

## ITEMS FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

### HEAD 706 – HIGHWAYS

#### Transport – Roads

#### **806TH – Dualling of Hiram’s Highway from Marina Cove to Sai Kung Town**

Members are invited to recommend to the Finance Committee the upgrading of **806TH** to Category A at an estimated cost of \$2,748.9 million in money-of-the-day prices.

### PROBLEM

We need to improve the Hiram’s Highway (HH) section between Marina Cove and Sai Kung Town and Po Tung Road to relieve the existing traffic congestion and cope with the anticipated traffic growth.

### PROPOSAL

2. The Director of Highways, with the support of the Secretary for Transport and Logistics, proposes to upgrade **806TH** to Category A at an estimated cost of \$2,748.9 million in money-of-the-day (MOD) prices for the design and construction works at HH, Po Tung Road and Tai Mong Tsai Road.

/PROJECT.....

**PROJECT SCOPE AND NATURE**

3. The proposed scope of works under **806TH** comprises –
- (a) widening of two sections of HH of approximately 3.5 kilometres (km) in total length between Marina Cove and Pak Sha Wan, and between Pak Sha Wan and Sai Kung Town from a single two-lane carriageway to a dual two-lane carriageway;
  - (b) widening of the Pak Sha Wan section of HH of approximately 100 metres (m) in length from a single two-lane carriageway to a single four-lane carriageway;
  - (c) widening of a section of Po Tung Road of approximately 400 m in length between Yau Ma Po Street and Fuk Man Road from a single two-lane carriageway to a dual two-lane carriageway;
  - (d) improvement of a section of Po Tung Road and Tai Mong Tsai Road of approximately 600 m in length between Fuk Man Road and Wai Man Road to a standard single two-lane carriageway;
  - (e) construction of a pedestrian subway across HH with lifts in Pak Sha Wan; and
  - (f) ancillary works including drainage, waterworks, slope stabilisation, public lighting, noise barriers, landscaping works, reprovision of affected government facilities as well as other associated works.

A layout plan with cross sections and photomontages of the project is at  
———— **Enclosure 1.**

4. To commence the proposed works as soon as possible, the Highways Department (HyD) initiated parallel tendering for the design and construction works contract<sup>1</sup> in September 2023 and the returned tender prices have been reflected in the estimated cost of the project. We will award the contract after obtaining funding approval from the Finance Committee (FC). We plan to carry out the detailed design and advance construction works<sup>2</sup> concurrently after award of the contract, followed by the commencement of the road widening works in full swing in 2026. We expect to complete the section at Tai Mong Tsai Road about four years after the commencement of construction, and the remaining sections at Po Tung Road and HH in the following one to two years.

## JUSTIFICATION

5. HH is the only major road connecting Sai Kung to East Kowloon and Tseung Kwan O. At present, the volume/capacity (v/c)<sup>3</sup> ratio of the section of HH between Marina Cove and Sai Kung Town as well as Po Tung Road during peak hours ranges from 1.0 to 1.2, indicating that the traffic volume of the concerned road sections is already operating over their design capacities during some periods. We anticipate that the traffic conditions of the concerned road sections will deteriorate and reach a v/c ratio of 1.5 during peak hours in 2037.

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<sup>1</sup> Due to the multi-faceted nature of the project and the presence of village houses and shops along both sides of the concerned roads, there is limited space for works area. In addition, the need to maintain the number of existing lanes and vehicular access on both sides of the road during the construction period, which involves complicated temporary traffic arrangements and adds to the construction difficulties, will require a higher level of construction technical requirements. Therefore, we will engage the contractor to carry out the detailed design of the works so that the detailed design of the works and the contractor's past experience, construction technology and resources (such as construction plant) can complement each other to facilitate the smooth implementation of the project.

<sup>2</sup> The advance construction works cover a series of works, such as site investigation and utility detection, construction of temporary accesses, laying of temporary water mains, tree survey, etc. These advance construction works are to allow the contractor to collect adequate information on the site condition and relevant engineering data to verify the detailed design and specifics of the project, as well as to develop diversion schemes with other pipelines and utility undertakers to ensure subsequent road widening works can proceed smoothly. The further design of the roads (such as the roundabouts, traffic signals, traffic signs, road markings, other traffic aids, etc.) will also be carried out upon obtaining funding approval.

<sup>3</sup> Volume/capacity (v/c) ratio is an indicator of the traffic performance of a road. A v/c ratio equal to or less than 1.0 means that a road has sufficient capacity to cope with the volume of vehicular traffic and the traffic flow will be smooth. A v/c ratio above 1.0 indicates the onset of congestion. A v/c ratio above 1.2 indicates more serious congestion with traffic speeds deteriorating progressively as a result of further increase in traffic.

Based on the results of the traffic impact assessment, the projected v/c ratio during peak hours after the completion of the project will be significantly reduced (see table below for details). The journey time from Sai Kung town centre to Clear Water Bay Road during peak hours will be reduced from about 35 to 40 minutes to about 20 minutes<sup>4</sup>.

Major road section	V/C ratio during peak hours in 2037	
	Without the project	With the project
HH between Pak Wai and Pak Sha Wan	1.45	0.52
HH between Pak Sha Wan and Ta Ho Tun Road	1.45	0.51
HH between Ta Ho Tun Road and Yau Ma Po Street	1.51	0.54
Po Tung Road between Yau Ma Po Street and Fuk Man Road	1.59	0.54

6. At present, the sections of HH between Marina Cove and Sai Kung Town as well as Po Tung Road are single two-lane carriageways, with one Sai Kung bound lane and one Kowloon bound lane. In case of unforeseen incidents such as traffic accidents or emergency maintenance works which require temporary closure of one of the lanes, both Sai Kung bound and Kowloon bound traffic can only use the remaining lane, resulting in serious traffic congestion.

7. We need to provide one additional traffic lane in each bound of HH between Marina Cove and Sai Kung Town as well as Po Tung Road in order to relieve the existing traffic congestion and cope with the anticipated traffic growth, as well as to enhance the resilience of the concerned roads to cope with unforeseen /situation .....

<sup>4</sup> The neighbouring project entitled **703TH** "Dualling of Hiram's Highway between Clear Water Bay Road and Marina Cove and Improvement to Local Access to Ho Chung" was substantially completed in February 2021. Taking into account the anticipated traffic benefits from the proposed project, the journey time from Sai Kung town centre to Clear Water Bay Road will be reduced from about 45 minutes before the implementation of two projects to about 20 minutes.

situation. The project will alleviate traffic congestion in the Sai Kung District during holidays and peak travel seasons, and increase the District's capacity to receive visitors. We will also reprovide the public facilities affected by the road works, including sitting-out areas, public toilets and refuse collection points. To facilitate vehicles to change direction or make U-turns on the dual two-lane carriageway, three roundabouts will also be added along the route.

