

3 FINDINGS OF THE REVIEW STUDY

3.1 Desk-Top Study

With reference to the latest commercial street guide book, a total of 3226 road sections were identified in this review study – 937 on Hong Kong Island, 870 on Kowloon Peninsula and 1419 in the New Territories and outlying islands.

58 road sections were excluded from this study. Of these 95 road sections, 16 sections of 13 roads are covered the Feasibility Study on Retroactive Road Traffic Noise Mitigation Measures under Agreement No. CE 8/96. 65 road sections have been assessed in a separate environmental study within the last 2 years or are involved in an on going EIA study. 14 at-grade road sections have already adopted noise mitigation measures with reference to the guidebook “Screening Structures and Building Designs against Transportation Noise in Hong Kong” provided by EPD. All the above excluded roads are presented in Appendix A.

Procedures and criteria of the “Working Tool” were reviewed and revised along the course of assessment. Several typical and complicated subjects were selected for initial testing. The results were helpful in fine-tuning the “Working Tool”.

All the at-grade roads in the Hong Kong territory have been reviewed using the 1:1000 scale survey maps produced by Lands Department. Each road was systematically tested using the assessment procedures. Identification of the noise problem and selection of the noise barrier form were firstly tested. Then, the site constrains including fire fighting, road safety, blockage of access, pedestrian movements and commercial activities were identified. All rationales for not recommending a particular road/road section for further investigation were provided in the database under the “Remarks” column.

A total of 9 sections of 8 roads were identified for further study on providing direct noise mitigation measures using “the Working Tool”. There are 2 road sections on Hong Kong Island, 4 road sections on Kowloon Peninsula and 3 road sections in the New Territories. Names of the roads are given in Table 3.1. Each identified road section was defined and could be found in the relevant land survey drawings.

The following roads duly satisfied all the screening criteria but with low acoustic effectiveness:-

Butterfly Valley Road – between Castle Peak Road and Lai Chi Lok Reception Centre
Cheung Sha Wan Road – between Cheung Shun Street and Tung Chau West Street
Princess Margaret Road – between Chatham Road South and Wylie Road
Princess Margaret Road – between Wylie Road and Perth Street
Tai Hang Tung Road – between Tong Yam Street and Boundary Street

Table 3.1 – Roads/Road Sections Recommended for Further Study

District	Name of Road	Section	Drawing Reference
Hong Kong Island	Chai Wan Road	Off Neptune Terrace (Southbound)	11SE-14C
	Heung Yip Road	Between Nam Long Shan Road to Ocean Park Road	11-SW-24C, 11-SW-24D
Kowloon Peninsula	Sau Mau Ping Road	Between Sau Ming Road and Sau Mau Path	11-NE-13D, 11-NE-18B
	Sau Mau Ping Road + Shun Lee Tsuen Road	Between Shun On Road and Hip Wo Street Between Shun On Street and Hip Wo Street	11-NE-13C, 11-NE-13D
	Tai Po Road	Between Slip Road to Lung Cheung Road and the Lutheran Church Missouri Synod	11-NW-9A, 11-NW-9C
New Territories	Ma Wang Road	Between Ma Mui Road and Shui Pin Wai Road	6-NW-9C
	Po Ning Road	Between Po Lam Road North Road and Tin Chau Road	12-NW-16A, 12-NW-16B, 12-NW-16D
	Yuen Shin Road	Between Wang Fuk Court and Ting Kok Road	7-NW-5C, 7-NW-10A

3.2 Preliminary Evaluation of Engineering Feasibility

Engineering feasibility for the provision of noise barrier proposals should aim to produce a safe and economical structure that requires minimal maintenance. For this reviewing study, a brief assessment of engineering feasibility was conducted in terms of the following aspects:

- compliance with road safety requirements as stipulated in the Traffic Planning & Design Manual (TPDM)
- compliance with the fire fighting and emergency access requirements of the Fire Services Department and other government departments
- conflict with pedestrian access
- conflict with existing structure

3.2.1 Chai Wan Road

Chai Wan Road is a dual 3-lane carriageway linking Shau Kei Wan Road and Siu Sai Wan Road. The land use on both sides of the road is a mix of residential and institutional, which are sensitive to road traffic noise.

The section of Chai Wan Road under investigation is in front of Neptune Terrace. The tower blocks vary from 34 to 36 storeys while 26 storeys are above the level of Chai Wan Road. A semi-enclosure is recommended to protect these high-rise buildings.

