

## **5 NOISE IMPACT ASSESSMENT**

### **5.1 Introduction**

This section of the EIA assesses the potential noise impacts during both the construction and operational phases and identifies the mitigation measures which will be required to ensure that compliance with the relevant noise criteria is maintained.

The construction noise impact assessment presented in Section 5.4 is performed based upon the main construction activities that are anticipated for the road widening works as identified in the construction programme. Practicable mitigation measures are proposed, where necessary, to ensure compliance with the statutory requirements.

Road traffic noise impacts from the existing and widened Tolo Highway and Fanling Highway and the associated slip roads are evaluated in Section 5.5. The noise impact assessment has evaluated the potential traffic noise impacts upon the identified NSRs and recommends appropriate mitigation measures to minimise the impacts to meet the requirements of the Study Brief.

In summary, the following operational noise impact assessments have been performed based on traffic flow data agreed by Transport Department:

- Road traffic noise impacts upon identified NSRs from the existing road alignment at Year 2002 (prior to the commencement of the road widening works);
- Road traffic noise impacts upon identified NSRs at Year 2020; and
- Quantitative comparison between the NIA for 24 Hour Opening of Border Crossings Study and the NIA Study for this widening project.

It has been agreed with Transport Department (Refer to Appendix 5.5) that within a 15 year period following the opening of the completed widening works, the maximum traffic noise impacts will be experienced in Year 2020. As such, the road traffic noise impact assessment will be performed for Year 2020 as per the requirements of CRTN.

### **5.2 Description of Surrounding Environment**

#### **5.2.1 Baseline Conditions**

It was observed from site visits that the dominant noise source in the immediate vicinity of the study area is road traffic noise. To a lesser degree, rail noise from the KCR railway line also impacts the study area, although any impacts related to these rail operations are outside the scope of this study.

In order to establish the background noise climate of the study area, spot noise measurements were undertaken along the Project route. Noise measurements were performed at seven locations (Figures 5.4.1 – 5.4.7) during peak traffic hours. The measurement results are summarised in Table 5.1. The results indicate that Tai Hang Village, Wan Tau Tong Estate and Wo Hop Shek are already subject to high traffic noise levels, with the measured  $L_{10}$  levels exceeding 70 dB(A). Spot noise measurements were further conducted at eleven other locations (Figures 5.5.1 – 5.5.5) during non peak hours. The measurement results are summarised in Table 5.2. As indicated by the results, high  $L_{10}$  levels (> 70 dB(A)) have been recorded at Avon Park and the footbridge near Wong Kong Shan, where they are located in close proximity to Fanling Highway. Therefore, it can be concluded that in general, NSRs located in close proximity to Fanling Highway are currently being impacted by high road traffic noise levels, even during non peak traffic hours.

**Table 5.1 Background Noise Measurement Results (Spot Measurements during Peak Hours)**

Location	Description	Measurement Time	L <sub>10</sub> (30 min) dB(A)	L <sub>90</sub> (30 min) dB(A)	L <sub>eq</sub> (30 min) dB(A)
A	Tai Hang Village	16/4/99 (6:05-6:35 PM)	78.5	71.0	77.3
B	Kau Liu Ha Village	16/4/99 (6:45-7:15 PM)	62.5	55.5	60.5
C	Wan Tau Tong Estate	20/4/99 (8:36-9:06 AM)	80.5	75.5	78.9
D	Wan Fuk Court	20/4/99 (9:36-10:06 AM)	66.0	58.5	63.5
E	Wo Hop Shek	20/4/99 (6:19-6:49 PM)	73.0	59.0	70.1
F	Parc Versailles	21/4/99 (8:32-9:02 AM)	56.0	52.0	54.5
G	Shek Kwu Lung	21/4/99 (9:30-10:00 AM)	56.5	48.0	53.7

**Table 5.2 Background Noise Measurement Results (Spot Measurements during Non Peak Hours)**

Location	Description	Measurement Time	L <sub>10</sub> (5 min) dB(A)	L <sub>90</sub> (5 min) dB(A)	L <sub>eq</sub> (5 min) dB(A)
H	Fanling Government Secondary School	6/5/99 (10:40 AM)	68.5	61.0	65.8
I	Avon Park	6/5/99 (11:10 AM)	69.5	64.0	67.7
J	Avon Park facing Fanling Highway	6/5/99 (11:25 AM)	80.5	74.5	78.7
K	Footbridge near Wong Kong Shan	6/5/99 (11:38 AM)	78.0	69.0	74.1
L	Tai Wo	6/5/99 (1:10 PM)	69.4	63.5	67.5
M	Kau Lung Hang	6/5/99 (1:50 PM)	64.0	58.0	61.5
N	Basketball Court at Kwong Fuk Estate	3/6/99 (2:10 PM)	67.5	60.0	65.6
O	Dynasty View	3/6/99 (3:15 PM)	62.5	56.5	60.2
P	Next to Monastery at Ma Wo	3/6/99 (3:25 PM)	60.0	56.0	58.6
Q	Dynasty View	3/6/99 (3:40 PM)	61.5	55.5	59.6
R	Ma Wo	3/6/99 (3:57 PM)	66.5	58.5	63.9

### 5.2.2 Future Trends

With reference to the Traffic Impact Assessment conducted for the Project, the forecast traffic demand in the southbound direction of Tolo Highway / Fanling Highway within the Project area would likely exceed the road design capacities of the existing highways. This increase in traffic likely results from the socio-economic growth in the New Territories. As a result of higher traffic flow on roads, traffic noise level will likely increase in the future if no mitigation measures are implemented.

### 5.3 Noise Sensitive Receivers

The spatial scope of the noise assessment for both construction and operational phases is 300 metres from either side of the alignment. In accordance with Annex 13 of EIA-TM, domestic premises including temporary housing, educational institutions including kindergartens and nurseries, hospitals, medical clinics, homes for the aged, convalescent homes, places of public worship, libraries, court of laws, performing arts centres, auditoria, amphitheatres, hostels and country parks are considered as Noise Sensitive Receivers (NSRs). A thorough review of all the latest Outline Zoning Plans, Outline Development Plans (refer to Section 4.3, Table 4.2), and the Register of all the recent rezoning applications in the Technical Services section of the Planning Department was conducted in order to identify both existing and committed land uses. Site visits have also been conducted in order to identify any potential representative NSRs as well as any noise sensitive structures that no longer exist. Based on the results of this research, the following categories of noise sensitive receivers which may be impacted

have been identified.

- current residential populations (including temporary accommodation);
- future residential populations; and
- non-residential locations (including places of public worship and educational institutions).

Representative NSRs selected for the noise impact assessment modelling and their associated land uses are listed in Tables 5.3 to 5.6. The locations of the NSRs are presented in Figures 5.1.1 to 5.1.40 and Drawings 551/R/9002 to 9016.

**Table 5.3 Selected Representative Noise Sensitive Receivers (NSRs) between Pak Wo Road and Hong Lok Yuen Road**

Selected SR ID	Description	Land Use <sup>A</sup>	Easting (m)	Northing (m)	1 <sup>st</sup> Level Assessment Elevation (mPD)
SR1	Avon Park	R	832816	838702	38.1
SR2	Fanling Government Secondary School	Ed	832959	838483	23
SR3	Dawning Views 1	R	832993	838637	32.5
SR3A	Dawning Views 2	R	833003	838630	32.5
SR7	Southwest Tong Hang	R	833385	838652	14.4
SR8 <sup>1</sup>	Wo Hop Shek 1	R	833283	838482	15.5
SR9 <sup>1</sup>	Wo Hop Shek 2	R	833622	838357	23.6
SR10	Kau Lung Hang	R	833885	838283	17.2
SR11	Kiu Tau	R	833907	837945	18.8
SR86	Tong Hang	R	833923	838068	18.4
SR12	Nam Wa Po 1	R	833801	837654	29.2
SR84	Nam Wa Po 2	R	833853	837518	19.7
SR85	Nam Wa Po 3	R	833869	837338	23.1
SR13	West Tai Wo	R	833795	836913	25
SR14	Tai Wo 1	R	833910	836947	27.7
SR87	Tai Wo 2	R	833959	837232	26.1
SR17*	Tai Hang 1	R	833759	836655	25.7
SR17A	Tai Hang 2	R	833751	836650	25.7
SR17B	Tai Hang 3	R	833739	836634	25.7
SR81	Tai Hang 4	R	833728	836568	25.2
SR82N	Tai Hang 5	R	836763	833756	24.2
SR19	Hong Lok Yuen 1	R	833731	836197	32.9
SR20	Hong Lok Yuen 2	R	833730	836187	32.9
SR21	Hong Lok Yuen 3	R	833763	836313	33.9
SR22	Wai Tau Tsuen 1	R	833311	835997	28.2
SR80	Wai Tau Tsuen 3	R	833553	836309	26.2
SR88	Wai Tau Tsuen 4	R	833320	836046	27.6
SR89	Wai Tau Tsuen 5	R	833328	836103	28.1
SR90	Wai Tau Tsuen 6	R	833374	836166	25.7
SR75	Wong Kong Shan	R	832918	838843	15.7
SR76	Yuen Leng 1	R	834018	837549	22
SR77	Yuen Leng 2	R	833988	837406	23.9
SR83	Yuen Leng 3	R	833934	837746	19.2
SR96 <sup>#</sup>	Village Zone near Wai Tau Tsuen	R	833681	836045	33
SR97 <sup>#</sup>	Village Zone at Tai Wo 1	R	833919	836670	25
SR98 <sup>#</sup>	Village Zone at Tai Wo 2	R	833929	836801	23.8

Selected SR ID	Description	Land Use <sup>A</sup>	Easting (m)	Northing (m)	1 <sup>st</sup> Level Assessment Elevation (mPD)
SR107	Village House near Hong Lok Yuen	R	833675	836277	27.1
SR108	Tai Hang Village House	R	833602	836557	25.7
SR109	Village House near Nam Wa Po	R	833791	837238	22.5

Notes:

<sup>A</sup> : Residential uses (R); Educational uses (Ed); Temple/Place of Worship (T)

\* : Selected for comparison purpose only. Will be demolished after commencement of the road widening works.

# Planned NSR

<sup>1</sup> Based on site observation, structures located closer to the highway are used for industrial activities. Hence SR8 and SR9 are chosen for assessment.

It should be noted that there are existing noise sensitive premises at Tai Hang which fall within the widened road alignment area. These premises will need to be resumed and therefore will not exist after the commencement of the work. As such, the future first layer of NSRs at Tai Hang will then be the village houses currently located behind the front row.

**Table 5.4 Selected Representative Noise Sensitive Receivers (NSRs) between Hong Lok Yuen Road and Tai Po Tai Wo Road**

Selected SR ID	Description	Land Use <sup>B</sup>	Easting (m)	Northing (m)	1 <sup>st</sup> Level Assessment Elevation (mPD)
SR23	Wai Tau Tsuen 2	R	833295	835868	28.7
SR24	Kau Liu Ha 1	R	833007	835534	19.1
SR25	Kau Liu Ha 2	R	833011	835521	19.1
SR26	Tai Po Garden	R	833886	834978	13.8
SR27	Mui Shu Hang	R	833717	834693	15.7
SR28	Northwest Shek Kwu Lung	R	833802	834667	21.2
SR29	Parc Versailles 1	R	833960	834769	11.5
SR29A	Parc Versailles 2	R	834057	834685	11.5

Notes:

<sup>B</sup> : Residential uses (R)

**Table 5.5 Selected Representative Noise Sensitive Receivers (NSRs) between Tai Po Tai Wo Road and Tat Wan Road**

Selected SR ID	Description	Land Use <sup>C</sup>	Easting (m)	Northing (m)	1 <sup>st</sup> Level Assessment Elevation (mPD)
SR30A	Shek Kwu Lung 4	R	834088	834428	13.4
SR30B	Shek Kwu Lung 5	R	834059	834401	17.2
SR30C	Shek Kwu Lung 6	R	834017	834372	31.2
SR31	Shek Kwu Lung 2	R	834198	834446	9.9
SR33	Shek Kwu Lung 3	R	834123	834155	33.2
SR34	Pun Chun Yuen	R	833952	834079	58.8
SR35	Buddhist Tai Kwong Middle School	Ed	834184	834144	32.4
SR36	Ma Wo	R	834428	833704	43.2
SR38	Dynasty View 1	R	834479	833625	37.7
SR55	Dynasty View 2	R	834514	833555	37.7
SR56	Monastery at Ma Wo	T	834560	833482	42.5
SR78	Dynasty View 3	R	834643	833476	33.7
SR91 <sup>#</sup>	New Residential (B) Zone near To Yuen Tung 1	R	834716	833415	40
SR92 <sup>#</sup>	New Residential (B) Zone near To Yuen Tung 2	R	834770	833401	40
SR95B	Tai Po Normal School Memorial School	Ed	834289	834295	16.6
SR103	Classical Garden	R	834808	833592	27.2
SR104	Village House near Ma Wo 1	R	834385	833504	81.2
SR105	Village House near Ma Wo 2	R	834256	833826	79.4

Selected SR ID	Description	Land Use <sup>c</sup>	Easting (m)	Northing (m)	1 <sup>st</sup> Level Assessment Elevation (mPD)
SR106	Village House near Shek Kwu Lung	R	833770	834463	39.2

Notes:

<sup>c</sup> : Residential uses (R); Educational uses (Ed); Temple/Place of Worship (T)

<sup>#</sup> Planned SR

With reference to the Outline Zoning Plan No. S/TP/11 gazetted on 20 August 1999, there is a new “Residential (Group B)” zone located near To Yuen Tung adjacent to Dynasty View. Two additional sensitive receivers (SR91 and SR92) have therefore been included for the operational noise impact assessment. As details of development in this R(B) zone are not available, the proposed locations of the planned SRs which best represent the worst case have been chosen according to the following recommendations:

- NSRs for “Village” zone should be assigned at the zone boundary closest to the highway
- NSRs for “Residential” zone should be assigned at 10 metres setback from the zone boundary closest to the highway

**Table 5.6 Selected Representative Noise Sensitive Receivers (NSRs) between Tat Wan Road and Island House Interchange**

Selected SR ID	Description	Land Use <sup>d</sup>	Easting (m)	Northing (m)	1 <sup>st</sup> Level Assessment Elevation (mPD)
SR39	The Paragon	R	835904	833771	37.3
SR40	Grand Palisades	R	835853	833633	59
SR41	Wong Shiu Chi Middle School	Ed	835728	833992	6.4
SR42	Wan Tau Tong Estate - Wan Lam House 1	R	835398	833644	12.8
SR43	Wan Tau Tong Estate - Wan Lam House 2	R	835365	833629	12.8
SR44	Wan Tau Tong Estate - Wan Loi House	R	835448	833702	12.8
SR45	HK Teacher's Association Secondary School	Ed	835530	833672	13.6
SR46	Uptown Plaza	R	835537	833772	30.3
SR47	Wang Fuk Court – Wang Cheong House 1	R	836216	834105	6.8
SR48	Wang Fuk Court – Wang Cheong House 2	R	836213	834126	6.8
SR49	Wang Fuk Court – Wang Cheong House 3	R	836197	834106	6.8
SR50	Wang Fuk Court – Wang Tat House	R	836154	834102	6.8
SR51	Wang Fuk Court – Wang Shing House	R	836210	834164	6.8
SR52	Ha Wong Yi Au 1	R	836061	833848	29.2
SR53	Ha Wong Yi Au 2	R	836215	833712	11
SR54	Riverrain Bayside	R	836343	833757	8.5
SR57	King Nga Court - King Yuet House 1	R	835187	833453	14.6
SR58	King Nga Court – King Yuet House 2	R	835208	833457	14.6
SR59N	King Nga Court – King Yan House	R	835252	833493	14.6
SR60	Tak Nga Court 1	R	835156	833458	16.3
SR61	Tak Nga Court 2	R	835143	833463	16.3
SR62	Ha Wun Yiu	R	834870	833294	29.6
SR63	Lai Chi Shan	R	835064	833211	22.4
SR64	Shan Tong New Village 1	R	835425	833404	44.3
SR65	Shan Tong New Village 2	R	835538	833460	41.8
SR66	P.L.K. Tin Ka Ping Primary School	Ed	835287	833553	14.6
SR67	Redland Garden	R	836715	833567	29.4

Selected SR ID	Description	Land Use <sup>D</sup>	Easting (m)	Northing (m)	1 <sup>st</sup> Level Assessment Elevation (mPD)
SR70	Kwong Fuk Estate - Kwong Lai House	R	836215	834287	9.7
SR73	Island House Conservation Studies Centre	Ed	836473	834040	17.2
SR79	Care Village	R	836431	833753	5.6
SR93	S.K.H. Mok Sau Tsang Secondary School	Ed	835573	833974	25.6
SR94	Choi Hin To Primary School	Ed	835183	833551	15.5
SR99 <sup>#</sup>	Ha Wong Yi Au 3	R	836158	833827	6.4
SR99A <sup>#</sup>	Ha Wong Yi Au 4	R	836185	833850	6.4
SR100	KCRC Staff Quarter at Tai Po Kau	R	836803	833546	10.2
SR101	Chateau Royale	R	836328	833652	20.2

Notes:

<sup>D</sup> : Residential uses (R); Educational uses (Ed); Recreational uses (Rec)

<sup>#</sup> Planned SR

For the review of the Noise Impact Assessment for 24 Hour Opening of Border Crossings study (undertaken by Highways Department in 1998), the NSRs assessed which fall within the current study area have also been selected for the current noise assessment of the road widening works. These NSRs are summarised in Table 5.7. With reference to the NIA for 24 Hour Opening of Border Crossings study, it has been concluded that Kau Liu Ha Village SR25 (F38) “is shielded from traffic noise by the elevated structure at the Lam Kam Road Interchange. No major noise problem is anticipated and no mitigation measure is required”. Therefore this NSR was not included in the review.

**Table 5.7 Summary of Current Selected NSR Locations which are the same as proposed in the NIA for 24 Hour Opening of Border Crossings**

Selected SR ID	24-hr NIA Study NSR Façade ID	Description (as in this EIA study)
SR46	F23	Uptown Plaza
SR44	F24	Wan Tau Tong Estate - Wan Loi House
SR43	F25	Wan Tau Tong Estate - Wan Lam House 2
SR59N	F26	King Nga Court – King Yan House
SR58	F27	King Nga Court – King Yuet House 2
SR61	F28	Tak Nga Court 2
SR64	F29	Shan Tong New Village 1
SR47	F30	Wang Fuk Court – Wang Cheong House 1
SR49	F31	Wang Fuk Court – Wang Cheong House 3
SR50	F32	Wang Fuk Court – Wang Tat House
SR51	F33	Wang Fuk Court – Wang Shing House
SR20	F37	Hong Lok Yuen 2
SR17	F45	Tai Hang 1

## 5.4 Construction Phase Noise Impacts

### 5.4.1 Identification of Noise Impacts

The road widening works, if unmitigated, are likely to generate significant noise impacts which will affect the surrounding NSRs. The extent of the construction noise impacts affecting the identified NSRs will vary due to the different types, locations and timing of Powered Mechanical Equipment (PME) to be used for the construction works. The movement of construction road traffic on access and haul roads will likely impose cumulative noise impacts during the construction phase.

### 5.4.2 Assessment Methodology

The computer model “siteNoise”, which is based on the calculation method for equivalent continuous sound level in British Standard 5228 (BS 5228), “Noise Control on Construction and Open Site”, has been used in this study. In order to assess the worst case scenario, the sound power levels (SWLs) of the PMEs has been adopted from *Technical Memorandum on Noise from Construction Works other than Percussive Piling* (GW-TM). Where the SWL of a particular plant is not available from the GW-TM, reference was made to BS 5228. The locations of PME has been assumed to be at the positions where they are most likely to be located according to the implementation program.

In accordance with Clause 3.5.1(iv.a) of the EIA Study Brief (No. ESB-004/1998), the construction noise impacts (excluding percussive piling) has been assessed for daytime works only, i.e., 0700 to 1900 hours on weekdays other than general holidays. The construction noise assessment criteria for 0700 to 1900 hours on any day not being a Sunday or public holiday (as presented in Section 3) are as follows:

- $L_{eq(30min)}$  75 dB(A) for residential premises, and
- $L_{eq(30min)}$  70 dB(A) for schools ( $L_{eq(30min)}$  65 dB(A) during examinations).

The construction noise assessment criterion for schools has been targeted at  $L_{eq(30min)}$  65 dB(A). However, it is recognised that this target is only applicable during examination periods. Normally the construction noise criterion for classroom activities is  $L_{eq(30min)}$  70 dB(A). As examination periods are not anticipated to extend over long periods, appropriate construction activity planning and/or mitigation measures have been recommended for school NSRs where exceedances of  $L_{eq(30min)}$  65 dB(A) have been predicted.

### 5.4.3 Impact Prediction

The construction program (given in Appendix 1.1), which has been agreed by Highways Department, will extend over a period of approximately 3 years (June 2002 to November 2005), with site clearance, earthworks and construction activities phased according to the following sections of highway:

- Section 1, between Island House and Tat Wan Road (Chainage 0100-1900)
- Section 2, between Tat Wan Road and Tai Po Tai Wo Road (Chainage 1900-4000)
- Section 3, between Tai Po Tai Wo Road and Hong Lok Yuen Road (Chainage 4000-5300)
- Section 4, between Hong Lok Yuen Road and Pak Wo Road (Chainage 5300-8700)

A list of the equipment to be employed and the associated sound power levels (SWLs), which has been agreed by HyD, is given in Appendix 5.1. For each section, the total sound power level (SWL) of the PME for each week of the construction period has been calculated (Appendix 1.1). The calculated maximum total SWL, with all equipment to be operated at 100% on time, represents the worst case scenario affecting the NSRs located in close proximity to that particular section. The corresponding worst case scenario week numbers for each section have been identified and are as follows:

- Section 1 – Week No. 21
- Section 2 – Week No. 38
- Section 3 – Week No. 30
- Section 4 – Week No. 77

Detailed modelling has been performed for each of these weeks to predict the potential noise levels and to determine the necessary mitigation measures. Construction noise levels at all identified NSRs originating from the works at each section during a particular worst case

week have been calculated.

Apart from fixed noise sources, noise from the construction vehicle movements on the haul roads has also been modelled. In the model, the slow lane of the existing Tolo Highway has been taken as the haul road. Noise from the haul road traffic has been modelled separately for the four work sections. The estimated number of vehicle movements on the haul road for each section is given in Appendix 5.2 and is assumed to be constant over the entire construction period. Noise contributions from each section (including both fixed and mobile sources) affecting a particular NSR have been logarithmically added together to establish the cumulative noise impacts (arising from the proposed construction works) during that particular worst case week.

For each of these identified worst case weeks, the unmitigated construction noise levels resulting from the construction works over the entire length of the Project area has been predicted at all identified NSRs. According to the best available information and through discussion with HyD, it is understood that there will be no other major construction activities carried out concurrently with this Project. Therefore, there will be no cumulative construction noise impacts from other projects.

In the absence of any mitigation measures, exceedance of the  $L_{eq(30 \text{ min})}$  75 and 65 dB(A) construction noise criteria for residential uses and educational uses, respectively, have been predicted. The prediction results for the unmitigated scenario are summarised in Table 5.8 and detailed in Appendix 5.4.

