

Submission from Ir Prof William H K LAM

# Report of the Expert Panel on Sustainable Transport Planning and Central - Wan Chai Bypass



October 2005

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Sustainable Transport Planning and  
Central – Wan Chai Bypass

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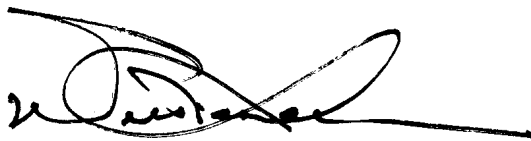
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## Foreword

Transport and land use decisions in Hong Kong have traditionally been made by the government, with input by specialists. In the past decade, nongovernmental organizations and concerned citizens have increasingly been involved in decisions affecting the outcome of road construction and urban development projects. While a consensus on enhancing the harbour-front emerged during public engagement of the Envisioning Stage of the Harbour-front Enhancement Review – Wan Chai, Causeway Bay and Adjoining Area project, diverse views on transport issues were also expressed by the public. This has prompted the Wan Chai Development Phase II Review Sub-committee to convene the Expert Panel Forum on Sustainable Transport Planning and Central-Wan Chai Bypass. The Expert Panel is invited to explore sustainable transport planning along the northern shore of Hong Kong Island and to deliberate on whether the Central-Wan Chai Bypass is needed.

The Panel appreciates the value of having visions, plans and consensus as part of our collective choice for a better living environment. The public increasingly aspires to a participatory approach towards decision-making. The need to integrate transport with land use planning for long-term sustainability has become abundantly clear and should be addressed by Government as a priority. Greater attention is called for on matters of land use and transport demand management. Pedestrian access to the waterfront must not be overlooked in our quest for an enhanced road network and improved public transport services. Careful appraisal and timely analyses are needed to ensure the sustainability of the chosen development strategy in the short, medium and long term. Deciding on a transport-related investment therefore calls for taking into consideration the environmental, economic and social impacts of the project holistically and comprehensively.

The Panel has held five working group meetings from 24 August to 30 September, 2005 to consolidate members' views and recommendations on the captioned issues. The Panel studied the background reports prepared by the Transport Department for this project and assessed the adjoining areas through site visits. Public participation was fully encouraged throughout, with 19 formal submissions received. A town hall meeting on the Expert Panel Forum to canvas the public's views and to dialogue with participants was held on 3 September, 2005. Taking into account the views and suggestions of all concerned, the Panel has mapped out recommendations in this report in the hope that they could assist Government to better implement sustainable transportation for improving our quality of life.



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Central-Wan Chai Bypass

October 2005

## **Acknowledgement**

The Expert Panel wish to express their gratitude to the Harbour-front Enhancement Committee - Sub-committee on Wan Chai Development Phase II Review for providing the valuable opportunities for a thorough discussion on the important topic of sustainable transport planning.

The Expert Panel's consideration of the issues would not have been so comprehensive without the participation of the public. The Panel therefore like to thank the members of the public who have provided their views in their submissions and/or at the Expert Panel Forum. Further appreciation goes to the Trade Development Council for providing the venue.

The Panel also wish to thank the Environment, Transport and Works Bureau, the Housing, Planning and Lands Bureau, the Civil Engineering and Development Department, the Planning Department and the Transport Department for providing the necessary assistance to the Panel in completing this review and for arranging the public forum, the meetings and the site visits.

## Glossary

- CBD - Central Business District
- CFA - Court of Final Appeal
- CHT - Cross Harbour Tunnel
- “the Corridor” - The east-west Connaught Road Central/Harcourt Road/Gloucester Road Corridor along the northshore of the Hong Kong Island
- CTS - Comprehensive Transport Studies
- CWB - Central - Wan Chai Bypass
- EHC - Eastern Harbour Crossing
- EIRR - Economic Internal Rate of Return
- ERP - Electronic Road Pricing
- Expert Panel Forum - Expert Panel Forum on Sustainable Transport Planning and Central-Wan Chai Bypass
- HEC - Harbour-front Enhancement Committee
- HER - Harbour-front Enhancement Review – Wan Chai, Causeway Bay and Adjoining Areas
- HKCEC - Hong Kong Convention and Exhibition Centre
- OZP - Outline Zoning Plan
- PHO - Protection of the Harbour Ordinance
- RC - reserve capacity, for measuring junction performance
- SPH - Society for Protection of the Harbour Limited
- Sub-committee - Sub-committee on Wan Chai Development Phase II Review of the Harbour-front Enhancement Committee
- TD - Transport Department of the HKSARG
- TPB - Town Planning Board
- WDII - Wan Chai Development Phase II
- WHC - Western Harbour Crossing
- V/C Ratio - Volume-to-Capacity Ratio

## Chapter 1 Introduction

### 1.1 Appointment of the Expert Panel

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1.1.1 The Harbour-front Enhancement Committee (HEC) was established in May 2004 to advise the Secretary for Housing, Planning and Lands of the Government of the Hong Kong Special Administrative Region, on the planning, land uses and developments along the existing and new harbour-front of the Victoria Harbour. The HEC has set up a Sub-committee on Wan Chai Development Phase II Review (Sub-committee) to advise the Government on a planning and engineering review on WDII (WDII Review). The background leading to the WDII Review is briefly described in Appendix I.

1.1.2 The Government has accepted the recommendation of the HEC to adopt an enhanced public participation approach in the WDII Review. To achieve this, the Sub-committee initiated the Harbour-front Enhancement Review – Wan Chai, Causeway Bay and Adjoining Area (HER) project under its steer and in parallel with the WDII Review. Results of the HER project will provide input to the WDII Review.

