

**HEC Sub-committee on
Wan Chai Development Phase II Review**

Tenth Meeting

Date : 9 March 2006 (Thursday)

Time : 2:30 p.m.

Venue: Conference Room, 15/F, North Point Government Offices,
333 Java Road, North Point.

Agenda

1. Confirmation of minutes of last meeting
2. Matters arising
3. Progress report on HER [Paper No. WD 1/2006]
4. Progressing from Envisioning Stage to Realization Stage [Paper No. WD 2/2006]
5. Discussion paper on deep tunnel option [Paper No. WD 3/2006]
6. Discussion paper on inland alignment [Paper No. WD 4/2006]
7. Discussion papers on slip roads [Paper No. WD 5/2006]
8. Discussion paper on “no-reclamation” alignments for the Trunk Road [Paper No. WD 6/2006]
9. Any other business

Secretariat,
HEC Sub-committee on
Wan Chai Development Phase II Review
March 2006

**HEC Sub-committee on
Wan Chai Development Phase II Review**

**Progress Report on
Harbour-front Enhancement Review -
Wan Chai, Causeway Bay and Adjoining Areas (HER)**

1. This progress report covers the period between the ninth and the tenth meetings of the Sub-committee on Wan Chai Development Phase II Review (Sub-committee), that is, from 12 December 2005 to 8 March 2006.
2. In accordance with the directive of the Sub-committee meeting of 12 December 2005, the HER Task Force considered the third draft of the report for the Envisioning Stage of HER at the meeting held on 20 December 2005. Members' comments on the draft were considered in detail. The meeting agreed that the fourth draft of the report, with all the agreed changes incorporated, should be circulated to all Sub-committee members for endorsement.
3. The fourth draft of the report was circulated to all Sub-committee members on 4 February 2006. In the Extended Task Force meeting held on 14 February 2006, members suggested adding to the report a "Foreword" and an "Appendix" summarizing those matters beyond the ambit of the Wan Chai Development Phase II Review but considered appropriate for further consideration by HEC.
4. As the follow-up to discussion of the Sub-committee at the meeting held on 12 December 2005, the Consultant submitted four discussion papers, on the inland alignment road concept, the deep tunnel concept and the slip roads respectively, to the HER Task Force for consideration at the Extended Task Force meeting held on 14 February 2006. Members concluded that the discussion papers should be considered further at the coming Sub-committee meeting.

**HEC Sub-committee on
Wan Chai Development Phase II Review**

**Harbour-front Enhancement Review -
Wan Chai, Causeway Bay and Adjoining Areas (HER)
Progressing from Envisioning Stage to Realization Stage**

Introduction

1. At the request of the Town Planning Board (TPB) and in the light of the judgment of the Court of Final Appeal (CFA) of 9 January 2004 on reclamation, the Government commenced a planning and engineering review on Wan Chai Development Phase II (WDII Review) to ensure full compliance with the requirements of the Protection of the Harbour Ordinance (PHO) and the CFA judgment. The WDII Review will provide input for TPB to reconsider the draft Wan Chai North Outline Zoning Plan (OZP) and the objections to it in accordance with the CFA judgment.
2. To advise the Government on the WDII Review, the Harbour-front Enhancement Committee (HEC) has set up a Sub-committee on WDII Review (Sub-committee).
3. The Government has accepted the recommendation of the HEC to adopt an enhanced public participation approach in the Review. To achieve this, the Sub-committee initiated the HER project under its steer and in parallel with the WDII Review. Results of the HER project will provide input to the WDII Review.
4. The HER project is designed to enhance public participation in the WDII Review. Its objectives are to achieve a socially, environmentally and economically sustainable harbour-front at Wan Chai, Causeway Bay and adjoining areas, and to satisfy the planning, transport and infrastructural needs.
5. The HER project comprises the following three stages with enhanced public participation at each and every stage.

- (a) The Envisioning Stage – The purpose is to engage the community at an early stage to solicit their visions on the types of harbour-front developments they aspire for at Wan Chai, Causeway Bay and the adjoining areas, while acknowledging the opportunities available and the constraints for development. A preliminary list of sustainability principles and indicators will be compiled at this stage for further discussion and agreement by the public.
 - (b) The Realization Stage – Based on the findings of the Envisioning Stage, Concept Plan(s) will be developed for evaluation using the agreed sustainability principles and indicators with a view to arriving at a consensus on the preliminary development proposals.
 - (c) The Detailed Planning Stage – Based on the consensus arrived at in the Realization Stage, a Recommended Outline Development Plan (RODP) will be drawn up, and a draft revised OZP will be prepared in accordance with the statutory requirements and procedures of the Town Planning Ordinance.
6. The intention is to complete the HER project within ten months; three months for the Envisioning Stage, four months for the Realization Stage and three months for the Detailed Planning Stage. This intention was stated in the public engagement kit for the Envisioning Stage.

The Envisioning Stage

7. To stimulate public input, a public engagement kit for the Envisioning Stage was prepared setting out the background and the constraints and opportunities for harbour-front enhancement at Wan Chai, Causeway Bay and the adjoining areas.
8. The HER collaborators, TPB, relevant District Councils (DCs) and Legislative Council (LegCo) were consulted on the draft public engagement kit in April 2005 before the kit was actually published. The public engagement kit and other relevant materials were uploaded onto the HEC website (<http://www.harbourfront.org.hk>).
9. Five public forums, two community design charrettes and opinion surveys were convened during May to July 2005.

10. While there was some consensus on harbour-front enhancement, views on the need for the the Central-Wan Chai Bypass(CWB) were diverse. To address that issue, the Sub-committee appointed a Transport Expert Panel comprising leading local and overseas experts in the transport and planning fields to review and make recommendations on the sustainable transport planning for the northern shore of Hong Kong Island including the necessity of the CWB. The Sub-committee also convened an Expert Panel Forum on Sustainable Transport Planning and Central-Wan Chai Bypass on 3 September 2005 to provide an opportunity for the Expert Panel Members to discuss the issue with the public.
11. The Expert Panel issued their report in late October 2005. Among the package of measures recommended, the Expert Panel supports the construction of the CWB to improve the reliability of the road network and the two sets of slip roads to magnify the benefits of the CWB. The Sub-committee endorsed the report at the meeting held on 12 December 2005. The Expert Panel report and submissions by Government and the public to the Expert Panel were uploaded onto the HEC website (<http://www.harbourfront.org.hk>).
12. Ideas and proposals received from the public during the Envisioning Stage were reported and consolidated by the Consultants at a Consolidation Forum convened on 12 November 2005. The Consultants' presentation at the Consolidation Forum has been uploaded onto the HEC website (<http://www.harbourfront.org.hk>).
13. Preparation of the report for the Envisioning Stage is at an advanced stage, and can be endorsed by the Sub-committee subject to the addition of a foreword and an appendix differentiating those ideas and proposals to be taken into account in the WDII Review from those to be followed up by the HEC separately. The latter ones will be highlighted in the appendix for information of the public. When completed, the Envisioning Stage report will also be uploaded to the HEC website.
14. With the completion of the Envisioning Stage, the HER project will now progress to the Realization Stage. The following paragraphs set out in broad terms the activities and time frame for the Realization Stage activities for agreement by the Sub-committee.

Realization Stage

15. The public engagement activities of the Envisioning Stage were well received by the public in particular by the key stakeholders as providing a platform for thorough exchange of views, rational discussions and consensus building. Amongst those took part in the process, the TPB and relevant DCs have expressed the wish of being fully engaged at the subsequent stages of the project.
16. TPB, via the letter dated 22 February 2006 from the Secretary, has requested for a briefing by the Sub-committee on the consolidated views collected during the Envisioning Stage of the HER project including views on the Central-Wan Chai Bypass and the harbour enhancement proposals as well as the Sub-committee's work plan for the subsequent stages.
17. To keep TPB, as well as DCs and other stakeholders up-to-date on the development of the project, it is recommended that the Sub-committee should, based on the Consultants' presentations at the Consolidation Forum with appropriate refinements to reflect the subsequent discussions at the Sub-committee, commence the engagement of TPB, DCs, LegCo, HER collaborators, professional institutions and other stakeholders by making presentations to them with the concerned Government departments and the Consultants.
18. The presentations will be for stimulation of further thought and discussions on the Consultants' findings and the Sub-committee's views. The Sub-committee can then analyze the outcome of this further round of public engagement for providing steer to the Consultants on the Concept Plan preparation work.
19. In parallel to the further public engagement process, the Sub-committee can continue with the consideration of the Consultants' findings with the aim of adhering to the time frame of completing the Realization Stage by June 2006.
20. A tentative schedule of the Realization Stage activities is set out below for members' consideration:

Date	Activities
end March to end April	Sub-committee to engage TPB, Wan Chai, Eastern, Southern and Central & Western DCs, LegCo, HER Collaborators and professional institutions.
end March to end April	Sub-committee to further consider and discuss on Consultants' findings.
May	Consultants to complete necessary preparation works as advised. Sub-committee to roll out PR actions and invitations for Realization Stage workshops and town hall meeting.
June	Sub-committee to conduct Realization Stage workshops and town hall meeting.
end June	Sub-committee to receive report by Consultants on further public engagement activities.

Advice Sought

21. Members are requested to consider and endorse the recommended approach and time schedule of the Realization Stage as described above.

Secretariat,
HEC Sub-committee on WDII Review
March 2006

Consolidation of Harbour-front & Trunk Road Ideas

Discussion Paper

Deep Tunnel Option

1 Introduction

- 1.1 The Sub-committee on Wan Chai Development Phase II Review of the Harbour-front Enhancement Committee convened a “Envisioning Stage – Consolidation Forum” to conclude the Envisioning Stage of the “Harbour-front Enhancement Review – Wan Chai, Causeway Bay and Adjoining Areas” (HER) on 12 November 2005.
- 1.2 The aim of the forum was to share with the public the comments and proposals received during the public engagement activities held from May to July 2005 for the Envisioning Stage of HER. Opportunities have been taken to involve the public in consolidating these views before proceeding with the preparation of the Concept Plans for the development and enhancement of the harbour-front of Wan Chai, Causeway Bay and the adjoining areas. In consolidating the various ideas and views put forward by the public in the Envisioning Stage, which will be taken forward in the development of Concept Plans for the project, some of the harbour-front enhancement and trunk road ideas presented during the consultation process are considered not worthwhile to be pursued any further. These ideas were raised for discussion in the Consolidation Forum.
- 1.3 Included in the Trunk Road ideas considered not worthwhile to be pursued any further is a Trunk Road option involving a deep bored tunnel to North Point. It has been proposed not to further develop this option in moving forward to the preparation of concept plans in the next stage of the WDII project.
- 1.4 This discussion paper elaborates on the reasons why the deep bored tunnel option should not be further pursued, specifically in relation to the extent of and need for reclamation required for this option when compared to other tunnel options.