8. Apart from increasing the road capacity, we will also enhance the design of the road alignment of the HH and improve sightlines for road users. We will construct a pedestrian subway near Pak Sha Wan to provide the public with a safe barrier-free passage<sup>5</sup> that separates pedestrians from vehicles, upgrade the existing slopes on both sides of the road and construct retaining walls to enhance the overall road safety. In addition, to improve accessibility for pedestrians and those in need, we will widen most of the footpaths along the roads to two metre-wide as far as practicable, as well as provide three additional bus bays to improve the traffic flow along the roads. With this project, we will also take the opportunity to replace the aged watermains and drainage/sewerage pipes to enhance resilience of these utility infrastructures and reduce the risk of bursting of watermains and flooding. We will also install 12 sets of noise barriers along HH in the vicinity of Marina Cove, Che Keng Tuk Road and Chui Tong Road, as well as Tai Mong Tsai Road, to mitigate the impact of traffic noise on nearby residents. We will also upgrade a section of Po Tung Road and Tai Mong Tsai Road between Fuk Man Road and Wai Man Road to a single two-lane carriageway in accordance with current standards.

## FINANCIAL IMPLICATIONS

9. We estimate the capital cost of the project to be \$2,748.9 million in MOD prices, with breakdown as follows –

/(a) .....

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<sup>5</sup> As the project will widen the rather busy section of HH at Pak Sha Wan to enhance road accessibility (converting it from a single two-lane carriageway to a single four-lane carriageway), the proposed pedestrian subway will facilitate pedestrians to cross the widened HH to ensure the safety of both pedestrians and road users.

	<b>\$ million</b>	
	<b>(in MOD prices)</b>	
(a) Roads, drainage and waterworks		630.8
(i) Road and associated works	394.9	
(ii) Drainage works and waterworks	235.9	
(b) Retaining walls and slope works <sup>6</sup>		1,210.1
(i) Retaining walls	854.7	
(ii) Slope works	355.4	
(c) Pedestrian subway with two associated lifts		74.4
(d) Public lighting facilities		22.8
(e) Noise barriers		208.8
(f) Landscaping works <sup>7</sup>		113.4
(g) Consultants' fees for		18.8
(i) contract administration <sup>8</sup>	14.4	
(ii) management of resident site staff (RSS)	4.4	
(h) Remuneration of RSS		219.9
(i) Contingencies		249.9
	<b>Total</b>	<u>2,748.9</u>

10. We propose to engage consultants to undertake the contract administration and site supervision of the project. A breakdown of the estimates for consultants' fees and RSS costs by man-months is at **Enclosure 2**.

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<sup>6</sup> It includes removal or upgrading works of the existing slopes.

<sup>7</sup> It includes tree survey, retaining/transplanting/removal and planting works. Please refer to paragraph 31 for details.

<sup>8</sup> It includes monitoring of construction progress, contract management and management of accounts.

11. Subject to funding approval, we plan to phase the expenditure as follows –

Year	\$ million (in MOD prices)
2024 – 25	44.4
2025 – 26	219.9
2026 – 27	261.1
2027 – 28	298.0
2028 – 29	316.1
2029 – 30	384.8
2030 – 31	412.3
2031 – 32	329.9
2032 – 33	219.9
2033 – 34	152.5
2034 – 35	82.5
2035 – 36	27.5
	2,748.9

12. We have derived the MOD estimates on the basis of the Government's latest forecast on trend rate of change in the prices of public sector building and construction output for the period from 2024 to 2036. Subject to funding approval, we will deliver the design and construction works under the New Engineering Contract (NEC) form<sup>9</sup> with provision for price adjustment.

13. We estimate the annual recurrent expenditure arising from the project to be \$28.2 million.

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<sup>9</sup> NEC is a suite of contracts developed by the Institution of Civil Engineers, United Kingdom. It is a contract form that emphasises cooperation, mutual trust and collaborative risk management between contracting parties.

14. In the planning stage of the proposed works, we have optimised the design of the project, including the modification of certain road alignments to exclude certain existing domestic structures from the project boundary, so as to minimise land acquisition. Furthermore, HyD will carry out the laying works of sewers<sup>10</sup> and watermains<sup>11</sup> entrusted by the Drainage Services Department (DSD) and the Water Supplies Department under the works contract of this project in one go to avoid multiple contractors carrying out works on the same sites concurrently, which will enhance work efficiency, achieve synergy and minimise the impact on nearby residents.

15. The returned tender prices have been reflected in the estimated capital cost of the project. The latest estimate is lower than the preliminary estimate of \$3,208.9 million in MOD prices when the Panel on Transport of the Legislative Council (LegCo) was consulted in June 2023. The main reasons for the downward adjustment of the capital cost of the project are set out in **Enclosure 3**.

16. Compared with the neighbouring project entitled **703TH** “Dualling of Hiram’s Highway between Clear Water Bay Road and Marina Cove and Improvement to Local Access to Ho Chung”, the total length of the road sections involved in this project is about twice as long and we consider the cost of this project reasonable<sup>12</sup> after comparing the unit costs. A comparison of the unit costs of both projects is at **Enclosure 4**.

## PUBLIC CONSULTATION

17. Since 2013, HyD has consulted the Sai Kung District Council (SKDC) and key stakeholders along HH, Po Tung Road and Tai Mong Tsai Road on the project on multiple occasions to gauge the public’s views. Successive SKDCs /have .....

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<sup>10</sup> These include part of DSD’s **272DS** – Port Shelter sewerage, stage 2 project (for details please refer to the paper for **272DS**), and the construction of a total of about 450m long of twin sewage rising mains of 200mm in diameter along the section of HH between Pak Kong Road and Hong Kin Road.

<sup>11</sup> This refers to the construction of a total of about 790m long watermains of 200mm and 250mm in diameter along the section of HH between Marina Cove and Kau Sai Sun Tsuen.

<sup>12</sup> Drawing on the construction experience in completing the works of the neighbouring **703TH** project (e.g. geotechnical design under similar site conditions, construction techniques and resources employed etc.), the optimised unit cost of the project is lower than that of the **703TH** project.



have also been pursuing with the Government for many years for improvement of the concerned road sections of HH. In this connection, HyD has carried out a number of consultation activities, including local consultation sessions and public forums to update the public on the latest scheme of the project, and to listen to the views and concerns of the public. In formulating the proposed road scheme, HyD has taken into account the views expressed by the major stakeholders and optimised the design of the proposed works as far as possible, such as adopting a single four-lane carriageway at Pak Sha Wan to minimise the impact on Kwun Yum Temple, preserving heritage buildings such as Tin Hau Temple, Hip Tin Temple and the Pai Lau of Man Yee Wan New Village/Shu Tsui New Village to better respond to the needs of the public and minimise impacts on residents. HyD consulted SKDC on the project on 6 November 2018 and 2 July 2019, and obtained the support of SKDC.

18. The scheme and plan of the project were gazetted under the Roads (Works, Use and Compensation) Ordinance (Cap. 370) (“the Ordinance”) on 3 and 10 January 2020. Comments received during the gazettal period were mainly concerned about the necessity of the proposed works/diverging views over the design/potential impact during construction; the impact of the proposed works on the environment/cultural heritage and rural character; involvement of partial land resumption and clearance of land; and insufficient consultation. HyD has provided written responses to the comments and arranged meetings with the objectors to explain the objective and details of the project. In response to the comments, HyD has further revised the scope of works and the road scheme to optimise the alignment and the design of the project to reduce the extent of land to be resumed and cleared, as well as the impact on the concerned parties. An amendment scheme was gazetted on 20 and 27 November 2020.