**Table 5.8 Summary of Predicted Construction Noise Levels without Mitigation Measures**

SR ID	Description	Floor	mPD	Predicted Construction Noise $L_{eq(30 \text{ min})}$ dB(A)							
				Section 1 (Week 21)		Section 3 (Week 30)		Section 2 (Week 38)		Section 4 (Week 77)	
SR1	Avon Park	1/F	38.1	0	0	46.9	67.4				
		13/F	71.7	0	0	47.8	68.7				
		25/F	105	0	0	47.1	68.7				
SR2	Fanling Government Secondary School	1/F	23	0	0	46.8	70.6	X			
SR3	Dawning Views 1	1/F	32.5	0	0	54.8	72.7				
		14/F	68.9	0	0	54.4	72.6				
		28/F	108	0	0	53.4	72.3				
SR3A	Dawning Views 2	1/F	32.5	0	0	55.4	72.9				
		14/F	68.9	0	0	54.8	72.8				
		28/F	108	0	0	53.9	72.6				
SR7	Southwest Tong Hang	G/F	14.4	0	0	59.3	87.5	X			
		1/F	17.1	0	0	59.3	87.5	X			
SR8	Wo Hop Shek 1	G/F	15.5	0	0	48.4	65.5				
		1/F	18.2	0	0	48.5	65.5				
SR9	Wo Hop Shek 2	G/F	23.6	0	0	60.2	81.4	X			
		1/F	26.3	0	0	60.1	81.3	X			
SR10	Kau Lung Hang	G/F	17.2	20.4	20.4	58.1	76.1	X			
SR11	Kiu Tau	G/F	18.8	7	0	61.7	97.4	X			
		1/F	21.5	7	0	61.7	97.5	X			
SR12	Nam Wa Po	G/F	29.2	27.3	27.3	58.1	77.6	X			
		1/F	31.9	27.3	27.3	58.1	77.6	X			
SR13	West Tai Wo	G/F	25	30.9	30.9	62.3	104.6	X			
		2/F	30.4	30.9	30.9	62.2	102.4	X			
SR14	Tai Wo	G/F	27.7	8.5	0	59.7	81.5	X			
		1/F	30.4	8.5	0	59.7	81.5	X			
SR17A	Tai Hang 2	G/F	25.7	33.4	33.4	72.1	78.6	X			
		2/F	31.1	33.4	33.4	72.1	78.5	X			
SR17B	Tai Hang 3	G/F	25.7	0	0	60.3	62.2				
		2/F	31.1	0	0	60.3	62.1				



SR ID	Description	Floor	mPD	Predicted Construction Noise $L_{eq(30 min)}$ dB(A)							
				Section 1 (Week 21)		Section 3 (Week 30)		Section 2 (Week 38)		Section 4 (Week 77)	
SR19	Hong Lok Yuen 1	G/F	32.9	55.7		57.6		71.7		74.7	
		2/F	38.3	57.6		59.8		72.7		74.8	
SR20	Hong Lok Yuen 2	G/F	32.9	55.8		57.8		72.6		74.3	
		2/F	38.3	57.7		59.9		73		74.4	
SR21	Hong Lok Yuen 3	G/F	33.9	52.9		55.5		75.8	X	78.3	X
		2/F	39.3	54.1		57.4		75.8	X	78.3	X
SR22	Wai Tau Tsuen 1	G/F	28.2	63.1		67.5		79.7	X	78.3	X
		1/F	30.9	63.3		68.4		79.7	X	78.3	X
SR23	Wai Tau Tsuen 2	G/F	28.7	69.3		71.4		73		78.3	X
		1/F	31.4	70.2		72.7		77.4	X	78.3	X
SR24	Kau Liu Ha 1	G/F	19.1	69		71		76.4	X	78.3	X
		2/F	24.5	71.9		74		79.4	X	78.3	X
SR25	Kau Liu Ha 2	G/F	19.1	69.2		71.1		76.8	X	78.3	X
		2/F	24.5	72		74.1		79.6	X	67.4	
SR26	Tai Po Garden	G/F	13.8	57.7		61.6		68		65.7	
		4/F	25	58.3		62.6		68.8		65.9	
SR27	Mui Shu Hang	G/F	15.7	65.5		65.8		75.4		74.5	
		1/F	18.4	65.6		65.9		75.4		74.5	
SR28	Northwest Shek Kwu Lung	G/F	21.2	62.7		62.8		78.7	X	80.5	X
		1/F	23.9	63.2		63.2		78.7	X	80.5	X
SR29	Parc Versailles 1	G/F	11.5	57.1		61		73.3		72.8	
		5/F	25.5	58.4		64		73.9		73.4	
SR29A	Parc Versailles 2	G/F	11.5	57		57.1		69.2		69.3	
		5/F	25.5	59.8		61.1		70.7		71.2	
SR30A	Shek Kwu Lung 4	G/F	13.4	75		75		73.8		73.6	
		2/F	18.8	75.1		75.1		74.3		73.7	
SR30B	Shek Kwu Lung 5	G/F	17.2	72.1		72.2		71.6		72.7	
		2/F	22.8	72.5		72.6		72.2		72.9	
SR30C	Shek Kwu Lung 6	G/F	31.2	62.8		63.2		64.9		71.1	
		2/F	36.8	66.5		66.7		69.5		72.9	
SR31	Shek Kwu Lung 2	G/F	9.9	70.3		70.4		70		68.1	
		2/F	15.3	70.3		70.5		70.1		68.7	
SR33	Shek Kwu Lung 3	G/F	33.2	80.5	X	82.4	X	80.3	X	79.6	X
SR34	Pun Chun Yuen	G/F	58.8	70		73.8		68.3		72.4	
		1/F	61.5	71.1		74.9		68.9		72.9	
SR35	Buddhist Tai Kwong Middle School	1/F	37.3	72.8		76.9	X	76.1	X	74.9	X
SR36	Ma Wo	G/F	43.2	76	X	75.8	X	77.5	X	61.3	
		1/F	45.9	76.2	X	76	X	77.6	X	61.6	
SR38	Dynasty View 1	1/F	37.7	65.4		65.2		65.2		68.7	
		5/F	48.9	74.6		73.8		73.8		75.8	X
		8/F	57.3	78.6	X	78.3	X	78.3	X	76.4	X
SR39	The Paragon	1/F	37.3	70.5		69.4		70.6		69.9	
		5/F	48.5	76.7	X	74.9		75.9	X	73.6	
		9/F	59.7	77.1	X	75.2		76.2	X	73.8	
SR40	Grand Palisades	1/F	59	70.9		70.3		70.6		72.2	
		6/F	73	73.5		72.8		73.1		73.1	
		10/F	84.2	74.1		73.1		73.5		73.1	
SR41	Wong Shiu Chi Middle School	1/F	6.4	74.2		72.6	X	73.1	X	70.9	X
		5/F	18.4	74.4		72.7	X	73.3	X	71	X
SR42	Wan Tau Tong Estate - Wan Lam House 1	1/F	12.8	67.1		68.9		61.7		75.7	X
		15/F	52	70.6		72.2		70.4		76.6	X
		31/F	96.8	70.9		72.6		72.5		75.3	
SR43	Wan Tau Tong Estate - Wan Lam House 2	1/F	12.8	75.9	X	75.9	X	56.5		73.1	
		15/F	52	75.8	X	75.8	X	56.5		72.2	
		31/F	96.8	75.3		75.3		56.3		69.7	
SR44	Wan Tau Tong Estate - Wan Loi House	1/F	12.8	67.5		65.4		66.5		74.8	
		15/F	52	71		72.3		71.5		76.9	X
		31/F	96.8	72.1		74		73.8		76.1	X

SR ID	Description	Floor	mPD	Predicted Construction Noise $L_{eq(30\text{ min})}$ dB(A)							
				Section 1 (Week 21)		Section 3 (Week 30)		Section 2 (Week 38)		Section 4 (Week 77)	
SR45	HK Teacher's Association Secondary School	1/F	13.6	77.3	X	80.2	X	72	X	82	X
		6/F	28.6	77.3	X	80.1	X	75.7	X	82	X
SR46	Uptown Plaza	1/F	30.3	73.3		75.4		70.5		75.9	X
		13/F	63.9	73.3		75.1		73.7		75.6	X
		26/F	100	73		74.5		74.5		75.3	
SR47	Wang Fuk Court – Wang Cheong House 1	1/F	6.8	82	X	77.9	X	78	X	67.6	
		15/F	46	82.2	X	78.9	X	79.2	X	72.8	
		31/F	90.8	80.4	X	77.4	X	77.7	X	72.5	
SR48	Wang Fuk Court – Wang Cheong House 2	1/F	6.8	77.1	X	73.1		73.1		0	
		15/F	46	76.2	X	72.2		72.2		0	
		31/F	90.8	73.4		69.4		69.4		0	
SR49	Wang Fuk Court – Wang Cheong House 3	1/F	6.8	77.9	X	73.7		74.2		68	
		15/F	46	79.7	X	77	X	77.9	X	73	
		31/F	90.8	79	X	76.3	X	77.1	X	72.7	
SR50	Wang Fuk Court – Wang Tat House	1/F	6.8	77.3	X	73.4		74.4		69.7	
		15/F	46	79.1	X	76.6	X	77.8	X	73	
		31/F	90.8	78.6	X	76.1	X	77.1	X	72.8	
SR51	Wang Fuk Court – Wang Shing House	1/F	6.8	0		0		0		0	
		15/F	46	0		0		0		0	
		31/F	90.8	0		0		0		0	
SR52	Ha Wong Yi Au 1	G/F	29.2	80	X	76.7	X	77.3	X	73.9	
		2/F	34.6	83.4	X	80.1	X	80.8	X	77.2	X
SR53	Ha Wong Yi Au 2	G/F	11	70		66.7		66.8		67.9	
		1/F	13.7	73.3		69.7		69.8		70.9	
SR54	Riverrain Bayside	G/F	8.5	78.8	X	75.3		75.5	X	78.6	X
		2/F	14.1	80.3	X	76.7	X	76.8	X	79.1	X
SR55	Dynasty View 2	1/F	37.7	75.7	X	75.6	X	75.6	X	54.3	
		4/F	46.1	80.8	X	80.7	X	80.7	X	56.5	
		8/F	57.3	80.9	X	80.7	X	80.7	X	57.9	
SR56	Monastery at Ma Wo	G/F	42.5	82	X	82	X	82.2	X	57.6	
		1/F	45.2	82	X	82	X	82.4	X	57.8	
SR57	King Nga Court – King Yuet House 1	1/F	14.6	83.7	X	83.7	X	68.7		69.7	
		18/F	62.2	82.5	X	82.6	X	72.1		69.7	
		36/F	113	80.1	X	80.1	X	71.5		69.3	
SR58	King Nga Court – King Yuet House 2	1/F	14.6	85.9	X	85.9	X	69.3		72.4	
		18/F	62.2	84.1	X	84.1	X	72.4		72.8	
		36/F	113	81	X	81	X	72.3		72.4	
SR59N	King Nga Court – King Yan House	1/F	14.6	86.7	X	86.8	X	66.2		73.1	
		18/F	62.2	84.6	X	84.6	X	69.6		73	
		36/F	113	81.2	X	81.2	X	70		72.5	
SR60	Tak Nga Court 1	1/F	16.3	68.3		68.3		71.1		70.2	
		17/F	61.1	69		69		72.8		70.3	
		34/F	109	68.4		68.4		72.1		69.8	
SR61	Tak Nga Court 2	1/F	16.3	68.5		68.8		71.4		70.3	
		17/F	61.1	69.4	X	73.8		74		70.3	
		34/F	109	70.3		74.8		74.4		69.9	
SR62	Ha Wun Yiu	G/F	29.6	75.6	X	75.8	X	76.9	X	74.8	
		1/F	32.3	75.6	X	75.8	X	76.9	X	74.8	
SR63	Lai Chi Shan	G/F	22.4	71.5		75.7	X	75		74.9	
		1/F	25.1	72.9		76.3	X	76.5	X	74.9	
SR64	Shan Tong New Village 1	G/F	44.3	70.6		72.1		68.8		71.6	
		2/F	49.7	73.3		74.5		71.2		73.6	
SR65	Shan Tong New Village 2	G/F	41.8	68		68.6		66.5		66.6	
		2/F	47.2	69.4		70.2		67.8		71.5	

SR ID	Description	Floor	mPD	Predicted Construction Noise $L_{eq(30\text{ min})}$ dB(A)							
				Section 1 (Week 21)		Section 3 (Week 30)		Section 2 (Week 38)		Section 4 (Week 77)	
SR66	P.L.K. Tin Ka Ping Primary School	1/F	14.6	81	X	81.1	X	64.6		73.4	X
		6/F	29.6	80.9	X	81.1	X	65.2		73.4	X
SR67	Redland Garden	1/F	29.4	68.9		65.9		66.3		64.6	
		6/F	43.4	69.2		66.3		66.7		64.8	
SR70	Kwong Fuk Estate - Kwong Lai House	1/F	9.7	71.7		68.8		68.7		65.4	
		12/F	40.5	73.2		70.3		70.3		66.9	
		23/F	71.3	73.2		70.6		70.6		67.2	
SR73	Island House Conservation Studies Centre	G/F	17.2	76.5	X	72.6	X	72.8	X	69.6	
		1/F	20.2	76.7	X	72.8	X	73.1	X	69.9	
SR75	Wong Kong Shan	G/F	15.7	0		0		49.1		70.1	
		1/F	18.4	0		0		49.1		69.9	
SR76	Yuen Leng 1	G/F	22	0		0		57.4		75.4	
		2/F	27.4	0		0		57.4		75.5	X
SR77	Yuen Leng 2	G/F	23.9	0		0		59.2		71.8	
		2/F	29.3	0		0		59.1		71.8	
SR78	Dynasty View 3	1/F	33.7	68.4		68.3		75.2		59.1	
		5/F	44.9	76.8	X	76.7	X	83.4	X	52.2	
		8/F	53.3	77	X	76.9	X	83.8	X	55	
SR79	Care Village	G/F	5.6	75.7	X	72.3		72.4		71.3	
		2/F	11	82	X	79	X	79.1	X	76	X
SR80	Wai Tau Tsuen 3	G/F	26.2	56		58.2		79.2	X	80	X
		2/F	31.6	58.3		60.6		79.2	X	80	X
SR81	Wai Tau Tsuen 4	G/F	25.2	38.8		38.8		77.9	X	82.7	X
		2/F	30.6	39.3		39.3		77.9	X	82.7	X
SR82N	Tai Hang 5	G/F	24.2	39.7		42		68.5		79.1	X
		2/F	29.6	39.7		43.4		68.5		79	X
SR83	Yuen Leng 3	G/F	19.2	0		0		59		81	X
		2/F	24.6	0		0		59		80.9	X
SR84	Nam Wa Po 2	G/F	19.7	33.7		33.7		61		74.8	
		2/F	25.1	33.7		33.7		61		74.9	
SR85	Nam Wa Po 3	G/F	23.1	25.4		25.4		62.1		70.9	
		2/F	28.5	25.4		25.4		62.1		71	
SR86	Tong Hang	G/F	18.4	30.1		30.1		59.4		82.3	X
		2/F	23.8	30.1		30.1		59.4		82.3	X
SR87	Tai Wo 2	G/F	26.1	25.6		25.6		62.7		74.2	
		2/F	31.5	25.6		25.6		62.7		74.3	
SR88	Wai Tau Tsuen 5	G/F	28.8	56.5		61		76.2	X	71.1	
		2/F	34.2	57.1		63.2		76.2	X	71.2	
SR89	Wai Tau Tsuen 6	G/F	29.3	53.7		57.7		72.9		71.4	
		2/F	34.7	54.5		59.8		73		71.4	
SR90	Wai Tau Tsuen 7	G/F	26.9	58.6		61		71.8		75	
		2/F	32.3	59		61.7		71.9		75	
SR93	SKH Mok Sau Tsang Secondary School	1/F	25.6	64.6		67.2	X	60.9		69	X
		6/F	40.6	71.3		70.4	X	69.3	X	69.7	X
SR94	Choi Hin To Primary School	1/F	15.5	55.6		59		58		65.2	
		5/F	27.5	56.1		60.8		61		65.2	
SR95B	Tai Po Normal School Memorial School 2	G/F	16.6	65.9		68.5	X	69	X	64.9	
SR100	KCRC Staff Quarters	G/F	10.2	65.7		61.8		62		62.6	
		3/F	19.2	68.2		64.8		65		63.2	
		6/F	28.2	68.6		65.2		65.4		63.8	
SR101	Chateau Royale	G/F	20.2	74.4		70.9		71		71.8	
		2/F	25.8	74.9		71.9		72		71.9	
SR103	Classical Garden	1/F	27.2	56.3		70.6		57		60.5	
		4/F	35.6	57.3		73		60.6		60.5	
		8/F	46.8	59.2		75.6	X	64.6		61	
SR104	Village House near Ma Wo 1	G/F	81.2	82.1	X	82.5	X	83.2	X	59.7	
SR105	Village House near Ma Wo 2	G/F	79.4	71.9		72.9		73.6		71	

SR ID	Description	Floor	mPD	Predicted Construction Noise $L_{eq(30\ min)}$ dB(A)							
				Section 1 (Week 21)	Section 3 (Week 30)	Section 2 (Week 38)	Section 4 (Week 77)				
SR106	Village House near Shek Kwu Lung	G/F	39.2	73.9		73.9		74.5		70.4	
SR107	Village House near Hong Lok Yuen	G/F	27.1	52.1		53.6		78	X	78.1	X
		1/F	29.8	54.1		55.4		78	X	78.2	X
SR108	Tai Hang Village House	G/F	25.7	50		53		73.7		79.1	X
		2/F	31.1	50		54.5		73.7		79	X
SR109	Village House near Nam Wa Po	G/F	22.5	35		35		62		74.8	

Notes:

X = Predicted construction noise levels exceed the relevant criterion.

#### 5.4.4 Mitigation Measures

In order to mitigate the noise impacts, the use of practical mitigation measures in terms of a combination of silenced equipment, reduction of number of equipment, reduction of the percentage on time of the equipment, and erecting temporary noise barriers, have been considered. The potential construction noise levels have been re-evaluated accordingly based upon the adopted proposal.

##### 5.4.4.1 Silenced Equipment

Powered mechanical equipment with lower SWLs than those specified in GW-TM are known to be commercially available in Hong Kong. Whilst specifying particular plant models can be too restrictive to Contractors' preference, it is more reasonable to set the noise performance specifications for identified types of PME. Nevertheless, the Contractor is required to deploy quiet plant on site as far as practicable.

Upon direct contact with the local PME suppliers, the SWLs of silenced equipment available in Hong Kong were received and were adopted in the noise calculations. For equipment where information is unavailable from local suppliers, the SWLs of the silenced plant used were extracted from previously endorsed EIA report by EPD (Final EIA Report West Rail – West Kowloon to Tuen Mun Centre Contract No. TS-900, KCRC, February 1998), as well as BS 5228: Part 1:1997 "Noise Control on Construction and Open Sites". Table 5.9 summarises the SWLs of silenced equipment adopted in the calculation.

**Table 5.9 Adopted Sound Power Levels of Silenced Equipment**

Plant	Adopted Maximum SWL dB(A)	CNP ID Code	Adopted SWL (Silenced Plant) dB(A)	Remarks*
Bulldozer	115	CNP 030	113.9	A
Backhoe	112	CNP 081	98	A
Loader	112	CNP 081	98.5	A
Rock Driller	128	CNP 181	113	Fit suitably designed muffler or sound reduction equipment to reduce noise without impairing machine efficiency (ensuring all leaks in air line are sealed). Use dampened bit to eliminate ringing <sup>B</sup> . Sound reduction up to 15 dB(A).
Concrete Cutter	119	BS 5228 Table C2#4	112	Erect acoustic screen between equipment and noise sensitive area. When possible, line of sight between top of machine and reception point should be obscured <sup>B</sup> . Sound reduction up to 10 dB(A).
Lorry	112	CNP 141	105	C
Vibrating Hammer	126	BS 5228 Table C4#6	116	Enclose hammer head and top of pile in acoustic screen. Acoustically dampen sheet steel piles to reduce levels of resonant vibration <sup>B</sup> . Sound reduction up to 10 dB(A).

Plant	Adopted Maximum SWL dB(A)	CNP ID Code	Adopted SWL (Silenced Plant) dB(A)	Remarks*
Piling Machine	100	CNP166	-	Silenced plant not required.
Generator	108	CNP101	97	A
Air Compressor	104	CNP 003	90	Enclose compressor or generator in ventilated acoustic enclosure <sup>B</sup> . Sound reduction up to 20 dB(A).
Lifting Crane	112	CNP 048	105	C
Bar Bender	90	CNP021	-	Silenced plant not required.
Concrete Pump	109	CNP 047	105	C
Vibrating Poker	113	CNP 170	102	BS 5228 Table C.5 Reference number 20.
Paver	109	CNP004	-	Silenced plant not required.
Compacting Plate	105	CNP 050	100	Fit more efficient exhaust sound reduction equipment <sup>B</sup> . Sound reduction up to 10 dB(A)
Compacting Roller	108	CNP186	-	Silenced plant not required.

Notes:

A – Local Supplier Information (refer to Appendix 5.11)

B – BS 5228 Table B.1 Methods of reducing sound levels from construction plant

C – Extracted from Final EIA Report West Rail – West Kowloon to Tuen Mun Centre Contract No. TS-900, KCRC, February 1998 (refer to Appendix 5.11)

The predicted construction noise levels after applying silenced equipment are summarised in Table 5.10 to Table 5.13. As shown from the results, using silenced equipment alone cannot mitigate the noise levels to an acceptable level at all identified NSRs. Further mitigation measures such as reducing the number of equipment and their percentage on-time, as well as constructing temporary noise barriers have therefore been considered and are discussed in the following sections.

#### 5.4.4.2 Reduction in Plant Numbers

In combination with the selection of silenced equipment, limiting the equipment numbers would further reduce noise levels. To this end, the number of plant/equipment, where necessary, has been reduced to the minimum number with which the construction program can still be met. The equipment reduction schedule implemented is as follow: reduce the number of equipment by 1 when the original equipment numbers are 3, 4, and 5, and reduce by 2 when the original equipment numbers are 6 or more. These are accepted by HyD and summarised in Appendix 5.1. The percentage on-time of the equipment operation, where applicable, has also been reduced to the appropriate level specified in BS 5228. The prediction results (Appendix 5.4) show that the noise impacts have been further reduced. However, the predicted noise levels at some NSRs still exceed the acceptable levels. Therefore, additional mitigation measures such as physical noise barriers have been evaluated and are discussed in the following section.

#### 5.4.4.3 Noise Barriers

Hoarding, if provided, will partially screen equipment noise from the nearby NSRs. The attenuation will be most effective if there are no gaps or openings in the hoarding. However, as hoarding locations cannot be clearly defined at this stage, the assessment has not taken into account potential benefits from the screening effects of hoarding.

Purpose built temporary noise barriers with heights varying between 2 and 7 metres have been included to further reduce the construction noise levels. Their locations, corresponding heights and descriptions are given in Figures 5.6.1–5.6.5. With these barriers in place, the predicted construction noise levels at most NSRs are found to be within acceptable levels except for two schools (SR41 and SR45) at which the predicted noise levels comply with the  $L_{eq(30 \text{ min})}$  70 dB(A) criterion but exceed the  $L_{eq(30 \text{ min})}$  65 dB(A) criterion (during examination period).

In addition, where practicable, traffic noise barriers could be constructed in an earlier stage of the construction program in order to provide screening for the construction noise. There are two types that can be considered: (a) those that are independent of the widening works, and (b) those that are dependent on the widening works. For type (a), early construction can be considered as long as it has no conflicts with other traffic diversions. For type (b), any construction needs to tie in with the widening works. However, it may be possible to stipulate that the construction sequence should be arranged so as to allow the barriers to be built at the earliest opportunity.

#### 5.4.4.4 Good Site Practices

In addition to the above-mentioned mitigation measures, the good site practices listed below should be adopted by all the contractors to further mitigate any residual impacts. Although the noise mitigating effects are not easily quantifiable, and the benefits are specific to the site and operating conditions, good site practices are easy to implement and do not impact upon the works schedule.

- only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program;
- silencers or mufflers on construction equipment should be utilised and should be properly maintained during the construction program; and
- mobile plant, if any, should be sited as far away from NSRs as possible.

Other good site practice and noise management can considerably reduce the impact of construction site activities on nearby NSRs. The following measures should be followed at all time of construction:

- machines and plant (such as trucks) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum;
- plant known to emit noise strongly in one direction, should, where possible, be orientated so that the noise is directed away from nearby NSRs;
- material stockpiles and other structures should be effectively utilised, where practicable, in screening noise from on-site construction activities.

The noise benefits of these techniques are difficult to quantify, and whilst they would provide some attenuation, they cannot be assumed to guarantee a high level of noise mitigation.