2 The Deep Tunnel Option

- 2.1 The deep tunnel option starts off as shallow cut-and-cover tunnel, in reclamation, at the connection with the Trunk Road tunnel constructed under Central Reclamation Phase III (CRIII) and stays in cut-and-cover tunnel through the HKCEC water channel and along the Wan Chai shoreline, similar to all other Trunk Road options. But for this option, the Trunk Road alignment then drops down to a sufficiently deep level, and changes to bored tunnel, to pass beneath the existing Cross Harbour Tunnel (CHT) and beneath the proposed Shatin to Central Link (SCL) tunnels, before rising up along the North Point shoreline to connect with the existing elevated Island Eastern Corridor (IEC).
- 2.2 The deep tunnel would be constructed by tunnel boring machine (TBM) down to a depth below –50mPD. This is so as to pass at sufficient depths below the CHT and the SCL tunnels, to minimise ground movement and potential disturbance to these essential infrastructure. The tunnel would then rise from this depth over a considerable distance

(governed by maximum gradient limitations) before connecting with the existing IEC at around the location of the North Point Ferry Piers. As the tunnel rises towards the seabed, and ground cover becomes insufficient for the TBM construction, the form of construction would change to cut-and-cover tunnel, with associated reclamation to facilitate this construction along the North Point shoreline.

2.3 Two of the major issues associated with this deep tunnel option are:

- (i) The longer length of the Trunk Road cut-and-cover tunnel along the North Point shoreline, all the way to the connection with the IEC at the North Point Ferry Piers, results in extensive reclamation along this part of the shoreline.
- (ii) Slip Road 8 (from Victoria Park Road to Trunk Road westbound) cannot join the mainline Trunk Road tunnel in Causeway Bay, as a connection from the ground level Victoria Park Road to the bored tunnel at this deep level will exceed maximum permissible tunnel gradients.

2.4 Omitting Slip Road 8 for the deep tunnel option means that this scheme will not meet all the functional requirements of the Trunk Road and, as such, the deep tunnel option does not perform as well as other tunnel options that have been proposed.

2.5 However, it is the issue of reclamation, and whether it is unnecessarily extensive, that is the key concern in this instance, particularly in light of the Court of Final Appeal (CFA) ruling on reclamation in relation to the Protection of the Harbour Ordinance (PHO), which requires the minimisation of reclamation when examining alternatives for the Trunk Road. This reclamation issue is the focus of this paper.

3 Extent of Reclamation for the Deep Tunnel Option

3.1 As noted in para 2.1, reclamation will be required at the connection with CRIII, through the HKCEC water channel and along the Wan Chai shoreline. This area of reclamation is common to all tunnel schemes. Reclamation is not required through the Causeway Bay Typhoon Shelter (CBTS) for the deep tunnel option, but is also not required for the permanent works of alternative tunnel options such as the 'Consolidated Harbour-front and Trunk Road Tunnel Idea', for instance.

3.2 The area of concern when comparing the deep tunnel option against other tunnel options is along the North Point shoreline, where the deep tunnel rises towards the seabed and, as the ground cover to the tunnel reduces, the form of construction needs to change from bored tunnel to cut-and-cover tunnel (in reclamation).

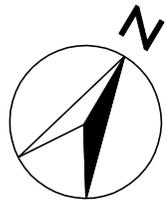
3.3 The more extensive reclamation along the North Point shoreline is not in itself a technical problem, but, when examining feasible and acceptable schemes, the need to minimise reclamation and, where reclamation is required, to fully justify its extent, is an essential aspect of this project. If there are feasible alternatives that require a lesser extent of reclamation, they should be pursued instead.

3.4 **Figure 1** shows the layout of a deep bored tunnel option in the area along the North Point shoreline, where it rises up to connect with the elevated IEC, and the extent of reclamation required in this area for the scheme.

- 3.5 **Figure 2** shows the layout and extent of reclamation of an alternative tunnel option which rises to connect to the IEC immediately to the west of the CBTS. The more westerly connection with the IEC for this option, immediately outside the CBTS rather than at the North Point Ferry Piers, is made possible by the shallower depth of the cut-and-cover Trunk Road tunnel through the typhoon shelter, where it lies below the seabed level but not at the deep level required for bored tunnel construction.
- 3.6 In examining the extent of reclamation, as can be seen from Figure 2, the alternative cut-and-cover tunnel scheme, rising up to connect with the IEC, can make good use of the existing land beneath and along the north side of the IEC, in the area immediately to the east of the typhoon shelter. As a result, this scheme requires a lesser extent of reclamation than the deep tunnel option which requires a wider and therefore greater area of reclamation due to the more set-back shoreline at that location.
- 3.7 Measurement of the extent of reclamation along the North Point shoreline for these two tunnel options indicates that their approximate reclamation areas are:
- deep tunnel option, 14ha
 - alternative tunnel option, 4ha.

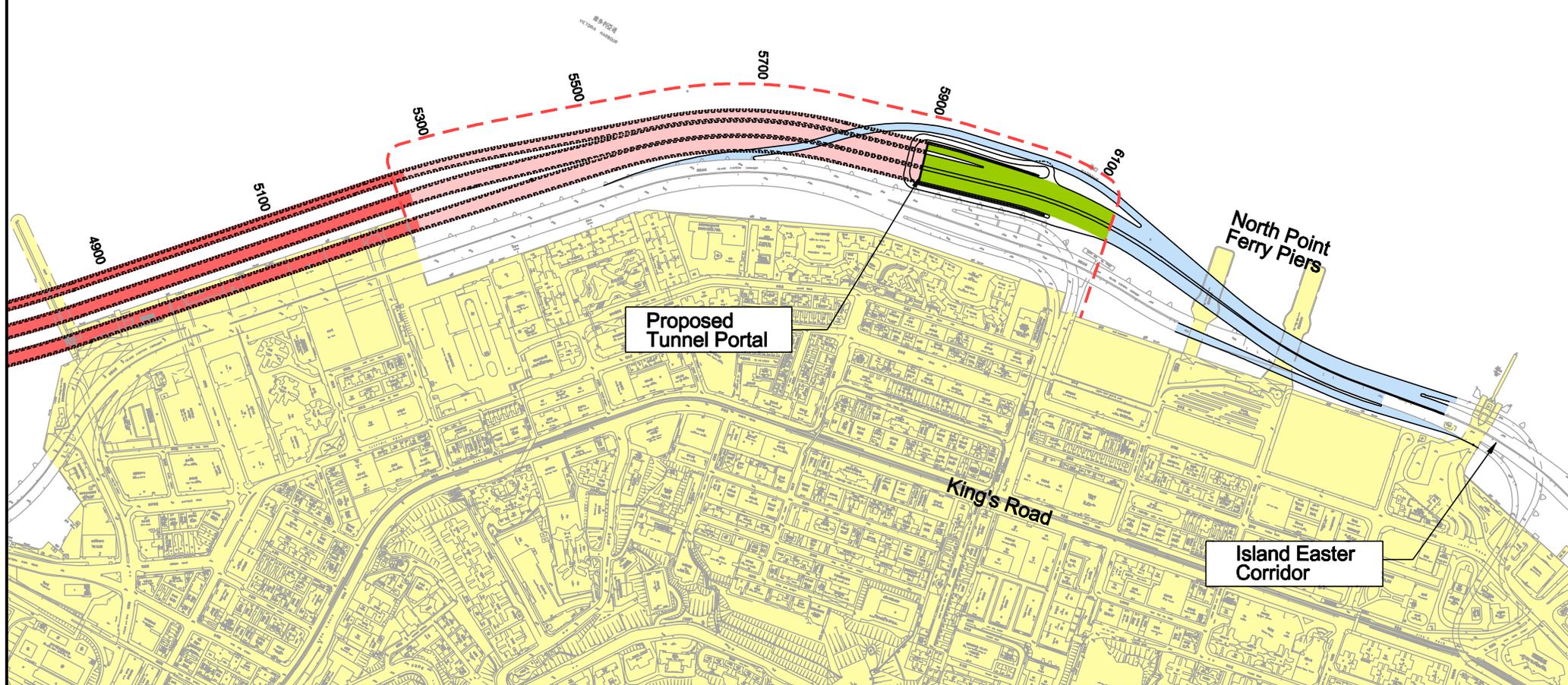
4 Conclusion

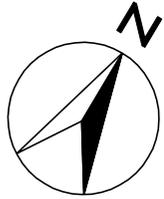
- 4.1 The deep bored tunnel option requires a greater area of reclamation along the North Point shoreline than the alternative tunnel option with a more westerly connection with the IEC.
- 4.2 Moreover, the deep bored tunnel option cannot perform as well as the alternative tunnel option, due to its deficiency in providing the Slip Road 8 connection.
- 4.3 The reclamation required for the deep tunnel option appears unnecessarily extensive; in the light of the CFA ruling, it must be concluded that, as the deep tunnel option will result in a greater area of reclamation than an alternative available tunnel option, and as in any event the deep tunnel option does not perform as well as the alternative tunnel option, there is no justification or overriding need to continue to pursue this deep tunnel option.



Legend :

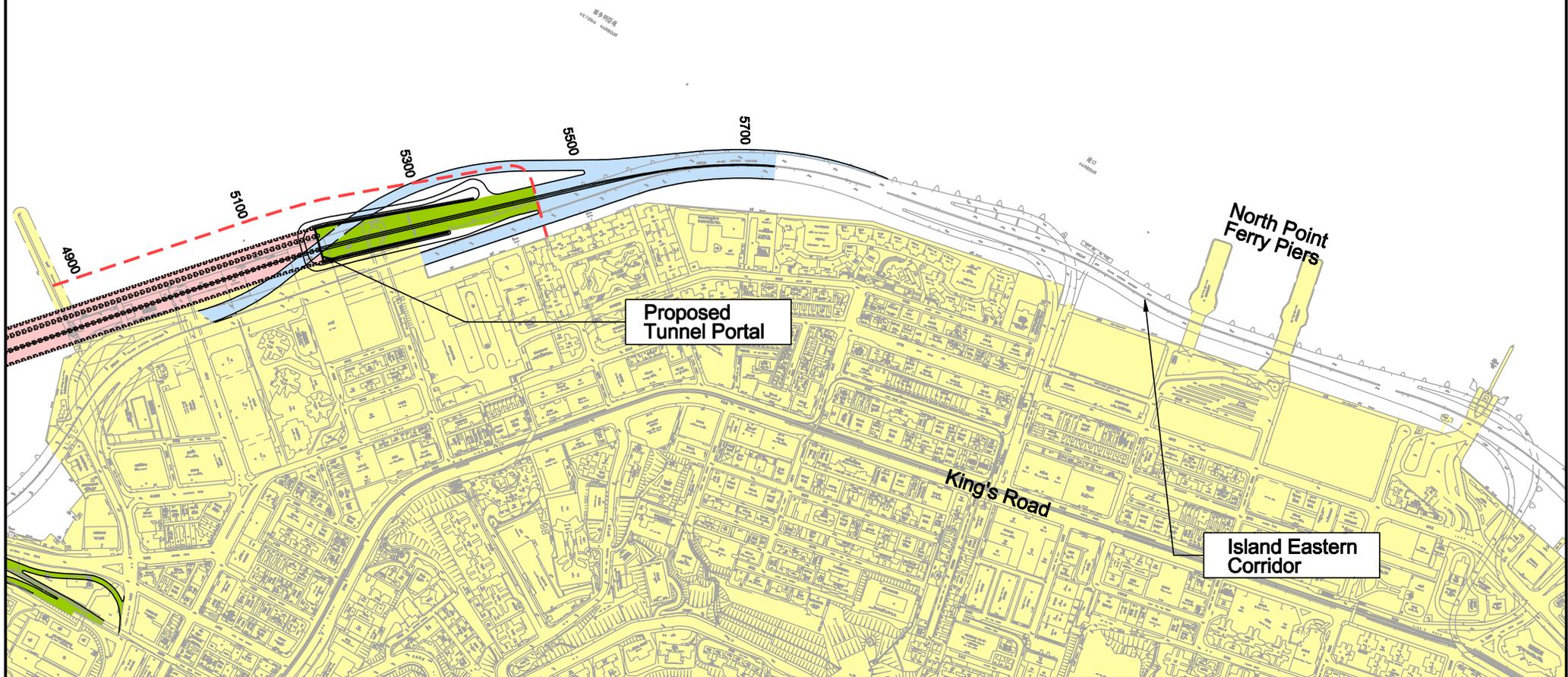
-  Cut & Cover Tunnel
-  Bored Tunnel
-  Elevated Structure
-  At-Grade Road
-  Reclamation Line (Indicative Only)