19. The road scheme as well as the amendment scheme were subsequently submitted to the Chief Executive-in-Council for consideration. Having considered the views, the Chief Executive-in-Council authorised the project in accordance with the Ordinance. The relevant authorisation notice of the project was gazetted on 29 October and 5 November 2021.

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20. HyD has consulted the Advisory Committee on the Appearance of Bridges and Associated Structures (ACABAS)<sup>13</sup> on the preliminary aesthetic designs of the noise barriers, pedestrian subway and retaining walls of the project. HyD will further consult ACABAS upon completion of the detailed design of the project.

21. We consulted the LegCo Panel on Transport on 16 June 2023 on the proposed project. Members supported the submission of the funding proposal to the Public Works Subcommittee for consideration. We also submitted supplementary information to the LegCo Panel on Transport on 21 August 2023. Subsequently, we communicated with SKDC, the Sai Kung Area Committee and the Sai Kung Rural Committee in mid-2024 to listen to the views of the relevant stakeholders on the implementation of the project (such as further design details and the impact on the residents during construction period). Members looked forward to an early commencement of the project.

## ENVIRONMENTAL IMPLICATIONS

22. The project is not a designated project under Schedule 2 of the Environmental Impact Assessment Ordinance (Cap. 499). HyD has completed an Environmental Study (ES) and a Technical Note (TN) for the project which were agreed by the Director of Environmental Protection in January 2020 and September 2021 respectively. The ES and TN have concluded that with the implementation of appropriate mitigation measures including provision of noise barriers and low-noise road surfacing materials, the project will not cause adverse environmental impact.

23. To minimise the impact on the environment during construction and to ensure compliance with established standards and guidelines, HyD will implement suitable mitigation measures, including the use of quiet powered mechanical equipment, movable temporary noise barriers, regular water spraying  
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<sup>13</sup> The membership of ACABAS comprises representatives of the Hong Kong Institute of Architects, the Hong Kong Institution of Engineers, the Hong Kong Institute of Planners, Architectural Services Department, HyD, Housing Department, Civil Engineering and Development Department, and a representative from the architecture or relevant faculty of a local academic institution. It is responsible for vetting the design of bridges and other structures associated with the public highway system from the aesthetic and visual impact points of view.

at works sites and provision of wheel-washing facilities to minimise the noise impact and dust generation during construction. HyD will incorporate the mitigation measures recommended in the ES and TN in the relevant works contract and has already included in the project estimate the cost of implementation of necessary mitigation measures.

24. During the planning and design stages, HyD has considered the alignment, design and construction procedures of the proposed works with a view to reducing the generation of construction waste where possible. In addition, HyD will require the contractor to reuse inert construction waste (e.g. use of excavated materials for backfilling) on site or in other suitable construction sites as far as possible in order to minimise the disposal of inert construction waste at public fill reception facilities<sup>14</sup>. HyD will encourage the contractor to maximise the use of recycled or recyclable inert construction waste, as well as the use of non-timber formwork to further reduce the generation of construction waste.

25. At the construction stage, HyD 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. HyD will ensure that the day-to-day operations on site comply with the approved plan and will require the contractor to separate the inert portion from non-inert construction waste on site for disposal at appropriate facilities. HyD 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.

26. HyD estimates that the project will generate in total about 365 000 tonnes of construction waste. Of these, about 158 000 tonnes (43%) of inert construction waste will be reused on site while about 162 000 tonnes (45%) of inert construction waste will be delivered to public fill reception facilities for subsequent reuse. The remaining about 45 000 tonnes (12%) of non-inert construction waste will be disposed at landfills. The total cost of disposal of construction waste at /public .....

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<sup>14</sup> Public fill reception facilities are specified in Schedule 4 of the Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 354N). Disposal of inert construction waste in public fill reception facilities requires a licence issued by the Director of Civil Engineering and Development.

public fill reception facilities and landfill sites is estimated to be about \$20.5 million for the project (based on a unit charge rate of \$71 per tonne for disposal at public fill reception facilities and \$200 per tonne at landfills as stipulated in the Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 354N)).

## HERITAGE IMPLICATIONS

27. The project will not affect any heritage site, i.e. all declared monuments, proposed monuments, graded historic sites / buildings / structures, sites of archaeological interest, all sites / buildings / structures included in the new list of proposed grading items; and Government historic sites identified by the Antiquities and Monuments Office.

## LAND ACQUISITION

28. HyD has consulted relevant stakeholders on a number of occasions to collect the public's views and optimise the design of the project, with a view to better responding to the needs of the public and minimising the impact on residents. For example, the proposed widening works of Po Tung Road will mainly make use of the existing amenity areas for conversion into carriageways so as to minimise the extent of private land to be resumed as far as practicable. The project requires resumption of 58 private lots with a total area of about 11 830.5 square metres (m<sup>2</sup>) and clearance of Government land with a total area of about 178 069.5 m<sup>2</sup>. It is estimated that the land resumption and clearance will affect one domestic structure on private land and 14 domestic structures on Government land, involving 26 households with 42 persons. In addition, one old ancestral grave comprising a total area of about 16.1 m<sup>2</sup> and three urns have to be cleared. Eligible owners of the lots to be resumed will be offered compensation in accordance with the prevailing policies, while the affected households will be offered public housing (including Interim Housing) or ex-gratia allowance, where eligible, and the compensation arrangement has largely been finalised. There are 51 non-domestic structures on private agricultural land and 341 non-domestic structures on Government land to be cleared. Issues arising from the clearance of these structures will be dealt with in accordance with the prevailing policies. The cost of land resumption and clearance is estimated to be about \$311.26 million and will be charged to **Head 701 – Land Acquisition**. A breakdown of the land acquisition cost is at **Enclosure 5**.

## TRAFFIC IMPLICATIONS

29. The project will not cause significant traffic impact during construction, as HyD will maintain the existing number of traffic lanes during peak hours during construction of the project. Nevertheless, certain work procedures, such as heavy lifting operation in vicinity of the existing traffic lane, may require temporary road closures to protect the safety of road users and site personnel. HyD will schedule such operations to be carried out during off-peak hours as far as possible to minimise the impact of the works on road users. To facilitate the construction works, HyD will implement temporary traffic arrangements (TTA) and set up a traffic management liaison group to discuss and vet the TTA. This group comprises representatives from the contractor, the Hong Kong Police Force, the Transport Department and other relevant government departments. During the construction period, HyD will also display publicity boards on site, providing details of the TTA and the anticipated completion date of individual sections of works. In addition, HyD will establish a Community Liaison Group and maintain close liaison with the local community on further design details of the project as well as set up a telephone hotline for public enquiries.