1.1.3 The HER project comprises of three stages, the “Envisioning”, “Realization” and “Detailed Planning” stages. It is designed to engage the public before the preliminary planning concepts are drawn up so that members of the community can express at an early stage their visions and aspirations for the sustainable development of the harbour-front with a view to building a consensus. Views and ideas raised by the public will form the basis for preparing the concept plans. Compared to the conventional practice of consulting the public after the planning concepts were produced, this is a new approach. It is hoped that with enhanced public participation at an early stage, the subsequent planning can better respond to public needs and aspirations.

1.1.4 To achieve the objectives of the HER project, five public forums, two community charrettes and an opinion survey were conducted in May to July 2005 under the Envisioning Stage of the project.

1.1.5 The public engagement activities of the Envisioning Stage of HER revealed that while there was a consensus view on enhancing the harbour-front, the public had expressed diverse views on the transport issues. The Sub-committee concluded that an in-depth discussion on the transport issues involving experts in the relevant field was necessary before embarking on the next stage of the HER project. In



this respect, the Sub-committee decided to convene an “Expert Panel Forum on Sustainable Transport Planning and Central-Wan Chai Bypass” (Expert Panel Forum).

1.1.6 In line with the operation of the HEC, the Sub-committee has required the Expert Panel Forum be opened to the public and opportunities be provided for stakeholders and interested parties to make written submissions to the Forum. Subject to this principle, the Panel was given the complete freedom to decide on the detailed arrangement of the Forum.

## **1.2 Terms of Reference**

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1.2.1 While acknowledging that a holistic approach is required for the transport planning for resolving traffic congestion problems along the northern shore of the Hong Kong Island and to ensure a sustainable solution which is in line with the harbour planning principles, the Task Force on HER, under the Sub-committee, is of the view that a conclusion one way or the other on the need of the CWB is essential before proceeding to the Realization Stage of HER. For this reason, it was concluded that the terms of reference of the Expert Panel would be to review and make recommendations on the sustainable transport planning for the northern shore of the Hong Kong Island, including the necessity of CWB.

1.2.2 The Panel was not requested to address design details of CWB.

## **1.3 Membership**

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1.3.1 The Expert Panel consists of local and overseas experts nominated by the Task Force on HER, Chartered Institute of Logistics and Transport in Hong Kong, Hong Kong Institution of Engineers, Hong Kong Institute of Planners, Department of Civil and Structural Engineering of The Hong Kong Polytechnic University, Department of Civil Engineering of The Hong Kong University of Science and Technology, and Department of Civil Engineering of The University of Hong Kong.

1.3.2 The Expert Panel is chaired by Professor William H K Lam, Chair Professor in Civil and Transportation Engineering of the Department of Civil and Structural Engineering, The Hong Kong Polytechnic University. Other members are:

Prof Michael Bell	Chair Professor in Transport Operations of the Department of Civil and Environmental Engineering, Imperial College London (nominated by the HER Task Force)
Dr Timothy D Hau	Associate Professor of the School of Economics and Finance, The University of Hong Kong (nominated by the HER Task Force)
Dr Hung Wing-tat	Associate Professor of the Department of Civil and Structural Engineering, The Hong Kong Polytechnic University (nominated by the Department of Civil and Structural Engineering, The Hong Kong Polytechnic University)
Ir Wilfred Lau	Director of Ove Arup & Partners Hong Kong Ltd (nominated by the Hong Kong Institution of Engineers)
Prof Lo Hong-kam	Associate Professor of the Department of Civil Engineering, The Hong Kong University of Science and Technology (nominated by the Department of Civil Engineering, The Hong Kong University of Science and Technology)
Ms YY Pong	Vice President of Hong Kong Institute of Planners (nominated by the Hong Kong Institute of Planners)
Dr James Wang	Associate Professor of the Department of Geography, The University of Hong Kong (nominated by the Chartered Institute of Logistics and Transport in Hong Kong)
Dr SC Wong	Associate Professor of the Department of Civil Engineering, The University of Hong Kong (nominated by the Department of Civil Engineering, The University of Hong Kong)

## **1.4 Work Programme**

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1.4.1. The Expert Panel was constituted on 18 August 2005. Besides attending the Expert Panel Forum on 3 September 2005 to hear views from the public, the Panel have met six times as follows:

- first meeting on 24 August 2005 – to determine the detailed arrangements of the Expert Panel Forum,
- second meeting on 2 September 2005 – to seek clarifications from government departments on the traffic data presented and the land use planning principles,
- site visit on 2 September 2005 to inspect the existing traffic conditions along the Corridor at the Connaught Road Central/Pedder Street junction, Man Yiu Street, Wan Chai Ferry Pier, Harbour Road/Fleming Road junction, Gloucester Road (Causeway Bay section),
- third meeting in the morning of 3 September 2005 - to exchange views among the members,
- fourth meeting on 14 September 2005 – to discuss the recommendations of the Expert Panel and format of the report,
- fifth meeting on 30 September 2005 – to review the preliminary draft report.

1.4.2 To enhance public participation in the process, public's views were invited before the Expert Panel Forum through four channels:

- Two sets of circular letters were sent on 12 and 22 August 2005 respectively to about 700 parties or persons. They included the collaborators of HER (organizations invited to assist and to promote the HER project); members of the Legislative Council, District Councillors of the 18 Districts, Town Planning Board, Transport Advisory Committee and Advisory Council on the Environment; stakeholders along Wan Chai & Causeway Bay harbour-front and those organizations that have made submissions to the Sub-committee at the Envisioning Stage of HER. The letters informed them of the Forum and invited them to make submissions and to attend the Forum.
- Advertisements were placed in the South China Morning Post, Star Post and Metro during the period from 17 to 24 August 2005.