Legend :

-  Cut & Cover Tunnel
-  Elevated Structure
-  At-Grade Road
-  Reclamation Line (Indicative Only)



Proposed
Tunnel Portal

Island Eastern
Corridor

Consolidation of Harbour-front & Trunk Road Ideas

Discussion Paper

Inland Alignments for the Trunk Road

1 INTRODUCTION

- 1.1 The Sub-committee on Wan Chai Development Phase II Review of the Harbour-front Enhancement Committee convened a 'Envisioning Stage – Consolidation Forum' to conclude the Envisioning Stage of the 'Harbour-front Enhancement Review – Wan Chai, Causeway Bay and Adjoining Areas' (HER) on 12 November 2005. The aim of the forum was to share with the public the comments and proposals received during the public engagement activities held from May to July 2005 for the Envisioning Stage of HER. Opportunities have been taken to involve the public in consolidating these views before proceeding with the preparation of the Concept Plans for the development and enhancement of the harbour-front of Wan Chai, Causeway Bay and the adjoining areas.
- 1.2 Whilst the emphasis of the HER is on the planning of the harbour-front with a view to protecting the Harbour and improving accessibility, utilisation and vibrancy of the harbour-front areas, a holistic approach must be taken in integrating with the harbour-front development essential transport infrastructure required under the Wan Chai Development Phase II (WDII) project, this being mainly the need to complete a long-planned strategic road link along the north shore of Hong Kong Island. Any land that may be formed along the shoreline to facilitate the Trunk Road construction will then provide further opportunity for harbour-front improvement.
- 1.3 Mindful of the need to protect the Harbour, during the Envisioning Stage the desire to consider inland alignments for the Trunk Road has been raised with the intention of minimising reclamation and retaining the existing shoreline. This Discussion Paper sets out some of the issues involved in determining the alignment of the Trunk Road and explains why inland alignments for the Trunk Road are not feasible.

2 CONSTRAINTS ON THE TRUNK ROAD

2.1 Trunk Road Alignment through the WDII Project Area

- 2.1.1 The WDII project area is a linear coastal strip along the north shore of Hong Kong Island, through which the Trunk Road must traverse. The Trunk Road will link the CWB in CRIII at the western end with the IEC at the eastern end, in order to bypass the heavily congested urban area; at the same time, east-bound and west-bound connections to the local road network need to be provided.
- 2.1.2 The derivation of Trunk Road alignments through the WDII project area is constrained by existing development and land uses along the northshore, existing cross harbour tunnels such as the MTR Tsuen Wan Line and the Cross Harbour Tunnel (CHT), proposed rail infrastructure such as the MTR North Island Line (NIL) and the Shatin to

Central Link (SCL), services infrastructure such as electricity sub-stations and sewage treatment plants, and connections at either end to existing or committed road alignments.

- 2.1.3 At the western end, connection is required to the CWB tunnel which will be constructed under CRIII, with road level –10mPD and top of tunnel structure at around –1mPD (ie above existing seabed level) at this connection point. To the east of the Causeway Bay Typhoon Shelter, the Trunk Road needs to connect to the existing elevated IEC road structure at a road level between +12mPD and +15mPD. These connecting constraints mean that all schemes for the Trunk Road alignment through the WDII project area will start off in tunnel (in reclamation) at the western end and end up as elevated road structure at the eastern end.

2.2 Infrastructure and Development

- 2.2.1 A number of facilities along the Wan Chai and Causeway Bay waterfront will be affected by the proposed Trunk Road alignment, including existing and proposed road and rail tunnels, cross harbour water mains, sewage outfalls, sewage treatment works, electricity sub-stations, ferry piers, cooling water systems, drainage outfalls, typhoon shelter moorings and anchorages, and existing land uses and building development.
- 2.2.2 For the most part, affected facilities such as water mains, sewage outfalls, cooling water systems, drainage outfalls and ferry piers, etc, can be reprovisioned and, as such, should not be regarded as fixed or immovable constraints to the Trunk Road alignment. However, cross harbour road and rail tunnels, major infrastructure development such as sewage treatment works and electricity sub-stations, and existing developments such as the Hong Kong Convention and Exhibition Centre (HKCEC), do form physical barriers around which the Trunk Road will need to be routed.
- 2.2.3 The following paragraphs outline some of the major obstacles to the Trunk Road alignment. These are also highlighted in **Figure 2.1**.

Road and Rail Tunnels

MTR Tsuen Wan Line

- 2.2.4 The Trunk Road and reclamation at the west side of the HKCEC Extension must not impose any loads on, or cause any significant movement of, the existing MTR immersed tube tunnel. Tunnelling under the MTR Tsuen Wan Line will need to be at sufficient depth to avoid disturbance to the existing ground and movement of the MTR tunnel; the CWB tunnel connection back to existing road links at the Central Interchange, and the slip road connections to the ground level road network in Wan Chai North cannot be achieved for the resulting deep tunnel, which is therefore considered not feasible.
- 2.2.5 Piled deck structure over the MTR tunnel is a feasible solution. A proposed scheme for this tunnel crossing, developed and agreed in consultation with MTRC to meet their statutory limitations on allowable surcharge, lateral pressure and movement, involves the construction of a row of bored piles along either side of the Tsuen Wan Line tunnel with precast tunnel sections supported by these piles for the CWB tunnel which spans over the MTR tunnel. For this scheme, the Trunk Road will cross over the MTR tunnel at a road

level of around -7mPD and a top of tunnel structure level of around $+2.5\text{mPD}$ (which would be above sea level).

Cross Harbour Tunnel

- 2.2.6 The CHT is an immersed tube tunnel constructed in 1970, comprising a very thin steel external shell lined internally with reinforced concrete. The immersed tube section of the CHT is considered to be particularly fragile and susceptible to damage due to movement, particularly when the age of the CHT is taken into account. Repair work would be extremely difficult. Given the susceptibility of the old CHT to damage, a near zero movement tolerance would need to be imposed for any Trunk Road tunnel crossing, which will be extremely difficult to ensure. As a result, the risk of damage due to any Trunk Road tunnel scheme passing beneath the immersed tube section of the CHT will be very (indeed, unacceptably) high. Movement of the CHT structure leading to failure of the waterproofing membrane or the structure itself would have major consequential impacts to the high volumes of traffic through the tunnel. The resulting traffic congestion on Hong Kong Island and in Kowloon would be severe, to the extent that any damage whatsoever to the CHT would give rise to an unacceptable situation.
- 2.2.7 On the other hand, an elevated Trunk Road crossing over the CHT would be acceptable from a construction risk point of view, or else tunnelling under the portal and approach ramp of the CHT may be possible within manageable bounds of construction risk. In this case, though, the Trunk Road tunnel would need to take into account the rock anchors that tie down the approach ramp structure to the underlying rock, which are used to prevent uplift caused by hydrostatic forces (flotation). If these rock anchors were to be released due to tunnelling operations below, without any compensating holding down loads, then the CHT approach structure would fail under the action of uplift pressures. The rock anchors, based on available as-built information, are installed to a depth of around -17mPD . Tunnelling through the anchorage zone would be technically complex and would involve a higher degree of risk. Tunnelling under the CHT approach structure should be deep enough to avoid conflict with these anchors; to achieve this, the Trunk Road level would need to be at around -30mPD .

NIL and SCL Rail Tunnels

- 2.2.8 The NIL is a proposed extension of the MTR system along the northshore of Hong Kong Island, and allowance needs to be made for the NIL alignment in planning for the Trunk Road. The alignment for the NIL is planned to run within existing land along the northshore area of Causeway Bay and Wan Chai to an Exhibition Station located beneath the existing Wan Chai North Public Transport Interchange (PTI). From there, the NIL tunnel will run partly through the HKCEC water channel in cut-and-cover tunnel, crossing over the MTR Tsuen Wan Line in similar form of construction as that proposed for the Trunk Road crossing, and then continuing westwards along the Central shoreline through the CRIII project area.
- 2.2.9 Allowance also needs to be made for the proposed fourth harbour rail crossing of the SCL. The SCL will be an immersed tube tunnel from Hung Hom across the Harbour (alternative easterly and westerly alignments have been proposed) to the breakwater of the Causeway Bay Typhoon Shelter, from where the tunnel will change to bored tunnel under the typhoon shelter, for both alternative alignments, but with a possible Causeway

Bay North Station under Gloucester Road in front of the Excelsior Hotel for the easterly alignment. From there, the SCL alignment will run under the Wan Chai Sports Ground to an Exhibition Station located in Harbour Road, then continuing westwards under Harbour Road and Fenwick Pier Street to Admiralty Station.

Existing Services Infrastructure

- 2.2.10 The major services infrastructure of concern in the Wan Chai North area is Hong Kong Electric's Wan Chai Zone Sub-Station on Hung Hing Road and new Electricity Receiving Station (under construction) on Wan Shing Street, and Drainage Services Department's Wan Chai East Sewage Screening Plant on Hung Hing Road.
- 2.2.11 The Electricity Sub-Station and Receiving Station have closed-spaced bored piled foundations down to founding levels of around -35mPD, which will obstruct any Trunk Road tunnel alignments running beneath these facilities. The Trunk Road will need to be at a level of around -60mPD to clear the foundation piles; this level is too deep for a Trunk Road tunnel to reach, after the high level crossing over the top of the MTR Tsuen Wan Line.
- 2.2.12 The Sewage Screening Plant comprises a pumping station with a well that extends down to a level of around -23mPD, and which is then founded on bored pile walls down to a founding level of around -35mPD, as well as screening plant facilities on bored pile foundations which also extend down to founding levels of around -35mPD. As for the case with the Electricity Sub-Station, these foundations will obstruct any Trunk Road tunnel alignments running beneath the Sewage Screening Plant site.
- 2.2.13 Re-provisioning these major electricity supply and sewerage facilities would involve locating suitable alternative sites in the already congested northshore area and then the relaying of all the high voltage feeder cables in Wan Chai and the reconstruction of sewage pipelines that currently gravitate to the existing sewage plant, through the congested streets of Wan Chai. This would incur major costs to the community, and result in massive disruption to these essential services and to the whole of the Wan Chai business and residential district. Re-provisioning of these facilities would therefore be impractical and unreasonable, even if alternative sites could be found (identifying suitable relocation sites will be difficult). Relocating the electricity supply and sewerage facilities, in order to remove their constraint on the Trunk Road alignment, is considered not practically feasible from land use, engineering and land administration points of view.