## BACKGROUND INFORMATION

30. We commenced site investigation and preparation of tender documents for the project in April 2022, the cost of which was about \$27.7 million. It was funded by block allocation **Subhead 6100TX** “Highway works, studies and investigations for items in Category D of the Public Works Programme”. The site investigation helps finalise the scope and cost estimate of the project for seeking funding approval from the FC.

31. There are about 2 270 trees within the project boundary, among which about 100 trees will be preserved. In order to make way for carrying out the proposed road improvement works, the project will require the transplanting of about 25 trees to other locations within the project boundary; the remaining of about 2 145 trees were assessed to be unsuitable for transplanting according to the tree survey and will be felled (including 11 undesirable species). Among the trees

/mentioned .....

mentioned above, 20 trees of particular interest<sup>15</sup> will be affected, of which 12 are located on slopes or are unsuitable for transplanting due to their unsatisfactory form, size and structural conditions, while the remaining eight will be transplanted. A summary of trees of particular interest affected is provided at **Enclosure 6**. We will incorporate planting proposals as part of the project, including the planting of about 2 140 trees.

32. We estimate that the project will create about 350 jobs (280 for labourers and 70 for professional/technical staff), providing a total employment of about 29 990 man-months.

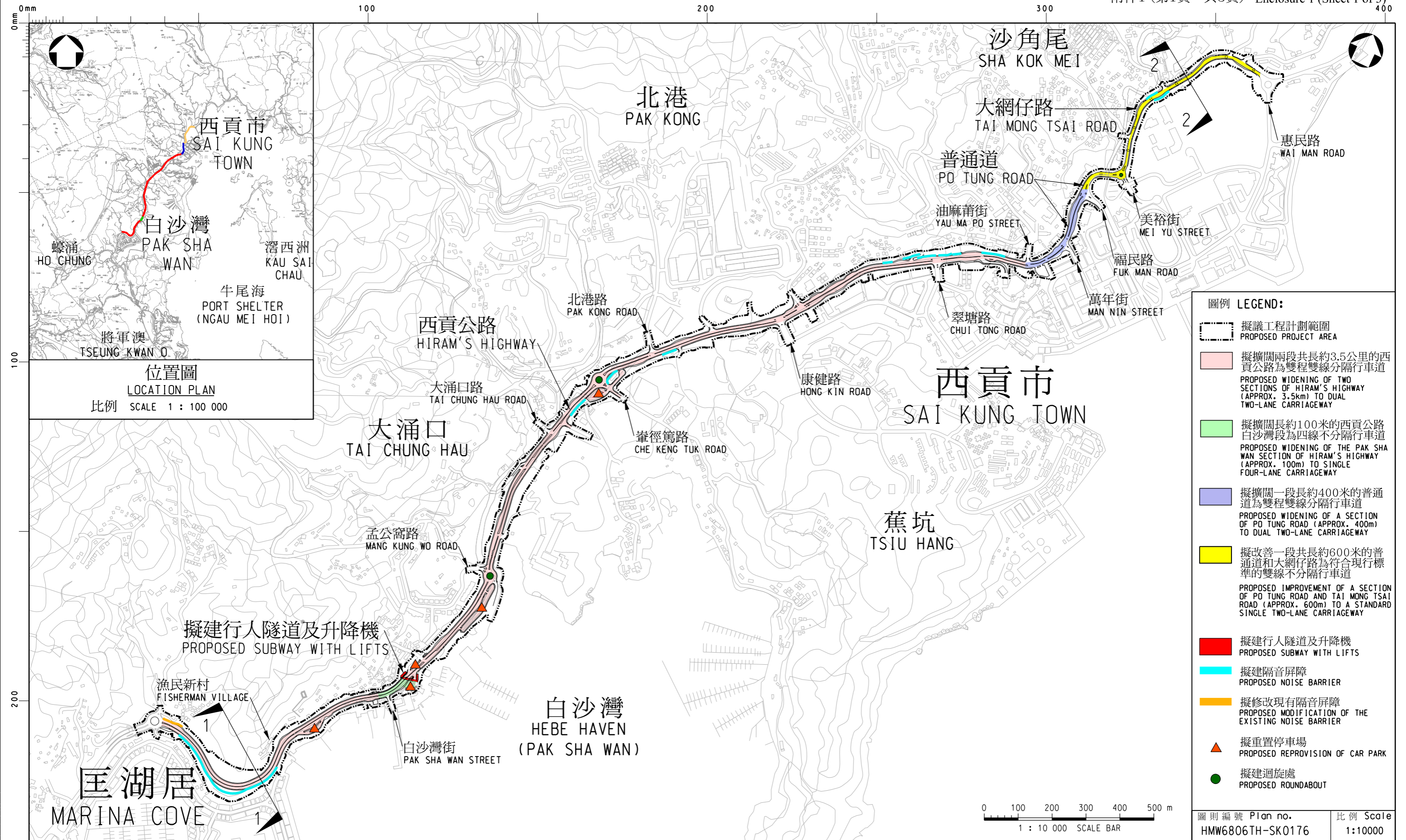
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## Transport and Logistics Bureau October 2024

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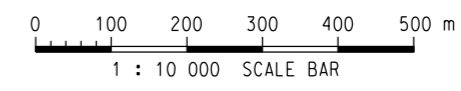
<sup>15</sup> Trees of particular interest are defined in paragraph 3.3.1 of the Guidelines for Tree Risk Assessment and Management Arrangement promulgated by the Development Bureau in 2023. Examples of trees of particular interest are listed as below -

- Old and Valuable Trees (OVTs) and trees that are potentially registrable in the Register of OVTs;
- Trees of 100 years old or above;
- Trees with trunk diameter equal to or exceeding 1 m (measured at 1.3 m above ground level), or with height/canopy spread equal to or exceeding 25 m;
- Stonewall trees or trees of outstanding form (taking account of overall tree sizes, shape and any special features);
- Rare tree species listed in “Rare and Precious Plants of Hong Kong” published by the Agriculture, Fisheries and Conservation Department;
- Endangered plant species protected under the Protection of Endangered Species of Animals and Plants Ordinance (Cap. 586);
- Tree species listed in the Forestry Regulations (Cap. 96A) under the Forests and Countryside Ordinance (Cap. 96);
- Well-known Fung Shui trees;
- Landmark trees with evidential records to support the historical or cultural significance of the trees;
- Trees which may arouse widespread public concerns; and
- Trees which may be subject to strong local objections on removal.