- Notices were sent to about 4,700 community groups, green groups, schools, building owners associations, building mutual aid committees, etc; and
- Three press releases were issued.

1.4.3 Nineteen submissions were received from different organizations and members of the public prior to the forum. Transport Department had also made a submission. . These are summarised in Chapter 2 and the submissions had been uploaded onto the HEC website for public's access (refer to [http://www.harbourfront.org.hk/eng/content\\_page/her\\_pdf\\_1.html](http://www.harbourfront.org.hk/eng/content_page/her_pdf_1.html) and [http://www.harbourfront.org.hk/eng/content\\_page/doc/Full\\_Submission.pdf](http://www.harbourfront.org.hk/eng/content_page/doc/Full_Submission.pdf) respectively).

1.4.4 Having reviewed the submission of Transport Department, additional traffic analysis and information were requested from the Transport Department to ascertain the robustness of the traffic demand model and to verify the assumptions made in the traffic demand model. Supplementary information was subsequently provided by Transport Department (refer to [http://www.harbourfront.org.hk/eng/content\\_page/doc/SN-en.pdf](http://www.harbourfront.org.hk/eng/content_page/doc/SN-en.pdf)).

1.4.5 At the second meeting of the Expert Panel, representatives of the Planning Department and the Civil Engineering and Development Department were invited to explain the land use planning in the Central and Wan Chai area and to explain the possible schemes of the CWB if it is to be built.

1.4.6 At the Expert Panel Forum on 3 September 2005, there were 128 attendants, including 65 members of the public and 9 from the media. A summary of the submissions received prior to the forum was presented and members of the public were given the opportunities to give comments after the deliberation of the Transport Department and after the panel discussion.

## **1.5 Overview of the Report**

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1.5.1 The content of this report is outlined as follows and the focus of the Expert Panel's review is on recommending a sustainable solution for relieving the traffic congestion on the strategic route ( not the congestion of the local roads).

- Chapter 1 gives an overview of the background of the formation of the Expert Panel and the Works Programme;

- Chapter 2 consists of two main parts. The first part provides the background of the traffic situation in the Central-Wan Chai area based on the information provided by the Transport Department. The second part summarises the views and submissions made by the public; and
- Chapter 3 details the Panel's views as well as short, medium and long-term recommendations for the sustainable transport planning of the Central and Wan Chai area.
- Five appendices are included. Appendix I presents a brief background on the WDII Review. Appendix II lists the organisations and individuals from the public who have submitted comments, suggestions and recommendations during the public consultation process. Locations of the Central-Wan Chai Bypass and Road P2 are indicated on Appendices III and IV respectively. Appendix V contains photo exhibits showing Expert Panel's activities, proceedings and deliberations.

## Chapter 2 Submissions

### 2.1 Submission from Transport Department

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2.1.1 Below is a summary of the traffic condition in the Central and Wan Chai areas and the background of the Central-Wan Chai Bypass based on Transport Department's submission. Detailed arguments can be found in the HEC website under [http://www.harbourfront.org.hk/eng/content\\_page/doc/Full\\_Submission.pdf](http://www.harbourfront.org.hk/eng/content_page/doc/Full_Submission.pdf) and [http://www.harbourfront.org.hk/eng/content\\_page/doc/SN-en.pdf](http://www.harbourfront.org.hk/eng/content_page/doc/SN-en.pdf).

#### Existing Road Network

2.1.2 CBD is currently served by the east-west Connaught Road Central / Harcourt Road / Gloucester Road Corridor ("the Corridor"). This Corridor is primarily a dual four-lane urban trunk road serving as a key east-west link for Hong Kong Island North. As an Urban Trunk Road, it bears the responsibility of carrying the long-haul traffic between east and west of Hong Kong Island.

2.1.3 At the same time, the Corridor also serves as a Distributor Road providing north-south connections to various local districts and providing key accesses to its adjacent areas with very short connecting roads. Unfortunately, the numerous junctions with side roads as well as underpasses and flyovers integrated with the Corridor create substantial weaving and merging movements. As a result, the Corridor is over-saturated and too heavily used by local traffic accessing its adjacent areas such that it is unable to perform its intended function as an Urban Trunk Road. Traffic queues from any bottlenecks along the Corridor's side roads or its main section usually result in blockage of other movements and rapid deterioration of traffic condition. A minor accident or incident occurs along or at the vicinity of the Corridor often results in serious congestion and delay in the road network, and in some more serious cases, gridlock of the whole CBD and complete blockage of the Corridor. These are clear indications that the stability and reliability of both the strategic road network and the Central and Wan Chai local road network are in an unsatisfactory state.

#### Existing Traffic Pattern

2.1.4 The existing Corridor is already operating beyond its design capacity. Congestion along the Corridor is not limited to the typical morning and evening peak hours. Regular traffic congestion can be

observed between 8 a.m. and 8 p.m. during weekdays. Eastbound traffic heading for the CBD often queues back to the WHC approach along the Rumsey Street Flyover and also the at-grade Connaught Road Central. Westbound traffic moving towards the CBD often tails back to Gloucester Road near the Wan Chai Sports Ground.