Existing Development and Land Uses

- 2.2.14 Major development in Wan Chai North includes the HKCEC Phase I and the HKCEC Extension, Grand Hyatt Hotel, Arts Centre, Telecom House, Shui On Centre, Wanchai Tower, Revenue Tower, Immigration Tower, Central Plaza, Renaissance Harbour View Hotel, Great Eagle Centre, Harbour Centre, China Resources Building, Causeway Centre and Sun Hung Kai Centre.
- 2.2.15 These buildings all have basement level development and piled foundations that extend down to bedrock (which varies around -30mPD to -40mPD in this area). This existing development therefore forms a physical barrier to the Trunk Road.

- 2.2.16 Similarly, existing development along the south side of Gloucester Road forms a barrier to Trunk Road alignments all the way through to Causeway Bay.
- 2.2.17 At Kellett Island, the Royal Hong Kong Yacht Club (RHKYC) is an existing land use which should be avoided, if possible (the RHKYC clubhouse is considered by the Antiquities and Monuments Office to be a building of historical significance).

3 DESIGN STANDARDS

- 3.1 Design standards as set out in the Transport Planning and Design Manual (TPDM) provide limiting values of horizontal and vertical geometry which must be followed when developing various Trunk Road schemes. Limiting values for road geometry are based on the design speeds of the roads; the mainline of the Trunk Road has a designated design speed of 85km/h, while the slip roads have a design speed of 50km/h. There are a number of geometric design and safety standards that need to be met, for example, horizontal and vertical curvature, minimum sight distances, maximum road gradients, etc. Reference should be made to the TPDM for details.

4 INLAND ALIGNMENTS

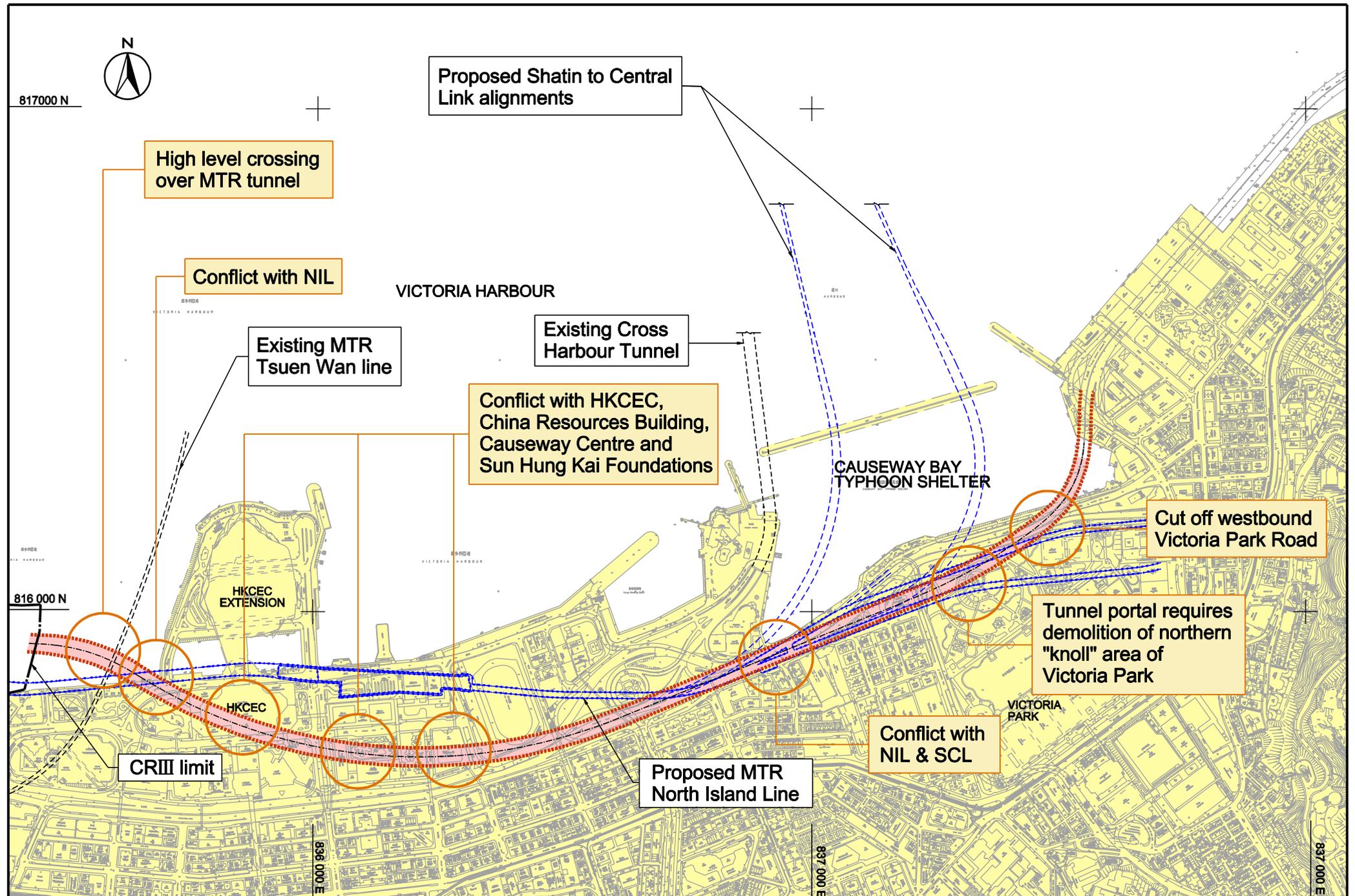
- 4.1 Trunk Road alignments along the inland corridor face major physical constraints, mainly due to conflicts with existing developments and highway infrastructure, and conflicts with the future rail infrastructure. At-grade or elevated Trunk Road inland alignments are self-evidently not possible in view of the scale of existing building development and infrastructure, and consideration of inland alignments is therefore confined to tunnel options.
- 4.2 **Figure 4.1** shows a Trunk Road tunnel turning inland (southwards) immediately after the connection with CRIII (ie only the essential and unavoidable reclamation at the tie-in to CRIII and over the MTR Tsuen Wan Line excepted).
- 4.3 After turning southwards from the connection with the CWB in CRIII, and crossing over the existing MTR Tsuen Wan Line, the Trunk Road will be obstructed by building development in Wan Chai North. Due to the high level of the Trunk Road as it passes over the MTR tunnel and Trunk Road gradient limitations, the inland tunnel alignment will conflict with the basement and foundations of the HKCEC Phase I and the Grand Hyatt Hotel (as for the case with the HKCEC Extension, the Trunk Road tunnel cannot drop down fast enough after crossing the MTR Tsuen Wan Line to avoid conflict with the foundations of these buildings). Thereafter, the Trunk Road tunnel will also conflict with the China Resources Building, Causeway Centre and Sun Hung Kai foundations.
- 4.4 The Trunk Road will also need to cross the NIL rail tunnel as it turns inland after passing over the MTR Tsuen Wan Line, but both the Trunk Road and the NIL tunnels will be at the same level at this location, as both will cross over the MTR Tsuen Wan Line at a similar (adjacent) location. Therefore, either the presence of (or allowance for) the NIL will obstruct the Trunk Road inland alignment, or the implementation of a Trunk Road inland alignment will mean that the NIL cannot be constructed.

- 4.5 Further east, in Causeway Bay, the Trunk Road inland alignment will need to run under Gloucester Road where it will conflict with both the NIL and SCL tunnels and the proposed Causeway Bay North station. Alignments further south of Gloucester Road, to avoid this conflict, are not possible due to the wall of existing development on the south side of Gloucester Road.
- 4.6 Connection to the existing IEC will need to be made to the north of Victoria Park. Self-evidently, inland alignments cannot be taken further inland around the south of the typhoon shelter to connect with the IEC in North Point, due to the mass of existing building development in the Tin Hau / Fortress Hill area. To achieve the connection with the IEC, the Trunk Road tunnel will need to rise up to a portal located in the northern 'knoll' area of Victoria Park. This not only results in demolition and permanent removal of this heavily wooded area of the park, but as the Trunk Road rises up to connect with the IEC it will cut off the westbound Victoria Park Road.
- 4.7 As a consequence of the above physical obstructions and constraints, this Trunk Road inland alignment is found to be not feasible.
- 4.8 Alternative inland alignments have been examined with a view to avoiding some of these constraints. **Figure 4.2** shows a Trunk Road tunnel turning inland further east, to avoid conflict with the Harbour Centre and Sun Hung Kai foundations, ie through the Wan Chai Sports Ground. In this case, the Trunk Road will conflict with the NIL Exhibition Station in Wan Chai North, as gradient limitations mean that it will not be able to pass beneath the NIL station foundations. Similar to the case above, either allowance for the NIL will obstruct this Trunk Road inland alignment, or the implementation of this Trunk Road inland alignment will mean that the NIL cannot be constructed. Moving the inland alignment even further east to avoid the conflict with the NIL Exhibition Station (also shown in **Figure 4.2**) will result in conflict with the major services infrastructure (in particular the Electricity Receiving Station) at Hung Hing Road.
- 4.9 Then, with this Trunk Road alignment turning inland further to the east, it will conflict with the foundations of the CHT approach roads structures. While smaller (7m diameter) rail tunnels may be able to thread their way through these numerous foundations, with underpinning of some of the foundations where conflict cannot be avoided, the Trunk Road tunnel is a 35m wide structure that will require demolition of large sections of the existing CHT approach structures to facilitate its construction. Traffic disruption and impacts particularly to the CHT traffic, will be unacceptable.
- 4.10 Further east in Causeway Bay, where the Trunk Road runs under Gloucester Road and then rises up to a tunnel portal in Victoria Park to connect with the IEC, constraints (conflicts with NIL and SCL, demolition of the park 'knoll', and cutting off Victoria Park Road) will be similar to the case above.
- 4.11 In view of the above, Trunk Road inland alignments are considered not feasible, primarily due to physical conflict with existing development and infrastructure.

5 CONCLUSION

- 5.1 Trunk Road alignments are constrained by existing development along the Wan Chai and Causeway Bay northshore area, existing cross harbour tunnels, proposed rail infrastructure and essential services infrastructure.
- 5.2 At the western end of the WDII project area, the Trunk Road will connect to the CWB cut-and-cover tunnel constructed under CRIII. The Trunk Road will then cross over the MTR Tsuen Wan line. This connection with CRIII and the MTR tunnel crossing will require reclamation in the area to the west of the HKCEC Extension for Trunk Road tunnel construction.
- 5.3 After this connection with CRIII, inland alignments through the WDII project area are obstructed by existing development in Wan Chai North, including the HKCEC Phase I, Grand Hyatt Hotel, China Resources Building, Causeway Centre and Sun Hung Kai Centre. Trunk Road inland alignments will also conflict with the proposed NIL and SCL rail infrastructure, and existing road and services infrastructure. Due to these physical conflicts, Trunk Road inland alignments are also found to be not feasible.