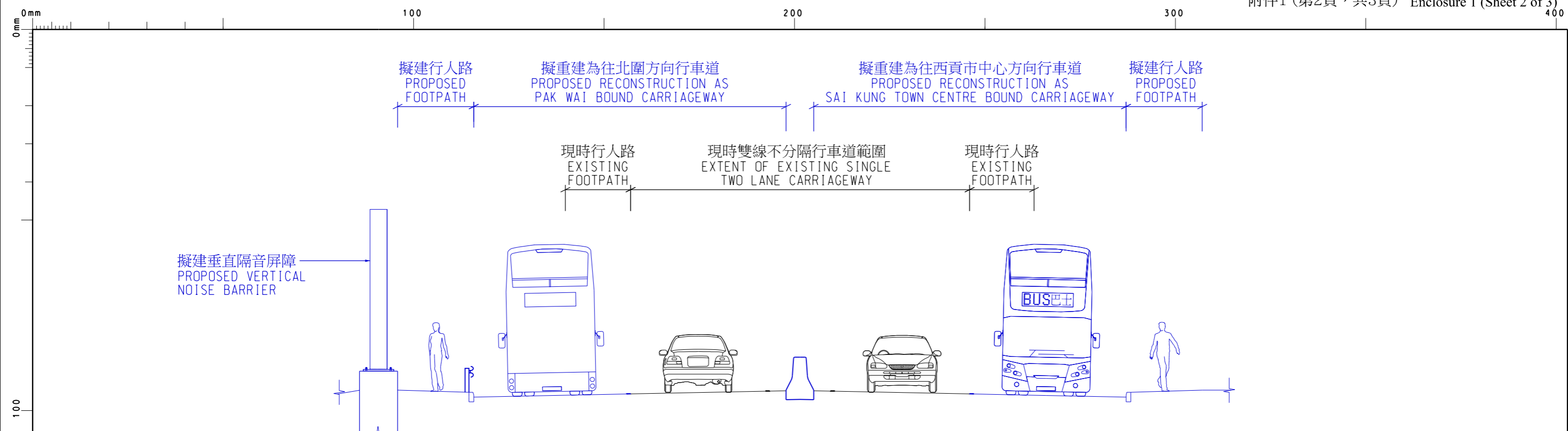


位置圖  
LOCATION PLAN  
比例 SCALE 1 : 100 000

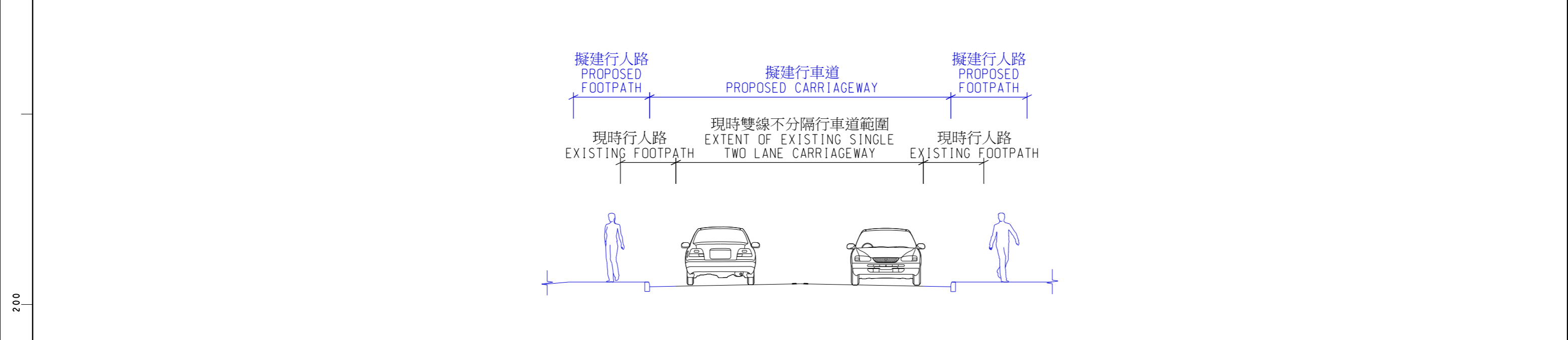
- 圖例 LEGEND:
- 擬議工程計劃範圍  
PROPOSED PROJECT AREA
  - 擬擴闊兩段共長約3.5公里的西貢公路為雙程雙線分隔行車道  
PROPOSED WIDENING OF TWO SECTIONS OF HIRAM'S HIGHWAY (APPROX. 3.5km) TO DUAL TWO-LANE CARRIAGEWAY
  - 擬擴闊長約100米的西貢公路白沙灣段為四線不分隔行車道  
PROPOSED WIDENING OF THE PAK SHA WAN SECTION OF HIRAM'S HIGHWAY (APPROX. 100m) TO SINGLE FOUR-LANE CARRIAGEWAY
  - 擬擴闊一段長約400米的普通道為雙程雙線分隔行車道  
PROPOSED WIDENING OF A SECTION OF PO TUNG ROAD (APPROX. 400m) TO DUAL TWO-LANE CARRIAGEWAY
  - 擬改善一段共長約600米的普通道和大網仔路為符合現行標準的雙線不分隔行車道  
PROPOSED IMPROVEMENT OF A SECTION OF PO TUNG ROAD AND TAI MONG TSAI ROAD (APPROX. 600m) TO A STANDARD SINGLE TWO-LANE CARRIAGEWAY
  - 擬建行人隧道及升降機  
PROPOSED SUBWAY WITH LIFTS
  - 擬建隔音屏障  
PROPOSED NOISE BARRIER
  - 擬修改現有隔音屏障  
PROPOSED MODIFICATION OF THE EXISTING NOISE BARRIER
  - 擬重置停車場  
PROPOSED REPROVISION OF CAR PARK
  - 擬建迴旋處  
PROPOSED ROUNDABOUT



圖則名稱 Drawing title	圖則編號 Plan no.	比例 Scale
工務計劃項目第806TH號 - 匡湖居至西貢市之間的西貢公路分隔車道工程 - 平面圖	HMW6806TH-SK0176	1:10000
PWP ITEM NO. 806TH - DUALLING OF HIRAM'S HIGHWAY FROM MARINA COVE TO SAI KUNG TOWN - LAYOUT PLAN	主要工程管理處 MAJOR WORKS PROJECT MANAGEMENT OFFICE © 版權所有 COPYRIGHT RESERVED	
		路政署 HONG KONG