An existing footbridge is found across Chai Wan Road and this will impose a constraint for the erection of a barrier. A screen underneath the footbridge is recommended to alleviate the traffic noise from the road.

An existing pedestrian stair down to Tai Man Street should not be blocked after the implementation of noise mitigation measures.

The existing bus bay in front of Block 3 of Neptune Terrace could be another constraint since sight line of passengers and bus drivers at bus bay would be much degraded after the erection of a barrier structure.

3.2.2 Heung Yip Road

Heung Yip Road is a dual single-lane carriageway linking Ocean Park Road and Wong Chuk Hang Road. The land use along the eastbound of the Heung Yip Road is industrial and a nullah is running along the westbound.

Wong Chuk Hang Estate, which is a linear housing block of 20 storeys, is located at the southern side of Heung Yip Road. The recommended noise mitigation measures are two sections of semi-enclosure.

The section under investigation, which is in front of Block 10 of Wong Chuk Hang Estate, consists of a signalised junction of Heung Yip Road and Nam Long Shan Road. Thus, sight line has been identified to be the major constraint in providing the noise mitigation measures.

3.2.3 Sau Mau Ping Road

Sau Mau Ping Road is a dual 2-lane carriageway linking Tseung Kwan O Road and the junction of Hip Wo Road and Shun Lee Tsuen Road. The land uses on both sides of Sau Mau Ping Road are mainly residential development, which is sensitive to road traffic noise. A secondary school, which is also sensitive to road traffic noise, is situated adjacent to the junction of Sau Mau Ping Road and Shun On Road.

Sau Mau Ping Estate is under redevelopment and some new housing development is under construction on both sides of Sau Mau Ping Road. The section of Sau Mau Ping Road under investigation is in front of Sau Lok House and Sau Hong House, which are public housing blocks of 36 storeys. Although the base elevation of the housing blocks is lower than the road level, above 30 storeys are overlooking Sau Mau Ping Road. A semi-enclosure is recommended for the noise mitigation measures.

An existing pedestrian stair from Sau Mau Ping Road down to the said development was identified so it should not be blocked.

3.2.4 Sau Mau Ping Road & Shun Lee Tsuen Road

Sau Mau Ping Road is described in the previous section.

Shun Lee Tsuen Road is a dual 2-lane carriageway linking the junction of Sau Mau Ping Road and Hip Wo Street and slips roads to and from Clear Water Bay Road. The land use along the eastbound road is mainly residential, which is sensitive to road traffic noise. A primary school, which is also sensitive to road traffic noise, is situated alongside the eastbound carriageway of Shun Lee Tsuen Road.

The section of Sau Mau Ping Road and Shun Lee Tsuen Road under investigation is in front of Shun Tin Estate. Tin Kam House, Tin Chi House, Tin Kuen House and Tin Kei House, which varies from 20 to 22 storeys, are overlooking the roads.

An existing pedestrian stair near the junction of Sau Mau Ping Road, Shun Lee Tsuen Road and Hip Wo Street leading to Shun Tin Estate was identified so it should not be blocked after implementing the noise mitigation measures.

3.2.5 Tai Po Road

Tai Po Road is a dual 3-lane carriageway linking Cheung Sha Wan Road and the Lion Rock Tunnel Road in Shatin. It is a main primary distributor connecting Kowloon and New Territories. The land use on both sides of the road is a mix of residential, institutional and district open space in a typical urban setting. The noise sensitive receivers, which are directly exposed to road traffic noise, are residential blocks and institutions alongside the road.

The section of Tai Po Road under investigation is off Cronin Garden and residential buildings on Kowloon Road, which are sensitive to road traffic noise. Cronin Garden consists of seven residential blocks of 13 storeys. Owing to the topographical effect, about 11 storeys of the residential block are overlooking the Tai Po Road. Residential buildings at Kowloon Road vary from 6 to 10 storeys. Thus, a top bend barrier is proposed as the noise mitigation measures.

Sheung Li Uk Park is lying between the identified noise sensitive receivers and Tai Po Road. There are three existing entrances to the park so they should not be blocked after implementation of the noise mitigation measures.

An existing access from Tai Po Road to Kowloon Road will be a constraint for erecting the barrier.

The existing bus bay in front of the park near Block 7 of Cronin Garden could be another constraint since sight line of passengers and the bus drivers at bus bay would be much degraded after the erection of a barrier structure.