**Table 5.10 Summary of Mitigated Construction Noise Levels for Week 21**

SR ID	Description	Floor	mPD	Predicted Construction Noise $L_{eq(30 \text{ min})}$ dB(A)					
				(A): Silenced Equipment Only	(B): (A) + Plant Reduction	(C): (B) + % On Time Reduction	(D): (C) + Temporary Barriers		
SR1	Avon Park	1/F	38.1	0	0	0	0	0	
		13/F	71.7	0	0	0	0	0	
		25/F	105	0	0	0	0	0	
SR2	Fanling Government Secondary School	1/F	23	0	0	0	0	0	
SR3	Dawning Views 1	1/F	32.5	0	0	0	0	0	
		14/F	68.9	0	0	0	0	0	
		28/F	108	0	0	0	0	0	
SR3A	Dawning Views 2	1/F	32.5	0	0	0	0	0	
		14/F	68.9	0	0	0	0	0	
		28/F	108	0	0	0	0	0	
SR7	Southwest Tong Hang	G/F	14.4	0	0	0	0	0	
		1/F	17.1	0	0	0	0	0	
SR8	Wo Hop Shek 1	G/F	15.5	0	0	0	0	0	
		1/F	18.2	0	0	0	0	0	

SR ID	Description	Floor	mPD	Predicted Construction Noise $L_{eq(30\text{ min})}$ dB(A)					
				(A): Silenced Equipment Only	(B): (A) + Plant Reduction	(C): (B) + %- On Time Reduction	(D): (C) + Temporary Barriers		
SR9	Wo Hop Shek 2	G/F	23.6	0	0	0	0	0	
		1/F	26.3	0	0	0	0		
SR10	Kau Lung Hang	G/F	17.2	20.4	20.4	20.4	20.4		
SR11	Kiu Tau	G/F	18.8	0	0	0	0		
		1/F	21.5	0	0	0	0		
SR12	Nam Wa Po	G/F	29.2	27.3	27.3	27.3	27.3		
		1/F	31.9	27.3	27.3	27.3	27.3		
SR13	West Tai Wo	G/F	25	30.9	30.9	30.9	30.9		
		2/F	30.4	30.9	30.9	30.9	30.9		
SR14	Tai Wo	G/F	27.7	8.5	8.5	8.5	8.5		
		1/F	30.4	8.5	8.5	8.5	8.5		
SR17A	Tai Hang 2	G/F	25.7	33.4	33.4	33.4	33.4		
		2/F	31.1	33.4	33.4	33.4	33.4		
SR17B	Tai Hang 3	G/F	25.7	0	0	0	0		
		2/F	31.1	0	0	0	0		
SR19	Hong Lok Yuen 1	G/F	32.9	50.2	50.2	50.2	50.2		
		2/F	38.3	51.5	51.5	51.5	51.5		
SR20	Hong Lok Yuen 2	G/F	32.9	50.5	50.5	50.5	50.5		
		2/F	38.3	51.8	51.8	51.8	51.8		
SR21	Hong Lok Yuen 3	G/F	33.9	46.6	46.6	46.6	46.6		
		2/F	39.3	47.6	47.6	47.6	47.6		
SR22	Wai Tau Tsuen 1	G/F	28.2	58.5	58.5	58.5	58.5		
		1/F	30.9	58.7	58.7	58.7	58.7		
SR23	Wai Tau Tsuen 2	G/F	28.7	66.3	66.3	66.3	66.3		
		1/F	31.4	66.8	66.8	66.8	66.8		
SR24	Kau Liu Ha 1	G/F	19.1	62.7	62.7	62.7	62.7		
		2/F	24.5	65.3	65.3	65.3	65.3		
SR25	Kau Liu Ha 2	G/F	19.1	62.9	62.9	62.9	62.9		
		2/F	24.5	65.4	65.4	65.4	65.4		
SR26	Tai Po Garden	G/F	13.8	55.4	55.4	55.3	56.7		
		4/F	25	55.5	55.5	55.4	57.6		
SR27	Mui Shu Hang	G/F	15.7	62	62	61	62.8		
		1/F	18.4	62	62	61.1	62.9		
SR28	Northwest Shek Kwu Lung	G/F	21.2	62.6	62.6	62.6	62.6		
		1/F	23.9	63.1	63.1	63	63		
SR29	Parc Versailles 1	G/F	11.5	55.5	55.5	55.4	56		
		5/F	25.5	56.4	56.4	56.2	57.1		
SR29A	Parc Versailles 2	G/F	11.5	54	54	53.7	53.6		
		5/F	25.5	56.2	56.2	55.6	55.2		
SR30A	Shek Kwu Lung 4	G/F	13.4	69.6	69.5	68.1	68.1		
		2/F	18.8	69.7	69.6	68.1	68.1		
SR30B	Shek Kwu Lung 5	G/F	17.2	67.4	67.4	65.9	65.9		
		2/F	22.8	67.7	67.7	66.2	66.2		
SR30C	Shek Kwu Lung 6	G/F	31.2	59.5	59.5	58.8	58.8		
		2/F	36.8	62.2	62.1	61.2	61.2		
SR31	Shek Kwu Lung 2	G/F	9.9	65	64.9	63.6	63.5		
		2/F	15.3	65	64.9	63.6	63.6		
SR33	Shek Kwu Lung 3	G/F	33.2	76.2	X 76.2	X 73.8	64.4		
SR34	Pun Chun Yuen	G/F	58.8	66.2	66.2	65	65		
		1/F	61.5	67.1	67.1	66	66		
SR35	Buddhist Tai Kwong Middle School	1/F	37.3	69.4	69.4	67.7	62.4		
SR36	Ma Wo	G/F	43.2	68.3	67	67	67		
		1/F	45.9	68.6	67.3	67.2	67.2		
SR38	Dynasty View 1	1/F	37.7	56.8	56.7	56.3	56.3		
		5/F	48.9	66.5	66.2	66	66		
		8/F	57.3	69.9	69.7	69.5	69.5		
SR39	The Paragon	1/F	37.3	66.6	64.3	63.5	63.7		
		5/F	48.5	72.3	69.9	69.3	69.3		
		9/F	59.7	72.6	70.3	69.7	69.7		
SR40	Grand Palisades	1/F	59	67.8	65.4	64.4	64.6		
		6/F	73	70	67.5	66.5	66.9		
		10/F	84.2	70.4	67.9	66.9	67.3		
SR41	Wong Shiu Chi Middle School	1/F	6.4	69.6	67.2	66.5	66.2		
		5/F	18.4	69.9	67.5	66.7	66.5		
SR42	Wan Tau Tong Estate - Wan Lam House 1	1/F	12.8	59.6	58.7	58.6	54.9		
		15/F	52	66.4	64.6	63.8	62.3		
		31/F	96.8	67.5	65.2	64.3	64		

SR ID	Description	Floor	mPD	Predicted Construction Noise $L_{eq(30\text{ min})}$ dB(A)						
				(A): Silenced Equipment Only	(B): (A) + Plant Reduction	(C): (B) + %- On Time Reduction	(D): (C) + Temporary Barriers	(E): (D) + % -	(F): (E) + % -	
SR43	Wan Tau Tong Estate - Wan Lam House 2	1/F	12.8	67.8		67.6		67.1		58.5
		15/F	52	68.5		67.5		66.9		63
		31/F	96.8	69.5		67		66.4		66.4
SR44	Wan Tau Tong Estate - Wan Loi House	1/F	12.8	63.2		61		60.4		60.4
		15/F	52	67.6		65.9		65.1		63.9
		31/F	96.8	69		66.9		65.9		65.6
SR45	HK Teacher's Association Secondary School	1/F	13.6	72.8		72.3		71.3		65.1
		6/F	28.6	73.2		72.2		71.2		67.5
SR46	Uptown Plaza	1/F	30.3	69.4		68.4		67.4		63.5
		13/F	63.9	70.1		68.3		67.3		65.9
		26/F	100	70.1		67.9		66.9		66.7
SR47	Wang Fuk Court – Wang Cheong House 1	1/F	6.8	78.2	X	75.9	X	74		74
		15/F	46	78.3	X	75.9	X	74.3		74.3
		31/F	90.8	76.5	X	74.1		72.6		72.6
SR48	Wang Fuk Court – Wang Cheong House 2	1/F	6.8	73.6		71.6		69.2		69.2
		15/F	46	72.7		70.7		68.3		68.3
		31/F	90.8	69.9		67.9		65.5		65.5
SR49	Wang Fuk Court – Wang Cheong House 3	1/F	6.8	73.7		71.1		69.9		69.9
		15/F	46	75.6	X	73		71.9		71.9
		31/F	90.8	74.8		72.3		71.1		71.1
SR50	Wang Fuk Court – Wang Tat House	1/F	6.8	73.1		70.3		69.2		69.6
		15/F	46	74.9		72.2		71.3		71.3
		31/F	90.8	74.4		71.8		70.8		70.8
SR51	Wang Fuk Court – Wang Shing House	1/F	6.8	0		0		0		0
		15/F	46	0		0		0		0
		31/F	90.8	0		0		0		0
SR52	Ha Wong Yi Au 1	G/F	29.2	74.9		72.2		71.7		71.7
		2/F	34.6	78.3	X	75.6	X	75		75
SR53	Ha Wong Yi Au 2	G/F	11	66.5		64.1		62.7		62.7
		1/F	13.7	69.8		67.4		65.9		65.9
SR54	Riverrain Bayside	G/F	8.5	75.1		72.8		71.2		71.3
		2/F	14.1	76.7	X	74.4		72.8		72.8
SR55	Dynasty View 2	1/F	37.7	66.8		66.8		66.5		66.5
		4/F	46.1	71.8		71.8		71.5		71.5
		8/F	57.3	72		72		71.6		71.6
SR56	Monastery at Ma Wo	G/F	42.5	73		73		72.6		72.6
		1/F	45.2	73		73		72.6		72.6
SR57	King Nga Court – King Yuet House 1	1/F	14.6	75.4		75.2		74.6		64.1
		18/F	62.2	76.5	X	74.2		73.6		72.9
		36/F	113	74.7		72.1		71.4		71.4
SR58	King Nga Court – King Yuet House 2	1/F	14.6	77.6	X	77.4	X	76.8	X	65.5
		18/F	62.2	78.2	X	75.7	X	75.1		74.8
		36/F	113	75.5	X	72.9		72.3		72.3
SR59N	King Nga Court – King Yan House	1/F	14.6	78.3	X	78.2	X	77.7	X	65.2
		18/F	62.2	78.7	X	76.1	X	75.6	X	75.4
		36/F	113	75.5	X	72.9		72.3		72.3
SR60	Tak Nga Court 1	1/F	16.3	66.2		64.2		63.1		63.1
		17/F	61.1	67.4		65.2		64.4		64.4
		34/F	109	66.8		64.6		63.7		63.7
SR61	Tak Nga Court 2	1/F	16.3	66.3		64.2		63		63
		17/F	61.1	67.5	X	65.3		64.4		64.4
		34/F	109	67.3		65.3		64.5		64.5
SR62	Ha Wun Yiu	G/F	29.6	72.3		70.4		69.4		68.9
		1/F	32.3	72.3		70.3		69.4		68.9
SR63	Lai Chi Shan	G/F	22.4	69.8		67.6		66.6		66.6
		1/F	25.1	71.2		68.9		68		68
SR64	Shan Tong New Village 1	G/F	44.3	66.6		64.9		64.5		64.5
		2/F	49.7	69.2		67.3		66.8		66.8
SR65	Shan Tong New Village 2	G/F	41.8	64.2		62.9		62.6		62.6
		2/F	47.2	65.5		63.9		63.5		63.5



SR ID	Description	Floor	mPD	Predicted Construction Noise $L_{eq(30\text{ min})}$ dB(A)						
				(A): Silenced Equipment Only	(B): (A) + Plant Reduction	(C): (B) + % On Time Reduction	(D): (C) + Temporary Barriers			
SR66	P.L.K. Tin Ka Ping Primary School	1/F	14.6	72.9		72.6		72.1		61.9
		6/F	29.6	72.9		72.5		72		63.4
SR67	Redland Garden	1/F	29.4	65.5		63.2		61.6		61.6
		6/F	43.4	65.8		63.5		61.9		61.9
SR70	Kwong Fuk Estate - Kwong Lai House	1/F	9.7	68.3		65.7		64.4		64.4
		12/F	40.5	69.7		67.4		65.8		65.8
		23/F	71.3	69.8		67.5		65.9		65.9
SR73	Island House Conservation Studies Centre	G/F	17.2	73		70.6		69.1		69.1
		1/F	20.2	73.1		70.7		69.2		69.2
SR75	Wong Kong Shan	G/F	15.7	0		0		0		0
		1/F	18.4	0		0		0		0
SR76	Yuen Leng 1	G/F	22	0		0		0		0
		2/F	27.4	0		0		0		0
SR77	Yuen Leng 2	G/F	23.9	0		0		0		0
		2/F	29.3	0		0		0		0
SR78	Dynasty View 3	1/F	33.7	60.1		60.1		59.6		59.6
		5/F	44.9	67.8		67.8		67.5		67.5
		8/F	53.3	68.3		68.3		67.9		67.9
SR79	Care Village	G/F	5.6	72		69.7		68.2		68.2
		2/F	11	78.8	X	76.6	X	74.9		74.9
SR80	Wai Tau Tsuen 3	G/F	26.2	50.7		50.7		50.7		50.7
		2/F	31.6	52.1		52.1		52.1		52.1
SR81	Wai Tau Tsuen 4	G/F	25.2	38.8		38.8		38.8		38.8
		2/F	30.6	39.3		39.3		39.3		39.3
SR82N	Tai Hang 5	G/F	24.2	39.7		39.7		39.7		39.7
		2/F	29.6	39.7		39.7		39.7		39.7
SR83	Yuen Leng 3	G/F	19.2	0		0		0		0
		2/F	24.6	0		0		0		0
SR84	Nam Wa Po 2	G/F	19.7	33.7		33.7		33.7		33.7
		2/F	25.1	33.7		33.7		33.7		33.7
SR85	Nam Wa Po 3	G/F	23.1	25.4		25.4		25.4		25.4
		2/F	28.5	25.4		25.4		25.4		25.4
SR86	Tong Hang	G/F	18.4	30.1		30.1		30.1		30.1
		2/F	23.8	30.1		30.1		30.1		30.1
SR87	Tai Wo 2	G/F	26.1	25.6		25.6		25.6		25.6
		2/F	31.5	25.6		25.6		25.6		25.6
SR88	Wai Tau Tsuen 5	G/F	28.8	54.5		54.5		54.5		54.5
		2/F	34.2	54.7		54.7		54.7		54.7
SR89	Wai Tau Tsuen 6	G/F	29.3	51.8		51.8		51.8		51.8
		2/F	34.7	52.1		52.1		52.1		52.1
SR90	Wai Tau Tsuen 7	G/F	26.9	53.5		53.5		53.5		53.5
		2/F	32.3	53.8		53.8		53.8		53.8
SR93	SKH Mok Sau Tsang Secondary School	1/F	25.6	61.8		61.1		60		55.8
		6/F	40.6	67.1		65.2		64.2		63.1
SR94	Choi Hin To Primary School	1/F	15.5	53.2		53		52.9		52.9
		5/F	27.5	53.3		53.1		53		53
SR95B	Tai Po Normal School Memorial School 2	G/F	16.6	61.1		61		60.4		59.2
SR100	KCRC Staff Quarters	G/F	10.2	61.7		59.3		57.9		57.9
		3/F	19.2	64.5		62.2		60.7		60.7
		6/F	28.2	64.8		62.4		61		61
SR101	Chateau Royale	G/F	20.2	70.8		68.5		67		67
		2/F	25.8	71.4		69.1		67.5		67.5
SR103	Classical Garden	1/F	27.2	50.1		49.3		49.1		48.7
		4/F	35.6	51.1		50		49.8		49.9
		8/F	46.8	53.4		51.7		51.4		52.6
SR104	Village House near Ma Wo 1	G/F	81.2	73.1		73.1		72.7		72.7
SR105	Village House near Ma Wo 2	G/F	79.4	63.6		62.9		62.7		62.7
SR106	Village House near Shek Kwu Lung	G/F	39.2	68.6		68.5		67.2		67.4
SR107	Village House near Hong Lok Yuen	G/F	27.1	44.4		44.4		44.4		44.4
		1/F	29.8	46.3		46.3		46.3		46.3
SR108	Tai Hang Village House	G/F	25.7	46		46		46		46
		2/F	31.1	45.9		45.9		45.9		45.9
SR109	Village House near Nam Wa Po	G/F	22.5	35		35		35		35

Notes:

x = Predicted construction noise levels exceed the relevant criterion.

**Table 5.11 Summary of Mitigated Construction Noise Levels for Week 30**

SR ID	Description	Floor	mPD	Predicted Construction Noise $L_{eq(30\ min)}$ dB(A)			dB(A) (D): (C) +Temporary Barriers
				(A): Silenced Equipment Only	(B): (A) + Plant Reduction	(C): (B) + %- On Time Reduction	
SR1	Avon Park	1/F	38.1	0	0	0	0
		13/F	71.7	0	0	0	0
		25/F	105	0	0	0	0
SR2	Fanling Government Secondary School	1/F	23	0	0	0	0
SR3	Dawning Views 1	1/F	32.5	0	0	0	0
		14/F	68.9	0	0	0	0
		28/F	108	0	0	0	0
SR3A	Dawning Views 2	1/F	32.5	0	0	0	0
		14/F	68.9	0	0	0	0
		28/F	108	0	0	0	0
SR7	Southwest Tong Hang	G/F	14.4	0	0	0	0
		1/F	17.1	0	0	0	0
SR8	Wo Hop Shek 1	G/F	15.5	0	0	0	0
		1/F	18.2	0	0	0	0
SR9	Wo Hop Shek 2	G/F	23.6	0	0	0	0
		1/F	26.3	0	0	0	0
SR10	Kau Lung Hang	G/F	17.2	20.4	20.4	20.4	20.4
SR11	Kiu Tau	G/F	18.8	0	0	0	0
		1/F	21.5	0	0	0	0
SR12	Nam Wa Po	G/F	29.2	27.3	27.3	27.3	27.3
		1/F	31.9	27.3	27.3	27.3	27.3
SR13	West Tai Wo	G/F	25	30.9	30.9	30.9	30.9
		2/F	30.4	30.9	30.9	30.9	30.9
SR14	Tai Wo	G/F	27.7	0	0	0	0
		1/F	30.4	0	0	0	0
SR17A	Tai Hang 2	G/F	25.7	33.4	33.4	33.4	33.4
		2/F	31.1	33.4	33.4	33.4	33.4
SR17B	Tai Hang 3	G/F	25.7	0	0	0	0
		2/F	31.1	0	0	0	0
SR19	Hong Lok Yuen 1	G/F	32.9	51.3	50.2	50.2	50.2
		2/F	38.3	52.9	51.5	51.5	51.5
SR20	Hong Lok Yuen 2	G/F	32.9	51.6	50.5	50.5	50.5
		2/F	38.3	53.2	51.8	51.8	51.8
SR21	Hong Lok Yuen 3	G/F	33.9	48.4	46.6	46.6	46.6
		2/F	39.3	49.9	47.6	47.6	47.6
SR22	Wai Tau Tsuen 1	G/F	28.2	60	58.5	58.5	58.5
		1/F	30.9	60.5	58.7	58.7	58.7
SR23	Wai Tau Tsuen 2	G/F	28.7	66.9	66.3	66.3	66.3
		1/F	31.4	67.6	66.8	66.8	66.8
SR24	Kau Liu Ha 1	G/F	19.1	64.2	62.7	62.7	62.7
		2/F	24.5	67	65.3	65.3	65.3
SR25	Kau Liu Ha 2	G/F	19.1	64.3	62.9	62.9	62.9
		2/F	24.5	67.1	65.4	65.4	65.4
SR26	Tai Po Garden	G/F	13.8	55.8	55.4	55.3	56.7
		4/F	25	56.2	55.7	55.5	57.6
SR27	Mui Shu Hang	G/F	15.7	62.4	62.4	61.2	62.6
		1/F	18.4	62.5	62.5	61.3	62.7
SR28	Northwest Shek Kwu Lung	G/F	21.2	62.6	62.6	62.6	62.6
		1/F	23.9	63.1	63.1	63	63
SR29	Parc Versailles 1	G/F	11.5	56	55.8	55.5	56.1
		5/F	25.5	57.5	57	56.6	57.5
SR29A	Parc Versailles 2	G/F	11.5	54.1	54.1	53.7	53.5
		5/F	25.5	56.9	56.8	56	54.8
SR30A	Shek Kwu Lung 4	G/F	13.4	69.6	69.4	67.7	67.7
		2/F	18.8	69.6	69.5	67.7	67.7
SR30B	Shek Kwu Lung 5	G/F	17.2	68.1	68	66.2	66.2
		2/F	22.8	68.3	68.3	66.5	66.4
SR30C	Shek Kwu Lung 6	G/F	31.2	59.8	59.7	58.8	58.8
		2/F	36.8	62.4	62.3	61.1	61
SR31	Shek Kwu Lung 2	G/F	9.9	65.1	64.9	63.3	63.2
		2/F	15.3	65.1	65	63.3	63.2
SR33	Shek Kwu Lung 3	G/F	33.2	72.5	71.9	72.1	61.6

SR ID	Description	Floor	mPD	Predicted Construction Noise $L_{eq(30\ min)}$ dB(A)						
				(A): Silenced Equipment Only	(B): (A) + Plant Reduction	(C): (B) + % On Time Reduction	(D): (C) + Temporary Barriers	(E): (D) + % On Time Reduction	(F): (E) + % On Time Reduction	
SR34	Pun Chun Yuen	G/F 1/F	58.8 61.5	68.6 69.7		68.3 69.5		67.1 68.2		67.1 68.2
SR35	Buddhist Tai Kwong Middle School	1/F	37.3	70.4	X	70.1	X	69.1	X	64.6
SR36	Ma Wo	G/F 1/F	43.2 45.9	68.1 68.3		66.8 67		66.7 67		66.7 67
SR38	Dynasty View 1	1/F 5/F 8/F	37.7 48.9 57.3	56.6 65.6 69.6		56.5 65.3 69.3		56.2 65 69		56.2 65.1 69
SR39	The Paragon	1/F 5/F 9/F	37.3 48.5 59.7	64.5 70.1 70.3		64.5 70 70.3		63.3 68.8 69		63.5 68.8 69.1
SR40	Grand Palisades	1/F 6/F 10/F	59 73 84.2	65.2 67.4 67.8		65.1 67.4 67.7		63.9 66.1 66.3		64.2 66.5 66.8
SR41	Wong Shiu Chi Middle School	1/F 5/F	6.4 18.4	67.3 67.4	X X	67.2 67.3	X X	65.8 65.9	X X	65.3 65.4
SR42	Wan Tau Tong Estate - Wan Lam House 1	1/F 15/F 31/F	12.8 52 96.8	62.4 66.6 67		62.4 66.5 66.8		60.9 65.1 65.5		55.3 63.1 65.2
SR43	Wan Tau Tong Estate - Wan Lam House 2	1/F 15/F 31/F	12.8 52 96.8	67.6 67.5 67		67.6 67.5 67		67.1 66.9 66.4		58.5 62.7 66.4
SR44	Wan Tau Tong Estate - Wan Loi House	1/F 15/F 31/F	12.8 52 96.8	60.8 67.4 68.5		60.7 67.3 68.4		59.6 66 67		59.6 64.5 66.8
SR45	HK Teacher's Association Secondary School	1/F 6/F	13.6 28.6	74.7 74.6	X X	74.6 74.4	X X	73.2 73.1	X X	65.7 68.9
SR46	Uptown Plaza	1/F 13/F 26/F	30.3 63.9 100	70.2 69.8 69.3		70 69.8 69.2		68.7 68.4 67.8		63.4 66.6 67.6
SR47	Wang Fuk Court – Wang Cheong House 1	1/F 15/F 31/F	6.8 46 90.8	72.5 73.1 71.3		72.4 72.9 71.1		70.2 71 69.4		70.3 71 69.4
SR48	Wang Fuk Court – Wang Cheong House 2	1/F 15/F 31/F	6.8 46 90.8	68.4 67.5 64.7		68.4 67.5 64.7		65.7 64.8 62		65.7 64.8 62
SR49	Wang Fuk Court – Wang Cheong House 3	1/F 15/F 31/F	6.8 46 90.8	67.2 70.6 70		67 70.4 69.8		65.7 68.9 68.2		65.7 68.9 68.2
SR50	Wang Fuk Court – Wang Tat House	1/F 15/F 31/F	6.8 46 90.8	67.2 70.4 69.9		67.1 70.2 69.7		65.7 68.7 68.2		65.9 68.7 68.2
SR51	Wang Fuk Court – Wang Shing House	1/F 15/F 31/F	6.8 46 90.8	0 0 0		0 0 0		0 0 0		0 0 0
SR52	Ha Wong Yi Au 1	G/F 2/F	29.2 34.6	71.2 74.4		71 74.3		69.7 72.9		69.7 72.9
SR53	Ha Wong Yi Au 2	G/F 1/F	11 13.7	60.3 63.1		60 62.8		58.3 61.1		58.3 61.1
SR54	Riverrain Bayside	G/F 2/F	8.5 14.1	69.6 70.8		69.2 70.5		67.1 68.6		67.1 68.6
SR55	Dynasty View 2	1/F 4/F 8/F	37.7 46.1 57.3	66.7 71.6 71.7		66.7 71.6 71.7		66.3 71.2 71.3		66.3 71.2 71.3
SR56	Monastery at Ma Wo	G/F 1/F	42.5 45.2	72.9 72.9		72.9 72.9		72.5 72.5		72.5 72.5
SR57	King Nga Court – King Yuet House 1	1/F 18/F 36/F	14.6 62.2 113	75.2 74.3 72.1		75.2 74.3 72.1		74.6 73.7 71.4		64.1 72.8 71.4