切面 SECTION 1-1



切面 SECTION 2-2

圖則名稱 Drawing title

工務計劃項目第806TH號 - 匡湖居至西貢市之間的西貢公路分隔車道工程 - 切面圖

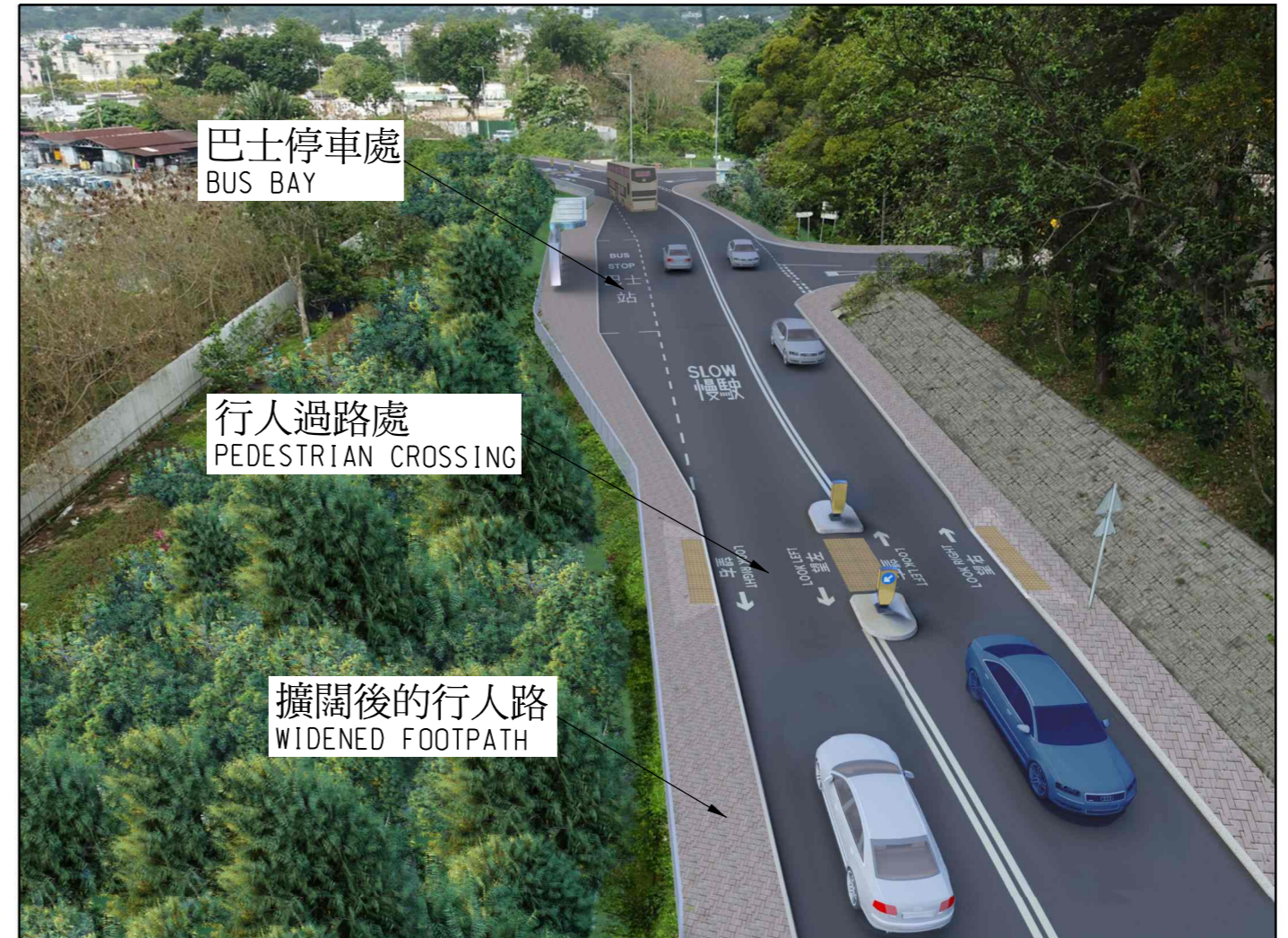
PWP ITEM NO. 806TH - DUALLING OF HIRAM'S HIGHWAY FROM MARINA COVE TO SAI KUNG TOWN - SECTIONS

圖則編號 Plan no. HMW6806TH-SK0177 比例 Scale N.T.S

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擬擴闊兩段共長約3.5公里的西貢公路及長約400米的普通道  
為雙程雙線分隔行車道  
PROPOSED WIDENING OF TWO SECTIONS OF HIRAM'S HIGHWAY (APPROX. 3.5km)  
AND A SECTION OF PO TUNG ROAD (APPROX. 400m) TO DUAL TWO-LANE CARRIAGEWAY

擬改善一段共長約600米的普通道和大網仔路  
為符合現行標準的雙線不分隔行車道  
PROPOSED IMPROVEMENT OF A SECTION OF PO TUNG ROAD  
AND TAI MONG TSAI ROAD (APPROX. 600m) TO A STANDARD SINGLE TWO-LANE CARRIAGEWAY

圖則名稱 Drawing title

工務計劃項目第806TH號 - 匡湖居至西貢市之間的西貢公路分隔車道工程 - 構思圖

PWP ITEM NO. 806TH - DUALLING OF HIRAM'S HIGHWAY FROM MARINA COVE TO SAI KUNG TOWN - ARTISTIC IMPRESSION

圖則編號 Plan no.  
HMW6806TH-SK0182 比例 Scale  
N.T.S

主要工程管理處  
MAJOR WORKS  
PROJECT MANAGEMENT OFFICE  
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 HIGHWAYS 路  
DEPARTMENT 政  
HONG KONG 署  
香港

**806TH – Dualling of Hiram’s Highway from Marina Cove to Sai Kung Town**

**Breakdown of the estimates of consultants’ fees and resident site staff costs  
(in September 2024 prices)**

		Estimated man- months	Average MPS* salary point	Multiplier (Note 1)	Estimated fee (\$ million)
(a) Consultants’ fee for contract administration (Note 2)	Professional	–	–	–	5.5
	Technical	–	–	–	6.2
				Sub-total	11.7 #
(b) Resident site staff (RSS) costs (Note 3)	Professional	575	38	1.6	85.8
	Technical	1813	14	1.6	96.9
				Sub-total	182.7
Comprising –					
(i) Consultants’ fees for management of RSS					3.6#
(ii) Remuneration of RSS					179.1#
				<b>Total</b>	<b>194.4</b>

\* MPS = Master Pay Scale

**Notes**

1. A multiplier of 1.6 is applied to the average MPS salary point to estimate the cost of RSS supplied by the consultants (as at now, MPS salary point 38 = \$93,255 per month and MPS salary point 14 = \$33,405 per month).
2. The consultants’ staff cost for contract administration is calculated in accordance with the existing consultancy agreement relating to the project. The construction phase of the assignment will only be executed subject to the Finance Committee’s approval to upgrade **806TH** to Category A.
3. The actual man-months and actual costs will only be known after completion of the construction works.

**Remarks**

The cost figures in this Enclosure are shown in constant prices to correlate with the MPS salary point of the same year. The cost figures marked with # are shown in money-of-the-day prices in paragraph 9 of the main text.

### **Main Reasons for Downward Adjustment in Capital Cost**

The Transport and Logistics Bureau consulted the Panel on Transport of the Legislative Council on the project on 16 June 2023. With reference to the cost of similar projects in the past and taking into account the site environment, conditions and constraints of the project, the preliminary estimate of the cost as stated in the paper submitted at that time was about \$3,208.9 million.