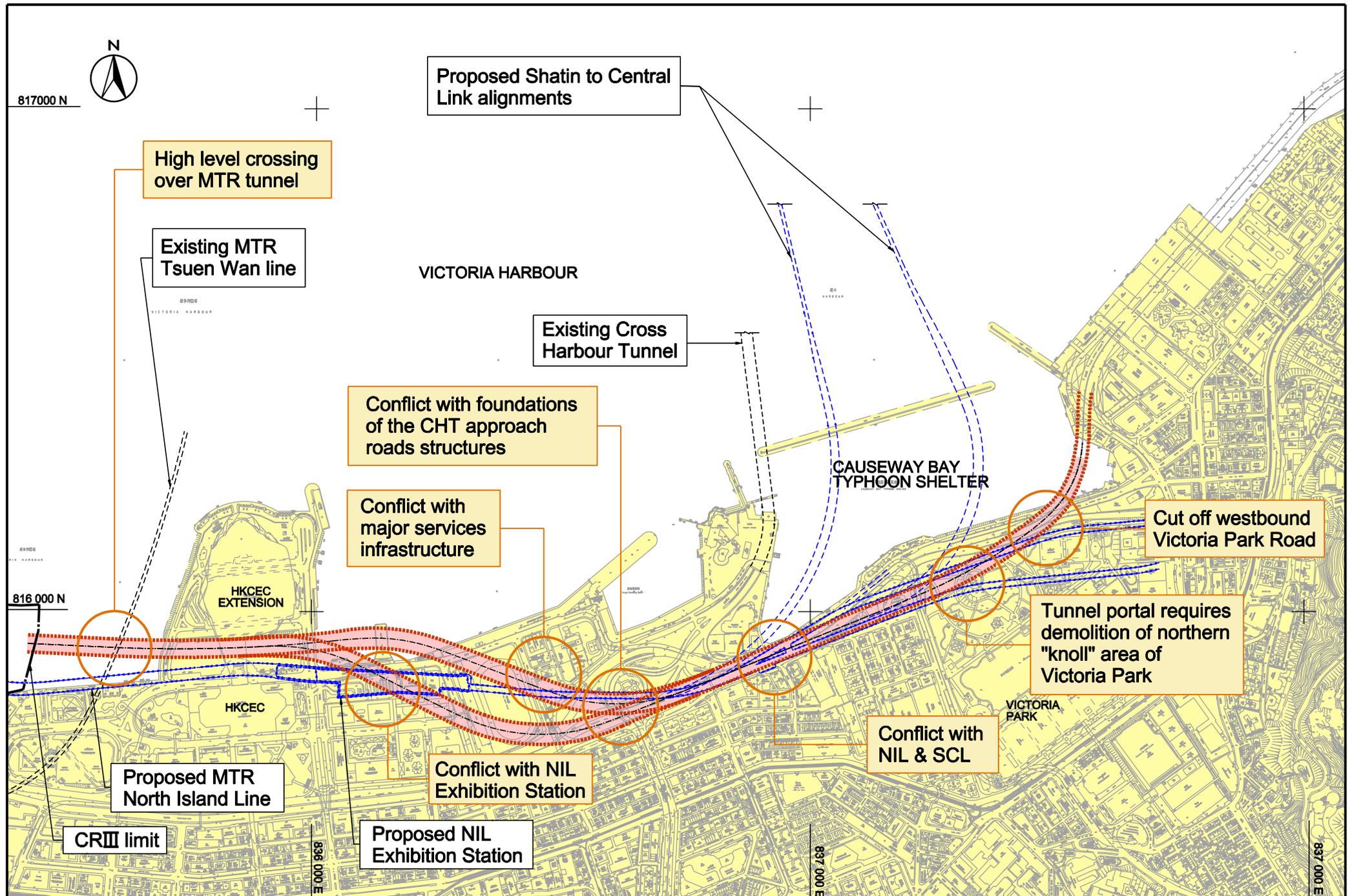




Wan Chai Development Phase II - Planning and Engineering Review

Inland Alignment

Figure 4.1



Wan Chai Development Phase II - Planning and Engineering Review

Alternative Inland Alignments

Figure 4.2

CONSOLIDATION OF HARBOUR-FRONT & TRUNK ROAD IDEAS

Discussion Paper **Slip Roads 1, 2 and 3**

1 Introduction

- 1.1 The Sub-committee on Wan Chai Development Phase II Review of the Harbour-front Enhancement Committee convened a 'Envisioning Stage – Consolidation Forum' to conclude the Envisioning Stage of the 'Harbour-front Enhancement Review – Wan Chai, Causeway Bay and Adjoining Areas' (HER) on 12 November 2005. The aim of the forum was to share with the public the comments and proposals received during the public engagement activities held from May to July 2005 for the Envisioning Stage of HER. Opportunities have been taken to involve the public in consolidating these views before proceeding with the preparation of the Concept Plans for the development and enhancement of the harbour-front of Wan Chai, Causeway Bay and the adjoining areas.
- 1.2 Whilst the emphasis of the HER is on the planning of the harbour-front with a view to protecting the Harbour and improving accessibility, utilisation and vibrancy of the harbour-front areas, one of the most important purposes of the Wan Chai Development Phase II (WDII) project is to implement the Trunk Road along the north shore of Hong Kong Island, with the objective of alleviating the severe traffic congestion along the existing Connaught Road / Harcourt Road / Gloucester Road corridor. Associated with the Trunk Road in the Wan Chai North area are three slip road connections to the local road network, required to ensure adequate connectivity and functionality of the Trunk Road so as to relieve the traffic congestion.
- 1.3 These slip roads will rise up from the Trunk Road tunnel to ground level roads. In view of the emphasis of the HER on harbour-front enhancement and improved accessibility, concerns have been expressed that they may compromise the HEC's harbour planning principles by taking up valuable waterfront land use space and affecting pedestrian accessibility.
- 1.4 This discussion paper examines the impacts of the slip roads on the harbour-front planning intentions, to determine whether the HEC's harbour planning principles would be compromised by the presence of these slip roads.

2 Consolidated Ideas for Harbour-front Enhancement

- 2.1 A number of consolidated harbour-front enhancement ideas were presented at the Consolidation Forum; these involve putting the Trunk Road in tunnel along the Wan Chai and Causeway Bay shoreline, and connecting with the existing elevated Island Eastern Corridor (IEC) in North Point. These consolidated ideas incorporate, as far as possible, the various harbour-front improvement suggestions put forward by the public.

- 2.2 All harbour-front proposals are similar in the Wan Chai North area (differences between Trunk Road and harbour-front ideas occurring mainly in Causeway Bay and with the connections to the IEC). In Wan Chai, the Trunk Road runs in cut-and-cover tunnel through the Hong Kong Convention and Exhibition Centre (HKCEC) water channel and along the Wan Chai North shoreline, in reclamation required for the tunnel construction. The land formed for the Trunk Road construction then provides opportunity to enhance the harbour-front.
- 2.3 An idea of the extent of these harbour-front enhancement ideas in the Wan Chai area, from a land use perspective, is illustrated in **Figure 2.1** (as presented at the Consolidation Forum). The figure indicates broad landscaping ideas for the creation of a landscaped promenade for leisure purposes.
- 2.4 Various activity nodes are envisaged in the Wan Chai North harbour-front area. To the west of the HKCEC, a cultural district, including arts and cultural fairs, performance venues, etc, could link up the Hong Kong Academy for Performing Arts (HKAPA) to the waterfront. North of the HKCEC Extension, the Golden Bauhinia Square currently provides the main attraction, but this area could be enhanced as an Expo Promenade with exhibitions and outdoor dining facilities. To the east of the HKCEC, the Wan Chai waterfront is seen as a green leisure zone with landscaped areas and alfresco dining; the incorporation of harbour-front cafes and the like would add to the attraction and vibrancy of the waterfront. Further to the west, the PCWA basin can be turned into a marine recreational facility.

3 Slip Road Connections in Wan Chai North

- 3.1 Provision of essential transport infrastructure is a key element of the WDII project. The need for the Trunk Road (or Central - Wan Chai Bypass (CWB)) has been demonstrated in a district traffic study to relieve the existing east-west corridor (Connaught Road / Harcourt Road / Gloucester Road) which is already operating beyond its capacity.
- 3.2 The district traffic study also confirmed that intermediate slip road connections are essential to achieve the objectives of implementing the Trunk Road, that is, to divert traffic away from the existing east-west corridor in order to provide relief to the corridor and to the local road network. The need for the Trunk Road and the three slip roads has been confirmed by the Expert Panel on Sustainable Transport Planning and Central - Wan Chai Bypass (the 'Expert Panel').
- 3.3 The necessary slip road connections in Wan Chai North are indicated in **Figure 3.1**, which also shows the proposed ground level road layout. Three slip road connections are proposed:
- a slip road for traffic from Central and the western districts of Hong Kong Island to exit the eastbound Trunk Road tunnel, going to Wan Chai North (Slip Road 1); if this slip road is not built, the traffic would have to use Gloucester Road eastbound and Queensway;
 - a slip road for traffic from Wan Chai North to enter the eastbound Trunk Road tunnel, going to the IEC direction and then North Point and the eastern districts of Hong Kong Island (Slip Road 2); if this slip road is not built, the traffic would have to use Gloucester Road eastbound and Hung Hing Road;

- a slip road for traffic from the IEC (ie from North Point and the eastern districts of Hong Kong Island) to exit the westbound Trunk Road tunnel, going to Wan Chai North (Slip Road 3); if this slip road is not built, the traffic would have to use Victoria Park Road westbound, Gloucester Road westbound and inner Gloucester Road.

3.4 These slip roads tie into a ground level road layout, of which Road P2 is the major component. Road P2 runs west-east from the Central Reclamation Phase I (CRI) area through to connections with the existing road network in Wan Chai North and with Victoria Park Road. In addition to providing access to the Central Reclamation Phase III (CRIII) area, Road P2 and its linkages into the slip roads facilitates connections between the Admiralty and Wan Chai hinterland areas and the Trunk Road, and enables connection from the CRI and CRIII areas to the Trunk Road, as well as facilitating the connection the Trunk Road eastbound to Causeway Bay (no direct slip road connection from the Trunk Road being provided in Causeway Bay for this movement).

4 The Effects of Slip Roads 1, 2 and 3 on the Harbour Planning Principles

4.1 As an overview to harbour-front planning, the HEC has established a number of harbour planning principles which should be followed when examining Trunk Road and harbour-front enhancement schemes. These are:

- preserving Victoria Harbour as a natural, public and economic asset
- Victoria Harbour as Hong Kong's identity
- a vibrant harbour
- an accessible harbour
- maximising opportunities for public enjoyment
- integrated planning for a world-class harbour
- sustainable development for the harbour
- early and ongoing stakeholder engagement.

4.2 There is a concern that the slip roads may compromise these harbour planning principles, specifically by sterilising valuable waterfront space that could otherwise be used for quality waterfront development, and by affecting accessibility by cutting off pedestrian access to and along the harbour-front.