2.1.5 Regular traffic queues along the Corridor are also found in the direction to the CHT, the Aberdeen Tunnel and the Causeway Bay area. These regular traffic queues occupy the road spaces of the Corridor and impose unnecessary delay to the through traffic between the eastern and western parts of Hong Kong Island.

### **Traffic Forecasts**

2.1.6 Five sets of traffic forecasts were undertaken to simulate the traffic situation at the Central, Wan Chai and Causeway Bay areas by 2016. Peak hour traffic flows were simulated for these test scenarios.

2.1.7 The assumptions of the five test scenarios are as follows:

**Scenario A** - With CWB, with Road P2, with the slip roads in Wan Chai Development Phase II, and with the proposed developments in Central Reclamation Phase III.

**Scenario B** - Without CWB, without Road P2, without the slip roads in Wan Chai Development Phase II, and with the proposed developments in Central Reclamation Phase III.

**Scenario B1** - Without CWB, without Road P2, without the slip roads in Wan Chai Development Phase II, and without the proposed developments in Central Reclamation Phase III.

**Scenario C** - With CWB, with Road P2, without the slip roads in Wan Chai Development Phase II, and with the proposed developments in Central Reclamation Phase III.

**Scenario D** - With CWB, without the at-grade road P2, without the associated slip roads in Wan Chai Development Phase II, and without the proposed developments in Central Reclamation Phase III.

2.1.8 The results of the test scenarios show that CWB with the slip roads in Wan Chai and Road P2 are required even if there is no new development in Wan Chai Development Phase II and if all the not-yet-started developments in Central Reclamation are removed. The summary of results is given in the table below.

**Table 1 : Summary of Modeling Assumptions and Results of the 5 Test Scenarios**

	CWB	Road P2	Wan Chai Slip Roads	Develop-ments in CR III	Traffic Modeling Results	
					V/C Ratio of Major Road Sections along the Corridor	RC of Major Road Junctions in Central & Wan Chai
<b>Scenario A</b>	✓	✓	✓	✓	Generally below 1, except along the westbound Inner Gloucester Road.	Generally with some RCs.
<b>Scenario B</b>	x	x	x	✓	All above 1.2 along both eastbound and westbound. Some as high as 1.55.	Most of the critical junctions have negative RCs.
<b>Scenario B1</b>	x	x	x	x	Most of the west-bound road sections with v/c ratio above 1.2. Some as high as 1.53.	Many of the critical junctions have negative RCs.
<b>Scenario C</b>	✓	✓	x	✓	Many of the east-bound road sections with v/c ratio above 1. Some as high as 1.13.	Some critical junctions have negative RCs.
<b>Scenario D</b>	✓	x	x	x	Most of the east-bound road sections with v/c ratio above 1. Some as high as 1.13.	Most of the critical junctions in Wan Chai have negative RCs.

Notes: V/C Ratio = Volume over Capacity Ratio for road links; RC = Reserve Capacity for signal junctions

## Summary of Transport Department's Submission

2.1.9 The east-west Corridor serving the CBD on Hong Kong Island is already operating beyond its capacity as can be observed on site. Previous and recent strategic transport studies have predicted further increase in traffic demand along the east-west Corridor, and confirmed the need for a parallel waterfront trunk road, the CWB, to avoid more extensive and frequent traffic congestion and even gridlock in the road network.

2.1.10 Traffic management and fiscal measures are already in place to maximize the capacity of the existing road network and suppress traffic demand. Further measures including ERP have also been considered. All these existing and proposed measures, however, cannot resolve the traffic congestion problem along the east-west Corridor. In other words, the CWB is essential, and ERP can complement the CWB but cannot replace it.

2.1.11 A district traffic study has been conducted to determine the configuration of the CWB. The study confirmed that the CWB is required, and that intermediate slip roads are essential to achieve the objectives of building the trunk road, i.e. to divert traffic away from the existing east-west Corridor and to provide adequate relief to it.



## **2.2 Submissions from the Public**

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2.2.1 Nineteen submissions from the public were received before the Expert Panel Forum on 3 September 2005. The 19 submissions from various organisations / individuals have been uploaded in the website under [http://www.harbourfront.org.hk/eng/content\\_page/her\\_pdf\\_1.html?s=1](http://www.harbourfront.org.hk/eng/content_page/her_pdf_1.html?s=1). A list of organisations and individuals who have submitted views and recommendations is presented in Appendix II.

2.2.2 Some submissions support the Government's initiative of providing additional infrastructures, i.e. the construction of CWB to cope with the anticipated future traffic demand. On the other hand, some submissions are against the provision of CWB. Furthermore, there are views on sustainable transport planning.

2.2.3 A summary of the public views, classified according to the following three categories, namely, *Support the Provision of CWB*; *Against the Provision of CWB*; and *Other Views*, is given below.

### **Support the Provision of CWB**

2.2.4 Public views supporting the provision of CWB are as follows:

- Traffic should be diverted and not blocked.
- CWB would benefit the entire community.
- CWB would alleviate traffic congestion and improve the operating environment.
- The aesthetic of the Victoria Harbour is important but should not impede economic growth
- Major roads in Wan Chai are operating beyond capacity and there is an urgency to build the CWB.

2.2.5 In supporting the provision of CWB, some of the submissions include the following conditions and provisions:

- All viable alternatives should be fully examined and exhausted, including the implementation of all traffic demand measures and alternative modes of transport for handling traffic generated by developments that have already commenced operation.
- The CWB would be designed to take existing surface road traffic underground.
- The CWB would be underground along the harbour-front past Fenwick Pier with offloading pontoon positioned as close as

possible to Fenwick Pier for easy access to the harbour for visiting sailors of all nations.

