

For discussion
on 26 May 2014

LEGISLATIVE COUNCIL PANEL ON ENVIRONMENTAL AFFAIRS

PWP Item No. 810TH – Retrofitting of Noise Barriers on Tuen Mun Road (Town Centre Section)

PURPOSE

This paper seeks Members' support for the submission of a proposal to upgrade **810TH** – Retrofitting of Noise Barriers on Tuen Mun Road (Town Centre Section) to Category A at an estimated cost of \$623.3 million in money-of-the-day (MOD) prices for retrofitting of noise barriers on the section of Tuen Mun Road between Rose Dale Garden and Lakeshore Building, prior to submission to the Public Works Subcommittee (PWSC) for consideration with a view to seeking funding approval from the Finance Committee (FC) of the Legislative Council.

PROPOSAL AND JUSTIFICATION

2. To mitigate the noise impact of existing roads on neighbouring residents, it is the Government's policy to consider the implementation of direct engineering solutions, where practicable, by way of retrofitting of noise barriers and enclosures, and resurfacing with low noise material on existing roads with a traffic noise level exceeding the limit of 70 dB(A)^[1].

3. For residents in the neighbourhood of Tuen Mun Road (Town Centre Section) between Rose Dale Garden and Lakeshore Building, there are a total of about 1 900 dwellings exposed to traffic noise level exceeding 70 dB(A). **810TH** comprises retrofitting of noise barriers, semi-enclosure and full enclosure on this road section. The proposed works will benefit about 1 800 dwellings with reduction in traffic noise levels of about 1 to 25 dB(A).

4. In order that the dwellings of this road section could benefit from the noise mitigation measures as soon as possible, we propose to upgrade **810TH** to Category A comprising the following proposed works –

¹ L₁₀(1 hour), the noise level exceeded for 10% of a one-hour period, is generally used for measuring road noise at peak traffic flow. The noise limit of 70 dB(A) for residential premises as stipulated in the Hong Kong Planning Standards and Guidelines is adopted as the administrative guideline for retrofitting projects identified under the policy introduced in 2000.

- (a) an approximate 25 metres (m) in length with 7m in height of noise semi-enclosure over the southbound carriageway with a 4.5m cantilevered section extending over the northbound carriageway between the noise barrier constructed under 819TH^[2] and the existing San Hui Footbridge;
- (b) an approximate 130m in length with 7m to 12m in height of full noise enclosure spanning both bound carriageways between the existing San Hui Footbridge and the car park on Tsing Yin Street;
- (c) an approximate 80m in length with 7m to 12m height of noise semi-enclosure over the northbound carriageway with a 5.5m cantilevered section extending over the southbound carriageway between Tsing Yin Street and Yuk Hong Street;
- (d) an approximate 125m in length and an approximate 60m in length with 7m in height of cantilevered noise barrier along the central median and the verge of the southbound carriageway respectively between Yuk Hong Street and the flyover of Tuen Mun Heung Sze Hui Road including 3m in height of vertical noise barrier underneath the flyover;
- (e) an approximate 325m in length with 7m to 12m in height of noise semi-enclosure over the southbound carriageway with a 4.5m cantilevered section extending over the northbound carriageway between the flyover of Tuen Mun Heung Sze Wui Road and Lakeshore Building;
- (f) an approximate 30m length with 7m in height of cantilevered noise barrier along the verge of the southbound carriageway near Lakeshore Building;
- (g) an approximate 40m length with 3m in height of vertical noise barrier along the verge of the northbound carriageway near the caretakers' quarters of Church of Christ in China Tam Lee Lai Fun Memorial Secondary School;
- (h) associated drainage, roadworks, utilities diversions, street lighting, traffic aids and landscaping works; and
- (i) implementation of an environmental monitoring and audit (EM&A) programme for the works mentioned in items (a) to (h)

² 819TH is entitled "Traffic Improvements to Tuen Mun Road Town Centre Section"

above.

5. Layout plan of the proposed works is at **Enclosure 1**. Subject to funding approval of the FC, we plan to commence the proposed works in August 2014 for completion in December 2017.

FINANCIAL IMPLICATIONS

6. We estimate the capital cost of the proposed works to be \$623.3 million in MOD prices.

7. We estimate that the proposed works will create about 231 jobs (187 for labourers and another 44 for professional/technical staff) providing a total employment of 8 520 man-months.