SR ID	Description	Floor	mPD	Predicted Construction Noise $L_{eq(30\ min)}$ dB(A)						
				(A): Silenced Equipment Only	(B): (A) + Plant Reduction	(C): (B) + % On Time Reduction	(D): (C) + Temporary Barriers	(E): (D) + % On Time Reduction	(F): (E) + % On Time Reduction	
SR58	King Nga Court – King Yuet House 2	1/F	14.6	77.4	X	77.4	X	76.8	X	65.5
		18/F	62.2	75.8	X	75.8	X	75.1	X	74.8
		36/F	113	73		73		72.3		72.3
SR59N	King Nga Court – King Yan House	1/F	14.6	78.3	X	78.3	X	77.8	X	65.2
		18/F	62.2	76.2	X	76.2	X	75.6	X	75.3
		36/F	113	73		73		72.4		72.4
SR60	Tak Nga Court 1	1/F	16.3	64.2		64.2		63.1		63.1
		17/F	61.1	65.2		65.2		64.4		64.4
		34/F	109	64.6		64.6		63.7		63.7
SR61	Tak Nga Court 2	1/F	16.3	64.3		64.3		63		63
		17/F	61.1	66.2		66.1		65.3		65.3
		34/F	109	66.5		66.3		65.7		65.7
SR62	Ha Wun Yiu	G/F	29.6	70.4		70.4		69.5		69
		1/F	32.3	70.4		70.4		69.5		68.9
SR63	Lai Chi Shan	G/F	22.4	68.4		68.3		67.5		67.5
		1/F	25.1	69.6		69.5		68.7		68.7
SR64	Shan Tong New Village 1	G/F	44.3	65.4		65.4		64.9		64.9
		2/F	49.7	68		67.9		67.3		67.3
SR65	Shan Tong New Village 2	G/F	41.8	63		62.9		62.5		62.5
		2/F	47.2	64.2		64.2		63.6		63.6
SR66	P.L.K. Tin Ka Ping Primary School	1/F	14.6	72.9	X	72.8	X	72.2	X	62.4
		6/F	29.6	72.8	X	72.8	X	72.1	X	63.7
SR67	Redland Garden	1/F	29.4	59.8		59.5		57.8		57.8
		6/F	43.4	60.2		59.9		58.2		58.2
SR70	Kwong Fuk Estate - Kwong Lai House	1/F	9.7	62.9		62.7		61.1		61
		12/F	40.5	64.4		64.2		62.5		62.4
		23/F	71.3	64.6		64.4		62.7		62.6
SR73	Island House Conservation Studies Centre	G/F	17.2	66.4		66.2		64.6		64.6
		1/F	20.2	66.5		66.3		64.8		64.8
SR75	Wong Kong Shan	G/F	15.7	0		0		0		0
		1/F	18.4	0		0		0		0
SR76	Yuen Leng 1	G/F	22	0		0		0		0
		2/F	27.4	0		0		0		0
SR77	Yuen Leng 2	G/F	23.9	0		0		0		0
		2/F	29.3	0		0		0		0
SR78	Dynasty View 3	1/F	33.7	59.9		59.9		59.6		59.6
		5/F	44.9	67.7		67.7		67.4		67.4
		8/F	53.3	68.2		68.2		67.8		67.8
SR79	Care Village	G/F	5.6	66.6		66.4		64.7		64.7
		2/F	11	73.6		73.4		71.6		71.6
SR80	Wai Tau Tsuen 3	G/F	26.2	51.8		50.7		50.7		50.7
		2/F	31.6	53.6		52.1		52.1		52.1
SR81	Wai Tau Tsuen 4	G/F	25.2	38.8		38.8		38.8		38.8
		2/F	30.6	39.3		39.3		39.3		39.3
SR82N	Tai Hang 5	G/F	24.2	39.9		39.7		39.7		39.7
		2/F	29.6	40.1		39.7		39.7		39.7
SR83	Yuen Leng 3	G/F	19.2	0		0		0		0
		2/F	24.6	0		0		0		0
SR84	Nam Wa Po 2	G/F	19.7	33.7		33.7		33.7		33.7
		2/F	25.1	33.7		33.7		33.7		33.7
SR85	Nam Wa Po 3	G/F	23.1	25.4		25.4		25.4		25.4
		2/F	28.5	25.4		25.4		25.4		25.4
SR86	Tong Hang	G/F	18.4	30.1		30.1		30.1		30.1
		2/F	23.8	30.1		30.1		30.1		30.1
SR87	Tai Wo 2	G/F	26.1	25.6		25.6		25.6		25.6
		2/F	31.5	25.6		25.6		25.6		25.6
SR88	Wai Tau Tsuen 5	G/F	28.8	55.2		54.5		54.5		54.5
		2/F	34.2	55.9		54.7		54.7		54.7
SR89	Wai Tau Tsuen 6	G/F	29.3	52.4		51.8		51.8		51.8
		2/F	34.7	53.1		52.1		52.1		52.1
SR90	Wai Tau Tsuen 7	G/F	26.9	54.6		53.5		53.5		53.5
		2/F	32.3	55		53.8		53.8		53.8
SR93	SKH Mok Sau Tsang Secondary School	1/F	25.6	62.5		62.4		61.2		55.6
		6/F	40.6	65.2		65.1		63.7		61.5

SR ID	Description	Floor	mPD	Predicted Construction Noise $L_{eq(30\ min)}$ dB(A)			
				(A): Silenced Equipment Only	(B): (A) + Plant Reduction	(C): (B) + %-On Time Reduction	(D): (C) + Temporary Barriers
SR94	Choi Hin To Primary School	1/F	15.5	53.5	53.4	53.3	53.3
		5/F	27.5	53.9	53.7	53.7	53.7
SR95B	Tai Po Normal School Memorial School 2	G/F	16.6	64.6	64.5	62.9	60.4
SR100	KCRC Staff Quarters	G/F	10.2	55.3	55.1	53.5	53.5
		3/F	19.2	58.6	58.3	56.6	56.6
		6/F	28.2	58.9	58.7	57	57
SR101	Chateau Royale	G/F	20.2	64.6	64.2	62.4	62.4
		2/F	25.8	65.6	65.3	63.5	63.5
SR103	Classical Garden	1/F	27.2	58.5	57.9	57.7	57.8
		4/F	35.6	60.7	60.1	59.9	60.9
		8/F	46.8	63.1	62.4	62.4	63.8
SR104	Village House near Ma Wo 1	G/F	81.2	73.3	73.3	72.8	72.8
SR105	Village House near Ma Wo 2	G/F	79.4	63.9	63.2	62.9	62.9
SR106	Village House near Shek Kwu Lung	G/F	39.2	68.7	68.6	66.9	67.4
SR107	Village House near Hong Lok Yuen	G/F	27.1	45.4	44.4	44.4	44.4
		1/F	29.8	47.3	46.3	46.3	46.3
SR108	Tai Hang Village House	G/F	25.7	47.1	46	46	46
		2/F	31.1	47.8	45.9	45.9	45.9
SR109	Village House near Nam Wa Po	G/F	22.5	35	35	35	35

Notes:

x = Predicted construction noise levels exceed the relevant criterion.

**Table 5.12 Summary of Mitigated Construction Noise Levels for Week 38**

SR ID	Description	Floor	mPD	Predicted Construction Noise $L_{eq(30\ min)}$ dB(A)			
				(A): Silenced Equipment Only	(B): (A) + Plant Reduction	(C): (B) + %-On Time Reduction	(D): (C) + Temporary Barriers
SR1	Avon Park	1/F	38.1	46.9	46.9	46.9	46.9
		13/F	71.7	47.8	47.8	47.8	47.8
		25/F	105	47.1	47.1	47.1	47.1
SR2	Fanling Government Secondary School	1/F	23	46.8	46.8	46.8	46.8
SR3	Dawning Views 1	1/F	32.5	54.8	54.8	54.8	54.8
		14/F	68.9	54.4	54.4	54.4	54.4
		28/F	108	53.4	53.4	53.4	53.4
SR3A	Dawning Views 2	1/F	32.5	55.4	55.4	55.4	55.4
		14/F	68.9	54.8	54.8	54.8	54.8
		28/F	108	53.9	53.9	53.9	53.9
SR7	Southwest Tong Hang	G/F	14.4	59.3	59.3	59.3	59.3
		1/F	17.1	59.3	59.3	59.3	59.3
SR8	Wo Hop Shek 1	G/F	15.5	48.4	48.4	48.4	48.4
		1/F	18.2	48.5	48.5	48.5	48.5
SR9	Wo Hop Shek 2	G/F	23.6	60.2	60.2	60.2	60.2
		1/F	26.3	60.1	60.1	60.1	60.1
SR10	Kau Lung Hang	G/F	17.2	58.1	58.1	58.1	58.1
SR11	Kiu Tau	G/F	18.8	61.7	61.7	61.7	61.7
		1/F	21.5	61.7	61.7	61.7	61.7
SR12	Nam Wa Po	G/F	29.2	58.1	58.1	58.1	58.1
		1/F	31.9	58.1	58.1	58.1	58.1
SR13	West Tai Wo	G/F	25	62.3	62.3	62.3	62.3
		2/F	30.4	62.2	62.2	62.2	62.2
SR14	Tai Wo	G/F	27.7	59.7	59.7	59.7	59.7
		1/F	30.4	59.7	59.7	59.7	59.7
SR17A	Tai Hang 2	G/F	25.7	66.8	66.8	66.8	66.8
		2/F	31.1	66.8	66.8	66.8	66.8
SR17B	Tai Hang 3	G/F	25.7	60.3	60.3	60.3	60.3
		2/F	31.1	60.3	60.3	60.3	60.3
SR19	Hong Lok Yuen 1	G/F	32.9	64.7	64.7	64.7	64.7
		2/F	38.3	65.6	65.6	65.6	65.6
SR20	Hong Lok Yuen 2	G/F	32.9	65.4	65.4	65.4	65.4
		2/F	38.3	65.7	65.7	65.7	65.7
SR21	Hong Lok Yuen 3	G/F	33.9	69.8	69.8	69.8	69.8
		2/F	39.3	69.8	69.8	69.8	69.8
SR22	Wai Tau Tsuen 1	G/F	28.2	75.1	75.1	75.1	75.1
		1/F	30.9	75	75	75	75

SR ID	Description	Floor	mPD	Predicted Construction Noise $L_{eq(30\ min)}$ dB(A)						
				(A): Silenced Equipment Only	(B): (A) + Plant Reduction	(C): (B) + % On Time Reduction	(D): (C) + Temporary Barriers	(E): (D) + % On Time Reduction	(F): (E) + Plant Reduction	
SR23	Wai Tau Tsuen 2	G/F	28.7	66.8		66.8		66.8		66.8
		1/F	31.4	67.5		67.5		67.5		67.5
SR24	Kau Liu Ha 1	G/F	19.1	63.7		63.7		63.7		63.7
		2/F	24.5	66.4		66.4		66.4		66.4
SR25	Kau Liu Ha 2	G/F	19.1	63.7		63.7		63.7		63.7
		2/F	24.5	66.5		66.5		66.5		66.5
SR26	Tai Po Garden	G/F	13.8	61.9		61.8		60.9		60.6
		4/F	25	62.6		62.5		61.7		61.3
SR27	Mui Shu Hang	G/F	15.7	70.5		70.5		69.5		69.5
		1/F	18.4	70.6		70.5		69.6		69.6
SR28	Northwest Shek Kwu Lung	G/F	21.2	73.5		73.5		72.5		72.5
		1/F	23.9	73.5		73.5		72.5		72.5
SR29	Parc Versailles 1	G/F	11.5	67.9		67.9		67		67
		5/F	25.5	68.5		68.5		67.5		67.5
SR29A	Parc Versailles 2	G/F	11.5	64.6		64.6		63.8		63.7
		5/F	25.5	66		65.9		65		64.6
SR30A	Shek Kwu Lung 4	G/F	13.4	67.8		67.6		65.7		65.7
		2/F	18.8	68.3		68.1		66.2		66.2
SR30B	Shek Kwu Lung 5	G/F	17.2	66.6		66.6		64.7		64.7
		2/F	22.8	67.1		67.1		65.2		65.1
SR30C	Shek Kwu Lung 6	G/F	31.2	60.7		60.6		60		60
		2/F	36.8	64.2		64.2		62.9		62.9
SR31	Shek Kwu Lung 2	G/F	9.9	64.2		64		62.2		62.2
		2/F	15.3	64.3		64.2		62.4		62.3
SR33	Shek Kwu Lung 3	G/F	33.2	72.5		71.8		71.3		62.4
SR34	Pun Chun Yuen	G/F	58.8	65.8		65.8		64.3		67
		1/F	61.5	65.8		65.8		64.4		68.1
SR35	Buddhist Tai Kwong Middle School	1/F	37.3	70.4	X	70.2	X	68.8	X	64.6
SR36	Ma Wo	G/F	43.2	68.8		68.8		68.7		68.7
		1/F	45.9	68.9		68.9		68.9		68.9
SR38	Dynasty View 1	1/F	37.7	56.6		56.6		56.2		56.2
		5/F	48.9	65.6		65.6		65.4		65.4
		8/F	57.3	69.6		69.6		69.3		69.3
SR39	The Paragon	1/F	37.3	65		65		65		65.4
		5/F	48.5	70.9		70.9		70.9		70.9
		9/F	59.7	71.1		71.1		71.1		71.1
SR40	Grand Palisades	1/F	59	65.3		65.3		65.3		65.5
		6/F	73	67.6		67.6		67.6		67.7
		10/F	84.2	68		68		68		68
SR41	Wong Shiu Chi Middle School	1/F	6.4	68.1	X	68.1	X	68.1	X	67.8
		5/F	18.4	68.2	X	68.2	X	68.2	X	67.9
SR42	Wan Tau Tong Estate - Wan Lam House 1	1/F	12.8	62.5		62.5		62.5		56.5
		15/F	52	66.7		66.7		66.7		64.8
		31/F	96.8	67.1		67.1		67.1		66.8
SR43	Wan Tau Tong Estate - Wan Lam House 2	1/F	12.8	56.5		56.5		56.5		56.5
		15/F	52	56.5		56.5		56.5		56.5
		31/F	96.8	56.3		56.3		56.3		56.3
SR44	Wan Tau Tong Estate - Wan Loi House	1/F	12.8	61.6		61.6		61.6		61.6
		15/F	52	67.6		67.6		67.6		66.1
		31/F	96.8	68.6		68.6		68.6		68.3
SR45	HK Teacher's Association Secondary School	1/F	13.6	74.7	X	74.7	X	74.7	X	67
		6/F	28.6	74.6	X	74.6	X	74.6	X	70.3
SR46	Uptown Plaza	1/F	30.3	70.3		70.3		70.3		65.2
		13/F	63.9	70		70		70		68.4
		26/F	100	69.5		69.5		69.5		69.2
SR47	Wang Fuk Court – Wang Cheong House 1	1/F	6.8	72.5		72.5		72.5		72.5
		15/F	46	73.2		73.2		73.2		73.2
		31/F	90.8	71.5		71.5		71.5		71.5
SR48	Wang Fuk Court – Wang Cheong House 2	1/F	6.8	68.4		68.4		68.4		68.4
		15/F	46	67.5		67.5		67.5		67.5
		31/F	90.8	64.7		64.7		64.7		64.7

SR ID	Description	Floor	mPD	Predicted Construction Noise $L_{eq(30\text{ min})}$ dB(A)						
				(A): Silenced Equipment Only	(B): (A) + Plant Reduction	(C): (B) + % - On Time Reduction	(D): (C) + Temporary Barriers	(E): (D) + % - On Time Reduction	(F): (E) + Temporary Barriers	
SR49	Wang Fuk Court – Wang Cheong House 3	1/F	6.8	67.5		67.5		67.5		67.6
		15/F	46	71.1		71.1		71.1		71.1
		31/F	90.8	70.5		70.5		70.5		70.5
SR50	Wang Fuk Court – Wang Tat House	1/F	6.8	67.9		67.9		67.9		68.2
		15/F	46	71.2		71.2		71.2		71.2
		31/F	90.8	70.6		70.6		70.6		70.6
SR51	Wang Fuk Court – Wang Shing House	1/F	6.8	0		0		0		0
		15/F	46	0		0		0		0
		31/F	90.8	0		0		0		0
SR52	Ha Wong Yi Au 1	G/F	29.2	71.7		71.7		71.7		71.7
		2/F	34.6	75		75		75		75
SR53	Ha Wong Yi Au 2	G/F	11	60.4		60.4		60.4		60.4
		1/F	13.7	63.2		63.2		63.2		63.2
SR54	Riverrain Bayside	G/F	8.5	69.6		69.6		69.6		69.7
		2/F	14.1	70.9		70.9		70.9		70.9
SR55	Dynasty View 2	1/F	37.7	66.7		66.7		66.3		66.3
		4/F	46.1	71.6		71.6		71.2		71.2
		8/F	57.3	71.7		71.7		71.3		71.3
SR56	Monastery at Ma Wo	G/F	42.5	73		73		72.6		72.6
		1/F	45.2	73.1		73.1		72.7		72.7
SR57	King Nga Court – King Yuet House 1	1/F	14.6	64.3		64.3		64.3		64.3
		18/F	62.2	67.2		67.2		67.2		67.2
		36/F	113	66.6		66.6		66.6		66.6
SR58	King Nga Court – King Yuet House 2	1/F	14.6	64.9		64.9		64.9		65.2
		18/F	62.2	67.8		67.8		67.8		67.7
		36/F	113	67.3		67.3		67.3		67.3
SR59N	King Nga Court – King Yan House	1/F	14.6	63.5		63.5		63.5		62.9
		18/F	62.2	65.6		65.6		65.6		65.4
		36/F	113	65.3		65.3		65.3		65.3
SR60	Tak Nga Court 1	1/F	16.3	65.9		65.9		65.9		65.9
		17/F	61.1	67.6		67.6		67.6		67.6
		34/F	109	67		67		67		67
SR61	Tak Nga Court 2	1/F	16.3	66.1		66.1		66.1		66.1
		17/F	61.1	68		68		67.9		67.9
		34/F	109	67.8		67.8		67.7		67.7
SR62	Ha Wun Yiu	G/F	29.6	71.6		71.6		71.6		71.6
		1/F	32.3	71.6		71.6		71.6		71.6
SR63	Lai Chi Shan	G/F	22.4	69.9		69.9		69.9		69.9
		1/F	25.1	71.4		71.4		71.4		71.4
SR64	Shan Tong New Village 1	G/F	44.3	64.3		64.3		64.3		64.3
		2/F	49.7	66.7		66.7		66.7		66.7
SR65	Shan Tong New Village 2	G/F	41.8	62.6		62.6		62.6		62.6
		2/F	47.2	63.5		63.5		63.5		63.5
SR66	P.L.K. Tin Ka Ping Primary School	1/F	14.6	63.9		63.9		63.9		61.4
		6/F	29.6	63.9		63.9		63.9		61.6
SR67	Redland Garden	1/F	29.4	59.9		59.9		59.9		60
		6/F	43.4	60.3		60.3		60.3		60.4
SR70	Kwong Fuk Estate - Kwong Lai House	1/F	9.7	62.9		62.9		62.9		62.8
		12/F	40.5	64.4		64.4		64.4		64.3
		23/F	71.3	64.6		64.6		64.6		64.5
SR73	Island House Conservation Studies Centre	G/F	17.2	66.4		66.4		66.4		66.5
		1/F	20.2	66.6		66.6		66.6		66.7
SR75	Wong Kong Shan	G/F	15.7	49.1		49.1		49.1		49.1
		1/F	18.4	49.1		49.1		49.1		49.1
SR76	Yuen Leng 1	G/F	22	57.4		57.4		57.4		57.4
		2/F	27.4	57.4		57.4		57.4		57.4
SR77	Yuen Leng 2	G/F	23.9	59.2		59.2		59.2		59.2
		2/F	29.3	59.1		59.1		59.1		59.1
SR78	Dynasty View 3	1/F	33.7	63.7		63.7		63.6		63.6
		5/F	44.9	71.8		71.8		71.6		71.6
		8/F	53.3	72.2		72.2		72.1		72.1

SR ID	Description	Floor	mPD	Predicted Construction Noise $L_{eq(30\text{ min})}$ dB(A)						
				(A): Silenced Equipment Only	(B): (A) + Plant Reduction	(C): (B) + %- On Time Reduction	(D): (C) + Temporary Barriers			
SR79	Care Village	G/F	5.6	66.6		66.6		66.6		66.6
		2/F	11	73.6		73.6		73.6		73.6
SR80	Wai Tau Tsuen 3	G/F	26.2	72.1		72.1		72.1		72.1
		2/F	31.6	72.1		72.1		72.1		72.1
SR81	Wai Tau Tsuen 4	G/F	25.2	71.4		71.4		71.4		71.4
		2/F	30.6	71.4		71.4		71.4		71.4
SR82N	Tai Hang 5	G/F	24.2	63.5		63.5		63.5		63.5
		2/F	29.6	63.5		63.5		63.5		63.5
SR83	Yuen Leng 3	G/F	19.2	59		59		59		59
		2/F	24.6	59		59		59		59
SR84	Nam Wa Po 2	G/F	19.7	60.8		60.8		60.8		60.8
		2/F	25.1	60.8		60.8		60.8		60.8
SR85	Nam Wa Po 3	G/F	23.1	62.1		62.1		62.1		62.1
		2/F	28.5	62.1		62.1		62.1		62.1
SR86	Tong Hang	G/F	18.4	59.4		59.4		59.4		59.4
		2/F	23.8	59.4		59.4		59.4		59.4
SR87	Tai Wo 2	G/F	26.1	60.9		60.9		60.9		60.9
		2/F	31.5	60.9		60.9		60.9		60.9
SR88	Wai Tau Tsuen 5	G/F	28.8	68.8		68.8		68.8		68.8
		2/F	34.2	68.8		68.8		68.8		68.8
SR89	Wai Tau Tsuen 6	G/F	29.3	65.9		65.9		65.9		65.9
		2/F	34.7	66		66		66		66
SR90	Wai Tau Tsuen 7	G/F	26.9	65.1		65.1		65.1		65.1
		2/F	32.3	65.1		65.1		65.1		65.1
SR93	SKH Mok Sau Tsang Secondary School	1/F	25.6	62.6		62.6		62.6		56.8
		6/F	40.6	65.7	X	65.7	X	65.7	X	63.7
SR94	Choi Hin To Primary School	1/F	15.5	53.2		53.2		53.2		53.2
		5/F	27.5	53.8		53.8		53.8		53.8
SR95B	Tai Po Normal School Memorial School 2	G/F	16.6	64.4		64.4		62.7		60.2
SR100	KCRC Staff Quarters	G/F	10.2	55.4		55.4		55.4		55.4
		3/F	19.2	58.6		58.6		58.6		58.6
		6/F	28.2	59.1		59.1		59.1		59.1
SR101	Chateau Royale	G/F	20.2	64.6		64.6		64.6		64.6
		2/F	25.8	65.7		65.7		65.7		65.7
SR103	Classical Garden	1/F	27.2	51.7		51.7		51.6		50.2
		4/F	35.6	52.4		52.4		52.3		51.8
		8/F	46.8	54.3		54.3		54.1		55.2
SR104	Village House near Ma Wo 1	G/F	81.2	73.6		73.6		73.2		73.2
SR105	Village House near Ma Wo 2	G/F	79.4	64.2		64.2		64		64
SR106	Village House near Shek Kwu Lung	G/F	39.2	68.7		68.5		66.7		66.8
SR107	Village House near Hong Lok Yuen	G/F	27.1	71.3		71.3		71.3		71.3
		1/F	29.8	71.3		71.3		71.3		71.3
SR108	Tai Hang Village House	G/F	25.7	67.3		67.3		67.3		67.3
		2/F	31.1	67.3		67.3		67.3		67.3
SR109	Village House near Nam Wa Po	G/F	22.5	59.2		59.2		59.2		59.2

Notes:

x = Predicted construction noise levels exceed the relevant criterion.

