	0	0	-	-	0	0	-	-
	08:00 - 08:15	0	0	-	-	0	0	-	-
	08:15 – 08:30	0	0	-	-	0	0	-	-
	08:30 – 08:45	0	0	-	-	0	0	-	-
	08:45 – 09:00	0	0	-	-	0	0	-	-
	Peak Hour flow (veh/h)	**0**	**0**	**-**	**-**	**0**	**0**	**-**	**-**
	17:30 – 17:45	0	0	-	-	0	0	-	-
	17:45 – 18:00	0	0	-	-	0	0	-	-
	18:00 – 18:15	0	0	-	-	0	0	-	-
	18:15 – 18:30	0	0	-	-	0	0	-	-

Road Segment No.	Time	Eastbound(1)				Westbound(1)			
		No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)	No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)
	18:30 – 18:45	0	0	-	-	0	0	-	-
	18:45 – 19:00	0	0	-	-	0	0	-	-
	Peak Hour flow (veh/h)	**0**	**0**	**-**	**-**	**0**	**0**	**-**	**-**
22 / Shing Mun Tunnel Road	07:30 - 07:45	278	503	36	79	103	302	25	63
	07:45 - 08:00	310	531	37	70	156	301	34	86
	08:00 - 08:15	356	599	37	72	153	289	35	70
	08:15 – 08:30	354	632	36	79	159	254	38	63
	08:30 – 08:45	335	557	38	79	152	249	38	70
	08:45 – 09:00	367	506	42	72	140	246	36	72
	Peak Hour flow (veh/h)	**1412**	**2294**	**38%**	**76**	**604**	**1038**	**37%**	**69**
	17:30 – 17:45	303	756	29	49	151	333	31	49
	17:45 – 18:00	272	773	26	63	118	334	26	72
	18:00 – 18:15	275	855	24	72	118	317	27	63
	18:15 – 18:30	275	855	24	58	118	317	27	58
	18:30 – 18:45	227	852	21	54	110	283	28	54
	18:45 – 19:00	228	791	22	72	110	276	28	63
	Peak Hour flow (veh/h)	**1125**	**3239**	**26%**	**60**	**505**	**1301**	**28%**	**60**
23 / Tai Po Road (Tai Wai)	07:30 - 07:45	16	142	10	48	-	-	-	-
	07:45 - 08:00	20	130	13	65	-	-	-	-
	08:00 - 08:15	23	144	14	49	-	-	-	-
	08:15 – 08:30	24	138	15	65	-	-	-	-
	08:30 – 08:45	21	159	12	65	-	-	-	-
	08:45 – 09:00	23	158	13	60	-	-	-	-
	Peak Hour flow (veh/h)	**91**	**599**	**13%**	**60**	**-**	**-**	**-**	**-**
	17:30 – 17:45	24	137	15	45	-	-	-	-
	17:45 – 18:00	27	140	16	45	-	-	-	-
	18:00 – 18:15	22	148	13	48	-	-	-	-
	18:15 – 18:30	19	139	12	49	-	-	-	-
	18:30 – 18:45	18	119	13	49	-	-	-	-
	18:45 – 19:00	18	115	14	49	-	-	-	-
	Peak Hour flow (veh/h)	**92**	**564**	**14%**	**47**	**-**	**-**	**-**	**-**
24 / Tai Po	07:30 - 07:45	-	-	-	-	28	133	17	53

Road Segment No.	Time	Eastbound[1]				Westbound[1]			
		No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)	No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)
Road (Tai Wai)	07:45 - 08:00	-	-	-	-	24	142	14	62
	08:00 - 08:15	-	-	-	-	29	107	21	62
	08:15 – 08:30	-	-	-	-	20	113	15	49
	08:30 – 08:45	-	-	-	-	18	109	14	58
	08:45 – 09:00	-	-	-	-	8	132	6	54
	Peak Hour flow (veh/h)	**-**	**-**	**-**	**-**	**75**	**461**	**14%**	**56**
	17:30 – 17:45	-	-	-	-	18	158	10	58
	17:45 – 18:00	-	-	-	-	17	137	11	63
	18:00 – 18:15	-	-	-	-	12	122	9	58
	18:15 – 18:30	-	-	-	-	24	115	17	42
	18:30 – 18:45	-	-	-	-	17	126	12	58
	18:45 – 19:00	-	-	-	-	16	118	12	46
	Peak Hour flow (veh/h)	**-**	**-**	**-**	**-**	**71**	**533**	**12%**	**55**

Note:
[1] – As the road segments are located between two monitoring stations, there are no clear distinction between far side and near side of the roads. Therefore, traffic count data are presented in eastbound and westbound of the road segments.

[2] – Road Segment No. 21 marked on the EM&A Manual is identified as an un-used ramp with a discontinued end.

Date : 2 March 2017 for Road Segments in vicinity of Monitoring Stations N1, N2

Bold, Italic and Underline – Peak Hour

Road Segment No. / Road Name	Time	Northbound(1)				Southbound(1)			
		No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)	No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)
1 / Northbound ramp approaching Tsing Sha Highway	07:30 - 07:45	9	65	12	76	-	-	-	-
	07:45 - 08:00	8	17	32	54	-	-	-	-
	08:00 - 08:15	8	10	44	42	-	-	-	-
	08:15 – 08:30	8	51	14	66	-	-	-	-
	08:30 – 08:45	18	61	23	57	-	-	-	-
	08:45 – 09:00	18	59	23	35	-	-	-	-
	Peak Hour flow (veh/h)	**33**	**143**	**26%**	**59**	**-**	**-**	**-**	**-**
	17:30 – 17:45	5	27	16	38	-	-	-	-
	17:45 – 18:00	4	16	20	57	-	-	-	-
	18:00 – 18:15	7	18	28	47	-	-	-	-
	18:15 – 18:30	6	9	40	51	-	-	-	-
	18:30 – 18:45	4	15	21	51	-	-	-	-
	18:45 – 19:00	6	5	55	38	-	-	-	-
	Peak Hour flow (veh/h)	**23**	**47**	**36%**	**47**	**-**	**-**	**-**	**-**
2 / Ying Wan Lane	07:30 - 07:45	1	4	20	36	1	4	20	36
	07:45 - 08:00	0	5	0	41	1	4	20	41
	08:00 - 08:15	0	2	0	66	0	3	0	66
	08:15 – 08:30	2	3	40	45	0	4	0	45
	08:30 – 08:45	1	2	33	41	0	4	0	41
	08:45 – 09:00	0	1	0	58	1	1	50	58
	Peak Hour flow (veh/h)	**3**	**14**	**15%**	**47**	**2**	**15**	**10%**	**44**
	17:30 – 17:45	0	3	0	45	0	2	0	41
	17:45 – 18:00	0	1	0	45	1	3	25	27
	18:00 – 18:15	0	2	0	29	0	2	0	28
	18:15 – 18:30	0	4	0	36	0	2	0	34
	18:30 – 18:45	0	1	0	31	0	2	0	27
	18:45 – 19:00	0	2	0	36	0	1	0	27
	Peak Hour flow (veh/h)	**0**	**9**	**0%**	**33**	**0**	**7**	**0%**	**29**
3 / Tsing Sha Highway	07:30 - 07:45	45	118	28	66	-	-	-	-
	07:45 - 08:00	51	103	33	73	-	-	-	-

Road Segment No. / Road Name	Time	Northbound(1)				Southbound(1)			
		No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)	No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)
	08:00 - 08:15	42	81	34	58	-	-	-	-
	08:15 – 08:30	66	83	44	58	-	-	-	-
	08:30 – 08:45	52	77	40	66	-	-	-	-
	08:45 – 09:00	61	72	46	61	-	-	-	-
	Peak Hour flow (veh/h)	**204**	**385**	**35%**	**64**	**-**	**-**	**-**	**-**
	17:30 – 17:45	59	96	38	68	-	-	-	-
	17:45 – 18:00	81	114	42	58	-	-	-	-
	18:00 – 18:15	79	117	40	73	-	-	-	-
	18:15 – 18:30	77	119	39	61	-	-	-	-
	18:30 – 18:45	73	137	35	62	-	-	-	-
	18:45 – 19:00	47	142	25	66	-	-	-	-
	Peak Hour flow (veh/h)	**276**	**515**	**35%**	**66**	**-**	**-**	**-**	**-**
3a / Ramp from Tsing Sha Highway to Tai Po Road	07:30 - 07:45	-	-	-	-	80	193	29	53
	07:45 - 08:00	-	-	-	-	82	189	30	57
	08:00 - 08:15	-	-	-	-	68	148	31	53
	08:15 – 08:30	-	-	-	-	60	187	24	58
	08:30 – 08:45	-	-	-	-	56	110	34	58
	08:45 – 09:00	-	-	-	-	84	117	42	65
	Peak Hour flow (veh/h)	**-**	**-**	**-**	**-**	**290**	**717**	**29%**	**55**
	17:30 – 17:45	-	-	-	-	36	125	22	60
	17:45 – 18:00	-	-	-	-	54	126	30	58
	18:00 – 18:15	-	-	-	-	76	155	33	53
	18:15 – 18:30	-	-	-	-	86	160	35	65
	18:30 – 18:45	-	-	-	-	52	164	24	58
	18:45 – 19:00	-	-	-	-	47	175	21	60
	Peak Hour flow (veh/h)	**-**	**-**	**-**	**-**	**261**	**654**	**28%**	**59**
4 / Tsing Sha Highway	07:30 - 07:45	-	-	-	-	134	469	22	75
	07:45 - 08:00	-	-	-	-	120	363	25	67
	08:00 - 08:15	-	-	-	-	145	299	33	75
	08:15 – 08:30	-	-	-	-	142	268	35	75
	08:30 – 08:45	-	-	-	-	179	334	35	67
	08:45 – 09:00	-	-	-	-	201	292	41	75
	Peak Hour flow (veh/h)	**-**	**-**	**-**	**-**	**541**	**1399**	**29%**	**73**