2. To enable the commencement of the works contract as soon as possible after obtaining funding approval from the Finance Committee, and to reflect the returned tender prices as far as possible in the Approved Project Estimate, the Highways Department (HyD) initiated parallel tendering for the design and construction works contract in September 2023. After careful evaluation of the technical proposals submitted by the tenderers, HyD considered there was room for further optimisation of the design and construction schemes, and hence reduced the capital cost of the project to around \$2,748.9 million (i.e. the estimated capital cost in the paper for discussion of the Public Works Subcommittee), which is about \$460.0 million lower than the original estimate. The key reasons are as follows -

<b>Major Price Adjustment Breakdown and Reasons</b>	<b>Amount of Downward Adjustment (\$ million)</b>
<p>I. <u>Geotechnical works for the widening of Hiram's Highway (HH) between Marina Cove and Sai Kung Town</u></p> <p>The widening works of HH between Marina Cove and Sai Kung Town require extensive geotechnical works, including retaining walls, slope works, earthworks and piling works, to be carried out along both sides of the above section of HH. However, these geotechnical works are highly difficult to carry out due to the very limited spaces within the project boundary, the proximity of village houses and shops, and the need to maintain existing traffic flow. According to the original estimate, the carrying out of these highly difficult works generally requires the contractor to implement complicated and extensive temporary traffic arrangements (TTA) to make sufficient spaces for the erection of temporary working platforms and temporary accesses, all while maintaining the existing lanes on both sides of the road and minimising impact on nearby premises as far as possible.</p> <p>After evaluating the technical proposals submitted by the tenderers, HyD considered it feasible to utilise a more</p>	254.7

<p align="center"><b>Major Price Adjustment Breakdown and Reasons</b></p>	<p align="center"><b>Amount of Downward Adjustment (\$ million)</b></p>
<p>diverse range of engineering design solutions, construction technology, resources (such as automated construction equipment) and with experiences of construction under similar site conditions to optimise the geotechnical works design and lower the capital cost of the relevant works. This includes adopting different forms of retaining walls, foundation pile design to reduce the working space needed and the amount of earthworks during construction. These schemes not only reduce the construction cost, but also effectively minimise the need for sizeable temporary working platforms and TTA, resulting in further savings.</p>	
<p>II. <u>Road, drainage and waterworks on HH and Po Tung Road</u></p> <p>As roads of about 4 km long will be widened from single two-lane to dual two-lane carriageway, extensive road works, including structures such as noise barriers and decks over drainage channels, as well as watermain, drain and sewer laying and other utility diversion works will be required on the busy HH and Po Tung Road. To ensure smooth traffic flow and maintain two of traffic lanes during peak hours, the extent of temporary road closure under the project would be very limited.</p> <p>After reviewing the skills and resources of the tenderers, HyD has further assessed the design and construction schemes of the above works and considered that by making use of more advanced construction technology and resources (such as smart construction machinery), the working space and time needed for the road, drainage and waterworks could be further compressed to a minimum. The alignment of watermains, sewers and drains were proposed in such a way to be compatible with the design and construction methods adopted in nearby structures and geotechnical works, in order to enable the use of such works as temporary support and more extensive use of the common trench for pipe and utility laying works. Compared with the conventional methods, HyD considered the optimised proposals technically feasible and could enhance construction efficiency as well as reduce the need</p>	<p align="center">123.3</p>

<p align="center"><b>Major Price Adjustment Breakdown and Reasons</b></p>	<p align="center"><b>Amount of Downward Adjustment (\$ million)</b></p>
<p>of works areas and the scale of delivery arrangements of construction materials, and hence lower the construction cost.</p>	
<p>III. <u>Other associated works, remuneration of resident site staff (RSS) and contingencies, etc.</u></p> <p>Factoring in the latest conditions above and cost adjustment, the cost of other associated works, remuneration of RSS and contingencies have been adjusted accordingly.</p>	<p align="center">82.0</p>
<p align="right"><b>Total:</b></p>	<p align="center"><b>460.0</b></p>

**Comparison of Unit Costs between 806TH and 703TH**

Road, drainage and waterworks		
PWP nos.	<b>806TH</b>	<b>703TH</b>
Unit cost (based on single traffic lane)	About \$37,000 per metre (m)	About \$39,000 per m
Retaining walls and slope works		
PWP nos.	<b>806TH</b>	<b>703TH</b>
Unit cost (based on single traffic lane)	About \$70,000 per m	About \$87,000 per m
Others (including public lighting facilities, noise barriers, landscaping works)		
PWP nos.	<b>806TH</b>	<b>703TH</b>
Unit cost (based on single traffic lane)	About \$20,000 per m	About \$29,000 per m

Note: **703TH** was upgraded to Category A in July 2015. The above unit costs are based on the money-of-the-day (MOD) prices of **703TH** and **806TH**.

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**Breakdown of land acquisition cost**

		<b>\$ million</b>
<b>(I) Estimated cost for land compensation</b>		272.38
<b>(II) Estimated cost for land clearance</b>		10.58
(a) Ex-gratia allowances (EGAs) for domestic occupiers (e.g. EGA for permitted occupiers of licenced structures and surveyed squatters affected by clearance, domestic removal allowance, etc.)	1.97	
(b) Other EGAs (e.g. crop compensation, disturbance allowance for cultivators, EGA for miscellaneous permanent improvements to farms, EGA for shops, workshops, godowns, slipways, schools, churches and ornamental fish breeding undertakings, EGA for open-air/outdoor business undertakings, EGA for clearance of graves, urns (“Kam Taps”) and shrines and EGA for “Tun Fu” ceremonial fees, etc.)	8.61	
<b>(III) Interest and contingency payment</b>		28.30
<b>Total</b>		<b>311.26</b>

The above estimated land acquisition cost is based on the ex-gratia compensation rates and compensation valuation as at October 2023.

**806TH – Dualling of Hiram's Highway from Marina Cover to Sai Kung Town  
Summary of Trees of Particular Interest Affected**