**Table 5.13 Summary of Mitigated Construction Noise Levels for Week 77**

SR ID	Description	Floor	mPD	Predicted Construction Noise $L_{eq(30\text{ min})}$ dB(A)						
				(A): Silenced Equipment Only	(B): (A) + Plant Reduction	(C): (B) + %- On Time Reduction	(D): (C) + Temporary Barriers			
SR1	Avon Park	1/F	38.1	60.6		60.5		59.4		59.4
		13/F	71.7	61.8		61.7		60.7		60.7
		25/F	105	61.7		61.6		60.7		60.7
SR2	Fanling Government Secondary School	1/F	23	63.4		63.3		62.4		62.4
SR3	Dawning Views 1	1/F	32.5	65.9		65.9		64.9		64.9
		14/F	68.9	65.8		65.7		64.7		64.7
		28/F	108	65.5		65.5		64.5		64.5
SR3A	Dawning Views 2	1/F	32.5	66.2		66.1		65.1		65.1
		14/F	68.9	66.1		66		65		65
		28/F	108	65.8		65.7		64.7		64.7



SR ID	Description	Floor	mPD	Predicted Construction Noise $L_{eq(30\text{ min})}$ dB(A)						
				(A): Silenced Equipment Only	(B): (A) + Plant Reduction	(C): (B) + % On Time Reduction	(D): (C) + Temporary Barriers	(E): (D) + % On Time Reduction	(F): (E) + Plant Reduction	
SR7	Southwest Tong Hang	G/F	14.4	79.8	X	79.7	X	79	X	69.2
		1/F	17.1	79.8	X	79.7	X	79	X	70.2
SR8	Wo Hop Shek 1	G/F	15.5	59.8		59.8		58.3		58.3
		1/F	18.2	59.8		59.8		58.3		58.3
SR9	Wo Hop Shek 2	G/F	23.6	75.9	X	75.8	X	74.3		74.3
		1/F	26.3	75.8	X	75.8	X	74.2		74.2
SR10	Kau Lung Hang	G/F	17.2	69.4		69.3		68.6		68
SR11	Kiu Tau	G/F	18.8	92.1	X	92.1	X	90.8	X	69.8
		1/F	21.5	92.2	X	92.2	X	90.9	X	72.3
SR12	Nam Wa Po	G/F	29.2	70.5		70.2		69.8		69.8
		1/F	31.9	70.5		70.2		69.8		69.8
SR13	West Tai Wo	G/F	25	94.7	X	94.7	X	94.7	X	71.1
		2/F	30.4	92.5	X	92.5	X	92.4	X	75.3
SR14	Tai Wo	G/F	27.7	73.6		73.6		73.2		73.2
		1/F	30.4	73.6		73.6		73.2		73.2
SR17A	Tai Hang 2	G/F	25.7	72.4		72.4		71.5		71.5
		2/F	31.1	72.4		72.4		71.4		71.4
SR17B	Tai Hang 3	G/F	25.7	62.2		62.2		62.2		62.2
		2/F	31.1	62.1		62.1		62.1		62.1
SR19	Hong Lok Yuen 1	G/F	32.9	65.8		65.8		65.7		65.7
		2/F	38.3	66.4		66.4		66.3		66.3
SR20	Hong Lok Yuen 2	G/F	32.9	65.4		65.4		65.2		65.2
		2/F	38.3	66		66		66		66
SR21	Hong Lok Yuen 3	G/F	33.9	69.6		69.6		69.5		69.5
		2/F	39.3	69.6		69.6		69.6		69.6
SR22	Wai Tau Tsuen 1	G/F	28.2	64.1		64.1		64.1		64.1
		1/F	30.9	64.3		64.3		64.3		64.3
SR23	Wai Tau Tsuen 2	G/F	28.7	69.9		69.9		69.9		69.9
		1/F	31.4	71.2		71.2		71.2		71.2
SR24	Kau Liu Ha 1	G/F	19.1	60.2		60.2		60.2		60.2
		2/F	24.5	62.1		62.1		62.1		62.1
SR25	Kau Liu Ha 2	G/F	19.1	60.1		60.1		60.1		60.1
		2/F	24.5	62.1		62.1		62.1		62.1
SR26	Tai Po Garden	G/F	13.8	60.9		60.9		59.7		59.5
		4/F	25	61		61		59.7		59.7
SR27	Mui Shu Hang	G/F	15.7	70.3		70.3		68.8		68.9
		1/F	18.4	70.3		70.3		68.8		69
SR28	Northwest Shek Kwu Lung	G/F	21.2	75.7	X	75.7	X	74		74
		1/F	23.9	75.7	X	75.7	X	74.1		74.1
SR29	Parc Versailles 1	G/F	11.5	68		68		66.5		67
		5/F	25.5	68.5		68.4		66.9		67.2
SR29A	Parc Versailles 2	G/F	11.5	64.3		64.3		62.8		62.7
		5/F	25.5	65.5		65.4		63.9		63.7
SR30A	Shek Kwu Lung 4	G/F	13.4	69.2		69.2		68		68
		2/F	18.8	69.2		69.2		68		68
SR30B	Shek Kwu Lung 5	G/F	17.2	68.2		68.2		66.6		66.6
		2/F	22.8	68.3		68.3		66.7		66.7
SR30C	Shek Kwu Lung 6	G/F	31.2	66.7		66.7		65.5		65.5
		2/F	36.8	68.6		68.6		67.6		67.6
SR31	Shek Kwu Lung 2	G/F	9.9	63.7		63.7		62.5		62.5
		2/F	15.3	64.2		64.2		62.9		62.9
SR33	Shek Kwu Lung 3	G/F	33.2	74.1		74		72.2		58.7
SR34	Pun Chun Yuen	G/F	58.8	66.6		66.5		64.8		64.8
		1/F	61.5	66.6		66.6		64.8		64.8
SR35	Buddhist Tai Kwong Middle School	1/F	37.3	69.7	X	69.7	X	67.9	X	57.5
SR36	Ma Wo	G/F	43.2	61.3		61.3		61.3		61.3
		1/F	45.9	61.5		61.5		61.5		61.5
SR38	Dynasty View 1	1/F	37.7	59.1		58.2		58.2		58.2
		5/F	48.9	68.2		67.2		67.2		67.2
		8/F	57.3	68.5		67.5		67.5		67.5
SR39	The Paragon	1/F	37.3	63.9		63.7		62.6		62.6
		5/F	48.5	68		67.8		66.6		66.6
		9/F	59.7	68.2		68		66.7		66.7
SR40	Grand Palisades	1/F	59	66.2		65.9		64.7		64.7
		6/F	73	67.1		66.8		65.6		65.6
		10/F	84.2	67.1		66.9		65.7		65.7
SR41	Wong Shiu Chi Middle School	1/F	6.4	64.9		64.7		63.4		63.4
		5/F	18.4	65.1		64.9		63.6		63.6

SR ID	Description	Floor	mPD	Predicted Construction Noise $L_{eq(30\text{ min})}$ dB(A)						
				(A): Silenced Equipment Only	(B): (A) + Plant Reduction	(C): (B) + % On Time Reduction	(D): (C) + Temporary Barriers	(A)	(B)	(C)
SR42	Wan Tau Tong Estate - Wan Lam House 1	1/F	12.8	69.2		68.3		66.9		66.9
		15/F	52	70		69.3		68.1		68.1
		31/F	96.8	68.8		68.3		67.1		67.1
SR43	Wan Tau Tong Estate - Wan Lam House 2	1/F	12.8	64.5		64.5		64.5		64.5
		15/F	52	63.8		63.8		63.8		63.8
		31/F	96.8	61.8		61.8		61.8		61.8
SR44	Wan Tau Tong Estate - Wan Loi House	1/F	12.8	68.3		67.5		66.2		66.2
		15/F	52	70.4		69.8		68.4		68.4
		31/F	96.8	69.6		69.1		68		68
SR45	HK Teacher's Association Secondary School	1/F	13.6	75.4	X	75.1	X	74.5	X	74.5
		6/F	28.6	75.4	X	75.1	X	74.4	X	74.4
SR46	Uptown Plaza	1/F	30.3	69.3		69.1		67.9		67.9
		13/F	63.9	69.1		68.8		67.7		67.7
		26/F	100	68.9		68.5		67.4		67.4
SR47	Wang Fuk Court – Wang Cheong House 1	1/F	6.8	63.3		63.2		61.4		62.5
		15/F	46	67.9		67.8		66.1		66.1
		31/F	90.8	67.5		67.4		65.7		65.7
SR48	Wang Fuk Court – Wang Cheong House 2	1/F	6.8	0		0		0		0
		15/F	46	0		0		0		0
		31/F	90.8	0		0		0		0
SR49	Wang Fuk Court – Wang Cheong House 3	1/F	6.8	63.5		63.4		61.6		62.2
		15/F	46	68		67.9		66.3		66.3
		31/F	90.8	67.6		67.5		65.8		65.8
SR50	Wang Fuk Court – Wang Tat House	1/F	6.8	64.8		64.6		63		63.4
		15/F	46	67.9		67.7		66.1		66.1
		31/F	90.8	67.4		67.3		65.8		65.8
SR51	Wang Fuk Court – Wang Shing House	1/F	6.8	0		0		0		0
		15/F	46	0		0		0		0
		31/F	90.8	0		0		0		0
SR52	Ha Wong Yi Au 1	G/F	29.2	68		67.8		66.2		66.2
		2/F	34.6	71.3		71.2		69.6		69.6
SR53	Ha Wong Yi Au 2	G/F	11	62.1		62		60.8		60.9
		1/F	13.7	65.3		65.1		63.9		63.9
SR54	Riverrain Bayside	G/F	8.5	72.6		72.4		71.4		71.4
		2/F	14.1	73.2		73		72		72
SR55	Dynasty View 2	1/F	37.7	54.3		54.3		54.3		54.3
		4/F	46.1	56.5		56.5		56.5		56.5
		8/F	57.3	57.9		57.9		57.9		57.9
SR56	Monastery at Ma Wo	G/F	42.5	57.6		57.6		57.6		57.6
		1/F	45.2	57.8		57.8		57.8		57.8
SR57	King Nga Court – King Yuet House 1	1/F	14.6	64.3		64.2		62.9		62.9
		18/F	62.2	64.3		64.2		62.9		62.9
		36/F	113	63.9		63.8		62.5		62.5
SR58	King Nga Court – King Yuet House 2	1/F	14.6	66.3		66.1		65		65
		18/F	62.2	66.7		66.4		65.3		65.3
		36/F	113	66.3		66.1		64.9		64.9
SR59N	King Nga Court – King Yan House	1/F	14.6	66.6		66.4		65.5		65.5
		18/F	62.2	66.5		66.3		65.3		65.3
		36/F	113	66.1		65.8		64.9		64.9
SR60	Tak Nga Court 1	1/F	16.3	64.4		64.3		62.9		62.9
		17/F	61.1	64.5		64.4		63		63
		34/F	109	64.1		64		62.5		62.5
SR61	Tak Nga Court 2	1/F	16.3	64.4		64.2		62.7		62.7
		17/F	61.1	64.4		64.3		62.8		62.8
		34/F	109	64.1		63.9		62.4		62.4
SR62	Ha Wun Yiu	G/F	29.6	68.9		68.4		67		67
		1/F	32.3	69		68.4		67.1		67.1
SR63	Lai Chi Shan	G/F	22.4	69		68.9		67.2		67.2
		1/F	25.1	69		68.9		67.2		67.2

SR ID	Description	Floor	mPD	Predicted Construction Noise $L_{eq(30\text{ min})}$ dB(A)					
				(A): Silenced Equipment Only	(B): (A) + Plant Reduction	(C): (B) + %- On Time Reduction	(D): (C) + Temporary Barriers		
SR64	Shan Tong New Village 1	G/F 2/F	44.3 49.7	65.9 68		65.7 67.7		64.9 66.9	64.9 66.9
SR65	Shan Tong New Village 2	G/F 2/F	41.8 47.2	62.7 65.9		62.6 65.7		62.1 64.7	62.1 64.7
SR66	P.L.K. Tin Ka Ping Primary School	1/F 6/F	14.6 29.6	66.3 66.2	X X	66 66	X X	65.4 65.4	65.4 65.4
SR67	Redland Garden	1/F 6/F	29.4 43.4	59 59.3		58.9 59.2		57.7 58	57.7 58
SR70	Kwong Fuk Estate - Kwong Lai House	1/F 12/F 23/F	9.7 40.5 71.3	60.6 61.9 62		60.4 61.7 61.9		58.5 60 60.2	58.5 60 60.3
SR73	Island House Conservation Studies Centre	G/F 1/F	17.2 20.2	64 64.6		63.8 64.5		62.4 63.1	62.4 63.1
SR75	Wong Kong Shan	G/F 1/F	15.7 18.4	63.7 63		63.6 62.9		62.8 61.9	62.8 61.9
SR76	Yuen Leng 1	G/F 2/F	22 27.4	68.1 68.4		67.8 68.1		67.5 67.8	67.5 67.8
SR77	Yuen Leng 2	G/F 2/F	23.9 29.3	64.9 65.3		64.7 65.1		64.4 64.8	64.4 64.8
SR78	Dynasty View 3	1/F 5/F 8/F	33.7 44.9 53.3	59.1 52.2 55		59.1 52.2 55		59.1 52.2 55	59.1 52.2 55
SR79	Care Village	G/F 2/F	5.6 11	65.7 70.3		65.5 70.2		64.7 69.3	64.7 69.3
SR80	Wai Tau Tsuen 3	G/F 2/F	26.2 31.6	75.3 75.3		75.3 75.3		75.2 75.3	75.2 75.3
SR81	Wai Tau Tsuen 4	G/F 2/F	25.2 30.6	72.9 72.9		72.9 72.9		72.4 72.5	72.4 72.5
SR82N	Tai Hang 5	G/F 2/F	24.2 29.6	73.5 73.2		73.5 73.2		71.5 71.2	71.5 71.2
SR83	Yuen Leng 3	G/F 2/F	19.2 24.6	72.5 72.4		72.3 72.2		72 71.8	72 71.8
SR84	Nam Wa Po 2	G/F 2/F	19.7 25.1	67.7 68		67.5 67.8		67.2 67.5	66.9 67.2
SR85	Nam Wa Po 3	G/F 2/F	23.1 28.5	65 65.5		64.8 65.4		64.6 65.2	64.5 65.1
SR86	Tong Hang	G/F 2/F	18.4 23.8	75.5 75.3	X	75.4 75.3		74.9 74.8	74 73.9
SR87	Tai Wo 2	G/F 2/F	26.1 31.5	67 67.2		67 67.2		66.6 66.8	66.6 66.8
SR88	Wai Tau Tsuen 5	G/F 2/F	28.8 34.2	64.2 63.8		64.2 63.8		64.2 63.7	63.9 63.5
SR89	Wai Tau Tsuen 6	G/F 2/F	29.3 34.7	63.9 63.6		63.9 63.6		63.9 63.6	63.9 63.6
SR90	Wai Tau Tsuen 7	G/F 2/F	26.9 32.3	66 66.1		66 66.1		65.9 66	65.9 66
SR93	SKH Mok Sau Tsang Secondary School	1/F 6/F	25.6 40.6	65.2 63.6		65 63.4		64.4 61.8	64.4 61.8
SR94	Choi Hin To Primary School	1/F 5/F	15.5 27.5	57.6 57.2		57.6 57.2		57.6 57.2	57.6 57.2
SR95B	Tai Po Normal School Memorial School 2	G/F	16.6	59.5		59.5		58.1	57.8
SR100	KCRC Staff Quarters	G/F 3/F 6/F	10.2 19.2 28.2	60.5 57.8 58.3		60.4 57.7 58.2		60 56.2 56.8	60 56.2 56.8
SR101	Chateau Royale	G/F 2/F	20.2 25.8	65.7 66		65.5 65.9		64.5 64.9	64.5 64.9
SR103	Classical Garden	1/F 4/F 8/F	27.2 35.6 46.8	55 54.2 54.5		54.7 53.7 54		53.8 52.7 53	53.8 52.7 53
SR104	Village House near Ma Wo 1	G/F	81.2	53.9		53.6		52.3	52.3
SR105	Village House near Ma Wo 2	G/F	79.4	64.6		63.5		63.5	63.5
SR106	Village House near Shek Kwu Lung	G/F	39.2	64.9		64.9		64	64.4

SR ID	Description	Floor	mPD	Predicted Construction Noise $L_{eq(30\ min)}$ dB(A)			dB(A) (D): (C) +Temporary Barriers
				(A): Silenced Equipment Only	(B): (A) + Plant Reduction	(C): (B) + %- On Time Reduction	
SR107	Village House near Hong Lok Yuen	G/F	27.1	70.3	70.3	70.3	70.3
		1/F	29.8	70.6	70.6	70.6	70.6
SR108	Tai Hang Village House	G/F	25.7	70.1	70.1	70	70
		2/F	31.1	69.9	69.9	69.7	69.7
SR109	Village House near Nam Wa Po	G/F	22.5	67.2	67.1	66.7	65.3

Notes:

x = Predicted construction noise levels exceed the relevant criterion.

#### 5.4.5 Residual Impacts

After implementation of the proposed mitigation measures such as silenced equipment, reducing the number of equipment, reducing the percentage on-time of equipment, as well as purpose built temporary noise barriers, the predicted noise levels at all residential type NSRs are found within the relevant criterion. For educational institutions, the predicted noise levels exceed the 65 dB(A) examination period criterion at Wong Shiu Chi Middle School during week 38. The predicted noise levels at HK Teacher's Association Secondary School exceed the  $L_{eq(30\ min)}$  70 dB(A) non examination period criterion during week 38 and week 77 and exceed the 65 dB(A) examination period criterion during week 30. These results are summarised in Table 5.14.

**Table 5.14 Summary of Residually Impacted NSRs after provision of all practicable direct mitigation measures**

SR ID	Description	Noise Criterion* $L_{eq(30\ min)}$	Predicted Max. Noise Level $L_{eq(30\ min)}$ dB(A) and Exceedance Floors			
			Week 21	Week 30	Week 38	Week 77
SR41	Wong Shiu Chi Middle School	65 / 70 dB(A)	-	-	67.9 (1-5/F)	-
SR45	HK Teacher's Association Secondary School	65 / 70 dB(A)	-	68.9 (1-6/F)	70.3 (1-6/F)	74.6 (1-6/F)

Notes:

\* 65 dB(A) during examination period and 70 dB(A) during non-examination period.

Upon direct contact with the school's officials, it has been confirmed that Wong Shiu Chi Middle School (SR41) and HK Teacher's Association Secondary School (SR45) are on the list of the EPD's "Noise Abatement Program in Schools" (NAP), i.e., appropriate glazing and air conditioners are installed at the impacted facades and air conditioners will be switched on throughout the year during school hours. As noise insulation is already in place at these two schools (SR41 and SR45), the residual construction noise impacts will be adequately mitigated and therefore these 2 schools will not be impacted.

#### 5.4.6 Cumulative Impacts

The assessment methodology has already considered the cumulative noise impacts from all 4 sections of the construction areas according to their respective construction works periods. No other nearby construction activities to be conducted during the same construction period as the captioned Project have been identified.

### 5.5 Operational Phase Noise Impacts

#### 5.5.1 Identification of Noise Impacts

Road traffic noise will be the most significant source of noise impacts during the operational phase of the Project. This includes noise from traffic on the improved highways, as well as the existing roads. The following road traffic noise impact assessments have been performed

for this study:

- Traffic noise impacts upon the identified NSRs at year 2002 to determine the total traffic noise level existing before the widening works commence; and
- Traffic noise impacts upon the identified NSRs at year 2020 (the worst year within a 15 year period after the commissioning of the Project).
- Quantitative comparison between the NIA for 24 Hour Opening of Border Crossings study and the study for this widening project.

### 5.5.2 Assessment Methodology

The traffic noise levels at the identified NSRs have been predicted using the computer model “roadNoise” which implements the calculation method as prescribed in “Calculation of Road Traffic Noise (CRTN)” developed by UK Department of Transport, Welsh Office in 1988.

With reference to Clause 2.4 of the Project Brief, the proposed road widening work is scheduled to start in mid 2002 for completion in year 2005. Therefore, the peak hourly traffic noise level during year 2002 is considered to be representative of the prevailing noise condition for the year prior to the commencement of the construction work. The prevailing noise level will be utilised, where necessary, for comparison with the predicted future traffic noise level when determining the need for indirect technical remedies (ITRs).

In accordance with CRTN, future traffic noise shall be calculated based on the maximum peak hourly traffic flow within the 15 years following the commencement of operation of the proposed roadwork. As confirmed by the Traffic Consultant (MVA Hong Kong Limited), the year 2020 traffic flow represents the maximum flow within 15 years of year 2005. Therefore it has been utilised for the future traffic noise prediction for this Study. The traffic data of year 2020, which is agreed by the Transport Department (refer to Appendix 5.10), is presented in Appendix 5.3.

#### 5.5.2.1 Speed Limit

It should be noted that under the Road Ordinance (Road Traffic) Chapter 374 Clause 40 (5), the maximum speed limit of all medium goods vehicles, heavy goods vehicles and buses is 70 km/h. In order to take this Clause into consideration, the weighted average speeds have been used in the traffic noise modelling for roads which the legal speed limit is higher than 70 km/h. The theoretical calculation method proposed by the Highways Department and agreed by the Transport Department is shown below.

$$\text{Weighted average speed} = \frac{\% \text{ of heavy vehicles defined under the Road Traffic Ordinance} \times 70 \text{ km/h} + \% \text{ of other vehicles} \times \text{posted speed limit}}$$

The speeds of all roads used in the traffic noise modelling have been provided by MVA, and have been agreed by the Transport Department (refer to Appendix 5.10) and are summarised in Appendix 5.3.

#### 5.5.2.2 Road Surface

The noise model has taken into account Highways Department’s Guidance Notes RD/GN/10A which recommends friction course road surfacing (noise reducing surface) to be provided for Category A roads, i.e., roads with a legal speed limit greater than 70 km/h.

#### 5.5.2.3 Criteria for Designing Mitigation Measures

The road traffic noise standards as stipulated in EIA-TM are given in Section 3.4. For the

purpose of this EIA study, the assessment criteria for designing mitigation measures are described below.