- Traffic lights or crossing places near Fenwick Pier would be included in the plans.
- The traffic impact would be assessed; the toll levels of the existing 3 tunnels would be equalised; a more comprehensive ERP system for all traffic entering the CBD would be implemented; and CWB would not be at-grade.
- Tunnel instead of viaduct or at-grade alignment be adopted.
- CWB would be connected to Hing Fat Street in the east and Fenwick Street in the west by two ramps. It was believed that this scheme would minimize reclaimed land, divert traffic and help to beautify the waterfront.
- Victoria Park would be extended to the waterfront corridor and the existing Victoria Park Road would be reconstructed as a tunnel under the Victoria Park to encourage the public to walk between the park and the harbour front.
- Alternative CWB interchange options at Wan Chai North to facilitate a right turn movement into Fleming Road from Road P2 would be provided; the amount of reclamation would be reduced; most of the existing facilities and continuous pedestrian access at-grade would be provided to the Wan Chai water-front.
- A major consideration in the development of CWB should be harbour-front enhancement to facilitate public enjoyment of the waterfront.

### **Against the Provision of CWB**

2.2.6 Public views against the provision of CWB are as follows:

- The public could not see the justification for the proposed 4-lane at grade road in addition to any bypass. This would increase the dislocation of the harbour-front from the rest of Wan Chai and degrade the area in terms of aesthetics.
- All traffic measures had to be implemented first before any further construction of new road infrastructure is initiated.
- The decision by Government in April 2005 to implement measures to balance the traffic flow of the three cross-harbour tunnels must be expedited. This means balancing the toll rates amongst them, especially the central and western tunnels.

- One through lane on existing road to carry 40% of the traffic would be desirable.
- Sufficient effort to exhaust all alternatives to resolve traffic congestion without the need of reclamation had not been made. Nevertheless, the traffic congestion needs to be resolved.
- It is in conflict with the Protection of Harbour Ordinance, the Harbour Planning Principles and the enhancement of the harbour-front.
- It is reasonable to expect that all alternative forms of transport would be implemented first before introducing any new road infrastructure. In line with this view, the construction of the Northern Island Line, Sha Tin / Central Link, and Airport Railway extension would help reduce congestion. Advancing the implementation of the West Island Line on or before 2012 would also relieve traffic congestion.
- Railways could improve accessibility to the waterfront and north of Gloucester Road.
- Running twice the number of cross harbour trains could improve the congestion problem.
- Not building the CWB would save expenses related to building the bypass (no construction contract penalty).

## **Other Views**

2.2.7 Other public views are as follows:

### On ERP

- There was no need to wait for an alternative vehicular corridor before ERP is implemented.
- A shorter wheel base for buses and coaches (promoted with ERP) should be considered.
- According to the HEC survey, 70% of the people had no objection to ERP in principle or have no opinion.
- The ERP Study should be updated.
- Four (4) approaches of road pricing could be considered: Corridor, Area Scheme, National and Trans-national Systems (charging on distance travelled), and Integration (charging across transport modes).

- 10 strategies were recommended for implementing road pricing, which includes: making it part of an integrated transport strategy, making use of funds acceptable to the public, maintaining flexibility in policy making etc.
- ERP would deter traffic from entering Wan Chai but would not provide any alternative diversion route, was not supported.
- ERP was considered not acceptable unless the taxi industry would be excluded.
- A more comprehensive ERP system for all traffic entering the CBD shall be considered if price equalisation on the three tunnels could not resolve the traffic problems.
- The strategy for implementing road pricing should be: Has congestion become intolerable? Have all other remedies been tried? Is road pricing politically viable?

#### On Integrated Land Use and Transport Planning

- Transport issues should not be treated as ancillary to but integrated into the land use planning process. Any decision to build new transport infrastructure should only be considered when all viable alternatives, including the intelligent use of existing infrastructure, had been examined and exhausted. Measures to resolve the existing and projected traffic problems should be extended beyond traffic management and fiscal measures. Existing/planned land uses and development density/intensity should be reviewed.
- The projected traffic increase should be reviewed in view of the reduction and deletion of the proposed developments on Central and Wan Chai Reclamation, Green Island Reclamation, Green Island Link to Lantau and the Container Port and Route 7.
- The Central District (Extension) OZP potentially allowed for nearly 13 million sq. ft. of Gross Floor Area to be added in the future would add substantial traffic to the harbour-front. Plans to add an extension to the Hong Kong Convention and Exhibition Centre would likewise increase traffic.
- Refer the Central (Extension) OZP back to the Town Planning Board and amend the current draft Wan Chai North OZP to remove all reclamation based on land for the bypass.
- The demand for the through traffic was possibly due to the additional density planned for the CBD and Wan Chai, particularly high-level developments, i.e., skyscrapers, etc.

- The current industrialisation of the area (a sewage treatment plant, an electricity sub-station and an LPG station and a proposed electrical transformer on Wan Shing Street) is against greening and beautifying the harbour-front area.
- The typhoon shelter, yacht club, rest area, food court, waterfront corridor with pedestrian facilities to between Central and Wan Chai, cycle path and running track should be maintained.
- Existing occupancies in Wan Chai North should be acknowledged as a key feature of this area.