INTERIM TRAFFIC ARRANGEMENT

8. We have conducted a traffic impact assessment (TIA) for the proposed works including assessment of the impact on traffic during the construction stage. We will maintain the same number of existing traffic lanes in the northbound and southbound carriageways of Tuen Mun Road during the peak hours throughout the construction period. The TIA concluded that the proposed works would not cause significant adverse impact on road users with implementation of appropriate temporary traffic arrangements.

ENVIRONMENTAL IMPLICATIONS

9. The proposed works is not a designated project under the Environmental Impact Assessment Ordinance (Cap. 499). We have conducted an environmental review which concluded that the proposed works would not cause adverse long-term environmental impact.

10. To minimize short-term impacts during construction, we will control the nuisances caused by noise, dust and site run-off to within the established standards and guidelines through the implementation of mitigation measures. We will also carry out the EM&A programmes to ensure proper implementation of the recommendations of the environmental review.

11. At the planning and design stages, we have considered the design and construction sequence of the proposed works to reduce the generation of construction waste where possible. In addition, we will require the contractor to reuse inert construction waste (e.g. excavated soil) on site or in other suitable

construction sites as far as possible, in order to minimize the disposal of inert construction waste at public fill reception facilities^[3]. We will encourage the contractor to maximize the use of recycled / recyclable inert construction waste, and the use of non-timber formwork to further reduce the generation of construction waste.

12. At the construction stage, we will require the contractor to submit for approval a plan setting out the waste management measures, which will include appropriate mitigation means to avoid, reduce, reuse and recycle inert construction waste. We will ensure that the day-to-day operations on site comply with the approved plan. We will require the contractor to separate the inert portion from non-inert construction waste on site for disposal at appropriate facilities. We will control the disposal of inert construction waste and non-inert construction waste at public fill reception facilities and landfills respectively through a trip-ticket system.

13. We estimate that the proposed works will generate in total about 26 300 tonnes of construction waste. Of these, we will reuse about 10 100 tonnes (38%) of inert construction waste on site and deliver 14 600 tonnes (56%) of inert construction waste to public fill reception facilities for subsequent reuse. We will dispose of the remaining 1 600 tonnes (6%) of non-inert construction waste at landfills. The total cost for accommodating the construction waste at public fill reception facilities and landfill sites is estimated to be about \$0.59 million for the proposed works (based on a unit charge rate of \$27 per tonne for disposal at public fill reception facilities and \$125 per tonne at landfills as stipulated in the Waste Disposal (Charge for Disposal of Construction Waste) Regulation).

14. The aesthetic design of the proposed noise barriers / enclosures will be in harmony with the surrounding environment. We will also install absorptive, transparent and translucent panels for the noise barriers / enclosures and provide roadside planters to improve aesthetics as well as to promote green surroundings. The cross-sectional views of the proposed noise barriers are **at Enclosure 2**. The TMDC and the Advisory Committee on the Appearance of Bridges and Associated Structures^[4] (ACABAS) have respectively supported and accepted the aesthetic design.

³ Public fill reception facilities are specified in Schedule 4 of the Waste Disposal (Charges for Disposal of Construction Waste) Regulation. Disposal of inert construction waste in public fill reception facilities requires a licence issued by the Director of Civil Engineering and Development.

⁴ The Advisory Committee on the Appearance of Bridges and Associated Structures, which comprises representatives of the Hong Kong Institute of Architects, the Hong Kong Institution of Engineers, the Hong Kong Institute of Planners, an academic institution, Architectural Services Department, Highways Department, Housing Department and Civil Engineering and Development Department, is responsible for vetting the design of bridges and other structures associated with the highway system, including noise barriers and enclosures, from the aesthetic and visual impact points of view.

15. Of the 152 trees within the proposed works boundary, 64 trees will be preserved. The proposed works will involve removal of 88 trees, including 66 trees to be felled and 22 trees to be transplanted elsewhere. All trees to be removed are not important trees⁵. We will incorporate planting proposals as part of the proposed works, including planting of 199 trees and 12 600 shrubs and forming of 900 square metres of grassed area.

HERITAGE IMPLICATIONS

16. The proposed works will not affect any heritage site, i.e. all declared monuments, proposed monuments, graded historic sites/buildings, sites of archaeological interest and Government historic sites identified by the Antiquities and Monuments Office.