“New” and “existing” road sections have been identified in accordance with Clause 3.5.1(v.a1) of the EIA Study Brief. The northbound and southbound carriageways of Tolo Highway and Fanling Highway, and their associated slip roads, which will be modified under this Project are considered to be “new” roads for the purpose of this noise impact assessment. All other roads which are within the 300 metre spatial scope of the Project limit are considered to be “existing” roads. Figures 5.7.1 – 5.7.4 illustrate the “new” and “existing” roads modelled for this Project. Traffic noise contributions from the two road categories have been evaluated separately and the cumulative noise levels from all roads have also been evaluated for all NSRs. The noise modelling results have then been used to design the mitigation measures for the Project. Essentially, direct mitigation measures have been designed such that the following 2 criteria are satisfied:

1. the predicted  $L_{10(1 \text{ hour})}$  noise level from the “new” roads must be below or equal to the relevant noise standards, i.e., 70 dB(A) for domestic premises and 65 dB(A) for education institutions; and
2. the contribution to the increase in the predicted overall noise level from the “new” roads must not be less than 1.0 dB(A) if the total noise level exceeds the relevant criterion.

If either of these 2 criteria is not met, further direct mitigation measures or indirect technical remedies will need to be considered. Details of mitigation measures are discussed in Section 5.5.3.3.

### **5.5.3 Impact Prediction**

#### **5.5.3.1 Prevailing Noise Climate at Year 2002**

This study has identified 101 representative NSR locations for the traffic noise impact assessment. The traffic noise mitigation measures recommended in the final report on the “Noise Impact Assessment for 24 Hour Opening of Border Crossings” (Highways Department, 1996) for the road sections near Tai Hang Village have been included as part of the evaluation of the year 2002 prevailing noise climate. As the implementation program for other mitigation measures are yet to be determined, they are not considered.

From the prediction results, it can be seen that the year 2002 peak hourly overall traffic noise levels exceed the relevant criterion ( $L_{10(1 \text{ hour})}$  70 dB(A) and 65 dB(A) for schools) at 88 NSRs, and at 11 of these locations the predicted noise levels are found to be over 80 dB(A). The predicted noise levels at all NSRs and all the corresponding floor levels are summarised in Appendix 5.6. Table 5.15 summarises the predicted noise levels at the low, midway and high floor levels for high rise NSRs.

Although the noise mitigation measures near Tai Hang Village as proposed in the NIA for 24 Hour Opening of Border Crossings study have been included in determining the prevailing noise climate of the surroundings, the predicted prevailing noise levels at year 2002 still exceed the  $L_{10(1 \text{ hour})}$  noise criterion at Tai Hang Village. This is because these mitigation measures were not designed to alleviate peak hourly traffic noise impacts. As such, mitigation measures should be provided to attain the relevant  $L_{10(1 \text{ hour})}$  noise criterion for this Project as set out in Section 3 of this EIA report.

**Table 5.15 Summary of the Predicted Traffic Noise Levels (Year 2002) With No Mitigation Measures**

SR ID	Description	Floor	mPD	Noise Contribution L <sub>10(1 hour)</sub> dB(A)					
				Tolo/Fanling Highways & slips to be modified		Other Existing Roads		All Roads	
SR1	Avon Park	1/F	38.1	63.2		76.3	x	76.5	x
		13/F	71.7	64.2		77	x	77.2	x
		25/F	105.3	64.2		76.2	x	76.4	x
SR2	Fanling Government Secondary School	1/F	23	60.7		68.2	x	68.9	x
SR3	Dawning Views 1	1/F	32.5	68.6		77	x	77.6	x
		14/F	68.9	69.2		78.4	x	78.9	x
		28/F	108.1	68.9		77.6	x	78.1	x
SR3A	Dawning Views 2	1/F	32.5	68.9		78.3	x	78.8	x
		14/F	68.9	69.4		78.6	x	79.1	x
		28/F	108.1	69.1		77.7	x	78.3	x
SR7	Southwest Tong Hang	G/F	14.4	72.8	x	69.8		74.6	x
		1/F	17.1	74.1	x	70.7	x	75.8	x
SR8	Wo Hop Shek 1	G/F	15.5	58.4		70		70.3	
		1/F	18.2	59.4		70.3		70.7	x
SR9	Wo Hop Shek 2	G/F	23.6	78.7	x	71.1	x	79.4	x
		1/F	26.3	79.1	x	71.1	x	79.7	x
SR10	Kau Lung Hang	G/F	17.2	73.6	x	65.8		74.3	x
SR11	Kiu Tau	G/F	18.8	78.3	x	72	x	79.2	x
		1/F	21.5	80.1	x	72.5	x	80.8	x
SR12	Nam Wa Po	G/F	29.2	75.5	x	68.3		76.3	x
		1/F	31.9	75.8	x	68.3		76.5	x
SR13	West Tai Wo	G/F	25	78.3	x	54.6		78.3	x
		2/F	30.4	81.4	x	57.2		81.4	x
SR14	Tai Wo	G/F	27.7	77.5	x	66.2		77.8	x
		1/F	30.4	78.1	x	66.2		78.4	x
SR17A	Tai Hang 2	G/F	25.7	80.2	x	56		80.2	x
		2/F	31.1	81.9	x	56.4		82	x
SR17B	Tai Hang 3	G/F	25.7	77.5	x	52.1		77.5	x
		2/F	31.1	79.4	x	52		79.4	x
SR19	Hong Lok Yuen 1	G/F	32.9	71	x	59.4		71.3	x
		2/F	38.3	72.2	x	59.5		72.4	x
SR20	Hong Lok Yuen 2	G/F	32.9	70.8	x	60.3		71.2	x
		2/F	38.3	71.9	x	60.3		72.2	x
SR21	Hong Lok Yuen 3	G/F	33.9	74.4	x	54.9		74.5	x
		2/F	39.3	75.2	x	56.1		75.3	x
SR22	Wai Tau Tsuen 1	G/F	28.2	76.2	x	58.3		76.2	x
		1/F	30.9	76.5	x	58.5		76.6	x
SR23	Wai Tau Tsuen 2	G/F	28.7	70.5	x	55.5		70.6	x
		1/F	31.4	72.6	x	60.1		72.9	x
SR24	Kau Liu Ha 1	G/F	19.1	64.5		72.1	x	72.8	x
		2/F	24.5	65.4		73.6	x	74.2	x
SR25	Kau Liu Ha 2	G/F	19.1	64.6		74.4	x	74.9	x
		2/F	24.5	65.4		75.6	x	76	x
SR26	Tai Po Garden	G/F	13.8	67		78.3	x	78.6	x
		4/F	25	68.5		75.7	x	76.4	x
SR27	Mui Shu Hang	G/F	15.7	65.1		56.6		65.7	
		1/F	18.4	65.9		57.3		66.4	
SR28	Northwest Shek Kwu Lung	G/F	21.2	62.4		41.1		62.4	
		1/F	23.9	63.4		42.2		63.4	
SR29	Parc Versailles	G/F	11.5	66.1		67.9		70.1	
		5/F	25.5	69.1		68.2		71.7	x
SR29A	Parc Versailles 2	G/F	11.5	64.8		67.8		69.6	
		5/F	25.5	67.6		68.2		70.9	x
SR30A	Shek Kwu Lung 4	G/F	13.4	62.9		61.8		65.4	
		2/F	18.8	64.1		63.9		67	
SR30B	Shek Kwu Lung 5	G/F	17.2	64.1		47.6		64.2	
		2/F	22.8	65.9		48.3		66	

SR ID	Description	Floor	mPD	Noise Contribution $L_{10}(1 \text{ hour})$ dB(A)				
				Tolo/Fanling Highways & slips to be modified		Other Existing Roads	All Roads	
SR30C	Shek Kwu Lung 6	G/F	31.2	64.3		47.3	64.4	
		2/F	36.8	67.9		49	68	
SR31	Shek Kwu Lung 2	G/F	9.9	62.5		65.3	67.2	
		2/F	15.3	63.7		67.9	69.3	
SR33	Shek Kwu Lung 3	G/F	33.2	65.8		42.8	65.9	
SR34	Pun Chun Yuen	G/F	58.8	70		60.3	70.4	
		1/F	61.5	70.9	x	60.4	71.3	x
SR35	Buddhist Tai Kwong Middle School	1/F	32.4	65.4		60.1	66.5	x
SR36	Ma Wo	G/F	43.2	68.8		51.1	68.9	
		1/F	45.9	70.2		51.1	70.3	
SR38	Dynasty View 1	1/F	37.7	65.7		46.7	65.7	
		5/F	48.9	74.4	x	46.8	74.4	x
		8/F	57.3	77.8	x	47.1	77.8	x
SR39	The Paragon	1/F	37.3	74.1	x	64.4	74.6	x
		5/F	48.5	79.4	x	67	79.7	x
		9/F	59.7	79.5	x	67.1	79.7	x
SR40	Grand Palisades	1/F	59	72.7	x	66.3	73.6	x
		6/F	73	74.7	x	67.7	75.5	x
		10/F	84.2	75.3	x	67.8	76	x
SR41	Wong Shiu Chi Middle School	1/F	6.4	67.6	x	76.4	77	x
		5/F	18.4	69.3	x	75.9	76.8	x
SR42	Wan Tau Tong Estate - Wan Lam House 1	1/F	12.8	64.7		59	65.8	
		15/F	52	70.6	x	61.5	71.1	x
		31/F	96.8	71.5	x	61.6	72	x
SR43	Wan Tau Tong Estate - Wan Lam House 2	1/F	12.8	66.4		42.2	66.4	
		15/F	52	71.9	x	51.2	72	x
		31/F	96.8	74.1	x	53.1	74.1	x
SR44	Wan Tau Tong Estate - Wan Loi House	1/F	12.8	65.2		64.6	67.9	
		15/F	52	73.5	x	64.4	74	x
		31/F	96.8	74.7	x	63.8	75.1	x
SR45	HK Teacher's Association Secondary School	1/F	13.6	72.4	x	63.7	72.9	x
		6/F	28.6	75.8	x	64	76.1	x
SR46	Uptown Plaza	1/F	30.3	71.9	x	72.5	75.2	x
		13/F	63.9	74.5	x	71	76.1	x
		26/F	100.3	74.9	x	69.9	76.1	x
SR47	Wang Fuk Court – Wang Cheong House 1	1/F	6.8	66.6		72.7	73.6	
		15/F	46	74.5	x	75.9	78.2	x
		31/F	90.8	74	x	74.1	77.1	x
SR48	Wang Fuk Court – Wang Cheong House 2	1/F	6.8	59.5		67.4	68.1	
		15/F	46	68.1		75.2	76	
		31/F	90.8	66.5		73.4	74.2	
SR49	Wang Fuk Court – Wang Cheong House 3	1/F	6.8	65.7		73.4	74.1	
		15/F	46	73.5	x	73.7	76.6	x
		31/F	90.8	73.4	x	72	75.8	x
SR50	Wang Fuk Court – Wang Tat House	1/F	6.8	67		75.5	76.1	
		15/F	46	73.5	x	74.8	77.2	x
		31/F	90.8	73.5	x	72.9	76.2	x
SR51	Wang Fuk Court – Wang Shing House	1/F	6.8	41.4		69	69	
		15/F	46	59		75.4	75.5	
		31/F	90.8	58.3		73.7	73.8	
SR52	Ha Wong Yi Au 1	G/F	29.2	73.9	x	65.5	74.5	x
		2/F	34.6	78	x	68.4	78.4	x
SR53	Ha Wong Yi Au 2	G/F	11	64.1		71.3	72.1	
		1/F	13.7	66.1		72.4	73.3	
SR54	Riverrain Bayside	G/F	8.5	71.3	x	61.2	71.7	x
		2/F	14.1	73.1	x	65.4	73.8	x
SR55	Dynasty View 2	1/F	37.7	69.2		0	69.2	
		4/F	46.1	73.1	x	0	73.1	x
		8/F	57.3	77	x	0	77	x
SR56	Monastery at Ma Wo	G/F	42.5	68.4		12.6	68.4	
		1/F	45.2	69.7		13.5	69.7	



SR ID	Description	Floor	mPD	Noise Contribution $L_{10}(1 \text{ hour})$ dB(A)					
				Tolo/Fanling Highways & slips to be modified		Other Existing Roads	All Roads		
SR57	King Nga Court – King Yuet House 1	1/F	14.6	68.4		55.5		68.6	
		18/F	62.2	75.4	x	58		75.5	x
		36/F	112.6	76.4	x	59.5		76.5	x
SR58	King Nga Court – King Yuet House 2	1/F	14.6	68.4		53		68.5	
		18/F	62.2	76	x	57.7		76.1	x
		36/F	112.6	76.9	x	59.6		76.9	x
SR59N	King Nga Court – King Yan House	1/F	14.6	67.8		46.8		67.8	
		18/F	62.2	75.4	x	56.3		75.5	x
		36/F	112.6	76.4	x	58.3		76.4	x
SR60	Tak Nga Court 1	1/F	16.3	68.3		56.1		68.6	
		17/F	61.1	74.1	x	57.7		74.2	x
		34/F	108.7	75.1	x	58.7		75.2	x
SR61	Tak Nga Court 2	1/F	16.3	67.5		61.6		68.5	
		17/F	61.1	72.8	x	61.7		73.1	x
		34/F	108.7	74.5	x	61.4		74.7	x
SR62	Ha Wun Yiu	G/F	29.6	65		50.1		65.1	
		1/F	32.3	66.1		50.2		66.2	
SR63	Lai Chi Shan	G/F	22.4	66.7		67.5		70.1	
		1/F	25.1	67.5		68.6		71.1	x
SR64	Shan Tong New Village 1	G/F	44.3	76.2	x	65.3		76.6	x
		2/F	49.7	80.1	x	65.1		80.2	x
SR65	Shan Tong New Village 2	G/F	41.8	65.4		64		67.8	
		2/F	47.2	69.6		64.6		70.8	x
SR66	P.L.K. Tin Ka Ping Primary School	1/F	14.6	66.8	x	45.7		66.8	x
		6/F	29.6	69.4	x	49.8		69.5	x
SR67	Redland Garden	1/F	29.4	71.9	x	78.5	x	79.4	x
		6/F	43.4	72.3	x	78.8	x	79.7	x
SR70	Kwong Fuk Estate - Kwong Lai House	1/F	9.7	60.8		75.5	x	75.7	x
		12/F	40.5	66.7		76.3	x	76.8	x
		23/F	71.3	67.2		74.9	x	75.6	x
SR73	Island House Conservation Studies Centre	G/F	17.2	73.9	x	68.5	x	75	x
		1/F	20.2	74	x	68.6	x	75.1	x
SR75	Wong Kong Shan	G/F	15.7	62.4		75.1	x	75.4	x
		1/F	18.4	62.5		75.2	x	75.4	x
SR76	Yuen Leng 1	G/F	22	74.4	x	68.9		75.5	x
		5/F	27.4	75.4	x	68.6		76.2	x
SR77	Yuen Leng 2	G/F	23.9	77	x	68.6		77.6	x
		2/F	29.3	78.1	x	68.2		78.5	x
SR78	Dynasty View 3	1/F	33.7	66.1		25.2		66.1	
		5/F	44.9	70.5	x	29		70.5	x
		8/F	53.3	74	x	32.4		74	x
SR79	Care Village	G/F	5.6	70.6	x	62.2		71.2	x
		2/F	11	77.2	x	68.7		77.8	x
SR80	Wai Tau Tsuen 3	G/F	26.2	76.2	x	50.4		76.2	x
		2/F	31.6	79.7	x	55.4		79.7	x
SR81	Wai Tau Tsuen 4	G/F	25.2	77.9	x	57.8		77.9	x
		2/F	30.6	81.7	x	58.2		81.7	x
SR82N	Tai Hang 5	G/F	24.2	75.7	x	54.4		75.8	x
		2/F	29.6	78	x	54.5		78	x
SR83	Yuen Leng 3	G/F	19.2	75	x	64.3		75.3	x
		2/F	24.6	77.5	x	66.1		77.8	x
SR84	Nam Wa Po 2	G/F	19.7	75.8	x	67.1		76.3	x
		2/F	25.1	78.5	x	67.4		78.8	x
SR85	Nam Wa Po 3	G/F	23.1	78.4	x	57.2		78.5	x
		2/F	28.5	80.8	x	60.2		80.8	x
SR86	Tong Hang	G/F	18.4	75.7	x	70.9	x	77	x
		2/F	23.8	77.4	x	71.3	x	78.4	x
SR87	Tai Wo 2	G/F	26.1	77.7	x	67.8		78.1	x
		2/F	31.5	79.1	x	67.5		79.4	x
SR88	Wai Tau Tsuen 5	G/F	28.8	75	x	62.8		75.2	x
		2/F	34.2	76	x	62.8		76.2	x

SR ID	Description	Floor	mPD	Noise Contribution $L_{10(1 \text{ hour})}$ dB(A)				
				Tolo/Fanling Highways & slips to be modified		Other Existing Roads	All Roads	
SR89	Wai Tau Tsuen 6	G/F	29.3	74	x	64.9	74.5	x
		2/F	34.7	75.1	x	64.8	75.5	x
SR90	Wai Tau Tsuen 7	G/F	26.9	73.5	x	58.8	73.7	x
		2/F	32.3	75.3	x	59.6	75.4	x
SR91	New R(B) Zone near To Yuen Tung 1	1/F	40	56.6		25.8	56.6	
		4/F	48.4	62.6		30.4	62.6	
		8/F	59.6	82.1	x	41.2	82.1	x
SR92	New R(B) Zone near To Yuen Tung 2	1/F	40	61.2		32	61.2	
		4/F	48.4	72.1	x	38.1	72.1	x
		8/F	59.6	82.5	x	45.8	82.5	x
SR93	SKH Mok Sau Tsang Secondary School	1/F	25.6	67.1	x	62.4	68.4	x
		6/F	40.6	68.9	x	64.1	70.1	x
SR94	Choi Hin To Primary School	1/F	15.5	62.4		56.8	63.4	
		5/F	27.5	63.9		56.9	64.7	
SR95B	Tai Po Normal School Memorial School 2	G/F	16.6	62.8		74.7	75	x
SR96	Village Zone near Wai Tau Tsuen	G/F	33	69.3		61.8	70.1	
		2/F	38.4	70		61.8	70.6	x
SR97	Village Zone at Tai Wo 1	G/F	25	73.9	x	52.6	73.9	x
		2/F	30.4	74.7	x	53.2	74.8	x
SR98	Village Zone at Tai Wo 2	G/F	23.8	73.7	x	49.3	73.8	x
		2/F	29.2	74.8	x	50.3	74.8	x
SR99	Ha Wong Yi Au 3	G/F	6.4	63.1		64.9	67.1	
		2/F	11.8	67.8		67.5	70.7	x
SR99A	Ha Wong Yi Au 4	G/F	6.4	70.9	x	71.7	74.3	x
		2/F	11.8	72.5	x	72.1	75.3	x
SR100	KCRC Staff Quarters	G/F	10.2	65.8		75.1	75.6	x
		3/F	19.2	68.2		76.4	77	x
		6/F	28.2	68.8		81.5	81.7	x
SR101	Chateau Royale	1/F	20.2	69.2		74.7	75.8	x
		2/F	25.8	70.4		74.4	75.8	x
SR103	Classical Garden	1/F	27.2	55.6		73.9	74	x
		4/F	35.6	57.9		72.5	72.6	x
		8/F	46.8	60.2		70.7	71.1	x
SR104	Village House opposite to Dynasty View	G/F	81.2	67.2		46.6	67.3	
SR105	Village House 2 opposite to Dynasty View	G/F	79.4	73.1	x	51.8	73.2	x
SR106	Shek Kwu Lung 7	G/F	39.2	65.9		49.5	66	
SR107	Village House at Hong Lok Yuen	G/F	27.1	75.9	x	56.1	76	x
		1/F	29.8	77.1	x	56.3	77.1	x
SR108	Wai Tau Tsuen 5	G/F	25.7	72	x	54.2	72.1	x
		2/F	31.1	73.1	x	54.7	73.2	x
SR109	Notional Point between SR13 & SR85	G/F	22.5	73	x	54.8	73.1	x

Notes:

"x" indicates noise level exceeds  $L_{10(1 \text{ Hour})}$  70 dB(A) (or 65 dB(A) for educational institutions)

For NSRs located at high-rise building, the results are summarised for the low, mid and high elevations only.

# Planned NSRs

### 5.5.3.2 Year 2020 Road Traffic Noise Impacts

Year 2020 peak hour traffic noise levels have been predicted for two scenarios: (i) with no mitigation measures; and (ii) with mitigation measures. The modelling results are presented in a split format so that the noise contributions from (i) proposed road alignment under the captioned Project, i.e., "new" roads, and (ii) other "existing" roads within the 300 metre spatial scope of the noise impact assessment, can be identified.

The modelling results for the year 2020 "no mitigation" scenario show that the predicted overall traffic noise levels at 91 NSRs exceed the relevant  $L_{10(1 \text{ hour})}$  criterion. The noise contributions from "new" roads and "existing" roads exceed the relevant noise criterion at 70 and 29 NSR locations, respectively. The number of dwellings and classrooms which will be affected by this Project if no noise mitigation measures are provided is approximately 5181

and 124, respectively. The modelling results for the year 2020 “no mitigation” scenario are summarised in Table 5.16.