Road Segment No. / Road Name	Time	Northbound(1)				Southbound(1)			
		No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)	No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)
	17:30 – 17:45	-	-	-	-	95	162	37	77
	17:45 – 18:00	-	-	-	-	114	175	39	71
	18:00 – 18:15	-	-	-	-	104	188	36	71
	18:15 – 18:30	-	-	-	-	113	195	37	75
	18:30 – 18:45	-	-	-	-	96	231	29	79
	18:45 – 19:00	-	-	-	-	84	248	25	67
	Peak Hour flow (veh/h)	**-**	**-**	**-**	**-**	**397**	**862**	**32%**	**73**
5 / Southbound ramp approaching Tsing Sha Highway	07:30 - 07:45	-	-	-	-	6	19	24	40
	07:45 - 08:00	-	-	-	-	14	17	45	36
	08:00 - 08:15	-	-	-	-	13	25	34	45
	08:15 – 08:30	-	-	-	-	10	17	37	40
	08:30 – 08:45	-	-	-	-	12	22	35	42
	08:45 – 09:00	-	-	-	-	13	21	38	49
	Peak Hour flow (veh/h)	**-**	**-**	**-**	**-**	**43**	**78**	**35%**	**40**
	17:30 – 17:45	-	-	-	-	8	16	33	42
	17:45 – 18:00	-	-	-	-	10	24	29	35
	18:00 – 18:15	-	-	-	-	8	27	23	40
	18:15 – 18:30	-	-	-	-	9	19	32	40
	18:30 – 18:45	-	-	-	-	8	10	44	36
	18:45 – 19:00	-	-	-	-	10	15	40	31
	Peak Hour flow (veh/h)	**-**	**-**	**-**	**-**	**35**	**71**	**35%**	**36**
6 / Tsing Sha Highway	07:30 - 07:45	-	-	-	-	20	49	29	60
	07:45 - 08:00	-	-	-	-	11	43	20	60
	08:00 - 08:15	-	-	-	-	17	35	33	70
	08:15 – 08:30	-	-	-	-	11	31	26	70
	08:30 – 08:45	-	-	-	-	11	38	22	76
	08:45 – 09:00	-	-	-	-	14	32	30	58
	Peak Hour flow (veh/h)	**-**	**-**	**-**	**-**	**55**	**136**	**29%**	**65**
	17:30 – 17:45	-	-	-	-	24	44	35	85
	17:45 – 18:00	-	-	-	-	14	50	22	72
	18:00 – 18:15	-	-	-	-	22	36	38	76
	18:15 – 18:30	-	-	-	-	15	53	22	72
	18:30 – 18:45	-	-	-	-	10	47	18	90

Road Segment No. / Road Name	Time	Northbound(1)				Southbound(1)			
		No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)	No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)
	18:45 – 19:00	-	-	-	-	18	40	31	62
	Peak Hour flow (veh/h)	**-**	**-**	**-**	**-**	**65**	**176**	**27%**	**75**
7 / Mei Tin Road	07:30 - 07:45	70	78	47	39	-	-	-	-
	07:45 - 08:00	50	90	36	44	-	-	-	-
	08:00 - 08:15	68	72	49	44	-	-	-	-
	08:15 – 08:30	55	87	39	44	-	-	-	-
	08:30 – 08:45	58	67	46	51	-	-	-	-
	08:45 – 09:00	65	65	50	44	-	-	-	-
	Peak Hour flow (veh/h)	**243**	**327**	**43%**	**43**	**-**	**-**	**-**	**-**
	17:30 – 17:45	70	96	42	35	-	-	-	-
	17:45 – 18:00	87	99	47	54	-	-	-	-
	18:00 – 18:15	76	76	50	49	-	-	-	-
	18:15 – 18:30	66	96	41	42	-	-	-	-
	18:30 – 18:45	79	97	45	44	-	-	-	-
	18:45 – 19:00	77	84	48	49	-	-	-	-
	Peak Hour flow (veh/h)	**293**	**353**	**46%**	**46**	**-**	**-**	**-**	**-**
8 / Mei Tin Road	07:30 - 07:45	-	-	-	-	88	142	38	47
	07:45 - 08:00	-	-	-	-	88	161	35	49
	08:00 - 08:15	-	-	-	-	85	147	37	42
	08:15 – 08:30	-	-	-	-	74	145	34	49
	08:30 – 08:45	-	-	-	-	83	162	34	44
	08:45 – 09:00	-	-	-	-	81	180	31	47
	Peak Hour flow (veh/h)	**-**	**-**	**-**	**-**	**335**	**595**	**36%**	**47**
	17:30 – 17:45	-	-	-	-	106	139	43	44
	17:45 – 18:00	-	-	-	-	107	108	50	52
	18:00 – 18:15	-	-	-	-	90	132	41	49
	18:15 – 18:30	-	-	-	-	82	108	43	44
	18:30 – 18:45	-	-	-	-	106	112	49	46
	18:45 – 19:00	-	-	-	-	107	113	49	40
	Peak Hour flow (veh/h)	**-**	**-**	**-**	**-**	**390**	**497**	**44%**	**45**

Note:

[1] – As the road segments are located between two monitoring stations, there are no clear distinction between far side and near side of the roads. Therefore, traffic count data are presented in eastbound and westbound of the road segments.

Date : 22 February 2017 for Road Segments in vicinity of Monitoring Stations N3(A), N4

Bold, Italic and Underline – Peak Hour

Road Segment No.	Time	Eastbound[1]				Westbound[1]			
		No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)	No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)
9 / Eastbound ramp approaching Tsing Sha Highway	07:30 - 07:45	24	36	40	40	-	-	-	-
	07:45 - 08:00	15	37	29	50	-	-	-	-
	08:00 - 08:15	24	44	35	52	-	-	-	-
	08:15 – 08:30	17	45	27	40	-	-	-	-
	08:30 – 08:45	23	41	36	49	-	-	-	-
	08:45 – 09:00	24	37	39	39	-	-	-	-
	Peak Hour flow (veh/h)	**88**	**167**	**34%**	**45**	**-**	**-**	**-**	**-**
	17:30 – 17:45	13	27	33	45	-	-	-	-
	17:45 – 18:00	13	30	30	43	-	-	-	-
	18:00 – 18:15	15	28	35	40	-	-	-	-
	18:15 – 18:30	10	29	26	37	-	-	-	-
	18:30 – 18:45	10	26	28	34	-	-	-	-
	18:45 – 19:00	10	26	28	38	-	-	-	-
	Peak Hour flow (veh/h)	**51**	**114**	**31%**	**41**	**-**	**-**	**-**	**-**
10 / Tai Po Road (Tai Wai) [2]	07:30 - 07:45	32	73	30	28	29	60	33	40
	07:45 - 08:00	28	63	31	29	33	49	40	34
	08:00 - 08:15	33	67	33	28	32	61	35	31
	08:15 – 08:30	39	62	39	36	25	65	27	35
	08:30 – 08:45	30	48	38	32	24	50	32	35
	08:45 – 09:00	26	54	33	28	30	55	35	34
	Peak Hour flow (veh/h)	**128**	**231**	**36%**	**31**	**111**	**231**	**32%**	**34**
	17:30 – 17:45	20	52	28	28	31	42	43	44
	17:45 – 18:00	33	40	45	28	30	54	36	39
	18:00 – 18:15	24	47	34	33	34	41	45	30
	18:15 – 18:30	19	55	26	35	32	41	44	33
	18:30 – 18:45	28	37	43	30	25	53	32	33
	18:45 – 19:00	21	55	27	29	31	46	40	39
	Peak Hour flow (veh/h)	**96**	**193**	**33%**	**31**	**127**	**179**	**42%**	**36**
11 / Tsing Sha Highway	07:30 - 07:45	56	350	14	71	-	-	-	-
	07:45 - 08:00	165	309	35	63	-	-	-	-

Road Segment No.	Time	Eastbound(1)				Westbound(1)			
		No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)	No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)
	08:00 - 08:15	176	293	38	71	-	-	-	-
	08:15 – 08:30	186	307	38	62	-	-	-	-
	08:30 – 08:45	181	251	42	68	-	-	-	-
	08:45 – 09:00	169	229	42	62	-	-	-	-
	Peak Hour flow (veh/h)	**712**	**1080**	**40%**	**66**	**-**	**-**	**-**	**-**
	17:30 – 17:45	154	325	32	56	-	-	-	-
	17:45 – 18:00	83	389	18	68	-	-	-	-
	18:00 – 18:15	164	381	30	71	-	-	-	-
	18:15 – 18:30	144	483	23	66	-	-	-	-
	18:30 – 18:45	146	502	23	80	-	-	-	-
	18:45 – 19:00	128	569	18	94	-	-	-	-
	Peak Hour flow (veh/h)	**545**	**1578**	**26%**	**65**	**-**	**-**	**-**	**-**
12 / Tsing Sha Highway	07:30 - 07:45	-	-	-	-	64	110	37	80
	07:45 - 08:00	-	-	-	-	83	110	43	80
	08:00 - 08:15	-	-	-	-	76	150	34	87
	08:15 – 08:30	-	-	-	-	63	117	35	67
	08:30 – 08:45	-	-	-	-	74	102	42	87
	08:45 – 09:00	-	-	-	-	79	116	41	100
	Peak Hour flow (veh/h)	**-**	**-**	**-**	**-**	**291**	**485**	**38%**	**85**
	17:30 – 17:45	-	-	-	-	61	69	47	75
	17:45 – 18:00	-	-	-	-	43	94	32	75
	18:00 – 18:15	-	-	-	-	52	87	37	60
	18:15 – 18:30	-	-	-	-	50	115	30	60
	18:30 – 18:45	-	-	-	-	53	80	40	67
	18:45 – 19:00	-	-	-	-	47	130	27	75
	Peak Hour flow (veh/h)	**-**	**-**	**-**	**-**	**206**	**365**	**37%**	**67**
13 / Slip road from Tsing Sha Highway to Mei Tin Road	07:30 - 07:45	18	52	26	25	-	-	-	-
	07:45 - 08:00	15	42	26	27	-	-	-	-
	08:00 - 08:15	19	44	30	32	-	-	-	-
	08:15 – 08:30	17	36	32	28	-	-	-	-
	08:30 – 08:45	16	35	31	32	-	-	-	-
	08:45 – 09:00	22	39	36	29	-	-	-	-
	Peak Hour flow	**74**	**154**	**32%**	**30**	**-**	**-**	**-**	**-**