#### On Possible Improvement Measures

- The problem was not through traffic, but stacking of local traffic because of limitations in the surrounding areas to absorb traffic. These included stacking of Causeway Bay traffic and Times Square traffic etc.
- Signalisation, parking policies, traffic calming, etc should be improved. Loading / unloading should be allowed at night time only.
- All commercial vehicles except franchised buses and trams between the Western and Central tunnels and above Connaught Road / Gloucester Road from 8am to midnight daily be banned.
- To establish pick-up and drop-off zones for taxis, minibuses, school buses and residents' buses along the waterfront north of Connaught Road / Gloucester Road. Passengers were to transfer to franchised buses from there, or walk.
- Taxi queue for the LPG station should be regulated.
- Convention and exhibition traffic be better managed.
- Traffic light sequencing should be corrected or the right-turn into Marsh Road be banned.
- Traffic lights or crossing places near Fenwick Pier be improved.
- Escalator network should be expanded. Improved / maintained ease of access for general public to Wan Chai North should be provided; improved parking for both Wan Chai North occupancies' operational vehicles and visiting general public should be provided.
- The environmental impact should be closely monitored during construction to minimize the negative impact to the harbour.

## Chapter 3 Panel's Views and Recommendations

### 3.1 Sustainable Transport Planning

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#### Concept of Sustainability

3.1.1 "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs," according to the so-called Brundtland Report of the United Nations (The World Commission on Environment and Development, 1987, p. 43). The Panel regards sustainable transportation as meeting our social, economic and environmental goals for today and tomorrow.

#### Objective of Sustainable Transportation

3.1.2 The Panel further recognizes the objective of sustainable transportation is to manage travel demand and to provide adequate transport facilities in a timely manner. This pursuit is fully consistent with the tripartite principles as espoused in the Hong Kong Government's green and white papers of internal transport policy (Hong Kong Government, 1974, 1979, 1989, 1990).

#### Key Issues in Sustainable Transport Planning

3.1.3 The Panel considers that the following are the key issues to be considered in the planning of sustainable transportation:

- *Integrated land use and transport* – Being interrelated, land use and transport planning ought to go hand in hand. Hong Kong is now at the stage where land-use planning needs to take as given transportation infrastructure requirements. Therefore land use development has to be planned to take into account travel demand, particularly in urban areas where the scope for further transport infrastructural development is severely restricted.
- *Consideration of environmental, economic and social factors and their interaction* – When appraising transportation investment, the economic, environmental and social impacts of the transport investment should be evaluated comprehensively and holistically.
- *Multi-modal and multi-faceted approach* – Sustainable transportation encompasses the gamut of transport facilities and

carriers (such as road, rail, ferry, motor vehicles and non-motorized transport) as well as travellers with differing characteristics.

- *Use of appropriate means or technology* – Selecting the right tool to tackle a particular problem – be it by simply painting white lines, providing information for public transport riders, expanding transport infrastructure capacity (including road and rail), charging for road use, or a combination thereof – should be done fittingly.
- *Balance of demand and supply* – Travel demand, being dynamic, changes as the land use and activities in an area changes. In order to balance travel demand and transport supply appropriately, short-term and long-term land-use plans must be reviewed regularly and adjusted accordingly.
- *Efficient use of existing infrastructure* – In congested situations, a suitable package of transport management measures (such as bus route rationalization, loading and unloading restrictions, road use charging and so forth) is warranted to ensure more efficient utilization of existing transport facilities. Road use charging is needed over the long term to ensure the sustainability of the heavily-utilized transport infrastructure.

## **3.2 The Need for Central-Wan Chai Bypass**

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### **Problem Statement**

3.2.1 The Panel notes that the east-west Connaught Road Central / Harcourt Road / Gloucester Road Corridor (hereafter the Corridor) is important locationally and strategically as it brings traffic from Hong Kong Island to the rest of the territory including Tseung Kwan O and Sai Kung to the northeast, the Hong Kong International Airport to the west and as far north as the boundary with the Mainland. Without a bypass, the corridor along the northern shore of Hong Kong Island would result in a steady increase of bottlenecks and traffic snarls. The so-called Central – Wan Chai Bypass (hereafter the Bypass or CWB for short) therefore constitutes a missing link in Hong Kong's strategic transport network. The reliability of the road network in the Central and Wan Chai area is of paramount importance as an ugly accident on this east-west strategic link would paralyze the road network all the way to the Kowloon side. The resultant losses to society in time wasted, fuel

burnt and resources dissipated are costly and intolerable. We as a community have in fact witnessed all too recently (on 9 May, 2005) just such a traffic incident that paralyzed our transport network and resulted in chaos throughout Hong Kong. In such a situation, the problem of network reliability looms large and cannot be addressed effectively by road use charging *per se*, short of unacceptably steep prices: the establishment of an alternative route is called for.

3.2.2 The Panel regards the recurrent congestion at the east-west Connaught Road Central / Harcourt Road / Gloucester Road Corridor and the adjoining areas to be socially, economically and environmentally unacceptable. Analysis of the data has shown that even using complementary traffic management and fiscal measures to curtail vehicular growth and travel demand – short of Draconian measures – would be ineffectual and socially undesirable.

### **The Need for an Alternative Route**

3.2.3 Enhancing transportation infrastructure capacity in the Corridor vicinity – which would take several years to fruition – would bring long-awaited relief over the medium haul to the Central and Wan Chai districts and greatly facilitate east-west traffic flow. The Panel therefore 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 Panel considers that the Central Wan Chai Bypass is essential for improving the network reliability of the east-west link. In the process of arriving at this conclusion, the Panel carefully addressed several important questions.