LAND ACQUISITION

17. The proposed works do not require land resumption.

PUBLIC CONSULTATION

18. Since March 2012, we have consulted the Traffic and Transport Committee (T&TC) and the Environment, Hygiene and District Development Committee (EH&DDC) of the TMDC on several occasions on the proposed works. The TMDC members have been repeatedly urging for early implementation of the proposed works to relief the residents from traffic noise impact.

19. With the support of the T&TC on 16 March 2012, we gazetted the proposed works under the Roads (Works, Use and Compensation) Ordinance (Cap. 370) (the Ordinance) in September 2012.

⁵ An "important tree" refers to trees on the Register of Old and Valuable Trees, or any other trees that meet one or more of the following criteria -

- (a) trees of over 100 years old or above;
- (b) trees of cultural, historical or memorable significance e.g. Fung Shui trees, trees as landmark of monastery or heritage monument, and trees in memory of an important person or event;
- (c) trees of precious or rare species;
- (d) trees of outstanding form (taking account of overall tree sizes, shape and any special features) e.g. trees with curtain like aerial roots, trees growing in unusual habitat; or
- (e) trees with trunk diameter equal or exceeding 1.0 metre (measured at 1.3 metre above ground level), or with height/canopy spread equal or exceeding 25 metres.

20. We received objections against the non-provision of noise mitigation measures on Tuen Mun Road fronting the existing Church of Christ in China Tam Lee Lai Fun Memorial Secondary School. The objection resolution was completed in April 2013 and a modified noise barrier scheme was proposed to provide additional vertical noise barriers fronting the caretakers' quarters of the secondary school. EH&DDC of the TMDC was consulted on the proposed works at the meeting on 19 July 2013, and was supportive of the modified noise barrier scheme and urged for early implementation. The Chief Executive in Council authorised the road scheme together with the modification for the Town Centre Section under the Ordinance and the notice of authorisation was gazetted on 27 September 2013.

