

**For discussion
on 21 December 2004**

**LEGISLATIVE COUNCIL
PANEL ON ENVIRONMENTAL AFFAIRS**

**PWP Item No. 780TH - Retrofitting of Noise barriers
on Cheung Pei Shan Road, Tsuen Wan**

PURPOSE

This paper briefs Members on the proposed retrofitting of noise barriers on the section of Cheung Pei Shan Road between Shek Wai Kok Estate and Cheung Shan Estate in Tsuen Wan (the project) to address the traffic noise impact of Cheung Pei Shan Road on neighbouring residents.

PROJECT SCOPE AND NATURE

2. We propose to carry out the following works -
 - (a) retrofitting of about 845 metres of 6 metres high cantilevered noise barrier along Cheung Pei Shan Road eastbound carriageway between Yi Pei Chun and Sam Tung Uk Resite Village;
 - (b) retrofitting of about 25 metres of 6 metres high cantilevered noise barrier along Cheung Pei Shan Road westbound carriageway outside Shek Wai Kok Estate;
 - (c) retrofitting of about 285 metres of noise semi-enclosures with the overall height varying from 6.5 metres to 13 metres along Cheung Pei Shan Road westbound carriageway outside Shek Wai Kok Estate;

- (d) retrofitting of about 360 metres of noise semi-enclosure with an overall height of 6.5 metres along Cheung Pei Shan Road westbound carriageway outside Cheung Shan Estate;
- (e) construction of two 6 metres wide emergency vehicular access roads with a total length of about 125 metres outside Cheung Shan Estate;
- (f) reprovisioning of a 2 metres wide footway ramp with a total length of about 43 metres outside Cheung Shan Estate;
- (g) construction of the associated retaining walls, street lighting, drainage, geotechnical and landscaping works; and
- (h) implementation of an environmental monitoring and audit (EM&A) programme for works mentioned in items (a) to (g) above.

———— The proposed works are shown on the plan at **Enclosure 1**. We plan to commence the construction works in June 2005 for completion in December 2007.

JUSTIFICATION

3. In November 2000, the Administration introduced a policy to address the traffic noise impact of existing roads on neighbouring residents. Under this policy, direct engineering solutions by way of retrofitting of noise barriers and enclosures and resurfacing with low noise material will be implemented where practicable on existing roads, with a traffic noise level exceeding the limit of 70 dB(A)L₁₀(1 hour)¹.

4. At present, about 1663 dwellings adjacent to the section of Cheung Pei Shan Road between Shek Wai Kok Estate and Cheung Shan Estate in Tsuen Wan are exposed to traffic noise of up to 80 dB(A)L₁₀(1

¹ L₁₀(1 hour) is the noise level exceeded for 10% of a one-hour period, generally used for 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.

hour). In line with the policy, we propose to retrofit noise barriers and semi-enclosures on this road section in order to mitigate the noise impact. The traffic noise at the façades of all the dwellings will be reduced by up to 18 dB(A) L₁₀(1 hour).

PUBLIC CONSULTATION

5. We presented the project including the scope, aesthetic design, interim traffic arrangements and implementation timetable to the Tsuen Wan East Area Committee (TWEAC) and the Tsuen Wan District Council Traffic and Transport Committee (TWDC TTC) on 27 February 2004 and 2 March 2004 respectively. Members of both Committees unanimously supported the project and raised no objection to the aesthetic design.

6. Lui Ming Choi Lutheran College has requested the Administration to erect additional noise barriers along the roadside of Cheung Pei Shan Road westbound carriageway outside the College to protect the College from the traffic noise. While supporting the project, the TWDC TTC and TWEAC have also raised the same request to the Administration. To address existing road traffic noise impacts on existing schools, the Administration launched a 'Noise Abatement Programme' for schools in 1987 to provide acoustic window insulation and air conditioning to classrooms affected by traffic noise. Under the programme, all teaching activity-related rooms of the College have already been provided with the necessary noise protection measures since 1993 in the form of acoustic window insulation and air conditioning.

7. We also consulted the Advisory Committee on the Appearance of Bridges and Associated Structures² (ACABAS) on the aesthetic design of the noise barriers and semi-enclosures on 20 April 2004. The Committee accepted the proposed aesthetic design.

8. We gazetted the road scheme of **780TH** under the Roads (Works, Use and Compensation) Ordinance (the Ordinance) on 18 June 2004 and no objection was received. The Permanent Secretary for the Environment, Transport and Works (Transport), under the delegated

² 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, Architectural Services Department, Highways Department, Housing Department, Planning Department and Civil Engineering and Development Department, is responsible for vetting the design of bridges and other structures associated with the public highway system, including noise barriers and semi-enclosures, from the aesthetic and visual impact points of view.

authority from the Secretary for the Environment, Transport and Works, authorised the road scheme of **780TH** under the Ordinance on 3 September 2004. The notice of authorisation was gazetted on 10 September 2004.