Road Segment No.	Time	Eastbound(1)				Westbound(1)			
		No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)	No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)
	(veh/h)								
	17:30 – 17:45	31	53	37	25	-	-	-	-
	17:45 – 18:00	29	72	29	22	-	-	-	-
	18:00 – 18:15	24	62	28	28	-	-	-	-
	18:15 – 18:30	28	80	26	27	-	-	-	-
	18:30 – 18:45	23	74	24	22	-	-	-	-
	18:45 – 19:00	25	84	23	27	-	-	-	-
	Peak Hour flow (veh/h)	**112**	**267**	**30%**	**25**	**-**	**-**	**-**	**-**
14 / Westbound ramp approaching Tsing Sha Highway	07:30 - 07:45	-	-	-	-	57	124	31	87
	07:45 - 08:00	-	-	-	-	56	165	25	87
	08:00 - 08:15	-	-	-	-	68	169	29	99
	08:15 – 08:30	-	-	-	-	70	104	40	99
	08:30 – 08:45	-	-	-	-	55	135	29	99
	08:45 – 09:00	-	-	-	-	79	116	41	87
	Peak Hour flow (veh/h)	**-**	**-**	**-**	**-**	**273**	**524**	**35%**	**96**
	17:30 – 17:45	-	-	-	-	34	123	22	74
	17:45 – 18:00	-	-	-	-	47	86	35	67
	18:00 – 18:15	-	-	-	-	46	98	32	74
	18:15 – 18:30	-	-	-	-	40	147	21	74
	18:30 – 18:45	-	-	-	-	30	141	17	67
	18:45 – 19:00	-	-	-	-	46	136	25	59
	Peak Hour flow (veh/h)	**-**	**-**	**-**	**-**	**167**	**454**	**28%**	**72**
Slip roads and ramps to and from the Shing Mun Tunnel Road [2]	07:30 - 07:45	16	37	30	28	15	30	33	40
	07:45 - 08:00	14	32	31	29	17	25	40	34
	08:00 - 08:15	16	33	33	28	16	30	35	31
	08:15 – 08:30	20	31	39	36	12	33	27	35
	08:30 – 08:45	15	24	38	32	12	25	32	35
	08:45 – 09:00	13	27	33	28	15	28	35	34
	Peak Hour flow (veh/h)	**64**	**115**	**33%**	**31**	**55**	**116**	**32%**	**34**
	17:30 – 17:45	10	26	28	28	16	21	43	44
	17:45 – 18:00	16	20	45	28	15	27	36	39
	18:00 – 18:15	12	23	34	33	17	21	45	30
	18:15 – 18:30	9	27	26	35	16	21	44	33

Road Segment No.	Time	Eastbound[1]				Westbound[1]			
		No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)	No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)
	18:30 – 18:45	14	19	43	30	13	27	32	33
	18:45 – 19:00	10	27	27	29	15	23	40	39
	Peak Hour flow (veh/h)	**48**	**96**	**33%**	**31**	**64**	**90**	**42%**	**36**

Note:
[1] – As the road segments are located between two monitoring stations, there are no clear distinction between far side and near side of the roads. Therefore, traffic count data are presented in eastbound and westbound of the road segments.

[2] – The slip roads and ramps to and from the Shing Mun Tunnel Road comprises 1 of 3 lanes of eastbound directions of Tai Po Road (Tai Wai) (i.e. Road Segment No. 10), and 2 of 4 lanes of westbound direction. Based on on-site observation, traffic using the slips and ramps was in proportion of lanes of Road Segment No. 10. Therefore, traffic count data of these slips and ramps are adopted from Road Segment No. 10 on proportion (i.e. one-third of eastbound direction of Road Section No. 10 and half of westbound direction of Road Section No. 10).

Date : 28 February 2017 for Road Segments in vicinity of Monitoring Stations N5, N6

Bold, Italic and Underline – Peak Hour

Road Segment No.	Time	Eastbound(1)				Westbound(1)			
		No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)	No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)
15 / Tsing Sha Highway	07:30 - 07:45	-	-	-	-	105	345	23	87
	07:45 - 08:00	-	-	-	-	115	363	24	80
	08:00 - 08:15	-	-	-	-	106	352	23	80
	08:15 – 08:30	-	-	-	-	117	325	26	87
	08:30 – 08:45	-	-	-	-	102	343	23	91
	08:45 – 09:00	-	-	-	-	142	328	30	84
	Peak Hour flow (veh/h)	**-**	**-**	**-**	**-**	**497**	**1348**	**26%**	**85**
	17:30 – 17:45	-	-	-	-	132	424	24	89
	17:45 – 18:00	-	-	-	-	112	399	22	75
	18:00 – 18:15	-	-	-	-	137	381	26	72
	18:15 – 18:30	-	-	-	-	125	375	25	89
	18:30 – 18:45	-	-	-	-	127	402	24	89
	18:45 – 19:00	-	-	-	-	139	359	28	89
	Peak Hour flow (veh/h)	**-**	**-**	**-**	**-**	**506**	**1579**	**24%**	**81**
16 / Eastbound ramp approaching Tsing Sha Highway	07:30 - 07:45	22	62	26	72	-	-	-	-
	07:45 - 08:00	32	59	35	56	-	-	-	-
	08:00 - 08:15	27	69	28	76	-	-	-	-
	08:15 – 08:30	34	41	45	66	-	-	-	-
	08:30 – 08:45	36	58	38	76	-	-	-	-
	08:45 – 09:00	39	47	45	52	-	-	-	-
	Peak Hour flow (veh/h)	**136**	**215**	**39%**	**67**	**-**	**-**	**-**	**-**
	17:30 – 17:45	51	57	47	63	-	-	-	-
	17:45 – 18:00	35	67	34	60	-	-	-	-
	18:00 – 18:15	45	84	35	66	-	-	-	-
	18:15 – 18:30	39	93	30	56	-	-	-	-
	18:30 – 18:45	45	98	31	64	-	-	-	-
	18:45 – 19:00	29	93	24	87	-	-	-	-
	Peak Hour flow (veh/h)	**170**	**301**	**36%**	**61**	**-**	**-**	**-**	**-**
17 / Tsing Sha Highway	07:30 - 07:45	-	-	-	-	132	464	22	61
	07:45 - 08:00	-	-	-	-	150	452	25	62

Road Segment No.	Time	Eastbound(1)				Westbound(1)			
		No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)	No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)
	08:00 - 08:15	-	-	-	-	176	371	32	66
	08:15 – 08:30	-	-	-	-	178	372	32	56
	08:30 – 08:45	-	-	-	-	196	338	37	62
	08:45 – 09:00	-	-	-	-	204	308	40	60
	Peak Hour flow (veh/h)	**-**	**-**	**-**	**-**	**754**	**1389**	**35%**	**61**
	17:30 – 17:45	-	-	-	-	206	262	44	54
	17:45 – 18:00	-	-	-	-	214	310	41	79
	18:00 – 18:15	-	-	-	-	190	342	36	57
	18:15 – 18:30	-	-	-	-	170	427	28	58
	18:30 – 18:45	-	-	-	-	132	390	25	81
	18:45 – 19:00	-	-	-	-	116	358	24	53
	Peak Hour flow (veh/h)	**-**	**-**	**-**	**-**	**780**	**1341**	**37%**	**62**
18 / Shing Mun Tunnel Road	07:30 - 07:45	159	303	34	72	-	-	-	-
	07:45 - 08:00	127	314	29	66	-	-	-	-
	08:00 - 08:15	168	275	38	70	-	-	-	-
	08:15 – 08:30	166	220	43	62	-	-	-	-
	08:30 – 08:45	193	203	49	68	-	-	-	-
	08:45 – 09:00	199	198	50	70	-	-	-	-
	Peak Hour flow (veh/h)	**726**	**896**	**45%**	**67**	**-**	**-**	**-**	**-**
	17:30 – 17:45	129	116	53	66	-	-	-	-
	17:45 – 18:00	135	213	39	55	-	-	-	-
	18:00 – 18:15	149	245	38	53	-	-	-	-
	18:15 – 18:30	127	158	45	56	-	-	-	-
	18:30 – 18:45	117	268	30	64	-	-	-	-
	18:45 – 19:00	94	261	26	66	-	-	-	-
	Peak Hour flow (veh/h)	**540**	**732**	**43%**	**57**	**-**	**-**	**-**	**-**
19 / Shing Mun Tunnel Road	07:30 - 07:45	-	-	-	-	134	291	32	86
	07:45 - 08:00	-	-	-	-	117	313	27	94
	08:00 - 08:15	-	-	-	-	126	307	29	80
	08:15 – 08:30	-	-	-	-	138	288	32	86
	08:30 – 08:45	-	-	-	-	167	234	42	80
	08:45 – 09:00	-	-	-	-	165	220	43	101
	Peak Hour flow	**-**	**-**	**-**	**-**	**596**	**1049**	**36%**	**87**