4.3 **Figure 4.1** illustrates the accessibility potential of the consolidated ideas for the Wan Chai North area. In addition to a continuous east-west waterfront promenade, a number of north-south linkages could possibly be provided:

- via a landscaped deck over Road P2 from the HKAPA to the waterfront to the west of the HKCEC Extension;
- through the HKCEC Atrium Link from the existing podium level walkway system in Wan Chai to the HKCEC Extension and surrounding waterfront;
- via a landscaped deck over the existing Wan Chai North Public Transport Interchange (PTI) and over Road P2 to the Wan Chai waterfront and ferry pier;
- via a footbridge over Road P2 connecting the existing Wan Chai Training Pool podium to the Wan Chai leisure waterfront;

- via a footbridge over Hung Hing Road alongside Marsh Road, linking up with existing footbridges back into Causeway Bay.
- 4.4. These grade separated connections can be supplemented by at-grade pedestrian connections at signalised junctions along Road P2 and Hung Hing Road.
 - 4.5. As can be seen from Figure 4.1, none of the Slip Roads 1, 2 or 3 (highlighted in the figure) impinge upon these proposed pedestrian connections or waterfront access routes. The slip roads are located outside the main access desire lines in landscaped amenity areas. The presence of the slip roads does not affect harbour-front accessibility.
 - 4.6. **Figure 4.2** shows the Wan Chai North area without the slip roads, to illustrate whether there would be any significant gain in harbour-front planning terms. The main activity nodes in this area are highlighted, being a cultural and entertainment zone to the west of the HKCEC, an Expo Promenade to the north of the HKCEC Extension and a green leisure zone along the Wan Chai shoreline to the east of the HKCEC Extension.
 - 4.7. These activity nodes link back directly to the hinterland with connections as discussed above, and are linked to each via the continuous waterfront promenade access.
 - 4.8. The areas that would otherwise be occupied by the slip roads are indicated: as can be seen, they do not affect, and are not affected by, the activity nodes or their linkages. The slip road areas would remain as landscaped amenity areas, not waterfront activity areas. The absence of the slip roads does not result in any enhancement of the activity nodes or entertainment or leisure zones. There would therefore be no major gain in harbour-front planning terms, if the slip roads were to be omitted. On the other hand, the inclusion of the slip roads will improve vehicle access to Wan Chai North and the future waterfront.

5 Conclusion

- 5.1 Three slip road connections to the Trunk Road are proposed in Wan Chai North: Slip Road 1 from the Trunk Road eastbound to Wan Cha North; Slip Road 2 from Wan Chai North to the Trunk Road eastbound; and Slip Road 3 from the Trunk Road westbound to Wan Chai North.
- 5.2 The effects of the slip roads on harbour-front accessibility and harbour-front planning have been examined. The location of the slip roads is such that they do not impinge upon any proposed pedestrian connections or waterfront access routes. Therefore, the presence of the slip roads does not affect harbour-front accessibility. Neither does the presence of the slip roads affect the envisaged waterfront activity nodes or their linkages, and there would be no major gain in harbour-front planning terms if the slip roads were to be omitted. Rather, the slip roads provide a beneficial improvement in terms of vehicle access to Wan Chai North and the waterfront area.
- 5.3 In conclusion, it is found that the Wan Chai North slip roads, Slip Roads 1, 2 and 3, are needed to complement the Trunk Road in relieving traffic congestion, and their presence will not compromise the HEC's harbour planning principles.





Slip Road 1
 Traffic from Central & Western HK
 Island to Wan Chai North

Slip Road 2
 Traffic from Wan Chai North
 to IEC (Eastern HK Island)

Road P2

Slip Road 3
 Traffic from IEC (Eastern HK
 Island) to Wan Chai North

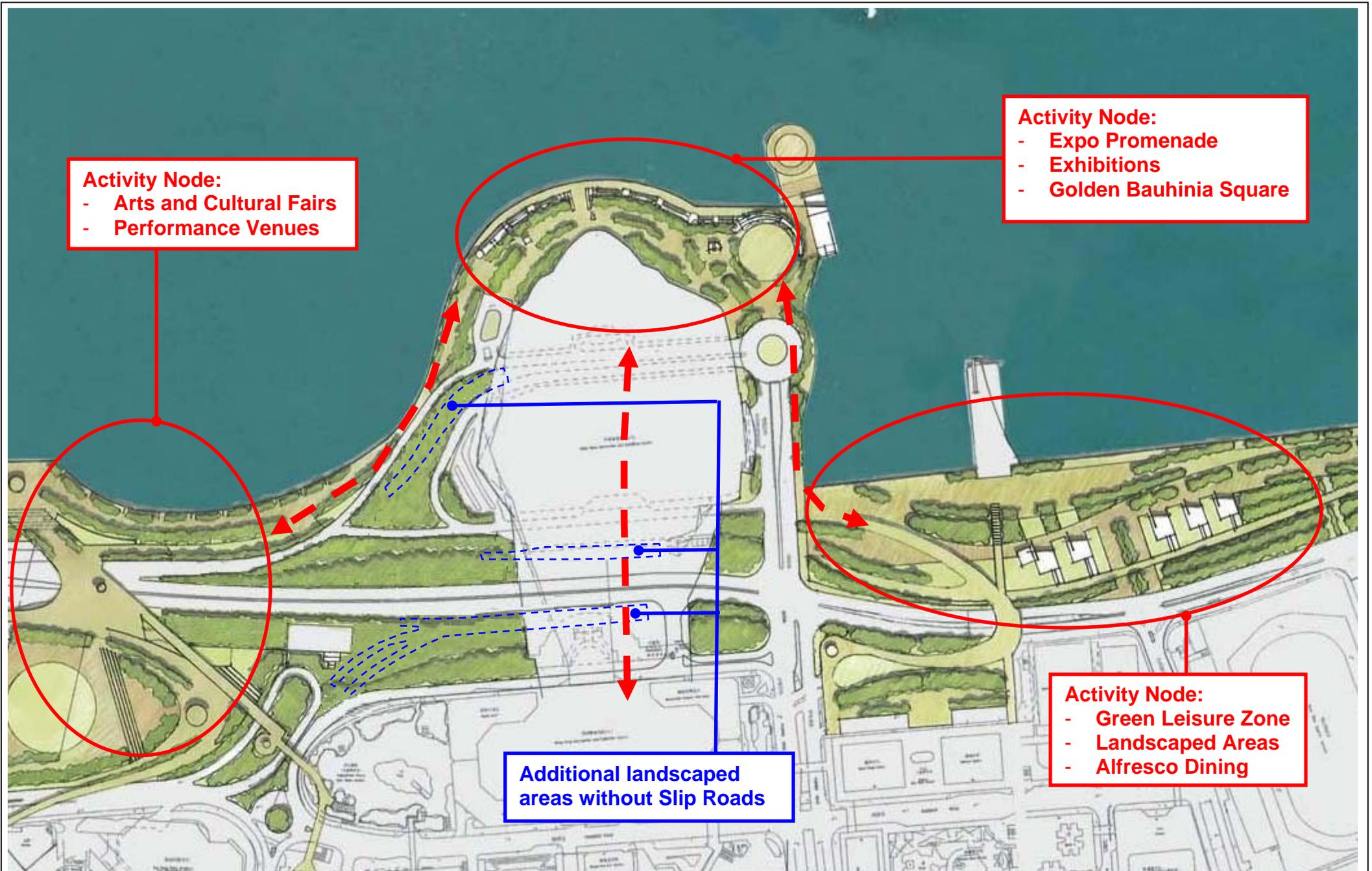


North-South Linkages



Continuous Landscaped Promenade





CONSOLIDATION OF HARBOUR-FRONT & TRUNK ROAD IDEAS

Discussion Paper

Slip Road 8

1 Introduction

- 1.1 The Sub-committee on Wan Chai Development Phase II Review of the Harbour-front Enhancement Committee convened a 'Envisioning Stage – Consolidation Forum' to conclude the Envisioning Stage of the 'Harbour-front Enhancement Review – Wan Chai, Causeway Bay and Adjoining Areas' (HER) on 12 November 2005. The aim of the forum was to share with the public the comments and proposals received during the public engagement activities held from May to July 2005 for the Envisioning Stage of HER. Opportunities have been taken to involve the public in consolidating these views before proceeding with the preparation of the Concept Plans for the development and enhancement of the harbour-front of Wan Chai, Causeway Bay and the adjoining areas.
- 1.2 Whilst the emphasis of the HER is on the planning of the harbour-front with a view to protecting the Harbour and improving accessibility, utilisation and vibrancy of the harbour-front areas, one of the most important purposes of the Wan Chai Development Phase II (WDII) project is to implement the Trunk Road along the north shore of Hong Kong Island, with the objective of alleviating the severe traffic congestion along the existing Connaught Road / Harcourt Road / Gloucester Road corridor. Associated with the Trunk Road in the Causeway Bay area is a slip road connection from Victoria Park Road to the westbound Trunk Road, which is required to ensure adequate connectivity and functionality of the Trunk Road so as to relieve the traffic congestion along Gloucester Road.
- 1.3 Although this slip road will be a tunnel connecting to the Trunk Road, it will need to start off as a ground level road connection to Victoria Park Road. In view of the emphasis of the HER on harbour-front enhancement and improved accessibility, concerns have been expressed that it may compromise the HEC's harbour planning principles by taking up valuable waterfront land use space and affecting pedestrian accessibility.
- 1.4 This discussion paper examines the impact of the slip road on the harbour-front planning intentions, to determine whether the HEC's harbour planning principles would be compromised by the presence of this slip road.

2 Consolidated Ideas for Harbour-front Enhancement

- 2.1 A number of consolidated harbour-front enhancement ideas were presented at the Consolidation Forum; these all involve putting the Trunk Road in tunnel along the Wan Chai and Causeway Bay shoreline, and connecting with the existing elevated Island

Eastern Corridor (IEC) in North Point. These consolidated ideas incorporate, as far as possible, the various harbour-front improvement suggestions put forward by the public.

- 2.2 Whilst all harbour-front proposals are similar in the Wan Chai North area, differences do occur in Causeway Bay and the connections with the IEC. One Trunk Road tunnel option is to have the Trunk Road tying into the north side of the existing IEC, immediately to the east of the Causeway Bay Typhoon Shelter (CBTS), with the existing IEC connections to Victoria Park Road being maintained. Other suggestions have the Trunk Road tying directly into the IEC at the eastern end of the CBTS, with the IEC connections to Victoria Park Road reconstructed through the south-eastern corner of the typhoon shelter. Associated with this latter suggestion is the proposed reconstruction of Victoria Park Road further to the south, through the existing Victoria Park, so as to free up waterfront space along the edge of the typhoon shelter; a wide landscaped deck can be provided to extend Victoria Park to the waterfront.
- 2.3 For the purposes of this paper, the more extensive waterfront development afforded by the consolidated ideas involving the reconstruction of Victoria Park Road is used to illustrate the potential impacts of the Causeway Bay slip road connection, as this may be regarded as more susceptible to being compromised by the presence of the slip road.
- 2.4 An idea of the possible more extensive harbour-front enhancement in the Causeway Bay area, from a land use perspective, is illustrated in **Figure 2.1** (as presented at the Consolidation Forum), which indicates broad landscaping ideas for the waterfront area.
- 2.5 For this harbour-front enhancement idea, various activity nodes are envisaged in the CBTS area. With the emphasis being on preservation of the typhoon shelter, the reclaimed area at the south-western corner of the typhoon shelter could become a heritage zone, incorporating a maritime museum, fishermen's wharf, dai pai dong and the noonday gun. The reclaimed area at the south-eastern corner of the typhoon shelter could also be used as a heritage zone, with fishermen museum, floating Tin Hau temple and a marine piazza linked to the water activities of the typhoon shelter. The typhoon shelter generally would become a sports/water activity/entertainment area.

3 Slip Road Connection in Causeway Bay

- 3.1 Provision of essential transport infrastructure is a key element of the WDII project. The need for the Trunk Road (or Central - Wan Chai Bypass (CWB)) has been demonstrated in a district traffic study to relieve the existing east-west corridor (Connaught Road / Harcourt Road / Gloucester Road) which is already operating beyond its capacity.
- 3.2 The district traffic study also confirmed that intermediate slip road connections are essential to achieve the objectives of implementing the Trunk Road, that is, to divert traffic away from the existing east-west corridor in order to provide relief to the corridor and to the local road network. The need for the Trunk Road and the slip road connection at the Victoria Park Road / Gloucester Road / Hing Fat Street passageway has been confirmed by the Expert Panel on Sustainable Transport Planning and Central - Wan Chai Bypass (the 'Expert Panel').