**Table 5.16 Summary of the Predicted Traffic Noise Levels (Year 2020) With No Mitigation Measures**

SR ID	Description	Floor	mPD	Noise Contribution L <sub>10(1 hour)</sub> dB(A)					
				Modified Tolo/Fanling Highways & slips	Other Existing Roads	All Roads			
SR1	Avon Park	1/F	38.1	61.3		77.3	x	77.4	x
		13/F	71.7	62.4		78.2	x	78.3	x
		25/F	105.3	62.2		77.5	x	77.6	x
SR2	Fanling Government Secondary School	1/F	23	61.1		69.6	x	70.2	x
SR3	Dawning Views 1	1/F	32.5	67.8		77.5	x	77.9	x
		14/F	68.9	68.8		79.2	x	79.6	x
		28/F	108.1	68.5		78.5	x	78.9	x
SR3A	Dawning Views 2	1/F	32.5	68.2		78.5	x	78.9	x
		14/F	68.9	69.1		79.3	x	79.7	x
		28/F	108.1	68.8		78.5	x	79	x
SR7	Southwest Tong Hang	G/F	14.4	72.8	x	69		74.4	x
		1/F	17.1	74.6	x	70.8	x	76.1	x
SR8	Wo Hop Shek 1	G/F	15.5	56.4		70.2		70.4	
		1/F	18.2	57.6		70.7	x	70.9	x
SR9	Wo Hop Shek 2	G/F	23.6	79	x	71	x	79.7	x
		1/F	26.3	79.6	x	71	x	80.2	x
SR10	Kau Lung Hang	G/F	17.2	74.8	x	67		75.5	x
SR11	Kiu Tau	G/F	18.8	80.9	x	71.7	x	81.4	x
		1/F	21.5	83.5	x	72.1	x	83.8	x
SR12	Nam Wa Po	G/F	29.2	76	x	63.4		76.3	x
		1/F	31.9	76.4	x	63.5		76.6	x
SR13	West Tai Wo	G/F	25	80.2	x	55		80.2	x
		2/F	30.4	82.6	x	57.4		82.6	x
SR14	Tai Wo	G/F	27.7	78.8	x	66.2		79.1	x
		1/F	30.4	79.4	x	66.2		79.7	x
SR17A	Tai Hang 2	G/F	25.7	82.3	x	51.9		82.3	x
		2/F	31.1	84.2	x	53.4		84.2	x
SR17B	Tai Hang 3	G/F	25.7	78.4	x	0		78.4	x
		2/F	31.1	81.3	x	0		81.3	x
SR19	Hong Lok Yuen 1	G/F	32.9	72.2	x	59.2		72.4	x
		2/F	38.3	73.5	x	59.3		73.7	x
SR20	Hong Lok Yuen 2	G/F	32.9	72	x	60.3		72.3	x
		2/F	38.3	73.3	x	60.4		73.5	x
SR21	Hong Lok Yuen 3	G/F	33.9	75.8	x	54.1		75.8	x
		2/F	39.3	76.7	x	55.1		76.7	x
SR22	Wai Tau Tsuen 1	G/F	28.2	76.4	x	58.2		76.5	x
		1/F	30.9	77.4	x	58.4		77.5	x
SR23	Wai Tau Tsuen 2	G/F	28.7	64.3		54.8		64.8	
		1/F	31.4	66.8		59		67.5	
SR24	Kau Liu Ha 1	G/F	19.1	65.5		76	x	76.4	x
		2/F	24.5	66.8		77.5	x	77.8	x
SR25	Kau Liu Ha 2	G/F	19.1	65.6		78.4	x	78.6	x
		2/F	24.5	66.9		79.5	x	79.7	x
SR26	Tai Po Garden	G/F	13.8	69		78.6	x	79	x
		4/F	25	70.8	x	75.9	x	77.1	x
SR27	Mui Shu Hang	G/F	15.7	65.1		58		65.9	
		1/F	18.4	65.9		58.6		66.7	
SR28	Northwest Shek Kwu Lung	G/F	21.2	61.4		41.5		61.5	
		1/F	23.9	62.4		42.5		62.4	
SR29	Parc Versailles	G/F	11.5	67.1		69.2		71.3	x
		5/F	25.5	70.3		69.4		72.9	x
SR29A	Parc Versailles 2	G/F	11.5	65.4		69		70.6	x
		5/F	25.5	68.4		69.5		72	x
SR30A	Shek Kwu Lung 4	G/F	13.4	61		69.1		69.7	
		2/F	18.8	62.3		69.9		70.6	x

SR ID	Description	Floor	mPD	Noise Contribution $L_{10}(1 \text{ hour})$ dB(A)				
				Modified Tolo/Fanling Highways & slips		Other Existing Roads	All Roads	
SR30B	Shek Kwu Lung 5	G/F	17.2	63.1		48.3	63.3	
		2/F	22.8	64.6		49	64.7	
SR30C	Shek Kwu Lung 6	G/F	31.2	64.5		47.8	64.6	
		2/F	36.8	67.2		49.5	67.3	
SR31	Shek Kwu Lung 2	G/F	9.9	62.4		73.7	74	x
		2/F	15.3	63.5		74.5	74.8	x
SR33	Shek Kwu Lung 3	G/F	33.2	61.1		45.8	61.3	
SR34	Pun Chun Yuen	G/F	58.8	71.8	x	61.9	72.3	x
		1/F	61.5	73	x	61.8	73.3	x
SR35	Buddhist Tai Kwong Middle School	1/F	32.4	63.4		61.3	65.5	x
SR36	Ma Wo	G/F	43.2	69.8		51.4	69.8	
		1/F	45.9	71.5	x	51.4	71.5	x
SR38	Dynasty View 1	1/F	37.7	66.2		47.9	66.2	
		5/F	48.9	75.6	x	48.1	75.6	x
		8/F	57.3	79.5	x	48.3	79.5	x
SR39	The Paragon	1/F	37.3	76.1	x	64.7	76.4	x
		5/F	48.5	80.7	x	67.7	80.9	x
		9/F	59.7	80.7	x	67.9	80.9	x
SR40	Grand Palisades	1/F	59	74.9	x	66.1	75.4	x
		6/F	73	76.7	x	67.8	77.2	x
		10/F	84.2	77.2	x	68.1	77.7	x
SR41	Wong Shiu Chi Middle School	1/F	6.4	70.4	x	76.8	77.7	x
		5/F	18.4	72.2	x	76.3	77.7	x
SR42	Wan Tau Tong Estate - Wan Lam House 1	1/F	12.8	64.8		59.4	65.9	
		15/F	52	73.5	x	62	73.8	x
		31/F	96.8	73.9	x	62	74.1	x
SR43	Wan Tau Tong Estate - Wan Lam House 2	1/F	12.8	70		43.3	70.1	
		15/F	52	76	x	51.7	76	x
		31/F	96.8	76.4	x	53.7	76.5	x
SR44	Wan Tau Tong Estate - Wan Loi House	1/F	12.8	69.4		65	70.7	x
		15/F	52	76.7	x	64.8	77	x
		31/F	96.8	77	x	64.2	77.2	x
SR45	HK Teacher's Association Secondary School	1/F	13.6	73.4	x	63.7	73.9	x
		6/F	28.6	79.3	x	64.1	79.5	x
SR46	Uptown Plaza	1/F	30.3	74.6	x	72.9	76.8	x
		13/F	63.9	77.3	x	71.5	78.3	x
		26/F	100.3	77.2	x	70.3	78	x
SR47	Wang Fuk Court – Wang Cheong House 1	1/F	6.8	67.3		73.3	74.2	x
		15/F	46	76.3	x	77.2	79.8	x
		31/F	90.8	75.9	x	75.4	78.7	x
SR48	Wang Fuk Court – Wang Cheong House 2	1/F	6.8	61.2		69.7	70.3	
		15/F	46	69.2		76.8	77.5	x
		31/F	90.8	67.6		75	75.7	x
SR49	Wang Fuk Court – Wang Cheong House 3	1/F	6.8	68.1		74.3	75.2	x
		15/F	46	75.8	x	74.7	78.3	x
		31/F	90.8	75.6	x	73.1	77.6	x
SR50	Wang Fuk Court – Wang Tat House	1/F	6.8	69.8		76.5	77.4	x
		15/F	46	75.9	x	75.9	78.9	x
		31/F	90.8	75.8	x	74	78	x
SR51	Wang Fuk Court – Wang Shing House	1/F	6.8	38.2		70.7	70.7	x
		15/F	46	56.6		77	77	x
		31/F	90.8	55.9		75.2	75.2	x
SR52	Ha Wong Yi Au 1	G/F	29.2	75.6	x	66.7	76.1	x
		2/F	34.6	79.6	x	69.7	80	x
SR53	Ha Wong Yi Au 2	G/F	11	66.8		72.7	73.7	x
		1/F	13.7	68.7		73.8	75	x
SR54	Riverrain Bayside	G/F	8.5	73	x	62.8	73.4	x
		2/F	14.1	75.2	x	66	75.7	x

SR ID	Description	Floor	mPD	Noise Contribution $L_{10}(1 \text{ hour})$ dB(A)					
				Modified Tolo/Fanling Highways & slips		Other Existing Roads		All Roads	
SR55	Dynasty View 2	1/F	37.7	67.4		0		67.4	
		4/F	46.1	71	x	0		71	x
		8/F	57.3	77	x	0		77	x
SR56	Monastery at Ma Wo	G/F	42.5	67.5		13.5		67.5	
		1/F	45.2	68.9		14.4		68.9	
SR57	King Nga Court – King Yuet House 1	1/F	14.6	71.3	x	57.3		71.4	x
		18/F	62.2	78.6	x	59.2		78.7	x
		36/F	112.6	78.6	x	60.5		78.7	x
SR58	King Nga Court – King Yuet House 2	1/F	14.6	71.7	x	54.5		71.7	x
		18/F	62.2	79.2	x	58.5		79.2	x
		36/F	112.6	79	x	60.4		79.1	x
SR59N	King Nga Court – King Yan House	1/F	14.6	71.8	x	46.8		71.8	x
		18/F	62.2	78.7	x	56.9		78.7	x
		36/F	112.6	78.5	x	59		78.6	x
SR60	Tak Nga Court 1	1/F	16.3	69.7		57.7		69.9	
		17/F	61.1	77	x	58.8		77.1	x
		34/F	108.7	77.3	x	59.7		77.4	x
SR61	Tak Nga Court 2	1/F	16.3	68.5		63.4		69.7	
		17/F	61.1	75.8	x	63.4		76	x
		34/F	108.7	76.7	x	63		76.8	x
SR62	Ha Wun Yiu	G/F	29.6	63.6		51.5		63.9	
		1/F	32.3	64.9		51.5		65.1	
SR63	Lai Chi Shan	G/F	22.4	66.1		68.2		70.3	
		1/F	25.1	67		69.4		71.3	x
SR64	Shan Tong New Village 1	G/F	44.3	79.2	x	66.1		79.4	x
		2/F	49.7	82.1	x	65.7		82.2	x
SR65	Shan Tong New Village 2	G/F	41.8	67.3		64.8		69.3	
		2/F	47.2	72.2	x	65.2		73	x
SR66	P.L.K. Tin Ka Ping Primary School	1/F	14.6	70.7	x	44.9		70.7	x
		6/F	29.6	73.7	x	50		73.7	x
SR67	Redland Garden	1/F	29.4	70.2		66.9		71.9	x
		6/F	43.4	73.9	x	70.4		75.5	x
SR70	Kwong Fuk Estate - Kwong Lai House	1/F	9.7	63.2		77.1	x	77.3	x
		12/F	40.5	68.8		77.9	x	78.4	x
		23/F	71.3	69.5		76.5	x	77.3	x
SR73	Island House Conservation Studies Centre	G/F	17.2	75	x	70.2	x	76.3	x
		1/F	20.2	75.4	x	70.3	x	76.5	x
SR75	Wong Kong Shan	G/F	15.7	58.8		76.9	x	77	x
		1/F	18.4	58.9		77	x	77	x
SR76	Yuen Leng 1	G/F	22	75.7	x	68.7		76.5	x
		5/F	27.4	77.1	x	68.3		77.6	x
SR77	Yuen Leng 2	G/F	23.9	78	x	68.5		78.5	x
		2/F	29.3	79.5	x	68		79.8	x
SR78	Dynasty View 3	1/F	33.7	66.6		25.4		66.6	
		5/F	44.9	70.6	x	29.2		70.6	x
		8/F	53.3	74.7	x	32.8		74.7	x
SR79	Care Village	G/F	5.6	71.6	x	60.5		71.9	x
		2/F	11	77.8	x	65.9		78.1	x
SR80	Wai Tau Tsuen 3	G/F	26.2	76.8	x	50.5		76.8	x
		2/F	31.6	82.5	x	56.8		82.5	x
SR81	Wai Tau Tsuen 4	G/F	25.2	81	x	52.7		81	x
		2/F	30.6	84.3	x	54.6		84.3	x
SR82N	Tai Hang 5	G/F	24.2	76.1	x	54.2		76.1	x
		2/F	29.6	79.2	x	54.4		79.3	x
SR83	Yuen Leng 3	G/F	19.2	76.3	x	63.3		76.5	x
		2/F	24.6	80.5	x	64.5		80.6	x
SR84	Nam Wa Po 2	G/F	19.7	75.2	x	61.8		75.4	x
		2/F	25.1	78.7	x	62.7		78.8	x

SR ID	Description	Floor	mPD	Noise Contribution $L_{10(1 \text{ hour})}$ dB(A)					
				Modified Tolo/Fanling Highways & slips		Other Existing Roads		All Roads	
SR85	Nam Wa Po 3	G/F	23.1	81.1	x	55.4		81.1	x
		2/F	28.5	83.3	x	59.3		83.4	x
SR86	Tong Hang	G/F	18.4	77	x	70.9	x	77.9	x
		2/F	23.8	80.1	x	71.4	x	80.6	x
SR87	Tai Wo 2	G/F	26.1	78.4	x	67.8		78.7	x
		2/F	31.5	79.8	x	67.5		80.1	x
SR88	Wai Tau Tsuen 5	G/F	28.8	75.5	x	62.8		75.7	x
		2/F	34.2	77.5	x	62.8		77.6	x
SR89	Wai Tau Tsuen 6	G/F	29.3	75	x	64.9		75.4	x
		2/F	34.7	76.6	x	65		76.9	x
SR90	Wai Tau Tsuen 7	G/F	26.9	74.2	x	58.5		74.3	x
		2/F	32.3	76.9	x	59.5		76.9	x
SR91	New R(B) Zone near To Yuen Tung 1	1/F	40	59.5		25.6		59.5	
		4/F	48.4	64.6		30.6		64.6	
		8/F	59.6	84.1	x	41.8		84.1	x
SR92	New R(B) Zone near To Yuen Tung 2	1/F	40	66.6		33.1		66.6	
		4/F	48.4	77	x	38.9		77	x
		8/F	59.6	87	x	46.3		87	x
SR93	SKH Mok Sau Tsang Secondary School	1/F	25.6	69.7	x	62.7		70.5	x
		6/F	40.6	71.5	x	64.6		72.3	x
SR94	Choi Hin To Primary School	1/F	15.5	65		58.8		65.9	x
		5/F	27.5	66.7	x	58.8		67.4	x
SR95B	Tai Po Normal School Memorial School 2	G/F	16.6	61.9		77.5	x	77.6	x
SR96	Village Zone near Wai Tau Tsuen	G/F	33	70.7	x	61.1		71.1	x
		2/F	38.4	71.5	x	61.1		71.9	x
SR97	Village Zone at Tai Wo 1	G/F	25	74.4	x	52.4		74.4	x
		2/F	30.4	75.5	x	53		75.5	x
SR98	Village Zone at Tai Wo 2	G/F	23.8	74.4	x	49.5		74.4	x
		2/F	29.2	75.7	x	50.6		75.7	x
SR99	Ha Wong Yi Au 3	G/F	6.4	65.4		66.6		69.1	
		2/F	11.8	71.1	x	69.5		73.4	x
SR99A	Ha Wong Yi Au 4	G/F	6.4	73.2	x	73.5	x	76.4	x
		2/F	11.8	75.3	x	73.9	x	77.6	x
SR100	KCRC Staff Quarters	G/F	10.2	59.8		60.2		63	
		3/F	19.2	62.8		67.3		68.6	
		6/F	28.2	67.8		72.6	x	73.9	x
SR101	Chateau Royale	1/F	20.2	71.1	x	76.1	x	77.3	x
		2/F	25.8	72.3	x	75.7	x	77.3	x
SR103	Classical Garden	1/F	27.2	57.3		74.2	x	74.3	x
		4/F	35.6	59.5		72.8	x	73	x
		8/F	46.8	61.9		71.1	x	71.6	x
SR104	Village House opposite to Dynasty View	G/F	81.2	69.7		47.1		69.7	
SR105	Village House 2 opposite to Dynasty View	G/F	79.4	74.3	x	52.1		74.3	x
SR106	Shek Kwu Lung 7	G/F	39.2	66.6		50.6		66.7	
SR107	Village House at Hong Lok Yuen	G/F	27.1	76.3	x	54.9		76.3	x
		1/F	29.8	77.9	x	55.1		77.9	x
SR108	Wai Tau Tsuen 5	G/F	25.7	72.4	x	54.2		72.4	x
		2/F	31.1	73.8	x	54.8		73.9	x
SR109	Notional Point between SR13 & SR85	G/F	22.5	73.3	x	52.5		73.3	x

Notes:

x indicates noise level exceeds  $L_{10(1 \text{ Hour})}$  70 dB(A) (or 65 dB(A) for educational institutions)

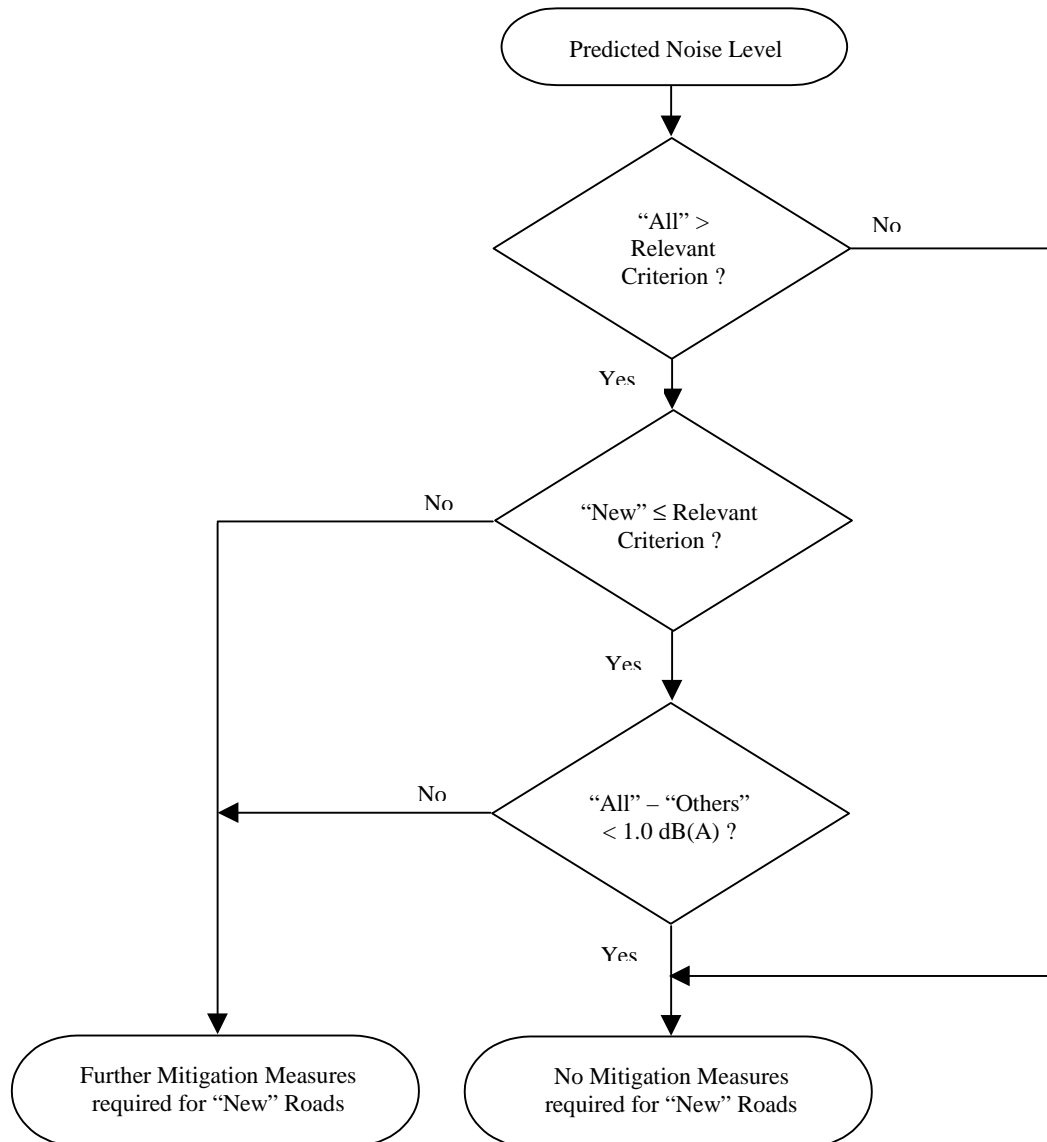
\* For NSRs located at high-rise building, the results are summarised for the low, mid and high elevations only.

# Planned NSRs

### 5.5.3.3 Direct Mitigation Measures

Based on the “no mitigation” scenario modelling results, there are significant traffic noise impacts from “all roads” affecting the NSRs. Mitigation measures have been proposed based on the assessment criteria presented in Section 5.5.2.3. The approach for designing direct mitigation measures for the current Project is summarised in Flow Chart 1.

**Flow Chart 1 - Summary of the Approach for Direct Mitigation Measures Design**



The most practical and effective direct mitigation measures for traffic noise attenuation are noise barriers. As such, both vertical and canopy type barriers have been considered for use under this study. Friction course road surfacing has also been included for high speed roads (>70 km/hr) as a direct mitigation measure. Due to the high traffic noise levels from the highways, as well as the close proximity of the NSRs to the roads, the noise barrier requirements are extensive. The proposed vertical noise barrier heights vary between 2 and 8 m. Two types of canopy type barrier have been proposed. Type I consists of 5.5 m high vertical barrier with a 4.5 m cantilever (2.5 m high from base of cantilever, i.e., a total height of 8.0 m), and Type II consists of 5.5 m high vertical barrier with 3.0 m cantilever (2.5 m high from base of cantilever, total height of 8.0 m). The relative height and location of the proposed barriers are shown in Drawings 551/R/9002 to 9016. Typical cross-sections is presented in Drawings 551/R/9017 & 9018. Details of the noise barrier implementation schedule are summarised in Section 13. It should be noted that the CRTN calculation method is based on the use of reflective type barriers although absorptive type barriers can equally be utilised to mitigate the predicted noise impacts upon the NSRs.

It is noted that there are noise barriers proposed for the adjacent Tolo Highway widening

project at the Island House Interchange which extend into this project's site area. Reference has been made to the Environmental Impact Assessment Final Report (April 1997) for the Feasibility Assignment for Widening of Tolo Highway and Traffic Surveillance and Information System commissioned by Highways Department. The noise barriers proposed in the above EIA which fall inside the current study area have been included in the year 2020 traffic noise modelling. The type and location of these barriers are illustrated in Figure 5.8.

The noise barrier proposal has also taken into consideration the requirement to re-provide a number of access tracks, run-ins to land lots and footpaths along Tai Wo Service Road West. As such, noise barriers cannot be located at these locations.

With the proposed noise mitigation measures in place, the predicted year 2020 traffic noise levels resulting from the "new" roads are found to comply with the relevant criteria at all NSR locations. The number of dwellings and classrooms which will be benefited from the mitigation measures recommended in this Project is approximately 4939 and 124, respectively. The number of dwellings and classrooms which will be protected by this Project is approximately 4126 and 124 respectively. The year 2020 predicted peak hourly traffic noise levels with mitigation measures are summarised in Table 5.17.