### **Key Questions to be Answered**

3.2.4 *Is doing nothing sustainable?* The Panel's unequivocal answer to the "do-nothing" option is 'no'. Based on standard traffic forecasting techniques, the Panel finds that the existing road network would not be able to cope with travel demand a decade from now despite assuming nil car growth and no further land development in the Central and Wan Chai area.

3.2.5 *Is the provision of the Central - Wan Chai Bypass alone sustainable?* The Panel's answer is also unequivocally 'no'. Since the Bypass has a finite capacity, growth of travel demand over a decade would overrun its capacity. Long term sustainability of the road network



hence calls for transport management measures and road use charging to produce more efficient infrastructure utilization.

*3.2.6 Can implementing road pricing per se solve the problem at hand?*

The Panel notes that no measure alone can serve as a panacea. Road pricing, which is in line with the 'user pays principle', refers to the optimal setting of congestion tolls under road use charging. Electronic road pricing (ERP) and area licensing, for instance, are but two types of congestion charging mechanisms with varying cost-effectiveness. Without infrastructural enhancement and traffic management measures, the optimal toll level required for road pricing to be effective under the currently congested situation – even without hyper-congestion taking place – would be extremely high, with issues of public acceptability coming into play. Social acceptance is uncertain at this stage in time, given that there are several unresolved issues regarding the design of congestion charging schemes suited for Hong Kong and their associated impacts, which would necessitate careful study and deliberation by both decision-makers and concerned citizens. The Panel therefore considers that road pricing in and of itself could not yet be considered a feasible option within the time frame in question.

*3.2.7 Is CWB and accessibility to the waterfront mutually exclusive?*

The Panel's answer is again 'no'. However, the Panel regards Harbour-front enhancement to facilitate access to the waterfront and the enjoyment thereof by the public should be made a priority in the development of the Bypass.

*3.2.8 Is stopping development an acceptable and sustainable solution to road congestion?*

The Panel considers that while zero development is always an option, the associated resource mobilization opportunities (in terms of foregone land rents, for instance) should be explicitly accounted for. However, sustainability calls for a proper balancing of economic, social and environmental considerations. This balance could not be achieved by halting development.

*3.2.9 Are the Bypass and electronic road pricing mutually exclusive?*

The Panel observes that long-term sustainability warrants the implementation of both electronic road pricing and the construction of the Central - Wan Chai Bypass.

### **3.3 Recommendations**

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#### **Short-Term Measures**

##### **Transportation Management Measures**

3.3.1 The Panel recognizes the need for short-term transport management measures such as loading/unloading restrictions, junction improvement, public transport route rationalization, etc., to tackle the traffic congestion problem on the Corridor prior to the opening of the Bypass.

##### **Tunnel Toll Adjustment**

3.3.2 The Panel recommends that Government should seriously consider differential tolling (i.e., tolling by time of day) by revamping the tolling arrangements of the three tunnels traversing the Victoria Harbour as a mitigating measure prior to the opening of the CWB. A viable scheme agreed to by stakeholders would go some distance towards cutting down the backups and gridlocks at the entrances of the harbour tunnels, thereby easing east-west traffic flow.

##### **Managing Development Programme**

3.3.3 The Panel recommends that Government address the need to regulate land-use developments throughout the Corridor area in order not to aggravate the congestion problem in the Corridor before the Bypass opens.

##### **Pedestrian Access to the Waterfront**

3.3.4 The Panel recommends that Government consider carefully the need for decent pedestrian access to the Victoria Harbour. The Panel notes that pedestrian accessibility to the harbour-front would be enhanced in the proposed development plan as compared to the existing situation. However, facilities for improvement of pedestrian access to the waterfront should also be provided in the interim.

#### **Medium-Term Measures**

##### **Enhancing the Multi-modal Transport Network**

3.3.5 Since the existing transport infrastructure facilities could not meet current and future vehicular demand by 2016, the Panel supports the construction of the CWB to improve the reliability of the road

network and to enhance multi-modal public transportation in the Corridor. The inability of the present infrastructure capacity to cope with present and future travel demand would persist even if development in the Central reclamation area were stopped and territory-wide car ownership held unchanged from now until 2016.

3.3.6 The Panel further supports the provision of slip roads at the Hong Kong Convention and Exhibition Centre area and at the Victoria Park Road / Gloucester Road / Hing Fat Street passageway to magnify the benefits of the CWB.

### **Environmental and Social Concerns**

3.3.7 The Panel supports the call for the enhancement of the Victoria harbour-front and recommends that Government properly address the visual and environmental impacts and social concerns arising from the construction of the multi-billion dollar Bypass, in addition to improving pedestrian access in the short term.

### **Road P2**

3.3.8 The Panel recognizes the need for Road P2 as an important *ad interim* measure in addressing traffic congestion in the Central reclamation area before the Bypass comes about. The Panel suggests that Government review the scale of P2 to match the gradual land development programme. While it may be necessary to reserve sufficient land for the full-scale development of Road P2 over the longer term, the Panel further recommends that Government explore introducing *pro tempore* traffic calming measures (such as speed bumps, euphemistically called 'sleeping policemen') on Road P2 and greening the reserve area in the meantime.

### **Road Pricing**

3.3.9 The Panel recognizes the vital importance of road pricing as a sustainable transport measure in internalizing traffic congestion externalities and lowering vehicular emissions in busy areas, which would improve air pollution and the quality of life. However, due to the wide variety of road pricing schemes that could be introduced, the Panel recommends that Government seriously consider implementing road pricing after undertaking a detailed assessment of the viability of alternative pricing schemes (electronic or otherwise), their relative effectiveness and social acceptability.