- 3.3 The necessary slip road connection in Causeway Bay is indicated in **Figure 3.1**, which also shows the proposed modifications to the Victoria Park Road layout and the wide landscaped decking over Victoria Park Road with Victoria Park being extended to the waterfront. Slip Road 8 is proposed as a slip road for traffic from Causeway Bay, Tai Hang, Fortress Hill and Tin Hau areas to enter the westbound Trunk Road tunnel, going to Central and the western districts of Hong Kong Island. The slip road will divert the heavy traffic flows away from the busy local roads.
- 3.4 In order to avoid intrusion into the typhoon shelter, Slip Road 8 is proposed as a tunnel running along the northern boundary of Victoria Park. For this scheme, the area affected by the slip road tunnel portal and the ground level road connection to the existing road network is within the area of the park that needs to be modified for the reconstruction of Victoria Park Road, in any event.

4 The Effects of Slip Road 8 on the Harbour Planning Principles

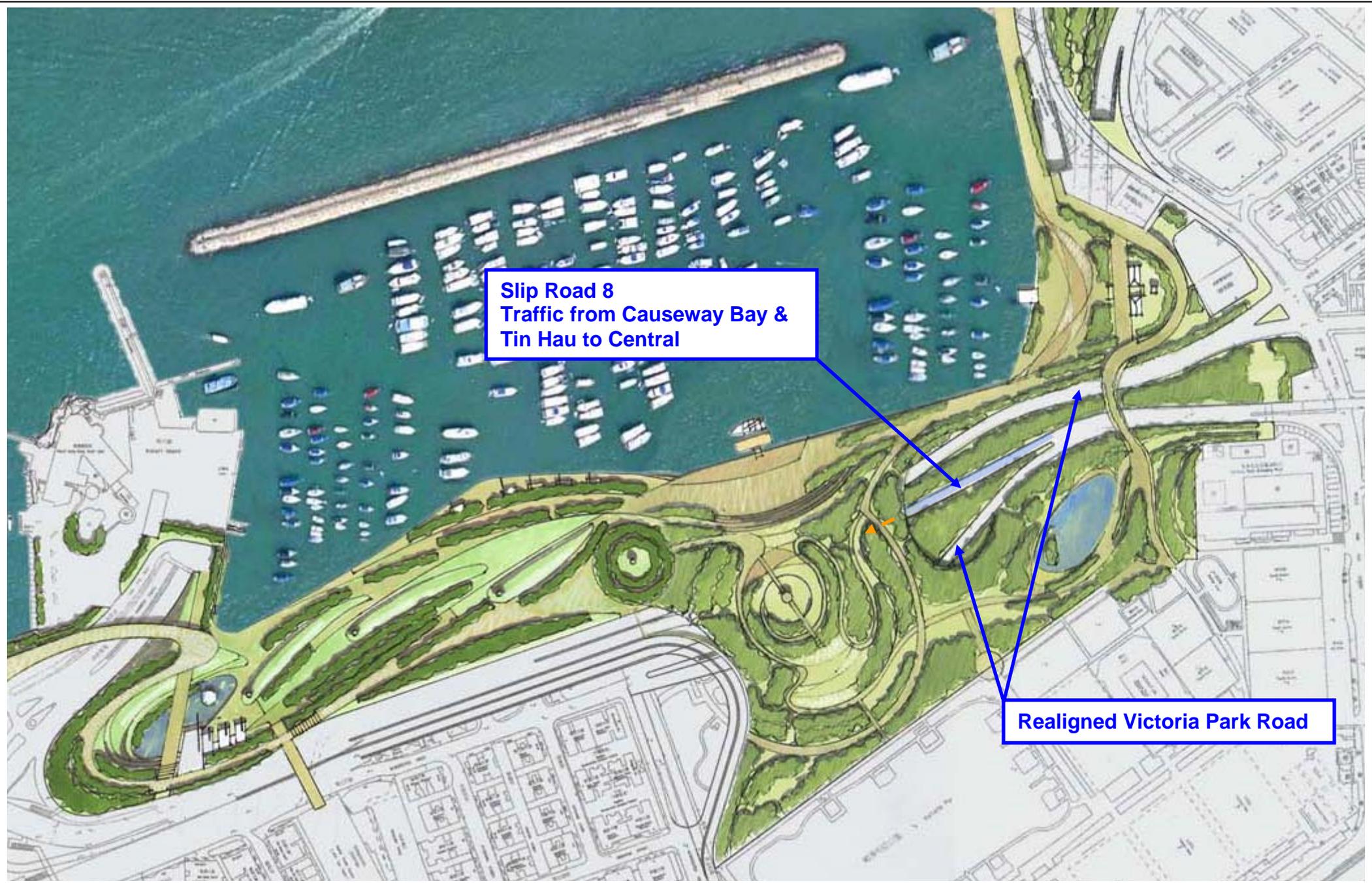
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 - sustainable development for the harbour
 - early and ongoing stakeholder engagement.
- 4.2 There is a concern that the slip road may compromise these harbour planning principles, specifically by sterilising valuable waterfront space that could otherwise be used for quality waterfront development, and by affecting accessibility by cutting off pedestrian access to and along the harbour-front.
- 4.3 **Figure 4.1** illustrates the accessibility potential of the consolidated ideas for the Causeway Bay area. In addition to a continuous east-west waterfront promenade, a number of north-south linkages could possibly be provided, including:
- a connection via the existing footbridge system from Canal Road to the marine recreational basin area, and then on a new pedestrian bridge across the CHT portal to the CBTS waterfront area;
 - a connection across Gloucester Road outside the World Trade Centre, possibly linking directly into the World Trade Centre podium level;
 - the wide landscaped deck that creates an extension of Victoria Park to the Causeway Bay waterfront (this being the 'centre piece' of this particular consolidated idea for the Causeway Bay area);
 - landscaped paths from the eastern side of Victoria Park extending via footbridges over Victoria Park Road to the south-eastern corner of the CBTS.

- 4.4. These grade separated connections would be supplemented by at-grade pedestrian connections at signalised junctions at Victoria Park Road / Hing Fat Street, providing access from the Tin Hau area.
- 4.5. As can be seen from Figure 4.1, Slip Road 8 (highlighted in the figure) does not impinge upon any of these proposed pedestrian connections or waterfront access routes. The slip road is located outside (and under) the primary landscaped deck access from Victoria Park, in what would be a landscaped amenity area between the east- and west-bound Victoria Park Road, set back from the waterfront area. Therefore, the presence of the slip road does not affect harbour-front accessibility.
- 4.6. **Figure 4.2** shows the Causeway Bay waterfront area without the slip road, to illustrate whether there would be any significant gain in harbour-front planning terms. The main activity nodes in this area are highlighted, being the two heritage zones at the south-eastern and south-western corners of the CBTS, and the main pedestrian flow paths between these zones and back into Victoria Park.
- 4.7. The area that would otherwise be occupied by the slip road is indicated: as can be seen, this does not affect, and is not affected by, the activity nodes or their linkages. The slip road area would remain as a landscaped amenity area between the eastbound and westbound Victoria Park Road, and would not be incorporated into the waterfront activity areas. The absence of the slip road does not result in any enhancement of the activity nodes or recreational areas. There would therefore be no major gain in harbour-front planning terms, if the slip road were to be omitted.

5 Conclusion

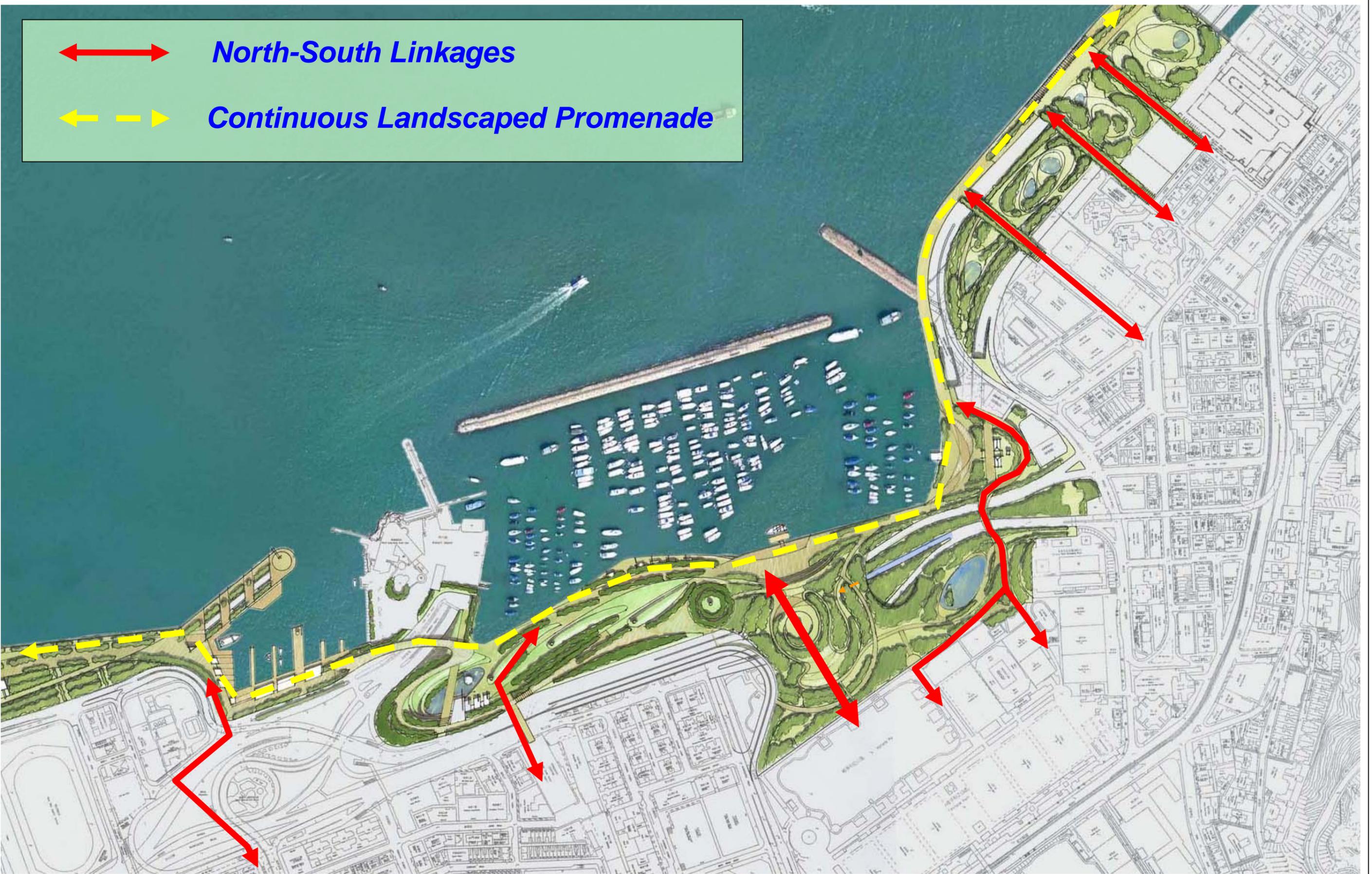
- 5.1 A slip road connection to the Trunk Road is proposed in Causeway Bay: Slip Road 8 taking traffic from the Causeway Bay, Tai Hang, Fortress Hill and Tin Hau areas to Central and the western districts of Hong Kong Island.
- 5.2 The effects of the slip road on harbour-front accessibility and harbour-front planning have been examined. The location of the slip road is such that it does not impinge upon any of the proposed pedestrian connections or waterfront access routes. Therefore, the presence of the slip road does not affect harbour-front accessibility. Neither does the presence of the slip road affect the waterfront activity nodes or their linkages, and there would be no major gain in harbour-front planning terms if the slip road were to be omitted.
- 5.3 In conclusion, it is found that the Causeway Bay slip road, Slip Road 8, is needed to complement the Trunk Road in relieving traffic congestion, and its presence will not compromise the HEC's harbour planning principles.