3.2.6 Ma Wang Road

Ma Wang Road is a single 3-lane carriageway linking the junction of Wang Lok Street and Yuen Long On Lok Road. The land use along the westbound route of Ma Wang Road is mainly residential and a nullah is running alongside the eastbound lane

The section of Ma Wang Road under investigation is in front of Shui Pin Wai Estate, which varies from 10 to 25 storeys. A semi-enclosure is recommended for the noise mitigation measures.

This section consists of two junctions (Ma Wang Road J/O Ma Miu Road; Ma Wang Road J/O Shui Pin Wai Road). Thus, sight line has been identified to be the major constraint in providing the noise mitigation measures.

3.2.7 Po Ning Road

Po Ning Road is a dual 2-lane carriageway linking Po Lam Road North roundabout and Chiu Shun Road with both residential and institutional developments on the both sides. The section of the road under investigation is between Po Shun Road and Po Ning Lane.

Hau Tak Estate (Tak Chak House, Tak Fu House and Tak Hong House) and Yu Ming Court (Yu Ming House, Yu Cheung House, Tak Yut House) are located on the southern side of the road. To the northern side of the road, there is Fu Ning Garden, which has 38-storey tower blocks.

An existing footbridge is found across Po Ning Road and it will impose a constraint for the erection of barrier structure.

The existing bus bay in front of Tak Fu House of Hau Tak Estate could be another constraint since the sight line of passengers and bus drivers at bus bay would be much degraded after the erection of a barrier structure.

There is an existing roundabout at Po Ning Road and Sheung Ning Road. Thus, sight line will also be a major constraint in providing the noise mitigation measures.

The recommended direct mitigation measures for Po Ning Road are as follows:

- Footbridge in front of Tak Chak House with screen for protecting the House
- Bend-top barrier – Type B for protecting Tak Fu House, Tak Hong House, Yu Ming House

- Full enclosure for protecting Yu Cheung House, Tak Yut House, Blocks 5 and 6 of Fu Ning Garden

3.2.8 Yuen Shin Road

Yuen Shun Road is a dual 2-lane carriageway linking Ting Kok Road and Tolo Highway. The land use on the westbound lanes of the road is a mix of residential, institutional and district open space in a typical urban setting. The noise sensitive receivers, which are exposed to road traffic noise directly, are mainly residential blocks and schools alongside the road.

The section of the road under investigation is in front of Shin King House of Fu Shin Estate, which has 34 storeys. A semi-enclosure is recommended along the northbound carriageway for protecting the affected tower block.

The existing bus bay in front of Shin King House could be a major constraint since sight line of passengers and bus drivers at the bus bay would be much degraded after the erection of a barrier structure.

An existing pedestrian staircase from the bus bay to the cycle track should not be blocked after the implementation of noise mitigation measures.

The noise reduction and number of dwellings being protected by the proposed mitigation measures were estimated. The results are summarized in Table 3.2.

A database containing all the identified at-grade roads was developed. All the study findings including the rationales of provision or non-provision of direct technical remedies to the identified at-grade roads were included in the database. A printout of the database showing all the findings is attached in Appendix B.

Table 3.2 – Noise Reduction and Number of Dwellings Being Benefited

Name of Road	Benefitted NSRs	Form of Barrier*	Noise Reduction dB(A)	No. of Dwellings Benefitted	Figure No.
Chai Wan Road	Neptune Terrace – Block 2 and Block 3	SE	10 – 20	143	3.1
Heung Yip Road	Wong Chuk Hang Estate – Block 10	SE	3 – 20	520	3.2
Sau Mau Ping Road	Sau Mau Ping Estate – Sau Lok House, Sau Hong House	SE	3 – 20	360	3.3
Sau Mau Ping Road + Shun Lee Tsuen Road	Shun Tin Estate – Tin Kei House, Tin Kuen House, Tin Chi House, Tin Kam House	SE	3 – 20	1480	3.4
Tai Po Road	Cronin Garden – Block 1 to Block 7 Residential Buildings along Kowloon Road	BB (Type B)	5 – 15	305	3.5
Ma Wang Road	Shui Pin Wai Estate – Ying Shui House, Shan House and Hong Shui House	SE	3 – 20	370	3.6
Po Ning Road	Hau Tak Estate – Tak Chak House, Tak Fu House, Tak Hong House and Tak Yue House Yu Ming Court – Yu Wing House and Yu Cheong House	SE & FE	3 – 20	1520	3.7
Yuen Shin Road	Fu Shin Estate – Shin King House	SE	3–20	464	3.8
Remarks:	*Form of Barriers BB (Type B) – 5m high with 2m cantilever 45° inclined SE – Semi-enclosure FE – Full enclosure Length measurement is corrected nearest to 5m.				