ENVIRONMENTAL IMPLICATIONS

9. **780TH** is not a designated project under the Environmental Impact Assessment Ordinance. We completed an environmental assessment for the project in June 2004 and concluded that it will not cause adverse long-term environmental impact. The project will reduce the existing traffic noise levels on the affected noise sensitive receivers adjacent to the section of Cheung Pei Shan Road between Shek Wai Kok Estate and Cheung Shan Estate in Tsuen Wan by up to 18 dB(A) L₁₀(1 hour).

10. The aesthetic design of the cantilevered barriers and semi-enclosures will be compatible with the environment. The proposed noise barrier panels are transparent except those to be installed at the lower parts of the noise barriers and semi-enclosures which are non-transparent. A drawing showing the perspective view of the noise barriers and semi-enclosures is at **Enclosure 2**. The proposed aesthetic design is supported by the TWEAC, TWDC TTC and ACABAS as described in paragraphs 5 and 7 above.

11. For short-term construction impacts, we will control noise, dust and site run-off nuisances to within the established standards and guidelines through the implementation of mitigation measures. We will also carry out the EM&A programme to ensure proper implementation of the recommendations of the environmental impact assessment.

12. We will require the contractor to submit a Waste Management Plan (WMP) for approval. The WMP will include appropriate mitigation measures to minimise, reuse and recycle the C&D materials. We will require the contractor to carry out on-site sorting of C&D materials and ensure that the day-to-day operations on site comply with the approved WMP. We will also control the disposal of C&D waste to landfills through a trip-ticket system. We will record and monitor the re-use and disposal of C&D materials. To further minimise the generation of C&D materials, we will encourage the contractor to use non-timber formwork and recyclable materials for temporary works.

13. At the planning and design stages, we have considered ways to minimise the generation of construction and demolition (C&D) materials.

We estimate that about 27 100 cubic metres (m³) of C&D materials will be generated by the project. Of these, about 13 000m³ (48.0%) will be reused on site, 13 600m³ (50.2%) will be reused as fill in public filling areas³ and 500m³ (1.8%) will be disposed of at landfills. The notional⁴ cost of accommodating the C&D waste at landfill sites is estimated to be \$62,500 for the project (based on a notional unit cost of \$125/m³).

14. The proposed retrofitting of noise barriers and semi-enclosures will involve removal of 66 trees including 33 trees to be felled and 33 trees to be replanted within the project site. All the trees to be removed are not important trees⁵. We will provide compensatory planting as part of the project, including estimated quantities of 80 trees, 1 080 shrubs and 560 square metres of grassed area.

INTERIM TRAFFIC ARRANGEMENT

15. Interim traffic arrangement will have to be introduced to facilitate the construction works. The eastbound carriageway of Cheung Pei Shan Road will be temporarily reduced from three lanes to two lanes when necessary during the construction period. The central median will be removed, and the westbound carriageway will be shifted towards the central median. The contractor will be required to maintain two lanes for each carriageway at all times during the construction period.

16. Full closure at night time for the westbound carriageway between Tsuen Kam Interchange and Wo Yip Hop Interchange is required to facilitate the safe installation of the roofs of the semi-enclosures, which

³ A public filling area is a designated part of a development project that accepts public fill for reclamation purpose. Disposal of public fill in a public filling area requires a licence issued by the Director of Civil Engineering and Development.

⁴ This estimate has taken into account the cost for developing, operating and restoring the landfills after they are filled and the aftercare required. It does not include the land opportunity cost for existing landfill sites (which is estimated at \$90/m³), nor the cost to provide new landfills (which are likely to be more expensive) when the existing ones are filled. The notional cost estimate is for reference only and does not form part of this project estimate.

⁵ Important trees include trees on the Register of Old and Valuable Trees and any other trees which meet one or more of the following criteria –

- (a) trees over 100 years old;
- (b) trees of cultural, historical or memorable significance;
- (c) trees of precious or rare species;
- (d) trees of outstanding form; or
- (e) trees with trunk diameter exceeding one metre (measured at one metre above ground level).

cover the whole width of several sections of the westbound carriageway. Such night time closures will be minimised as far as practicable. During these closures, the westbound traffic will be diverted via the slip road off Wo Yi Hop Interchange to Sam Tung Uk Road, Yi Pei Chun Road, Shek Wai Kok Road and Wai Tsuen Road back to Tsuen Kam Interchange.

17. We have conducted a traffic impact assessment (TIA) to assess the impacts of the temporary traffic diversion during the construction of the works. The TIA has concluded that the proposed temporary traffic arrangement will not cause significant adverse impacts to road users. The TWDC TTC was briefed on the interim traffic arrangement on 2 March 2004 and did not raise any objection.

LAND ACQUISITION

18. The proposed works do not require land acquisition.

WAY FORWARD

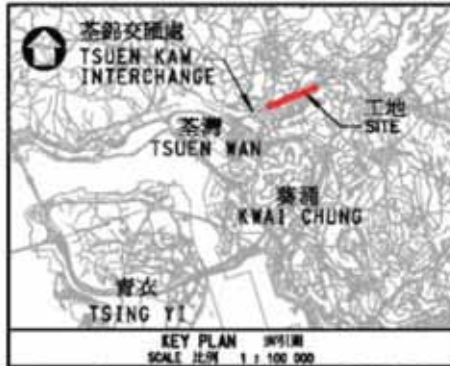
19. We plan to seek the Public Works Sub-committee's endorsement for upgrading the works mentioned in paragraph 2 above to Category A (at an estimated cost of \$217.1 million in money-of-the-day prices) on 26 January 2005.