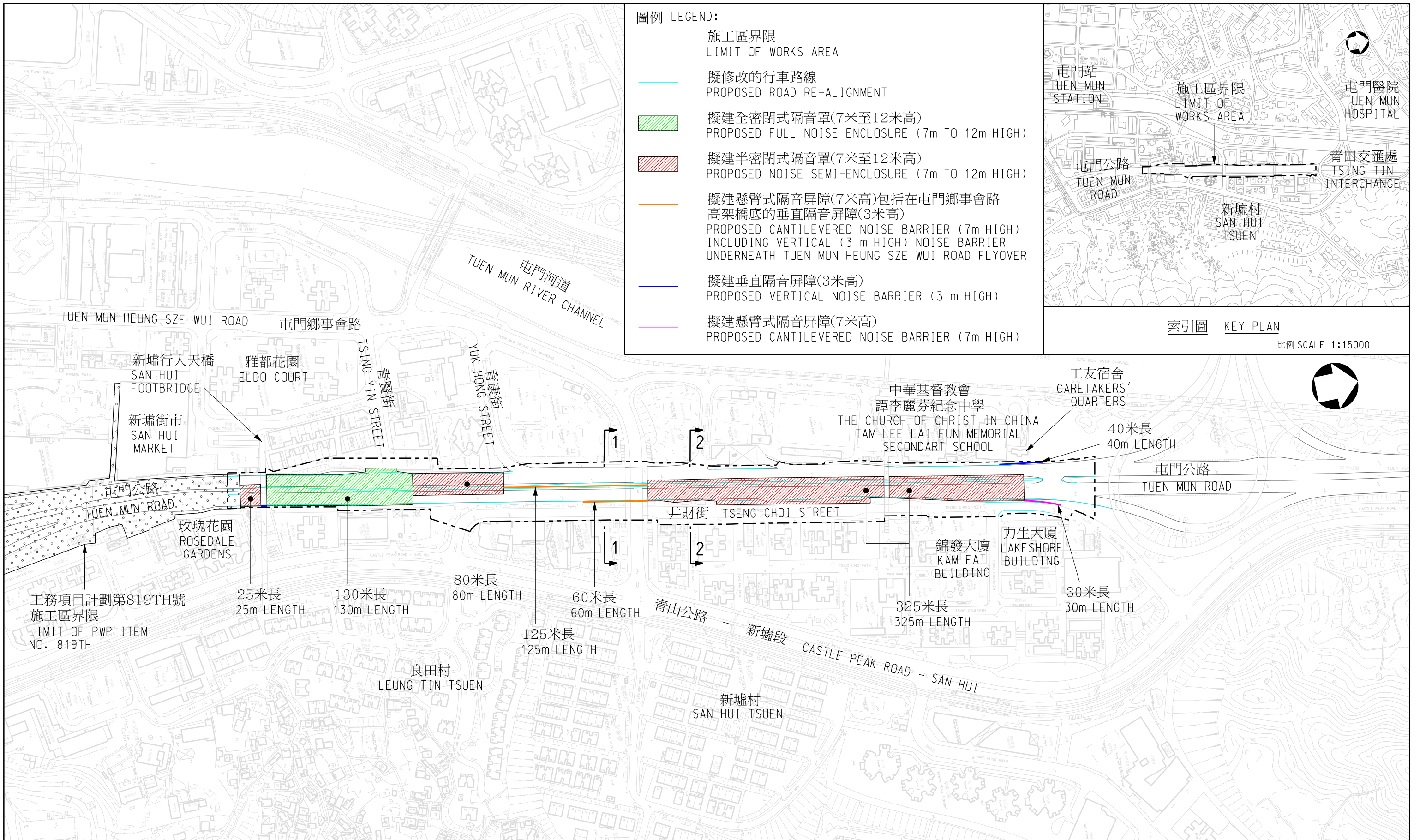
ADVICE SOUGHT

21. Members are invited to support our proposal to seek the Public Works Subcommittee's support in June 2014 for upgrading **810TH** – Retrofitting of Noise Barriers on Tuen Mun Road (Town Centre Section) to Category A, with a view to seeking the funding approval of FC.

ATTACHMENT

Enclosure 1 – Drawing No. HMW6810TH-SK0024
Enclosure 2 – Drawing No. HMW6810TH-SK0025

Environment Protection Department
May 2014

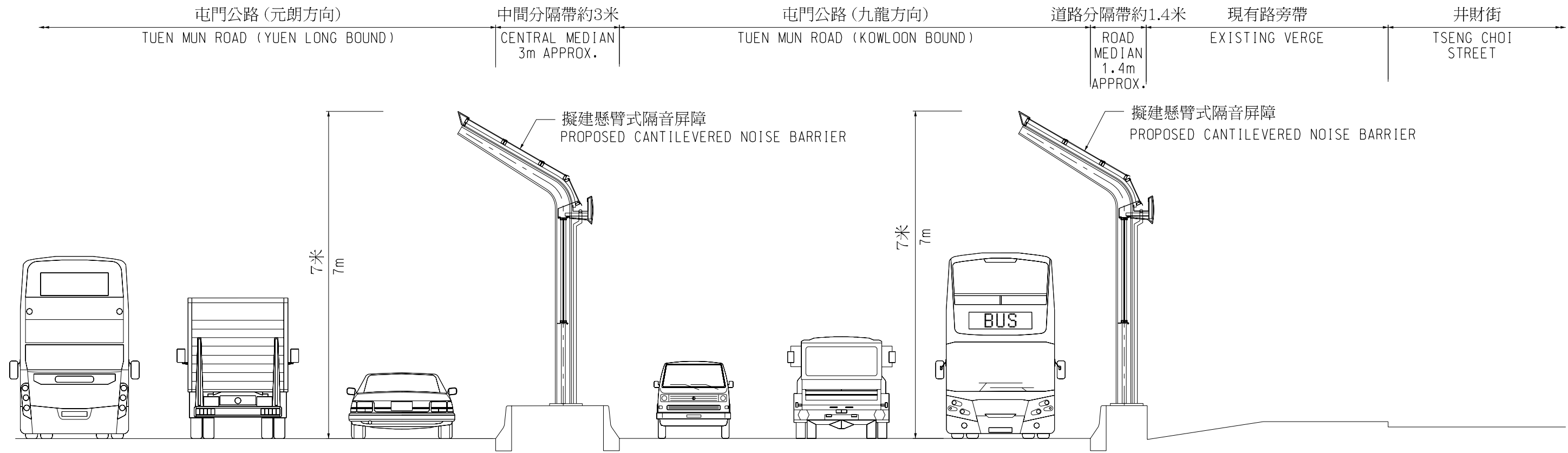


圖例 LEGEND:

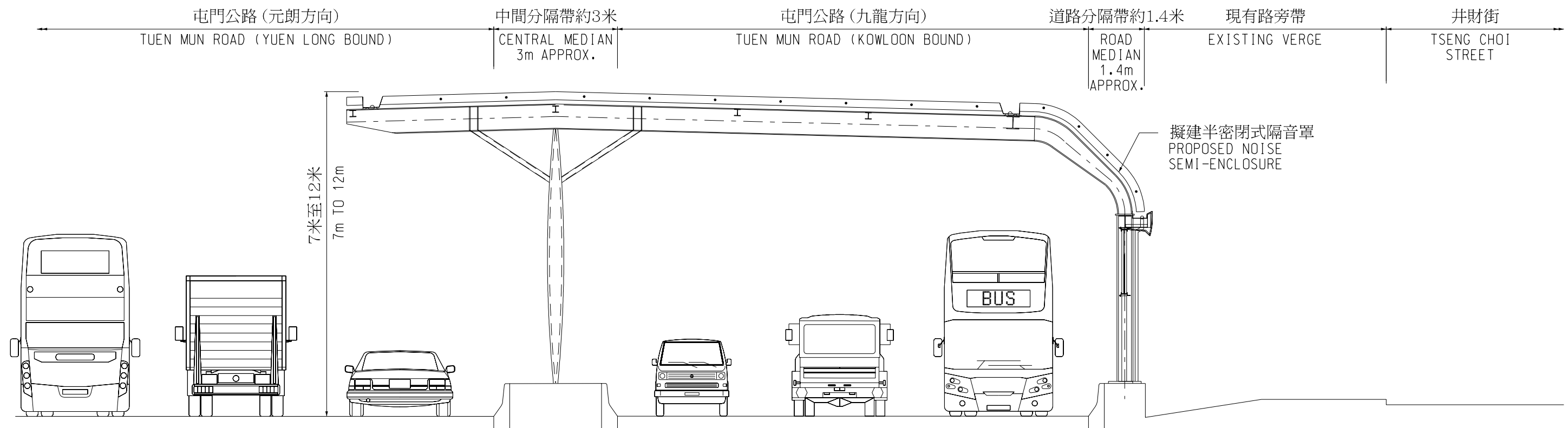
- 施工區界限
LIMIT OF WORKS AREA
- 擬修改的行车路線
PROPOSED ROAD RE-ALIGNMENT
- █ 擬建全密閉式隔音罩(7米至12米高)
PROPOSED FULL NOISE ENCLOSURE (7m TO 12m HIGH)
- █ 擬建半密閉式隔音罩(7米至12米高)
PROPOSED NOISE SEMI-ENCLOSURE (7m TO 12m HIGH)
- 擬建懸臂式隔音屏障(7米高)包括在屯門鄉事會路
高架橋底的垂直隔音屏障(3米高)
PROPOSED CANTILEVERED NOISE BARRIER (7m HIGH)
INCLUDING VERTICAL (3 m HIGH) NOISE BARRIER
UNDERNEATH TUEN MUN HEUNG SZE WUI ROAD FLYOVER
- 擬建垂直隔音屏障(3米高)
PROPOSED VERTICAL NOISE BARRIER (3 m HIGH)
- 擬建懸臂式隔音屏障(7米高)
PROPOSED CANTILEVERED NOISE BARRIER (7m HIGH)

索引圖 KEY PLAN
比例 SCALE 1:15000

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| <p>圖則名稱 drawing title</p> <p>工務項目計劃第810TH號 - 屯門公路(市中心段)加建隔音屏障工程 - 平面圖 PWP ITEM NO. 810TH - RETROFITTING OF NOISE BARRIERS ON TUEN MUN ROAD (TOWN CENTRE SECTION) - LAYOUT PLAN</p> | <p>圖則編號 drawing no.</p> <p>HMW6810TH-SK0024</p> | <p>比例 scale</p> <p>1:3000</p> |
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切面圖 SECTION 1-1



切面圖 SECTION 2-2

圖則名稱 drawing title

工務項目計劃第810TH號 - 屯門公路 (市中心段) 加建隔音屏障工程 - 切面圖
PWP ITEM NO. 810TH - RETROFITTING OF NOISE BARRIERS ON TUEN MUN ROAD (TOWN CENTRE SECTION)
- SECTION

圖則編號 drawing no.
HMW6810TH-SK0025

比例 scale
1:100

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