Road Segment No.	Time	Eastbound(1)				Westbound(1)			
		No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)	No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)
	(veh/h)								
	17:30 – 17:45	-	-	-	-	145	221	40	89
	17:45 – 18:00	-	-	-	-	150	250	38	84
	18:00 – 18:15	-	-	-	-	158	264	37	80
	18:15 – 18:30	-	-	-	-	148	265	36	86
	18:30 – 18:45	-	-	-	-	109	272	29	80
	18:45 – 19:00	-	-	-	-	101	285	26	84
	Peak Hour flow (veh/h)	**-**	**-**	**-**	**-**	**601**	**1000**	**38%**	**85**
20 / Tsing Sha Road Eastbound	07:30 - 07:45	231	331	41	71	-	-	-	-
	07:45 - 08:00	244	324	43	74	-	-	-	-
	08:00 - 08:15	227	328	41	70	-	-	-	-
	08:15 – 08:30	223	311	42	75	-	-	-	-
	08:30 – 08:45	226	252	47	62	-	-	-	-
	08:45 – 09:00	261	268	49	89	-	-	-	-
	Peak Hour flow (veh/h)	**937**	**1159**	**45%**	**74**	**-**	**-**	**-**	**-**
	17:30 – 17:45	256	354	42	72	-	-	-	-
	17:45 – 18:00	269	397	40	70	-	-	-	-
	18:00 – 18:15	249	388	39	77	-	-	-	-
	18:15 – 18:30	241	415	37	75	-	-	-	-
	18:30 – 18:45	265	466	36	77	-	-	-	-
	18:45 – 19:00	189	487	28	80	-	-	-	-
	Peak Hour flow (veh/h)	**1015**	**1554**	**40%**	**73**	**-**	**-**	**-**	**-**
21[2] / Shing Mun Tunnel Road	07:30 - 07:45	0	0	-	-	0	0	-	-
	07:45 - 08:00	0	0	-	-	0	0	-	-
	08:00 - 08:15	0	0	-	-	0	0	-	-
	08:15 – 08:30	0	0	-	-	0	0	-	-
	08:30 – 08:45	0	0	-	-	0	0	-	-
	08:45 – 09:00	0	0	-	-	0	0	-	-
	Peak Hour flow (veh/h)	**0**	**0**	**-**	**-**	**0**	**0**	**-**	**-**
	17:30 – 17:45	0	0	-	-	0	0	-	-
	17:45 – 18:00	0	0	-	-	0	0	-	-
	18:00 – 18:15	0	0	-	-	0	0	-	-
	18:15 – 18:30	0	0	-	-	0	0	-	-

Road Segment No.	Time	Eastbound(1)				Westbound(1)			
		No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)	No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)
	18:30 – 18:45	0	0	-	-	0	0	-	-
	18:45 – 19:00	0	0	-	-	0	0	-	-
	Peak Hour flow (veh/h)	**0**	**0**	**-**	**-**	**0**	**0**	**-**	**-**
22 / Shing Mun Tunnel Road	07:30 - 07:45	390	634	38	72	134	291	32	63
	07:45 - 08:00	371	638	37	49	117	313	27	58
	08:00 - 08:15	395	603	40	72	126	307	29	63
	08:15 – 08:30	389	531	42	63	138	288	32	63
	08:30 – 08:45	419	455	48	49	167	234	42	58
	08:45 – 09:00	460	466	50	72	165	220	43	58
	Peak Hour flow (veh/h)	**1663**	**2055**	**45%**	**64**	**596**	**1049**	**36%**	**60**
	17:30 – 17:45	385	470	45	63	145	221	40	58
	17:45 – 18:00	404	610	40	63	150	250	38	63
	18:00 – 18:15	398	633	39	58	158	264	37	58
	18:15 – 18:30	368	573	39	72	148	265	36	63
	18:30 – 18:45	382	734	34	58	109	272	29	58
	18:45 – 19:00	283	748	27	72	101	285	26	54
	Peak Hour flow (veh/h)	**1555**	**2286**	**41%**	**64**	**601**	**1000**	**38%**	**60**
23 / Tai Po Road (Tai Wai)	07:30 - 07:45	65	125	34	57	-	-	-	-
	07:45 - 08:00	58	136	30	65	-	-	-	-
	08:00 - 08:15	51	115	30	72	-	-	-	-
	08:15 – 08:30	38	116	25	58	-	-	-	-
	08:30 – 08:45	52	73	41	53	-	-	-	-
	08:45 – 09:00	34	53	39	45	-	-	-	-
	Peak Hour flow (veh/h)	**174**	**358**	**34%**	**57**	**-**	**-**	**-**	**-**
	17:30 – 17:45	32	60	35	41	-	-	-	-
	17:45 – 18:00	40	56	42	36	-	-	-	-
	18:00 – 18:15	26	46	36	42	-	-	-	-
	18:15 – 18:30	28	78	27	42	-	-	-	-
	18:30 – 18:45	21	59	27	49	-	-	-	-
	18:45 – 19:00	19	71	21	42	-	-	-	-
	Peak Hour flow (veh/h)	**127**	**240**	**35%**	**40**	**-**	**-**	**-**	**-**
24 / Tai Po	07:30 - 07:45	-	-	-	-	46	180	20	54

Road Segment No.	Time	Eastbound[1]				Westbound[1]			
		No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)	No. of Heavy Vehicle	No. of Light Vehicle	Percentage of Heavy Vehicle	Speed (kph)
Road (Tai Wai)	07:45 - 08:00	-	-	-	-	55	141	28	53
	08:00 - 08:15	-	-	-	-	64	91	42	54
	08:15 – 08:30	-	-	-	-	57	77	42	54
	08:30 – 08:45	-	-	-	-	42	90	32	58
	08:45 – 09:00	-	-	-	-	38	47	45	53
	Peak Hour flow (veh/h)	**-**	**-**	**-**	**-**	**202**	**304**	**40%**	**55**
	17:30 – 17:45	-	-	-	-	25	46	35	42
	17:45 – 18:00	-	-	-	-	39	53	42	42
	18:00 – 18:15	-	-	-	-	33	58	36	63
	18:15 – 18:30	-	-	-	-	43	118	27	49
	18:30 – 18:45	-	-	-	-	18	49	27	45
	18:45 – 19:00	-	-	-	-	21	81	21	51
	Peak Hour flow (veh/h)	**-**	**-**	**-**	**-**	**139**	**275**	**31%**	**49**

Note:
[1] – As the road segments are located between two monitoring stations, there are no clear distinction between far side and near side of the roads. Therefore, traffic count data are presented in eastbound and westbound of the road segments.

[2] – Road Segment No. 21 marked on the EM&A Manual is identified as an un-used ramp with a discontinued end.

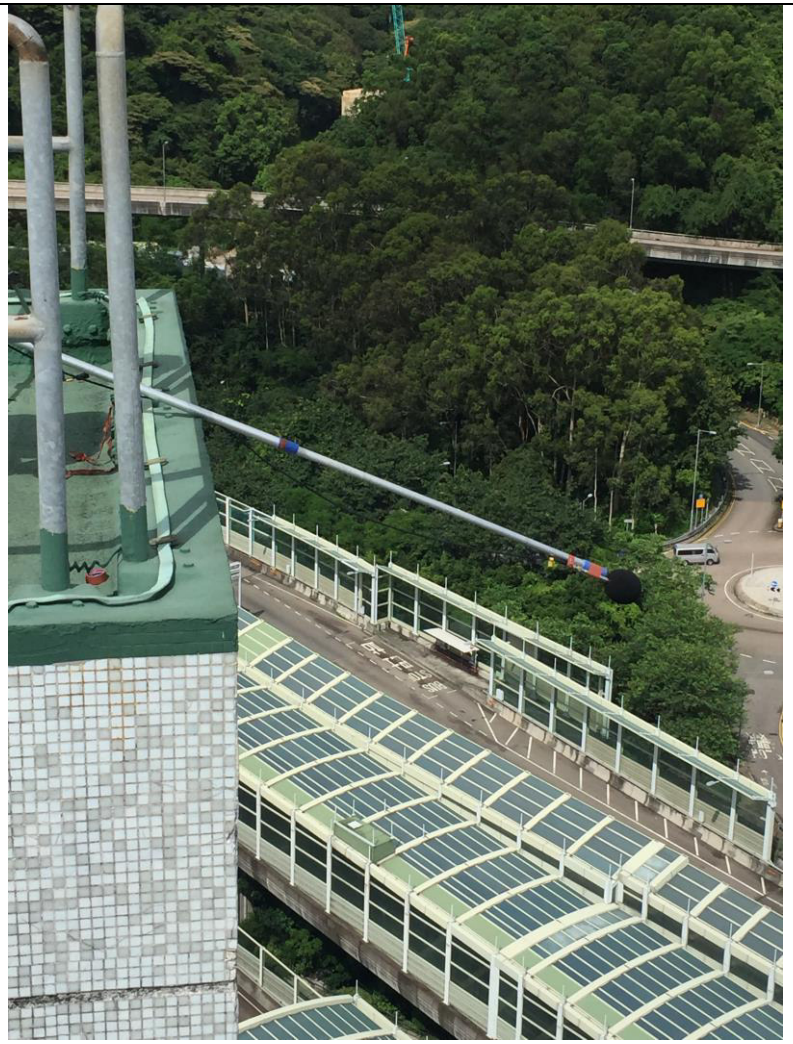
APPENDIX D
PHOTOS OF MONITORING STATIONS