Tree ref. no <sup>1</sup>	Species		Measurements			Amenity Value <sup>3</sup>	Form	Health Condition	Structural Condition	Suitability for Transplanting <sup>4</sup>		Conservation Status <sup>5</sup>	Recommendation (Retain/ Transplant/ Remove)	Maintenance department to provide comments on Tree Preservation and Removal Proposal	Additional Remark
	Scientific Name	Chinese Name	Height (m)	DBH <sup>2</sup> (mm)	Crown Spread (m)	(High/ Medium / Low)	(Good/ Average/ Poor)			(High/ Medium / Low)	Remark <sup>6</sup>				
HH2-T0950	<i>Aquilaria sinensis</i>	土沉香	7	150	3	Medium	Average	Average	Average	Medium	-	Cap. 586 ; RPPHK ; CPRDB: V ; IUCN: VU	Transplant	Lands Department (LandsD)	Tree of Particular Interest (TPI) (rare and precious species), on gentle slope
HH2-T0955	<i>Aquilaria sinensis</i>	土沉香	6	95	3	Medium	Average	Average	Average	Medium	-	Cap. 586 ; RPPHK ; CPRDB: V ; IUCN: VU	Transplant	LandsD	TPI (rare and precious species), on gentle slope
HH2-T0995	<i>Aquilaria sinensis</i>	土沉香	5	110	3	Medium	Average	Average	Average	Medium	-	Cap. 586 ; RPPHK ; CPRDB: V ; IUCN: VU	Transplant	LandsD	TPI (rare and precious species), slightly crooked trunk, on gentle slope
HH2-T1040	<i>Aquilaria sinensis</i>	土沉香	9	105	6	Medium	Average	Average	Average	Low	3, 4	Cap. 586 ; RPPHK ; CPRDB: V ; IUCN: VU	Fell	LandsD	TPI (rare and precious species), on slope
HH2-T1059	<i>Aquilaria sinensis</i>	土沉香	12	233	4	Medium	Average	Average	Average	Low	3, 4	Cap. 586 ; RPPHK ; CPRDB: V ; IUCN: VU	Fell	LandsD	TPI (rare and precious species), on slope, co-dominant branches
HH2-T1099	<i>Aquilaria sinensis</i>	土沉香	6	95	1.5	Medium	Average	Average	Average	Medium	-	Cap. 586 ; RPPHK ; CPRDB: V ; IUCN: VU	Transplant	LandsD	TPI (rare and precious species), on gentle slope
HH2-T1340	<i>Cinnamomum camphora</i>	樟	12	1050	13	Medium	Average	Average	Average	Medium	-	-	Transplant	Leisure and Cultural Services Department (LCSD)	Tree of Particular Interest (diameter at breast height ≥ 1m)
HH2R-T003	<i>Aquilaria sinensis</i>	土沉香	9	180	3	Medium	Average	Average	Average	Low	3, 4	Cap. 586 ; RPPHK ; CPRDB: V ; IUCN: VU	Fell	LandsD	TPI (rare and precious species), on slope, low branching
HH2R-T025	<i>Aquilaria sinensis</i>	土沉香	5	120	3	Medium	Average	Average	Average	Low	4	Cap. 586 ; RPPHK ; CPRDB: V ; IUCN: VU	Fell	Highways Department (HyD)	TPI (rare and precious species), on steep slope (~45 degrees)
HH2R-T026	<i>Ormosia pachycarpa</i>	葶莢紅豆	8.5	250	5	Medium	Average	Average	Average	Low	3, 4	RPPHK	Fell	HyD	TPI (rare and precious species), on steep slope (~60 degrees)
HH2R-T029	<i>Aquilaria sinensis</i>	土沉香	6.5	180	4	Medium	Average	Average	Average	Low	4	Cap. 586 ; RPPHK ; CPRDB: V ; IUCN: VU	Fell	LandsD	TPI (rare and precious species), on steep slope (~40 degrees)
HH2R-T031	<i>Aquilaria sinensis</i>	土沉香	12	111.8	3.5	Medium	Average	Average	Average	Low	3, 4	Cap. 586 ; RPPHK ; CPRDB: V ; IUCN: VU	Fell	LandsD	TPI (rare and precious species), on slope
HH2R-T036	<i>Aquilaria sinensis</i>	土沉香	9	180	2.5	Medium	Average	Average	Average	Medium	-	Cap. 586 ; RPPHK ; CPRDB: V ; IUCN: VU	Transplant	LandsD	TPI (rare and precious species), on gentle slope
T703	<i>Aquilaria sinensis</i>	土沉香	9	143	3	Medium	Poor	Average	Average	Low	2, 3, 4	Cap. 586 ; RPPHK ; CPRDB: V ; IUCN: VU	Fell	LandsD	TPI (rare and precious species), crooked trunk, on slope
T726	<i>Aquilaria sinensis</i>	土沉香	7	134	2	Medium	Poor	Average	Average	Low	2, 4	Cap. 586 ; RPPHK ; CPRDB: V ; IUCN: VU	Fell	HyD	TPI (rare and precious species), imbalanced crown, on steep slope (~60 degrees)
T727	<i>Aquilaria sinensis</i>	土沉香	7	156	2	Medium	Poor	Average	Average	Low	2, 4	Cap. 586 ; RPPHK ; CPRDB: V ; IUCN: VU	Fell	HyD	TPI (rare and precious species), codominant branches, imbalanced crown, on slope



Tree ref. no <sup>1</sup>	Species		Measurements			Amenity Value <sup>3</sup>	Form	Health Condition	Structural Condition	Suitability for Transplanting <sup>4</sup>		Conservation Status <sup>5</sup>	Recommendation (Retain/ Transplant/ Remove)	Maintenance department to provide comments on Tree Preservation and Removal Proposal	Additional Remark
	Scientific Name	Chinese Name	Height (m)	DBH <sup>2</sup> (mm)	Crown Spread (m)	(High/ Medium / Low)	(Good/ Average/ Poor)			(High/ Medium / Low)	Remark <sup>6</sup>				
T731	<i>Ormosia pachycarpa</i>	茸莢紅豆	7	122	2	Medium	Average	Average	Average	Medium	-	RPPHK	Transplant	LandsD	TPI (rare and precious species), on slope
T732	<i>Ormosia pachycarpa</i>	茸莢紅豆	10	165	3	Medium	Average	Average	Average	Low	3, 4	RPPHK	Fell	LandsD	TPI (rare and precious species), on slope
T735	<i>Aquilaria sinensis</i>	土沉香	7	108	2	Medium	Average	Average	Average	Medium	-	Cap. 586 ; RPPHK ; CPRDB: V ; IUCN: VU	Transplant	LCSD	TPI (rare and precious species), on slope
T736	<i>Aquilaria sinensis</i>	土沉香	10	230	3	Medium	Poor	Average	Average	Low	3, 4	Cap. 586 ; RPPHK ; CPRDB: V ; IUCN: VU	Fell	LCSD	TPI (rare and precious species), bent trunk, on slope

## Remarks:

- (1) There are no trees within site boundary listed in the Register of Old and Valuable Trees.
- (2) DBH of a tree refers to its diameter at breast height (i.e. measurement at 1.3 m above ground level), and is measured in accordance with Agriculture, Fisheries and Conservation Department (AFCD) Nature Conservation Practice Note No.2 “Measurement of Diameter at Breast Height (DBH)”.
- (3) Amenity value of the tree is assessed by its functional values for shade, seasonal interest, shelter screening, reduction of pollution and noise and also its fung shui significance, and classified into the following categories:
  - High: important trees which should be retained by adjusting the design layout accordingly.
  - Medium: trees that are desirable to be retained in order to create a pleasant environment, which includes healthy specimens of lesser importance than “High” trees.
  - Low: trees that are dead, dying or potentially hazardous and should be removed.
- (4) Assessment has taken into account conditions of an individual tree at the time of survey (including health, structure, age and root conditions), site conditions (including topography and accessibility), and intrinsic characters of tree species (survival rate after transplanting).
- (5) Conservation status is based on the rarity and protection status of individual species under relevant ordinances in Hong Kong, such as –
  - RPPHK - Species included in AFCD publication “Rare and Precious Plants of Hong Kong (2003)”;
  - Cap. 586 - Native plants listed in Protection of Endangered Species of Animals and Plants Ordinance, Cap. 586;
  - Cap. 96 - Species scheduled under Forestry Regulations, Cap. 96 subsidiary legislation;
  - IUCN: VU - Species of “Vulnerable” under IUCN Red List of Threatened Species; and
  - CPRDB: V - Species of “Vulnerable (V)” in China Plant Red Data Book.
- (6) Key to considerations for transplanting suitability –
  1. Trees of low amenity value;
  2. Trees with poor form/health/structural condition;
  3. Irrecoverable form after transplanting (e.g. transplanting requires substantial crown and root pruning); and
  4. Trees grown under poor conditions which have limited the formation of proper root ball necessary for transplanting (e.g. on steep slope, close to utilities, close to other trees).