ATTACHMENT

Enclosure 1 – Plan No. NTW 1383

Enclosure 2 – Plan No. NTW 1384

**Environment, Transport and Works Bureau
December 2004**

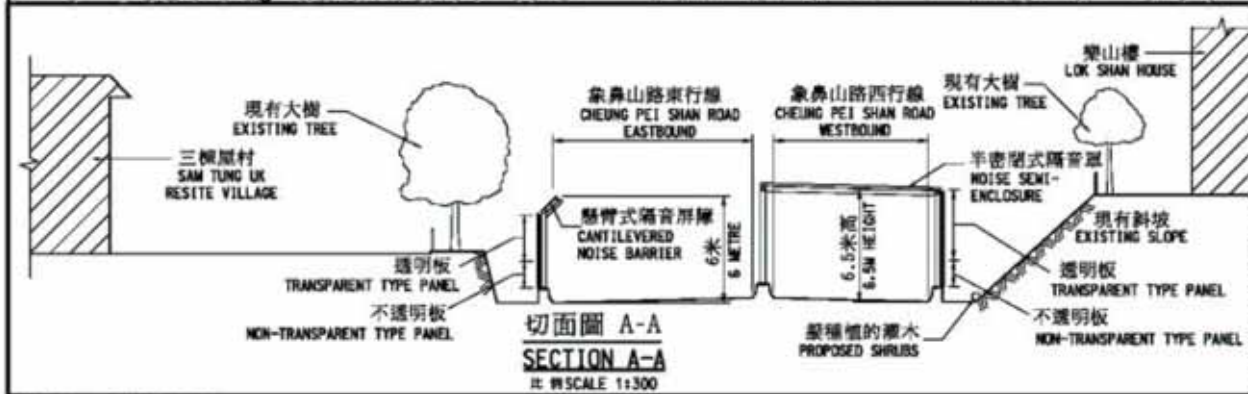


註釋 NOTES:

LEGENDS:

- 施工區界限
LIMIT OF WORKS AREA
- 擬建懸臂式隔音屏障
PROPOSED CANTILEVERED NOISE BARRIER
- 擬建半密閉式隔音罩
PROPOSED NOISE SEMI-ENCLOSURE
- 擬建緊急車輛通道
PROPOSED EMERGENCY VEHICULAR ACCESS ROAD
- 擬建行人斜道
PROPOSED FOOTWAY RAMP

編號	日期	修訂內容	修訂人	日期
修訂 REVISION				
	姓名 name	職銜 Initial	日期 date	
繪圖	P. K. SO	SIGNED		11.12.04
校對	S. M. LAI	SIGNED		11.12.04
核准 approved				
		SIGNED		11.12.04
"HONGKONG" 註冊 Chief Engineer/Env 日期 date				
工程編號 project no. T80TH				
檔案編號 file no.				
合約編號 contract no.				
合約 contract				
圖則名稱 drawing title				
荃灣象鼻山路隔音屏障加建工程 - 平面圖				
RETROFITTING OF NOISE BARRIERS ON CHEUNG PEI SHAN ROAD, TSUEN WAN - LAYOUT PLAN				
圖則編號 drawing no.				比例 scale
NTW 1383				1:4000 OR AS SHOWN
辦事處 office				
新界西及北拓展處 NEW TERRITORIES NORTH AND WEST DEVELOPMENT OFFICE				



二〇〇四年至二〇〇五年度環境事務委員會文件
PANEL ON ENVIRONMENTAL AFFAIRS PAPER 2004 - 2005



註釋 NOTES :

編號	日期	內容	校對	日期
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修訂 REVISION				
修訂	姓名 name	簽署 Initial	日期 date	
繪圖 drawn	P. K. SO	SIGNED	11.12.04	
校對 checked	S. M. LAI	SIGNED	11.12.04	

核准 approved
 SIGNED 11.12.04
 黃國權 P. K. SO
 Chief Engineer/NTW 日期 date

工程編號 project no. 780TH

檔案編號 file no.

合約編號 contract no.

合約 contract

圖則名稱 drawing title
 荃灣象鼻山路隔音屏障加建工程
 - 透視觀景於擬建隔音屏障及半隔音罩
 RETROFITTING OF NOISE BARRIERS ON
 CHEUNG PEI SHAN ROAD, TSUEN WAN
 - PERSPECTIVE VIEW OF NOISE BARRIERS
 AND SEMI-ENCLOSURE

圖則編號 drawing no. NTW 1384	比例 scale N.T.S.
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辦事處 office
 新界西及北拓展處
 NEW TERRITORIES NORTH AND WEST
 DEVELOPMENT OFFICE

土木工程拓展署
 CIVIL ENGINEERING AND
 DEVELOPMENT DEPARTMENT