Appendix D – Photos of Monitoring Stations

N1 – Tai Wai New Village – Block 20 – 1/F

N1 – Tai Wai New Village – Block 20 – 3/F

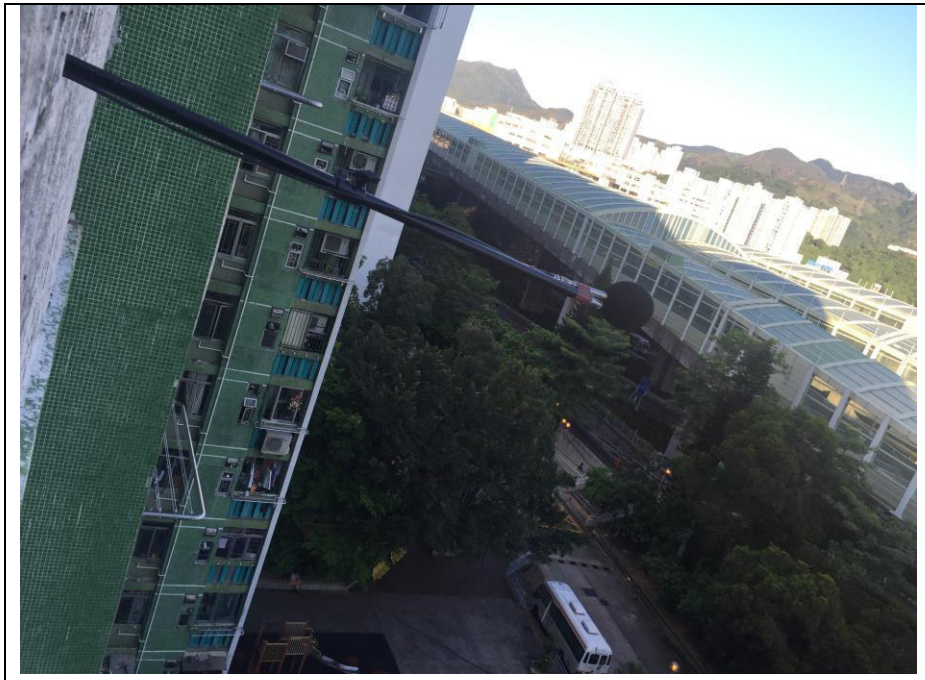
N2 - Holford Garden – Fook Hey Court - 1/F



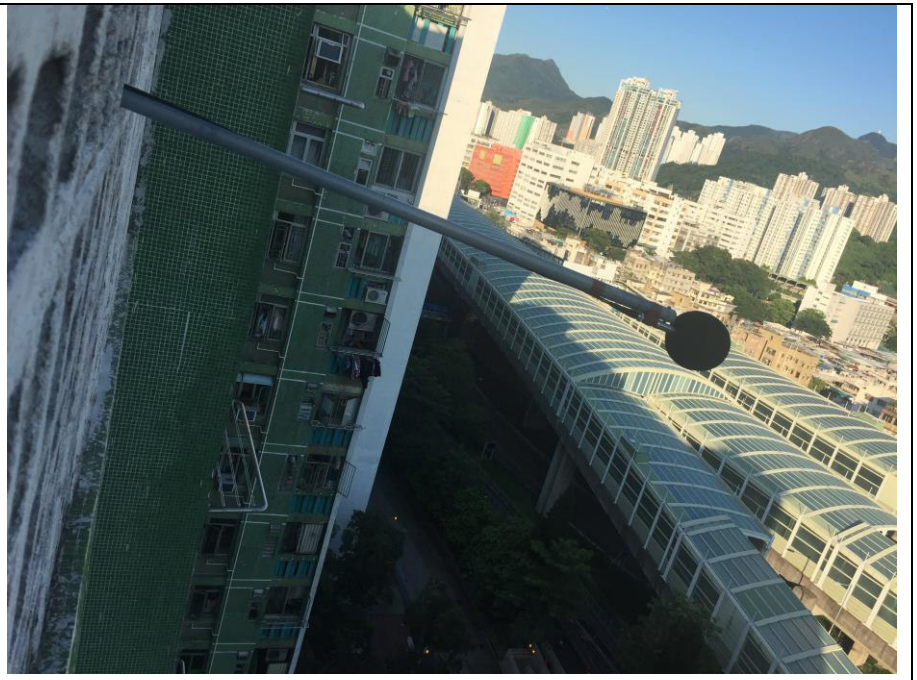
N2 - Holford Garden – Fook Hey Court - 31/F

N3 – 60 – 68 Chik Chuen Street –
Tai Wai Cambridge Nursing Home – 3/F

N3 – 60 – 68 Chik Chuen Street –
Tai Wai Cambridge Nursing Home – 5/F



N4 - Mei Fung House - 10/F



N4 - Mei Fung House - 20/F

N5 – 27 Tung Lo Wan Village – 1/F

N5 – 27 Tung Lo Wan Village – 3/F

	
N6 - Scenery Court, Podium near Block 1 - 4/F	**N6 - Scenery Court Block 1, Roof Top – 24/F**

APPENDIX E
IN HOUSE NOISE MODEL CALIBRATION

Appendix E – In House Noise Model Calibration

1. In order to ensure that the measured noise levels are comparable with the predicted in Environmental Review Report under the full provision of the mitigation measures recommended, the conversion correction will be applied into the measured noise levels for the adjustment to the traffic condition.

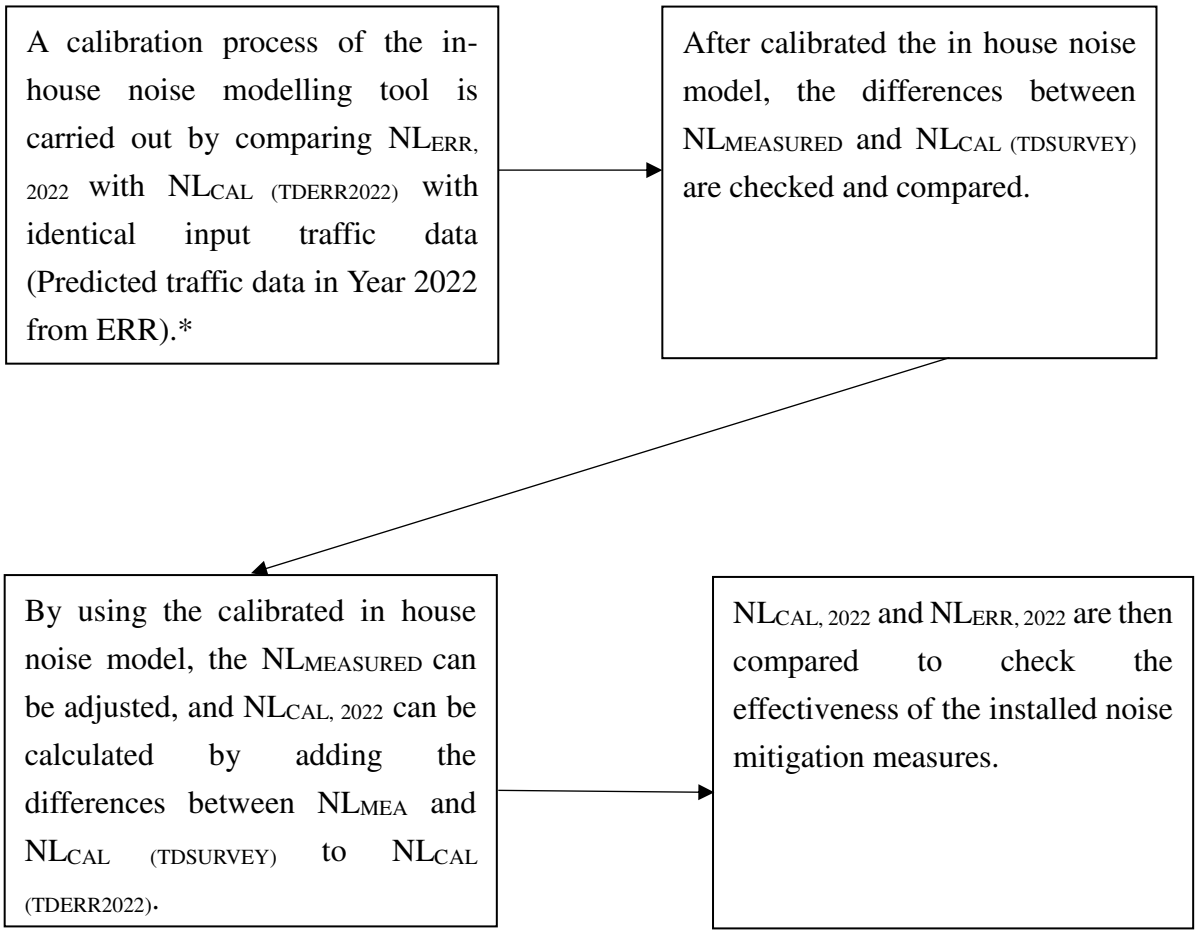
2. The adjustment to measured noise levels from current situation to Year 2022 (timeframe of Environmental Review Report prediction) cannot be directly calculated by desktop CRTN method in complex road networks. Modelling tools is used for adjustments. The measured noise levels from current situation can be adjusted by using the calibrated in house noise model. By using the EIA traffic data in the calibrated model, the predicted noise levels of Year 2022 can be calculated and adjusted when the differences between measured and calculated noise levels for current traffic data are added.

3. Based on the surveyed traffic counts, the percentage heavy vehicles and the vehicle speed, the L_{10}(1-hr) at the selected monitoring locations will be predicted using an in-house noise model according to the methods described in the U.K. Department of Transport's "Calculation of Road Traffic Noise (CRTN)" (1988). In the noise model, the topographical terrain will also be considered based on the field observations.

4. The procedures of CRTN assume typical traffic and noise propagation conditions which are consistent with moderately adverse wind velocities and direction. All noise levels will be expressed in terms of L_{10}(1-hr) dB(A). The calculations will be worked out to 0.1 dB(A) keeping within the quoted range of the validity charts. For comparison with the specified noise level or the EIA-TM standards, the relevant noise level from traffic expected to use the highway will be rounded to the nearest whole number (0.5 being rounded up). Details of the methods have been given in the CRTN.

5. The predicted noise levels from the Environmental Review Report (ERR) will be compared with the measured values, which will be adjusted by the model from current situation to Year 2022, to check the effectiveness of the installed noise mitigation measures. A flowchart of adjustment by noise assessment model is shown below.