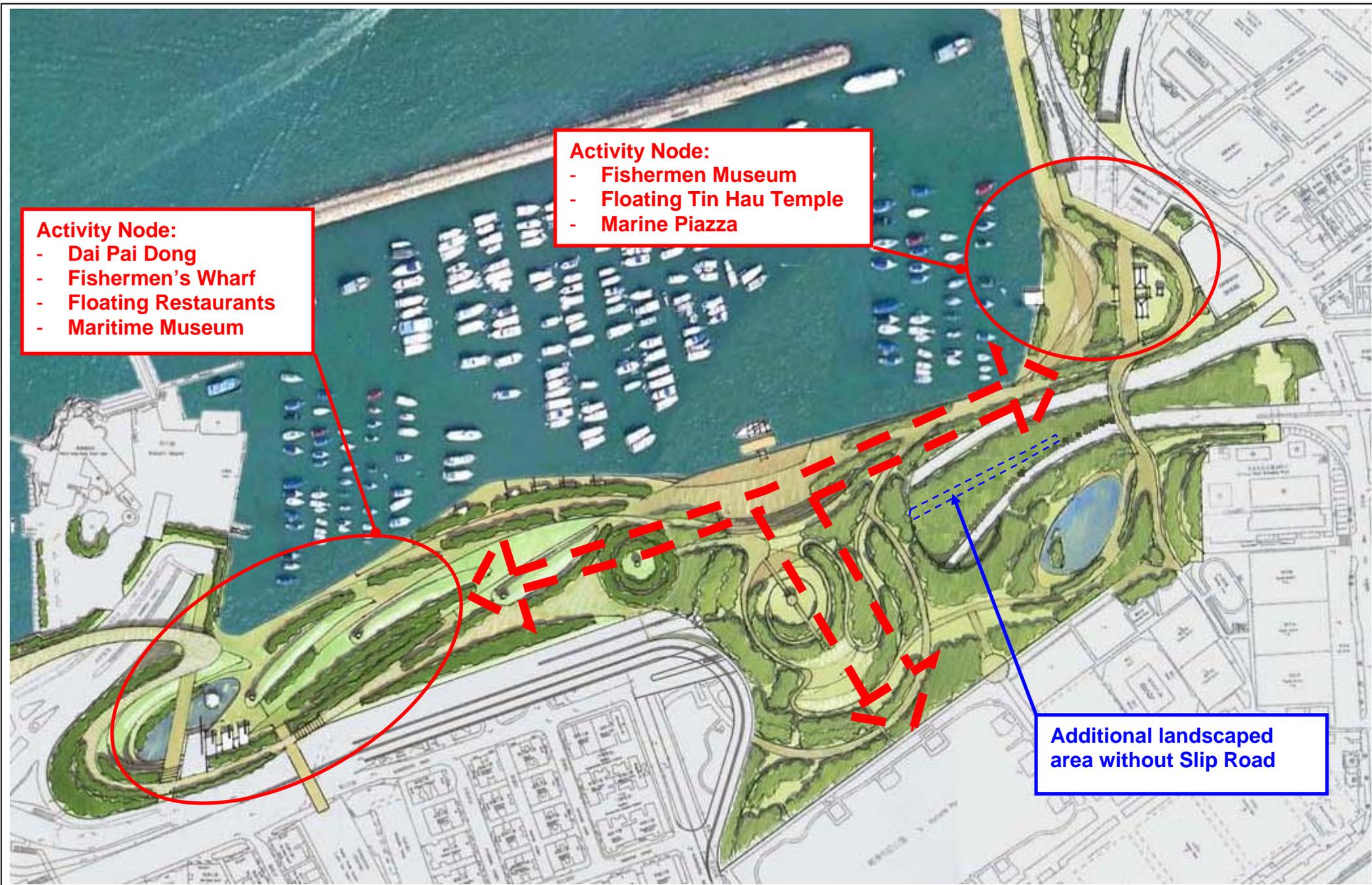




Slip Road 8
Traffic from Causeway Bay &
Tin Hau to Central

Realigned Victoria Park Road





Activity Node:

- Fishermen Museum
- Floating Tin Hau Temple
- Marine Piazza

Activity Node:

- Dai Pai Dong
- Fishermen's Wharf
- Floating Restaurants
- Maritime Museum

Additional landscaped area without Slip Road

Consolidation of Harbour-front & Trunk Road Ideas

Discussion Paper

No-Reclamation Alignments for the Trunk Road

1 INTRODUCTION

- 1.1 The Sub-committee on Wan Chai Development Phase II Review of the Harbour-front Enhancement Committee convened a 'Envisioning Stage – Consolidation Forum' to conclude the Envisioning Stage of the 'Harbour-front Enhancement Review – Wan Chai, Causeway Bay and Adjoining Areas' (HER) on 12 November 2005.
- 1.2 The aim of the forum was to share with the public the comments and proposals received during the public engagement activities held from May to July 2005 for the Envisioning Stage of HER. Opportunities have been taken to involve the public in consolidating these views before proceeding with the preparation of the Concept Plans for the development and enhancement of the harbour-front of Wan Chai, Causeway Bay and the adjoining areas.
- 1.3 Whilst the emphasis of the HER is on the planning of the harbour-front with a view to protecting the Harbour and improving accessibility, utilisation and vibrancy of the harbour-front areas, a holistic approach must be taken in integrating with the harbour-front development essential transport infrastructure required under the Wan Chai Development Phase II (WDII) project, this being mainly the need to complete a long-planned strategic road link along the north shore of Hong Kong Island. Any land that may be formed along the shoreline to facilitate the Trunk Road construction will then provide further opportunity for harbour-front improvement.
- 1.4 A district traffic study has confirmed that the Trunk Road, together with intermediate slip roads, is required to divert traffic away from the existing east-west road corridor and to provide relief to the corridor and the local road network. The need of the Trunk Road has also been confirmed by the Expert Panel on Sustainable Transport Planning and Central - Wan Chai Bypass ('Expert Panel') which consists of independent local and overseas experts in the relevant fields. Among the package of measures recommended, the Expert Panel recommends the construction of a bypass as a medium-term solution to tackle the problem of deteriorating traffic congestion in the Central and Wan Chai Area. The Expert Panel considers that the CWB is essential for improving the network reliability of the east-west link. Reference can be made to 'Report of the Expert Panel on Sustainable Transport Planning and Central - Wan Chai Bypass'
- 1.5 When investigating Trunk Road schemes, any reasonable alignments that do not require or result in reclamation (i.e. "no-reclamation" alignments) need to be identified and pursued, in accordance with the Court of Final Appeal's judgement on the presumption against reclamation established in the Protection of the Harbour Ordinance. This Discussion Paper explains why no-reclamation alignments for the Trunk Road are not feasible.

2 NO RECLAMATION ALIGNMENTS FOR THE TRUNK ROAD

- 2.1 The WDII project area is a linear coastal strip along the north shore of Hong Kong Island, through which the Trunk Road must traverse. The Trunk Road includes the extension of the Central – Wan Chai Bypass (CWB) in the Central Reclamation Phase III (CRIII) area eastward to join the existing Island Eastern Corridor (IEC) at the eastern end, in order to bypass the heavily congested urban area; at the same time, east-bound and west-bound connections to the local road network need to be provided.
- 2.2 At the western end, connection is required to the CWB tunnel which will be constructed under CRIII, with road level at -10mPD and top of tunnel structure at around -1mPD (i.e. above existing seabed level) at this connection point. This puts the tunnel structure above seabed level (indeed, the tunnel structure together with a tunnel protection layer would be above sea level and therefore viewed as reclamation, in any event) and reclamation will be required for cut-and-cover tunnel construction at this western end.
- 2.3 Beyond the connection with the CWB tunnel in the CRIII area, the Trunk Road will have to cross the MTR Tsuen Wan Line immersed tube tunnel. The Trunk Road must not impose any loads on, or cause any significant movement of, the existing MTR immersed tube tunnel. Tunnelling under the MTR Tsuen Wan Line will need to be at sufficient depth to avoid disturbance to the existing ground and movement of the MTR tunnel; the CWB tunnel connection back to existing road links at the Central Interchange, and the slip road connections to the ground level road network in Wan Chai North cannot be achieved for the resulting deep tunnel, which is therefore considered not feasible.
- 2.4 Piled deck structure over the MTR tunnel is a feasible solution. A proposed scheme for this tunnel crossing, developed and agreed in consultation with MTRC to meet their statutory limitations on allowable surcharge, lateral pressure and movement, involves the construction of a row of bored piles along either side of the Tsuen Wan Line tunnel with precast tunnel sections supported by these piles for the CWB tunnel which spans over the MTR tunnel. For this scheme, the Trunk Road will cross over the MTR tunnel at a road level of around -7mPD and a top of tunnel structure level of around $+2.5\text{mPD}$ (which would be above sea level). Reclamation is again required (otherwise the Trunk Road tunnel structure would be above sea level, giving rise to marine impacts and visual impacts; again, this would effectively be viewed as reclamation, anyway).
- 2.5 Therefore, in all cases, and no matter which route corridor may be pursued, reclamation will be required for the Trunk Road tunnel construction in the area to the west of the HKCEC Extension.
- 2.6 To the east of the Causeway Bay Typhoon Shelter, the Trunk Road needs to connect to the existing elevated IEC road structure at a road level between $+12\text{mPD}$ and $+15\text{mPD}$. This means that any Trunk Road tunnel running under the seabed must, at some point or another, rise above the seabed to a tunnel portal at ground level before rising onto elevated road structure to connect to the IEC. As the tunnel rises to and above the seabed, reclamation will be required for cut-and-cover tunnel construction, and reclamation will be required for the ground level tunnel portal construction.

3 CONCLUSION

- 3.1 In the WDII project area, the Trunk Road will connect the CWB cut-and-cover tunnel constructed under CRIII. Then, the Trunk Road must cross over the MTR Tsuen Wan line. This connection with CRIII and the MTR tunnel crossing will require reclamation in the area to the west of the HKCEC Extension for Trunk Road tunnel construction.
- 3.2 To the east of the Causeway Bay Typhoon Shelter, the Trunk Road, if the tunnel form of construction is adopted, needs to connect to the existing elevated IEC road structure. As the tunnel rises to and above the seabed, reclamation will be required for cut-and-cover tunnel construction, and reclamation will be required for the ground level tunnel portal construction.
- 3.3 These connecting constraints mean that all schemes for the Trunk Road alignment through the WDII project area will require some reclamation at least at the western and the eastern ends. There is therefore no possible “no-reclamation” alignment option for the Trunk Road through the WDII area.