**Table 5.17 Summary of the Predicted Traffic Noise Levels (Year 2020) With Direct Mitigation Measures**

SR ID	Description	Floor	MPD	Noise Contribution $L_{10}(1 \text{ hour})$ dB(A)					
				Modified Tolo/Fanling Highways & slips		Other Existing Roads		All Roads	
SR1	Avon Park	1/F	38.1	60.2		77.2	x	77.3	x
		13/F	71.7	61.1		78.1	x	78.2	x
		25/F	105.3	61.4		77.4	x	77.5	x
SR2	Fanling Government Secondary School	1/F	23	55.1		69.6	x	69.8	x
SR3	Dawning Views 1	1/F	32.5	66.4		76	x	76.5	x
		14/F	68.9	67.3		78.4	x	78.7	x
		28/F	108.1	68.1		78.2	x	78.6	x
SR3A	Dawning Views 2	1/F	32.5	66.7		77.3	x	77.7	x
		14/F	68.9	67.5		78.4	x	78.7	x
		28/F	108.1	68.3		78.2	x	78.6	x
SR7	Southwest Tong Hang	G/F	14.4	65.1		63.3		67.3	
		1/F	17.1	65.9		64		68.1	
SR8	Wo Hop Shek 1	G/F	15.5	56.4		68.7		68.9	
		1/F	18.2	57.6		68.7		69	
SR9	Wo Hop Shek 2	G/F	23.6	65		72.2	x	73	x
		1/F	26.3	65.9		72.1	x	73	x
SR10	Kau Lung Hang	G/F	17.2	66.6		66.7		69.7	
SR11	Kiu Tau	G/F	18.8	57.9		72.4	x	72.6	x
		1/F	21.5	59.5		72.3	x	72.5	x
SR12	Nam Wa Po	G/F	29.2	67.2		63.9		68.9	
		1/F	31.9	67.6		64		69.2	
SR13	West Tai Wo	G/F	25	66.2		53.6		66.4	
		2/F	30.4	70.1		53.6		70.2	
SR14	Tai Wo	G/F	27.7	66.5		66.2		69.4	
		1/F	30.4	67.2		66.2		69.7	
SR17A	Tai Hang 2	G/F	25.7	62.2		49		62.4	
		2/F	31.1	70.2		49.9		70.2	
SR17B	Tai Hang 3	G/F	25.7	68.6		0		68.6	
		2/F	31.1	70.3		0		70.3	
SR19	Hong Lok Yuen 1	G/F	32.9	66.8		59.1		67.5	
		2/F	38.3	67.6		59.2		68.2	
SR20	Hong Lok Yuen 2	G/F	32.9	67		60.2		67.8	
		2/F	38.3	67.7		60.3		68.4	
SR21	Hong Lok Yuen 3	G/F	33.9	68.5		53.6		68.6	
		2/F	39.3	69.8		54.5		69.9	



SR ID	Description	Floor	MPD	Noise Contribution $L_{10}(1 \text{ hour})$ dB(A)					
				Modified Tolo/Fanling Highways & slips		Other Existing Roads		All Roads	
SR22	Wai Tau Tsuen 1	G/F	28.2	68.9		57.9		69.2	
		1/F	30.9	69.8		58		70.1	
SR23	Wai Tau Tsuen 2	G/F	28.7	64.3		54.8		64.8	
		1/F	31.4	66.7		59		67.4	
SR24	Kau Liu Ha 1	G/F	19.1	65.5		76	x	76.4	x
		2/F	24.5	66.8		77.5	x	77.9	x
SR25	Kau Liu Ha 2	G/F	19.1	65.5		78.4	x	78.6	x
		2/F	24.5	66.8		79.5	x	79.7	x
SR26	Tai Po Garden	G/F	13.8	61.9		78.6	x	78.7	x
		4/F	25	63.6		75.9	x	76.1	x
SR27	Mui Shu Hang	G/F	15.7	65.8		57.9		66.5	
		1/F	18.4	66.5		58.6		67.2	
SR28	Northwest Shek Kwu Lung	G/F	21.2	61.9		40.9		61.9	
		1/F	23.9	62.9		41.7		62.9	
SR29	Parc Versailles	G/F	11.5	60.6		69.2		69.8	
		5/F	25.5	63.4		69.4		70.4	
SR29A	Parc Versailles 2	G/F	11.5	59.7		69		69.5	
		5/F	25.5	62.5		69.5		70.3	
SR30A	Shek Kwu Lung 4	G/F	13.4	56.9		69.1		69.4	
		2/F	18.8	57.7		69.9		70.2	
SR30B	Shek Kwu Lung 5	G/F	17.2	61.4		48.2		61.6	
		2/F	22.8	62.7		48.9		62.9	
SR30C	Shek Kwu Lung 6	G/F	31.2	63		47.8		63.1	
		2/F	36.8	65.6		49.4		65.7	
SR31	Shek Kwu Lung 2	G/F	9.9	58.8		73.7	x	73.8	x
		2/F	15.3	59.5		74.5	x	74.6	x
SR33	Shek Kwu Lung 3	G/F	33.2	61.2		45.8		61.3	
SR34	Pun Chun Yuen	G/F	58.8	68.2		61.9		69.1	
		1/F	61.5	69.7		61.8		70.4	
SR35	Buddhist Tai Kwong Middle School	1/F	32.4	62.7		61.3		65.1	
SR36	Ma Wo	G/F	43.2	65.1		51.4		65.3	
		1/F	45.9	66.3		51.4		66.4	
SR38	Dynasty View 1	1/F	37.7	63		47.9		63.1	
		5/F	48.9	66.9		48.1		67	
		8/F	57.3	69.6		48.2		69.6	
SR39	The Paragon	1/F	37.3	63.5		59.8		65	
		5/F	48.5	65.6		64.9		68.3	
		9/F	59.7	67		66.7		69.9	
SR40	Grand Palisades	1/F	59	64.5		64.6		67.6	
		6/F	73	66.6		66.7		69.7	
		10/F	84.2	67.1		67.2		70.2	
SR41	Wong Shiu Chi Middle School	1/F	6.4	52.5		76.7	x	76.7	x
		5/F	18.4	53.5		76.2	x	76.2	x
SR42	Wan Tau Tong Estate - Wan Lam House 1	1/F	12.8	50.4		58.6		59.2	
		15/F	52	54.5		60.9		61.8	
		31/F	96.8	59.2		61		63.2	
SR43	Wan Tau Tong Estate - Wan Lam House 2	1/F	12.8	56.5		37.7		56.6	
		15/F	52	59.2		50.2		59.7	
		31/F	96.8	63		52.9		63.4	
SR44	Wan Tau Tong Estate - Wan Loi House	1/F	12.8	54.5		65.2		65.6	
		15/F	52	58.2		64.8		65.7	
		31/F	96.8	63.1		64		66.6	
SR45	HK Teacher's Association Secondary School	1/F	13.6	57.2		63.6		64.5	
		6/F	28.6	59.5		63.6		65	
SR46	Uptown Plaza	1/F	30.3	56.2		72.9	x	73	x
		13/F	63.9	60.1		71.4	x	71.7	x
		26/F	100.3	63.4		70.2		71	x
SR47	Wang Fuk Court – Wang Cheong House 1	1/F	6.8	55.7		73.1	x	73.2	x
		15/F	46	64.6		77.1	x	77.3	x
		31/F	90.8	67.7		75.4	x	76.1	x

SR ID	Description	Floor	MPD	Noise Contribution $L_{10}(1 \text{ hour})$ dB(A)				
				Modified Tolo/Fanling Highways & slips	Other Existing Roads	All Roads		
SR48	Wang Fuk Court – Wang Cheong House 2	1/F	6.8	56.2	68.3		68.6	
		15/F	46	65.4	76.7	x	77	x
		31/F	90.8	65.8	74.9	x	75.4	x
SR49	Wang Fuk Court – Wang Cheong House 3	1/F	6.8	55.8	74.2	x	74.3	x
		15/F	46	61.6	74.6	x	74.8	x
		31/F	90.8	65.9	73	x	73.8	x
SR50	Wang Fuk Court – Wang Tat House	1/F	6.8	56.9	76.5	x	76.5	x
		15/F	46	62	75.8	x	76	x
		31/F	90.8	65.5	74	x	74.6	x
SR51	Wang Fuk Court – Wang Shing House	1/F	6.8	36.9	70.7	x	70.7	x
		15/F	46	49.2	76.9	x	76.9	x
		31/F	90.8	57	75.1	x	75.2	x
SR52	Ha Wong Yi Au 1	G/F	29.2	64.8	62.3		66.7	
		2/F	34.6	66.9	66.6		69.8	
SR53	Ha Wong Yi Au 2	G/F	11	61	72.7	x	73	x
		1/F	13.7	62.7	73.7	x	74	x
SR54	Riverrain Bayside	G/F	8.5	64.4	62.3		66.5	
		2/F	14.1	66.6	65.4		69.1	
SR55	Dynasty View 2	1/F	37.7	61.9	0		61.9	
		4/F	46.1	64.4	0		64.4	
		8/F	57.3	68.4	0		68.4	
SR56	Monastery at Ma Wo	G/F	42.5	64	13.4		64	
		1/F	45.2	65.1	14.2		65.1	
SR57	King Nga Court – King Yuet House 1	1/F	14.6	63.2	57.2		64.2	
		18/F	62.2	66.1	58.5		66.8	
		36/F	112.6	69.1	60		69.6	
SR58	King Nga Court – King Yuet House 2	1/F	14.6	63.4	54.2		63.9	
		18/F	62.2	66.2	57.6		66.8	
		36/F	112.6	70	59.9		70.4	
SR59N	King Nga Court – King Yan House	1/F	14.6	61.4	45		61.5	
		18/F	62.2	64.5	55.7		65	
		36/F	112.6	69.4	58.6		69.7	
SR60	Tak Nga Court 1	1/F	16.3	62.3	57.6		63.6	
		17/F	61.1	65	58.2		65.8	
		34/F	108.7	66.6	59		67.3	
SR61	Tak Nga Court 2	1/F	16.3	61	63.4		65.4	
		17/F	61.1	63.9	63.3		66.6	
		34/F	108.7	66.2	62.7		67.8	
SR62	Ha Wun Yiu	G/F	29.6	61.1	51.4		61.5	
		1/F	32.3	62	51.5		62.4	
SR63	Lai Chi Shan	G/F	22.4	61.3	68.2		69	
		1/F	25.1	61.9	69.4		70.1	
SR64	Shan Tong New Village 1	G/F	44.3	65.4	65.7		68.6	
		2/F	49.7	67.8	65.1		69.7	
SR65	Shan Tong New Village 2	G/F	41.8	61.9	64.7		66.5	
		2/F	47.2	64.9	64.8		67.9	
SR66	P.L.K. Tin Ka Ping Primary School	1/F	14.6	58.4	39.4		58.5	
		6/F	29.6	59.5	43.9		59.6	
SR67	Redland Garden	1/F	29.4	61.2	67.2		68.2	
		6/F	43.4	64	70.7	x	71.5	x
SR70	Kwong Fuk Estate - Kwong Lai House	1/F	9.7	55.9	77.1	x	77.1	x
		12/F	40.5	59.8	77.9	x	78	x
		23/F	71.3	62.5	76.4	x	76.6	x
SR73	Island House Conservation Studies Centre	G/F	17.2	62.5	69.6	x	70.4	x
		1/F	20.2	62.9	69.7	x	70.5	x
SR75	Wong Kong Shan	G/F	15.7	58.9	77.1	x	77.2	x
		1/F	18.4	59	77.1	x	77.2	x
SR76	Yuen Leng 1	G/F	22	64.4	68.6		70	
		5/F	27.4	65.5	68.2		70.1	
SR77	Yuen Leng 2	G/F	23.9	65	68.4		70	
		2/F	29.3	66.6	67.9		70.3	

SR ID	Description	Floor	MPD	Noise Contribution $L_{10}(1 \text{ hour})$ dB(A)			
				Modified Tolo/Fanling Highways & slips		Other Existing Roads	
SR78	Dynasty View 3	1/F	33.7	59.8	24.8	59.8	
		5/F	44.9	62.4	28.2	62.4	
		8/F	53.3	64.6	31.7	64.6	
SR79	Care Village	G/F	5.6	62.8	58.3	64.1	
		2/F	11	65.2	60.8	66.5	
SR80	Wai Tau Tsuen 3	G/F	26.2	65.6	43.4	65.6	
		2/F	31.6	69.6	46.4	69.6	
SR81	Wai Tau Tsuen 4	G/F	25.2	62.5	50.5	62.8	
		2/F	30.6	69	50.9	69.1	
SR82N	Tai Hang 5	G/F	24.2	65.1	54.1	65.4	
		2/F	29.6	67.3	54.1	67.5	
SR83	Yuen Leng 3	G/F	19.2	65.6	62.6	67.4	
		2/F	24.6	69.3	62.9	70.2	
SR84	Nam Wa Po 2	G/F	19.7	63.6	62.7	66.2	
		2/F	25.1	65	62.7	67	
SR85	Nam Wa Po 3	G/F	23.1	66	49.3	66.1	
		2/F	28.5	69.8	51	69.9	
SR86	Tong Hang	G/F	18.4	60.6	70.3	70.7	x
		2/F	23.8	63.3	70.4	71.2	x
SR87	Tai Wo 2	G/F	26.1	65.6	67.8	69.8	
		2/F	31.5	67	67.4	70.2	
SR88	Wai Tau Tsuen 5	G/F	28.8	67	62.8	68.4	
		2/F	34.2	68.9	62.5	69.8	
SR89	Wai Tau Tsuen 6	G/F	29.3	66.7	65	68.9	
		2/F	34.7	67.8	65	69.6	
SR90	Wai Tau Tsuen 7	G/F	26.9	65.9	58.2	66.6	
		2/F	32.3	67.5	58.7	68	
SR91	New R(B) Zone near To Yuen Tung 1	1/F	40	57.1	25.5	57.1	
		4/F	48.4	59	30.1	59	
		8/F	59.6	65.8	39.5	65.8	
SR92	New R(B) Zone near To Yuen Tung 2	1/F	40	58	30.2	58	
		4/F	48.4	59.3	33.4	59.3	
		8/F	59.6	70.2	44.6	70.2	
SR93	SKH Mok Sau Tsang Secondary School	1/F	25.6	51.5	62.6	62.9	
		6/F	40.6	53.2	64.2	64.5	
SR94	Choi Hin To Primary School	1/F	15.5	55.6	58.8	60.5	
		5/F	27.5	56.5	58.8	60.8	
SR95B	Tai Po Normal School Memorial School 2	G/F	16.6	59.6	77.5	77.6	x
SR96	Village Zone near Wai Tau Tsuen	G/F	33	68.3	61.1	69.1	
		2/F	38.4	68.9	61.1	69.6	
SR97	Village Zone at Tai Wo 1	G/F	25	65.5	51.9	65.7	
		2/F	30.4	66.3	52	66.5	
SR98	Village Zone at Tai Wo 2	G/F	23.8	65.2	48.6	65.3	
		2/F	29.2	66	48.7	66.1	
SR99	Ha Wong Yi Au 3	G/F	6.4	60.6	66.4	67.4	
		2/F	11.8	63.2	69.1	70.1	
SR99A	Ha Wong Yi Au 4	G/F	6.4	64.1	73.4	73.9	x
		2/F	11.8	66.2	73.7	74.4	x
SR100	KCRC Staff Quarters	G/F	10.2	57.2	59.7	61.6	
		3/F	19.2	58.8	66.4	67.1	
		6/F	28.2	60.5	71.9	72.2	x
SR101	Chateau Royale	1/F	20.2	62.8	76	76.2	x
		2/F	25.8	63.9	75.6	75.9	x
SR103	Classical Garden	1/F	27.2	52.2	74.2	74.2	x
		4/F	35.6	53.8	72.8	72.9	x
		8/F	46.8	56	71.1	71.2	x
SR104	Village House opposite to Dynasty View	G/F	81.2	69.7	47	69.7	
SR105	Village House 2 opposite to Dynasty View	G/F	79.4	67.3	51.1	67.4	
SR106	Shek Kwu Lung 7	G/F	39.2	67.3	50.4	67.4	
SR107	Village House at Hong Lok Yuen	G/F	27.1	69.6	54.6	69.7	
		1/F	29.8	70.3	54.7	70.4	

SR ID	Description	Floor	MPD	Noise Contribution $L_{10(1 \text{ hour})}$ dB(A)			
				Modified Tolo/Fanling Highways & slips	Other Existing Roads	All Roads	
SR108	Wai Tau Tsuen 5	G/F	25.7	62.6	53.8	63.1	
		2/F	31.1	63.3	53.9	63.8	
SR109	Notional Point between SR13 & SR85	G/F	22.5	63.8	49.8	64	

Notes:

x indicates noise level exceeds  $L_{10(1 \text{ Hour})}$  70 dB(A) (or 65 for schools)

For NSRs located at high-rise building, the results are summarised for the low, mid and high elevations only.

#### 5.5.3.4 Indirect Technical Remedies

Following direct mitigation measures, the predicted overall traffic noise levels for Year 2020 from all roads will exceed the relevant criterion at 28 NSRs. As per the requirements of Clause 3.5.1(v.c3) of the EIA Study Brief, each of the impacted NSRs will need to be evaluated to determine whether they are eligible for the provision of indirect technical remedies (ITR) such as window insulation and air-conditioners. The three selection criteria are listed below:

- (i) The predicted overall noise level from the new road together with other traffic noise in the vicinity must be above a specified noise level (e.g. 70 dB(A) for domestic premises and 65 dB(A) for education institutions, all in  $L_{10(1 \text{ hour})}$ );
- (ii) The predicted overall noise level is at least 1.0 dB(A) more than the prevailing traffic noise level, i.e., the total traffic noise level existing before the works to construct the road were commenced; and
- (iii) The contribution to the increase in the predicted overall noise level from the new road must be at least 1.0 dB(A).

The eligibility test for all the impacted NSRs is summarised in Appendix 5.6. No NSRs have been identified to be eligible for ITR in accordance with the criteria set out in the EIA Study Brief.

#### 5.5.4 Residual Impacts

Following direct mitigation, the predicted Year 2020 noise contributions from the “new” roads of this Project, at all NSRs, complies with the relevant  $L_{10(1 \text{ hour})}$  criterion (65 dB(A) for schools and 70 dB(A) for residential uses). As such, no residual impacts are predicted at any NSRs due to the proposed road alignment under this Project.

#### 5.5.5 Cumulative Impacts

This assessment has evaluated the road traffic noise impacts by modeling all the roadways within a 300 metre distance from the study area boundary. Therefore the cumulative impacts have been considered. The prediction results indicate that the year 2020 overall noise level caused by all roads exceeds the relevant noise standard at 28 NSRs. The mitigation measures have been designed to alleviate the noise impacts from the “new” roads such that the noise contributions at all NSRs meet the assessment criteria (Section 5.5.2.3). Consequently, the cumulative noise impacts caused by the “new” roads have been mitigated as per the requirements of the Study Brief.

#### 5.5.6 Noise Impact Assessment for the 24 Hour Opening of Border Crossings

In 1994, Highways Department commissioned a Noise Impact Assessment for the 24 Hour Opening of the Border Crossings. The study recommended mitigation measures to alleviate the noise impacts due to the cross border traffic under the 24 hour opening of border crossings. A specific assessment criterion was established, which is, to reduce the predicted year 2006 traffic noise levels, both  $L_{10(2200-2300 \text{ hr})}$  and  $L_{10(0600-0700 \text{ hr})}$  in dB(A), from the cross border traffic

to a level equal to or more than 10 dB(A) below the prevailing noise levels (in  $L_{10(1 \text{ hr})}$ ) recorded in 1994. This current study has undertaken an additional assessment to illustrate the performance of the proposed mitigation measures for the widened highway with respect to the criterion set out in the 24 Hour Opening of the Border Crossing study.

A number of NSRs assessed in the 24 Hour Opening of the Border Crossings NIA fall within the current study area. These have been selected for the review and are summarised in Table 5.7. The assessment utilises the year 2006 cross border traffic flow forecast data for Tolo Highway and Fanling Highway and is presented in Appendix 5.12. The percentage heavy vehicles in the cross border traffic fleet is predicted to be 74%. According to the average speed calculation proposed in Section 5.5.2.1, an averaged speed of 77.8 km/h has been adopted in the noise model for the review. The predicted cross border traffic noise levels for the year 2006 with both Lok Ma Chau and Man Kam To Border Crossings in 24 hour operation scenario are presented in Appendix 5.13 and summarised in Table 5.18.

**Table 5.18 Predicted Traffic Noise Levels due to Border Crossing Traffic Only Incorporating Mitigation Measures Proposed for the Current Road Widening Study**

24hrs SR ID	SR ID	Description (as in this EIA study)	Floor	$L_{10(0600-0700)}$ dB(A)			$L_{10(2200-2300)}$ dB(A)		
				2006	1994*	1994 – 2006	2006	1994*	1994 – 2006
F45#	SR17	Tai Hang 1	G/F	48.3	69	20.7	44.9	67.5	22.6
			2/F	54.6	72.5	17.9	51.2	71.5	20.3
F37	SR20	Hong Lok Yuen 2	G/F	52.1	62.8	10.7	50.2	61.5	11.3
			2/F	53.2	63.6	10.4	51.2	62.4	11.2
F25	SR43	Wan Tau Tong Estate – Wan Lam House 2	1/F	39.9	59	19.1	36.3	58.6	22.3
			15/F	43.5	64.2	20.7	39.6	64.1	24.5
			31/F	48.1	66.4	18.3	44.3	66.1	21.8
F24	SR44	Wan Tau Tong Estate – Wan Loi House	1/F	40	62.5	22.5	36.5	62.2	25.7
			15/F	43.8	66.2	22.4	40.1	66.1	26
			31/F	48.7	66.8	18.1	44.9	66.7	21.8
F23	SR46	Uptown Plaza	3/F	42.1	64.6	22.5	38.5	64	25.5
			15/F	45.8	66	20.2	42.1	65.9	23.8
			25/F	48.4	66.3	17.9	44.6	66	21.4
F30	SR47	Wang Fuk Court – Wang Cheong House 1	1/F	38.4	64.7	26.3	35	67	32
			15/F	47.3	69.3	22	45.6	70.3	24.7
			31/F	49.5	68.8	19.3	46.9	69.5	22.6
F31	SR49	Wang Fuk Court – Wang Cheong House 3	1/F	38.6	65.3	26.7	35.1	67.1	32
			15/F	46.7	68.1	21.4	44.9	68.9	24
			31/F	49.3	68.1	18.8	46.5	68.5	22
F32	SR50	Wang Fuk Court – Wang Tat House	1/F	38.7	68.7	30	35.2	70.1	34.9
			15/F	42.8	70.3	27.5	39.2	70.9	31.7
			31/F	47.6	69.5	21.9	44.1	69.9	25.8
F33	SR51	Wang Fuk Court – Wang Shing House	1/F	18.5	64.2	45.7	17.7	67.9	50.2
			15/F	30.7	68.3	37.6	29.9	70.6	40.7
			31/F	38.5	66.6	28.1	37.7	68.6	30.9
F27	SR58	King Nga Court – King Yuet House 2	1/F	41.1	61.6	20.5	37.7	61.1	23.4
			17/F	46.3	67.9	21.6	42.6	67.8	25.2
			34/F	53	68.8	15.8	50	68.7	18.7
F26	SR59N	King Nga Court – King Yan House	1/F	41	61.2	20.2	37.5	60.8	23.3
			17/F	46	67.6	21.6	42.4	67.4	25
			34/F	52.6	68.2	15.6	49.6	68	18.4
F28	SR61	Tak Nga Court 2	1/F	39.5	57.6	18.1	36	57.5	21.5
			17/F	44.6	63.4	18.8	40.9	63.4	22.5
			34/F	50.7	65.9	15.2	46.9	65.8	18.9
F29	SR64	Shan Tong New Village 1	G/F	49.3	66.2	16.9	47.4	65.5	18.1
			2/F	51.9	72.1	20.2	49.9	71.2	21.3

Note:

\* Prevailing noise level in  $L_{10(1 \text{ hour})}$  dB(A) in year 1994. Data extracted from the NIA for 24 Hour Opening of Border Crossings, Final Report, August 1996

# For comparison only. This NSR will be demolished due to the road widening works.

From the comparison results, the 24 hour study criterion is fully attained at all the identified locations.

## 5.6 Conclusion and Recommendation

This assessment has predicted the construction noise impacts associated with the construction works of the proposed road widening Project. With the use of silenced equipment, reduction in equipment percentage on-time, as well as 2 to 7 metre high purpose-built barriers at appropriate locations, the predicted noise levels during different phases of the construction work will meet the stipulated criterion at all residential NSRs and at a majority of the education based NSRs. Elevated construction noise levels have been predicted at two schools (SR41 Wong Shiu Chi Middle School and SR45 HK Teacher's Association Secondary School). However, as confirmed by the school officials, both schools are equipped with adequate noise insulation facilities (i.e., air conditioners and window glazing) at the noise sensitive facades. As such, the noisy construction activities can be adequately mitigated and therefore, no residual impacts are anticipated.

Year 2020 traffic noise impacts have been evaluated. The use of 2 to 8 metres high vertical roadside and central reserve barriers, as well as canopy type barriers have been proposed to alleviate the noise impacts contributed by the "new" roads of this road widening Project. With the incorporation of direct mitigation measures, the two assessment criteria, (1) the predicted  $L_{10(1 \text{ hour})}$  noise level contributed by the "new" roads must be below the relevant noise standards, i.e., 70 dB(A) for domestic premises and 65 dB(A) for education institutions; and (2) the contribution to the increase in the predicted overall noise level from the "new" roads must be less than 1.0 dB(A) if the overall noise level exceed the relevant criterion, are met at all NSRs. The performance of the proposed mitigation measures for the Project also meets the criterion set out in the 24 Hour Opening of the Border Crossing study. Therefore there are no significant traffic noise impacts caused by the Project.

## 5.7 References

British Standards Institution, 1997, BS 5228 : Part 1: 1997 "Noise Control on Construction and Open Sites".

Environmental Protection Department (EPD), 1997, Technical Memorandum on Environmental Impact Assessment Process.

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Environmental Protection Department (EPD), July 1989, "A Practical Guide for the Reduction of Noise from Construction Works".

Kowloon-Canton Railway Corporation (KCRC), 1998, "West Kowloon to Tuen Mun Centre, Contract No TS-900, Environmental Impact Assessment – Final Assessment Report".

Highways Department (HyD), August 1996, "Noise Impact Assessment for 24 Hour Opening of Border Crossings – Final Report".

Highways Department (HyD), April 1997, "Feasibility Assignment for Widening of Tolo Highway and Traffic Surveillance and Information System, Environmental Impact Assessment – Final Report".

Department of Transport Welsh Office, HMSO, 1988, "Calculation of Road Traffic Noise".

### Acoustic Terminology

Decibel, dB      A dimensionless unit used to express logarithmically the ration of one sound power or pressure to a reference value.

dB(A)	The A-weighted decibel is a commonly used unit for measuring environmental noise taking into account the way human ear responds to noise.
Sound Power Level SWL	A measure of the total acoustic power radiated by a given sound source. It is independent of any reference distance or other extraneous factors.
$L_{eq(T)}$	Equivalent continuous sound level over a defined time period T.
$L_{10(T)}$	A time-varying noise level, measured in dB(A), which is exceeded for 10% of the total time period T. Also a typical noise measurement for traffic noise.