Flowchart of Comparison of the Predicted Traffic Noise Levels in ERR with the Predicted Traffic Noise Levels by the In-house Noise Model



*Different noise model tools using in Environmental Review Report (ERR) and in this plan are no contradiction to correct the measured noise levels for the comparison with predicted noise levels in ERR as they are based on same acoustic theory according to CRTN.

$NL_{CAL, 2022}$:	Calibrated Predicted Traffic Noise Level in 2022 using the traffic data in Year 2022 from ERR by the in-house noise model
$NL_{ERR, 2022}$:	Predicted Traffic Noise Level in 2022 in ERR
$NL_{CAL\ (TDERR2022)}$:	Calculated Traffic Noise Level in 2022 with the traffic data in Year 2022 from ERR by the in-house noise model
$NL_{MEASURED}$:	Measured Traffic Noise Level
$NL_{CAL\ (TDSURVEY)}$:	Calculated Traffic Noise Level based on surveyed traffic data by the calibrated in-house noise model

6. A calibration process of the in house noise modelling tool was carried out by comparing EIA predictions and the results from in house modelling tool with identical input data. According to **Table I**, differences of approximately 2 dB(A) between the two models were observed (except at some of the monitoring stations, such as 3/F of N3(A) and 4/F of N6). The differences were caused by the followings:
   - Assumption of topographic terrain set up in noise-model tools; and

- Some road networks of other Projects (such as Link Road from Tai Po Road (Sha Tin Heights) to Lower Shing Mun Road, and Trunk Road T4), which were assumed to be constructed in the Environmental Review Report (March 2002), was not yet constructed in year 2017.

Table I Summary of Predicted Noise Levels (Unmitigated and Mitigated) at the Monitoring Stations based on the Environmental Review Report (March 2002) and In-house Noise Model Calibration

Monitoring Station	Floor	Environmental Review Report Prediction		In-house Noise Model Calibration
		Predicted Unmitigated Noise Level, $L_{10(1\text{-hour})}$ dB(A) [$NL_{ERR, 2022}$]	Predicted Mitigated Noise Level, $L_{10(1\text{-hour})}$ dB(A) [$NL_{ERR, 2022}$]	Calculated Noise Level $L_{10(1\text{-hour})}$ dB(A) (Based on EIA Traffic Data) [$NL_{CAL\ (TDERR2022)}$]
N1	1/F	76.4	61.9	63.7
	3/F	82.3	65.1	65.8
N2	1/F	74.7	60.2	58.1
	31/F	81.0 (b)	69.5 (b)	69.9
N3(A) (a)	3/F	78.1	72.7	67.1
	5/F	86.0	69.9	71.7
N4	10/F	78.4	68.1	67.4
	20/F	79.1	68.0	68.0
N5	1/F	75.6	72.7	70.6
	3/F	77.8	68.5	71.2
N6	4/F (Podium)	80.4 (c)	76.0 (c)	72.2
	24/F	79.1 (c)	77.0 (c)	76.3

Remarks:

(a) NSR I.D. CCS2 in the Environmental Review Report (March 2002).

(b) Predicted noise level at Holford Garden – Fook Hey Court (20/F) in the Environmental Review Report will be adopted for alternative monitoring station Holford Garden – Fook Hey Court, Roof Top (31/F).

(c) Predicted noise level at Scenery Court Block 1 (1/F and 23/F) in the Environmental Review Report will be adopted for alternative monitoring stations Scenery Court Block 1, Podium (4/F) and Roof Top (24/F) respectively.

7. After calibrated the in house noise model, the differences between measured and calculated noise levels for current traffic data were checked and the comparison of measured noise levels and calculated noise levels using the current traffic data is shown in **Table II.**

Table II Comparison of Measured and Calculated Traffic Noise Levels

Monitoring Station	Floor	AM / PM	Measured Traffic Noise Levels at peak hour, L_{10} dB(A) [$NL_{MEASURED}$]	Calculated Noise Levels $L_{10(1\text{-hour})}$ dB(A) (Based on monitoring traffic data) [$NL_{CAL\ (TDSURVEY)}$]	Difference between Calculated Traffic Noise Levels, dB(A)
July 2016					
N1	1/F	AM	67.6	59.6	8.0
		PM	63.0	59.6	3.4
	3/F	AM	70.1	62.3	7.8
		PM	67.3	62.6	4.7
N2	1/F	AM	65.3	55.2	10.1
		PM	63.3	54.9	8.4
	31/F	AM	67.3	68.2	-0.9
		PM	67.5	67.9	-0.4
N3(A)	3/F	AM	73.8	61.6	12.2
		PM	73.3	61.9	11.4
	5/F	AM	70.4	66.9	3.5
		PM	69.9	67.0	2.9
N4	10/F	AM	67.9	66.5	1.4
		PM	69.2	66.6	2.6
	20/F	AM	67.2	66.6	0.6
		PM	67.5	66.7	0.8
N5	1/F	AM	69.8	71.0	-1.2
		PM	71.0	70.2	0.8
	3/F	AM	71.5	71.5	0.0
		PM	72.4	70.7	1.7
N6	4/F	AM	69.5	72.2	-2.7
		PM	66.0	71.1	-5.1
	24/F	AM	71.6	76.4	-4.8
		PM	71.6	75.1	-3.5
February 2017					
N1	1/F	AM	64.3	60.6	3.7
		PM	65.6	60.1	5.5
	3/F	AM	67.3	63.5	3.8
		PM	66.6	63.3	3.3
N2	1/F	AM	67.4	55.4	12.0
		PM	61.2	55.2	6.0
	31/F	AM	66.8	68.2	-1.4
		PM	66.1	68.4	-2.3
N3(A)	3/F	AM	64.9	62.7	2.2
		PM	69.8	60.1	9.7
	5/F	AM	67.9	67.6	0.3
		PM	69.4	66.6	2.8
N4	10/F	AM	68.7	67.0	1.7
		PM	66.3	67.4	-1.1
	20/F	AM	66.5	67.2	-0.7
		PM	65.9	67.6	-1.7
		AM	71.4	71.1	0.3

Monitoring Station	Floor	AM / PM	Measured Traffic Noise Levels at peak hour, L_{10} dB(A) [$NL_{MEASURED}$]	Calculated Noise Levels $L_{10(1\text{-hour})}$ dB(A) (Based on monitoring traffic data) [$NL_{CAL\ (TDSURVEY)}$]	Difference between Calculated Traffic Noise Levels, dB(A)
N5	1/F	PM	71.0	71.0	0.0
	3/F	AM	71.4	71.5	-0.1
		PM	70.4	71.4	-1.0
N6	4/F	AM	78.5	72.1	6.4
		PM	72.9	71.3	1.6
	24/F	AM	72.8	76.1	-3.3
		PM	72.3	75.3	-3.0

8. By using the EIA traffic data in the calibrated model, the predicted noise levels of Year 2022 can be calculated and adjusted when the differences between measured and calculated noise levels for current traffic data was added. The predicted noise levels for Year 2022 are shown in **Table III**.

Table III Calibrated Predicted Traffic Noise Levels

Monitoring Station	Floor	Time	Calculated Traffic Noise Levels, $L_{10(1\text{-hour})}$ dB(A) (EIA Traffic Data) [$NL_{CAL\ (TDERR2022)}$]	Differences between Measured and Calculated Traffic Noise Levels, dB(A)	Calibrated Predicted Traffic Noise Levels, $L_{10(1\text{-hour})}$ dB(A) (EIA Traffic Data) [$NL_{CAL,\ 2022}$]
July 2016					
N1	1/F	AM	63.7	8.0	71.7
		PM		3.4	67.1
	3/F	AM	65.8	7.8	73.6
		PM		4.7	70.5
N2	1/F	AM	58.1	10.1	68.2
		PM		8.4	66.5
	31/F	AM	69.9	-0.9	69.0
		PM		-0.4	69.5
N3(A)	3/F	AM	67.1	12.2	79.3
		PM		11.4	78.5
	5/F	AM	71.7	3.5	75.2
		PM		2.9	74.6
N4	10/F	AM	67.4	1.4	68.8
		PM		2.6	70.0
	20/F	AM	68.0	0.6	68.6
		PM		0.8	68.8
N5	1/F	AM	70.6	-1.2	69.4
		PM		0.8	71.4

Monitoring Station	Floor	Time	Calculated Traffic Noise Levels, $L_{10(1\text{-hour})}$ dB(A) (EIA Traffic Data) [$NL_{CAL\ (TDERR2022)}$]	Differences between Measured and Calculated Traffic Noise Levels, dB(A)	Calibrated Predicted Traffic Noise Levels, $L_{10(1\text{-hour})}$ dB(A) (EIA Traffic Data) [$NL_{CAL,\ 2022}$]
	3/F	AM	71.2	0.0	71.2
		PM		1.7	72.9
N6	4/F	AM	72.2	-2.7	69.5
		PM		-5.1	67.1
	24/F	AM	76.3	-4.8	71.5
		PM		-3.5	72.8
February 2017					
N1	1/F	AM	63.7	3.7	67.4
		PM		5.5	69.2
	3/F	AM	65.8	3.8	69.6
		PM		3.3	69.1
N2	1/F	AM	58.1	12.0	70.1
		PM		6.0	64.1
	31/F	AM	69.9	-1.4	68.5
		PM		-2.3	67.6
N3(A)	3/F	AM	67.1	2.2	69.3
		PM		9.7	76.8
	5/F	AM	71.7	0.3	72.0
		PM		2.8	74.5
N4	10/F	AM	67.4	1.7	69.1
		PM		-1.1	66.3
	20/F	AM	68.0	-0.7	67.3
		PM		-1.7	66.3
N5	1/F	AM	70.6	0.3	70.9
		PM		0.0	70.6
	3/F	AM	71.2	-0.1	71.1
		PM		-1.0	70.2
N6	4/F	AM	72.2	6.4	78.6
		PM		1.6	73.8
	24/F	AM	76.3	-3.3	73.0
		PM		-3.0	73.3

Table IV – Summary of Measured Noise Levels (Adjusted)

Monitoring Station	Floor	Environmental Review Report Prediction		Range of Measured Noise Level (Adjusted)			
		Noise Level if Unmitigated	Predicted Noise Level with Mitigation Measures	1st Traffic Noise Monitoring, AM	1st Traffic Noise Monitoring, PM	2nd Traffic Noise Monitoring, AM	2nd Traffic Noise Monitoring, PM
N1	1/F	76.4	61.9	Not valid	Not valid	Not valid	Not valid
	3/F	82.3	65.1	Not valid	Not valid	Not valid	Not valid
N2	1/F	74.7	60.2	Not valid	Not valid	Not valid	Not valid
	31/F	81.0	69.5	69.0	69.5	68.5	67.6
N3(A)	3/F	78.1	72.7	Not valid	Not valid	Not valid	Not valid
	5/F	86.0	69.9	Not valid	Not valid	Not valid	Not valid
N4	10/F	78.4	68.1	68.8	70.0	69.1	66.3
	20/F	79.1	68.0	68.6	68.8	67.3	66.3
N5	1/F	75.6	72.7	69.4	71.4	70.9	70.6
	3/F	77.8	68.5	71.2	72.9	71.1	70.2
N6	4/F (Podium)	80.4	76.0	69.5	67.1	78.6	73.8
	24/F	79.1	77.0	71.5	72.8	73.0	73.3

Remarks: Justification for entries of "Not Valid" shown should be referred to Section 4 of the main text.

APPENDIX F
TRAFFIC NOISE MONITORING DATA

Appendix F - Summary of Traffic Noise Monitoring Results

Table I – 1st Traffic Noise Monitoring Results

- To represent measured noise level during peak hour in $L_{10\ (1\text{-hour})}$. The peak hour (either 0730 – 0830 or 0800 – 0900; and 1730 – 1830 or 1800 – 1900) is chosen whichever measured noise levels are higher. (*)

Monitoring Date	Monitoring Stations	Floor	Time	L_{eq} dB(A)	L_{10} dB(A)	L_{90} dB(A)
15 July 2016	N1 - Tai Wai New Village – Block 20	1/F (#)	07:30 - 08:00	64.1	65.8	61.9
			08:00 - 08:30	64.5	66.2	62.4
			08:30 - 09:00	65.5	67.6	62.9
			17:30 - 18:00	60.7	62.6	57.8
			18:00 - 18:30	61.7	63.0	58.8
			18:30 - 19:00	60.9	62.7	58.3
		3/F (#)	07:30 - 08:00	68.0	69.8	65.9
			08:00 - 08:30	67.6	69.3	65.4
			08:30 - 09:00	68.5	70.1	66.1
			17:30 - 18:00	64.5	66.7	61.0
			18:00 - 18:30	65.4	67.3	62.1
			18:30 - 19:00	65.0	66.8	62.3
15 July 2016	N2 - Holford Garden – Fook Hey Court	1/F (#)	07:30 - 08:00	59.9	61.4	58.1
			08:00 - 08:30	61.2	63.4	58.3
			08:30 - 09:00	63.9	65.3	62.0
			17:30 - 18:00	60.3	61.8	58.0
			18:00 - 18:30	61.3	62.7	58.9
			18:30 - 19:00	61.8	63.3	59.1
		31/F	07:30 - 08:00	65.8	67.2	64.1
			08:00 - 08:30	66.0	67.3	64.2
			08:30 - 09:00	65.6	67.2	63.8
			17:30 - 18:00	65.3	66.7	63.5
			18:00 - 18:30	65.7	67.2	63.9
			18:30 - 19:00	66.0	67.5	63.9
22 July 2016	N3(A) - 60 – 68 Chik Chuen Street – Tai Wai Cambridge Nursing Home	3/F	07:30 - 08:00	70.0	72.9	65.0
			08:00 - 08:30	70.5	72.9	66.0
			08:30 - 09:00	71.6	73.8	67.3
			17:30 - 18:00	70.7	73.3	67.1
			18:00 - 18:30	70.4	72.8	66.6
			18:30 - 19:00	70.9	73.3	66.8
		5/F	07:30 - 08:00	66.6	69.2	62.3
			08:00 - 08:30	66.8	69.2	63.2
			08:30 - 09:00	68.1	70.4	64.5
			17:30 - 18:00	67.3	69.8	64.2
			18:00 - 18:30	67.4	69.8	63.9
			18:30 - 19:00	67.6	69.9	64.0
22 July 2016	N4 - Mei Fung	10/F (#)	07:30 - 08:00	65.8	67.7	62.7

Monitoring Date	Monitoring Stations	Floor	Time	L_{eq} dB(A)	L_{10} dB(A)	L_{90} dB(A)
	House		08:00 - 08:30	66.1	67.9	63.2
			08:30 - 09:00	65.5	67.6	62.7
			17:30 - 18:00	67.2	69.0	64.2
			18:00 - 18:30	66.9	68.9	63.5
			18:30 - 19:00	67.4	69.2	63.3
		20/F	07:30 - 08:00	64.9	66.2	62.6
			08:00 - 08:30	65.2	67.0	62.7
			08:30 - 09:00	65.3	67.2	62.8
			17:30 - 18:00	65.7	67.4	63.5
			18:00 - 18:30	65.4	67.0	63.2
			18:30 - 19:00	65.6	67.5	62.9
29 July 2016	N5- 27 Tung Lo Wan Village	1/F (#)	07:30 - 08:00	67.5	69.4	64.9
			08:00 - 08:30	67.7	69.6	65.0
			08:30 - 09:00	67.9	69.8	64.8
			17:30 - 18:00	70.2	70.7	64.9
			18:00 - 18:30	69.0	71.0	65.6
			18:30 - 19:00	67.5	69.5	64.3
		3/F (#)	07:30 - 08:00	69.1	70.9	66.3
			08:00 - 08:30	69.3	71.4	66.2
			08:30 - 09:00	69.8	71.5	66.6
			17:30 - 18:00	71.5	71.8	65.9
			18:00 - 18:30	70.3	72.4	66.8
			18:30 - 19:00	68.6	70.6	65.3
29 July 2016	N6 - Scenery Court Block 1	4/F	07:30 - 08:00	68.7	69.4	67.7
			08:00 - 08:30	68.5	69.4	67.6
			08:30 - 09:00	68.9	69.5	67.7
			17:30 - 18:00	64.3	65.8	62.3
			18:00 - 18:30	64.6	66.0	62.6
			18:30 - 19:00	63.4	65.0	61.5
		24/F	07:30 - 08:00	70.0	71.6	68.2
			08:00 - 08:30	70.2	71.6	68.5
			08:30 - 09:00	69.7	71.0	68.1
			17:30 - 18:00	69.9	71.6	68.0
			18:00 - 18:30	69.1	70.8	67.0
			18:30 - 19:00	68.0	70.3	65.2

Remarks: (#) Noise levels measured by free field measurement have been adjusted with a correction of +3 dB(A)

(*) Use of $L_{10\ (1\text{-hour})}$ for calculating adjusted measured noise levels during peak hour was not adopted as measurement of $L_{10\ (1\text{-hour})}$ was not required in the approved EM&A Manual. For comparison with predicted noise levels in the ERR, an alternative method to use $L_{10\ (30\text{-min})}$, which is one of the monitoring requirement in the approved EM&A Manual, was adopted for traffic noise assessment in this Project instead of $L_{10\ (1\text{-hour})}$.

(^) In cases that there were significant difference of two noise levels recorded (>2 dB(A)) in the two 30-minute periods of the peak hour, larger inaccuracy of adjusted measured noise levels may be resulted. Despite, it is considered acceptable as adjusted measured noise levels obtained in such cases still represents the noise level in conditions of the busiest traffic and are considered indicative under limited options of data.

Table II – 2nd Traffic Noise Monitoring Results

- To represent measured noise level during peak hour in $L_{10\ (1\text{-hour})}$. The peak hour (either 0730 – 0830 or 0800 – 0900; and 1730 – 1830 or 1800 – 1900) is chosen whichever measured noise levels are higher. (*)

Monitoring Date	Monitoring Stations	Floor	Time	L_{eq} dB(A)	L_{10} dB(A)	L_{90} dB(A)
2 March 2017	N1 - Tai Wai New Village – Block 20	1/F (#)	08:00 - 08:30	61.7	64.0	57.5
			08:30 - 09:00	62.0	64.3	57.7
			09:00 - 09:30	62.6	63.8	57.5
			17:30 - 18:00	61.8	64.1	58.0
			18:00 - 18:30	63.5	65.3	59.1
			18:30 - 19:00	64.5	65.6	60.0
		3/F (#)	08:00 - 08:30	64.7	67.0	60.4
			08:30 - 09:00	65.1	67.3	60.7
			09:00 - 09:30	65.2	66.0	60.6
			17:30 - 18:00	63.2	65.5	59.2
			18:00 - 18:30	64.4	66.5	60.2
			18:30 - 19:00	65.2	66.6	61.0
2 March 2017	N2 - Holford Garden – Fook Hey Court	1/F (#)	08:00 - 08:30	64.4	67.4 (^)	58.4
			08:30 - 09:00	62.7	63.6	58.0
			09:00 - 09:30	62.8	62.5	57.4
			17:30 - 18:00	57.6	59.9	52.5
			18:00 - 18:30	58.3	60.2	54.6
			18:30 - 19:00	59.6	61.2	55.9
		31/F	08:00 - 08:30	65.4	66.8	63.4
			08:30 - 09:00	65.5	66.8	63.4
			09:00 - 09:30	65.2	66.4	63.2
			17:30 - 18:00	63.9	65.5	62.1
			18:00 - 18:30	64.1	65.5	62.3
			18:30 - 19:00	64.7	66.1	63.0
23 February 2017	N3(A) - 60 – 68 Chik Chuen Street – Tai Wai Cambridge Nursing Home	3/F	07:30 - 08:00	60.7	63.8	57.3
			08:00 - 08:30	60.3	62.2	57.2
			08:30 - 09:00	62.7	64.9	52.2
			17:30 - 18:00	67.2	69.5	64.0
			18:00 - 18:30	67.5	69.8	64.2
			18:30 - 19:00	67.5	69.7	64.5
		5/F	07:30 - 08:00	62.5	66.4	57.8
			08:00 - 08:30	63.8	67.9	58.1
			08:30 - 09:00	61.0	66.4	56.0
			17:30 - 18:00	67.8	69.4 (^)	63.9
			18:00 - 18:30	64.3	67.1	62.6
			18:30 - 19:00	65.7	68.4	62.3
23 February 2017	N4 - Mei Fung House	10/F (#)	08:00 - 08:30	66.4	68.1	63.5
			08:30 - 09:00	65.9	67.6	63.8

Monitoring Date	Monitoring Stations	Floor	Time	L_{eq} dB(A)	L_{10} dB(A)	L_{90} dB(A)
			09:00 - 09:30	66.6	68.7	63.8
			17:30 - 18:00	64.3	66.3	61.5
			18:00 - 18:30	64.2	66.1	61.6
			18:30 - 19:00	64.1	65.6	61.3
		20/F	08:00 - 08:30	65.1	66.5	62.6
			08:30 - 09:00	64.5	66.0	62.5
			09:00 - 09:30	64.4	66.2	61.9
			17:30 - 18:00	63.8	65.6	61.2
			18:00 - 18:30	64.2	65.9	61.7
			18:30 - 19:00	64.4	65.8	61.6
28 February 2017	N5- 27 Tung Lo Wan Village	1/F (#)	08:00 - 08:30	69.7	71.4	69.1
			08:30 - 09:00	69.2	71.0	70.9
			09:00 - 09:30	69.1	70.9	66.6
			17:30 - 18:00	69.1	71.0	65.8
			18:00 - 18:30	68.7	70.6	66.2
			18:30 - 19:00	68.2	70.0	65.0
		3/F (#)	08:00 - 08:30	69.5	71.4	66.9
			08:30 - 09:00	69.1	70.9	66.3
			09:00 - 09:30	69.0	70.9	66.0
			17:30 - 18:00	68.4	70.4	65.1
			18:00 - 18:30	68.2	70.0	65.5
			18:30 - 19:00	68.1	69.9	64.8
28 February 2017	N6 - Scenery Court Block 1	4/F	08:00 - 08:30	74.2	76.6	73.6
			08:30 - 09:00	76.7	78.5	74.3
			09:00 - 09:30	70.9	73.4	66.9
			17:30 - 18:00	70.4	72.9 (^)	66.4
			18:00 - 18:30	66.3	68.0	64.4
			18:30 - 19:00	65.5	67.9	63.2
		24/F	08:00 - 08:30	71.4	72.8	69.7
			08:30 - 09:00	71.2	72.5	69.4
			09:00 - 09:30	70.9	72.5	69.0
			17:30 - 18:00	70.7	72.3	68.8
			18:00 - 18:30	70.7	72.2	69.0
			18:30 - 19:00	70.4	71.9	68.6

Remarks: (#) Noise levels measured by free field measurement have been adjusted with a correction of +3 dB(A)

(*) Use of $L_{10\ (1\text{-hour})}$ for calculating adjusted measured noise levels during peak hour was not adopted as measurement of $L_{10\ (1\text{-hour})}$ was not required in the approved EM&A Manual. For comparison with predicted noise levels in the ERR, an alternative method to use $L_{10\ (30\text{-min})}$, which is one of the monitoring requirement in the approved EM&A Manual, was adopted for traffic noise assessment in this Project instead of $L_{10\ (1\text{-hour})}$.

(^) In cases that there were significant difference of two noise levels recorded (>2 dB(A)) in the two 30-minute periods of the peak hour, larger inaccuracy of adjusted measured noise levels may be resulted. Despite, it is considered acceptable as adjusted measured noise levels obtained in such cases still represents the noise level in conditions of the busiest traffic and are considered indicative under limited options of data.

APPENDIX G
SAMPLE OF FIELD RECORD SHEET

Traffic Noise Monitoring
Field Record Sheet

CINOTECH

General

Location	N1 (1/F).
Date of Monitoring	18 July 2016
Measurement time	(Morning traffic peak hour /~~Evening traffic peak hour~~)
	07:30, 08:00, 08:30.
Weather conditions	Sunny
Temperature (°C)	30°C.
Wind speed (ms^{-1})	1 m s-1.

Equipment

Instrument	Type	Equipment No.	Setting
Sound level meter	SVAN 955	N.08.03	A.
Calibrator	B&K 4231	N.02.01	A

Calibration

Before measurement:	93.9	After measurement:	93.9

Raw Data

Noise Measurements

	Parameter	Measured
Measurement Results (1st 30 mins)	L_{eq} dB(A)	61.1
	L_{10} dB(A)	62.8
	L_{90} dB(A)	58.9
Measurement Results (2nd 30 mins)	L_{eq} dB(A)	61.5
	L_{10} dB(A)	63.2
	L_{90} dB(A)	59.4.
Measurement Results (3rd 30 mins)	L_{eq} dB(A)	62.5
	L_{10} dB(A)	64.6
	L_{90} dB(A)	59.9.

Remarks: Monitoring should be cancelled if steady wind speed exceeds 5m/s or with gusts exceeding 10m/s.
Note: LV - light vehicle (i.e., private car, motorcycle and taxies)
HV - heavy vehicle (i.e., other than LV)
* - traffic count for a duration of 15 minutes
\# - a/b|c/d=near side LV/ near side HV | far side LV/far side HV

...../2

Traffic Noise Monitoring
Field Record Sheet

CINOTECH

Traffic Counts

Road Segments	Time (15 min each)	Traffic data*				Average traveling time			
		~~Near side~~ North		~~Far side~~ South		~~Near side~~ North		~~Far side~~ South	
		HV	LV	HV	LV	HV	LV	HV	LV
1	7:30	11	53	✓	✓	57	38	✓	✓
	7:45	8	35	✓	✓	45	45	✓	✓
	8:00	5	24	✓	✓	57	32	✓	✓
	8:15	10	54	✓	✓	45	45	✓	✓
	8:30	13	50	✓	✓	38	57	✓	✓
	8:45	13	11	✓	✓	45	45	✓	✓
2	7:30	1	2	1	2	40	50	40	40
	7:45	1	1	0	2	33	50	40	40
	8:00	0	1	0	3	50	50	40	50
	8:15	0	4	1	3	33	33	40	50
	8:30	0	1	0	1	33	50	50	40
	8:45	0	0	0	1	40	50	40	33
3	7:30	25	77	✓	✓	68	61	✓	✓
	7:45	37	98	✓	✓	68	68	✓	✓
	8:00	50	97	✓	✓	61	68	✓	✓
	8:15	39	99	✓	✓	68	68	✓	✓
	8:30	43	82	✓	✓	61	78	✓	✓
	8:45	55	82	✓	✓	78	61	✓	✓
3a	7:30	✓	✓	35	167	✓	✓	58	72
	7:45	✓	✓	46	182	✓	✓	58	72
	8:00	✓	✓	40	157	✓	✓	58	72
	8:15	✓	✓	36	148	✓	✓	48	58
	8:30	✓	✓	37	137	✓	✓	58	72
	8:45	✓	✓	19	139	✓	✓	48	58
4	7:30	✓	✓	151	476	✓	✓	63	79
	7:45	✓	✓	167	424	✓	✓	63	79
	8:00	✓	✓	168	406	✓	✓	63	79
	8:15	✓	✓	147	361	✓	✓	63	63
	8:30	✓	✓	163	292	✓	✓	79	70
	8:45	✓	✓	160	240	✓	✓	63	63
5	7:30	✓	✓	13	8	✓	✓	41	41
	7:45	✓	✓	11	14	✓	✓	35	31
	8:00	✓	✓	14	6	✓	✓	31	35
	8:15	✓	✓	12	10	✓	✓	31	35
	8:30	✓	✓	12	11	✓	✓	31	35
	8:45	✓	✓	16	15	✓	✓	41	31

Traffic Noise Monitoring
Field Record Sheet

CINOTECH

Traffic Counts

Road Segments	Time (15 min each)	Traffic data*				Average traveling time			
		~~Near side~~ North		~~Far side~~ South		~~Near side~~ North		~~Far side~~ South	
		HV	LV	HV	LV	HV	LV	HV	LV
6	7:30	✓	✓	8	49	✓	✓	82	55
	7:45	✓	✓	6	43	✓	✓	70	70
	8:00	✓	✓	5	37	✓	✓	62	82
	8:15	✓	✓	8	33	✓	✓	82	55
	8:30	✓	✓	4	22	✓	✓	55	55
	8:45	✓	✓	4	20	✓	✓	70	62
7	7:30	94	67	✓	✓	39	50	✓	✓
	7:45	61	80	✓	✓	50	39	✓	✓
	8:00	73	69	✓	✓	50	39	✓	✓
	8:15	53	72	✓	✓	44	50	✓	✓
	8:30	44	78	✓	✓	50	50	✓	✓
	8:45	55	73	✓	✓	50	58	✓	✓
8	7:30	✓	✓	81	91	✓	✓	46	46
	7:45	✓	✓	74	107	✓	✓	46	46
	8:00	✓	✓	79	112	✓	✓	52	52
	8:15	✓	✓	73	128	✓	✓	52	52
	8:30	✓	✓	87	163	✓	✓	46	46
	8:45	✓	✓	85	141	✓	✓	41	52