### **The Complementariness of Road Pricing and the Bypass**

3.3.10 The Panel recognizes that road pricing is a complementary measure to the construction of the Bypass. Because of the opening of

the CWB – scheduled to take place in 2012 – dovetails with the expected lead time for the implementation of electronic road pricing, the Panel recognizes a window of opportunity exists to introduce ERP at the opening of the CWB. Integrating ERP with road capacity enhancement thereby constitutes a package of measures that is more likely to be publicly acceptable and truly sustainable over the long term.

### **Long-Term Measures**

#### **Holistic Approach towards Transport/Land Use Planning**

3.3.11 For sustainable transport planning, traffic demand needs to be managed and planned in a holistic manner. A need for the simultaneous integration of land use and transport planning therefore follows. The Panel recognizes that Government has been taking an interactive approach towards land use and transport planning, and recommends that Government fortify this integration, placing due emphasis on the limitation of excessive transport infrastructural development in heavily congested areas.

#### **An Area-wide Pedestrian Network to the Harbour-front**

3.3.12 The Panel recognizes the community's growing aspirations for pedestrian access to the harbour-front and recommends the development of an area-wide pedestrian network linking the waterfront with the hinterland as well as to all means of transport modes, thereby connecting motorized and non-motorized transportation in a holistic way.

#### **Incident Management Capability**

3.3.13 The Panel recommends that Government strengthen the management of traffic incidents along the Corridor to augment the reliability of the expanded road network in the Central and Wan Chai area, bracing oneself for the heightened risks associated with network paralysis from severe traffic incidents.

#### **The Maintenance of Reserve Capacities**

3.3.14 The Panel further recommends that Government review reserve capacities in the transport infrastructure to better the safety margin. For example, if the optimal volume-to-capacity (v/c) ratio – a standard indicator reflecting the performance of a road – on a highway is close to 0.9, it should be taken as a signal for stemming land use development.

#### **Sustainable Transportation**

3.3.15 To improve the quality of life in our community, the Panel recommends that Government review and adopt best practices in sustainable transportation for Hong Kong. The Panel recognizes the need for Government to develop integrated policies, strategies and packages for sustainable transportation in Hong Kong for both motorized and non-motorized transportation. For instance, while the share of public transportation would likely be increased due to a combination of an enhanced road network, appropriate road use charging measures and integrated land use and transport planning, Government could seize the opportunities to rationalize multi-modal public transport routes and improve connectivity with rail.

## REFERENCES

- World Commission on Environment and Development (1987), *Our Common Future*, Oxford: Oxford University Press. This is also known as the Brundtland Report of the United Nations.
- Hong Kong Government (1974), *Transport in Hong Kong: A Paper for Public Information and Discussion*, Green Paper on Internal Transport Policy, Hong Kong, May, 16 pp.
- Environment Branch (1979), *Keeping Hong Kong Moving: The White Paper on Internal Transport Policy*, Government Secretariat, Hong Kong, May, 47 pp.
- Transport Branch (1989), *Moving into the 21<sup>st</sup> Century: The Green Paper on Transport Policy in Hong Kong*, Government Secretariat, Hong Kong, May 45 pp.
- Transport Branch (1990), *Moving into the 21<sup>st</sup> Century: Transport Policy in Hong Kong*, Government Secretariat, Hong Kong, January, 46 pp.

## **Appendix I Brief Background Leading to the WDII Review**

The Government gazetted the draft Wan Chai North Outline Zoning Plan (OZP) under the Town Planning Ordinance in April 2002. It covered the area bounded by the western edge of Hong Kong Exhibition and Convention Centre (HKCEC) at the west, the eastern breakwater of the Causeway Bay Typhoon Shelter and Hing Fat Street at the east and the Gloucester Road at the south. Among others, the OZP indicated Government's proposals for the CWB and for enhancing the harbour-front at Wan Chai North and Causeway Bay.

In February 2003, the Society for Protection of the Harbour Limited (SPH) applied for judicial review of the decisions of the Town Planning Board (TPB) made in connection with the draft Wan Chai North OZP on the interpretation of the Protection of the Harbour Ordinance (PHO). The judicial review was ultimately determined by the Court of Final Appeal (CFA), which handed down its judgment on 9 January 2004.

According to the CFA judgment, the presumption against reclamation specified in the PHO can only be rebutted by establishing an overriding public need for reclamation. This need (i.e., the economic, environmental and social needs of the community) must be a compelling and present need with no reasonable alternative to reclamation (all circumstances including the economic, environmental and social implications should be considered). A compelling and present need goes far beyond something which is "nice to have", desirable, preferable or beneficial. But on the other hand, it would be going much too far to describe it as something in the nature of the last resort, or something which the public cannot do without.

In the light of the CFA judgment of 9 January 2004, Government has undertaken to conduct a planning and engineering review ("WDII Review") on the draft Wan Chai North OZP and the area in between the eastern construction limit of the Central Reclamation Phase III project at about Lung King Street and the HKCEC to ensure full compliance with the requirements of the PHO and the CFA judgment. The WDII Review commenced in March 2004.

## Appendix II List of Organisations / Individuals Who Made Submissions

To enhance public participation in the process, public's views were invited before the Expert Panel Forum. Nineteen submissions were received from different organizations and members of the public prior to the forum. A list of organisations and individuals who have submitted their views and recommendations is presented in the table below.

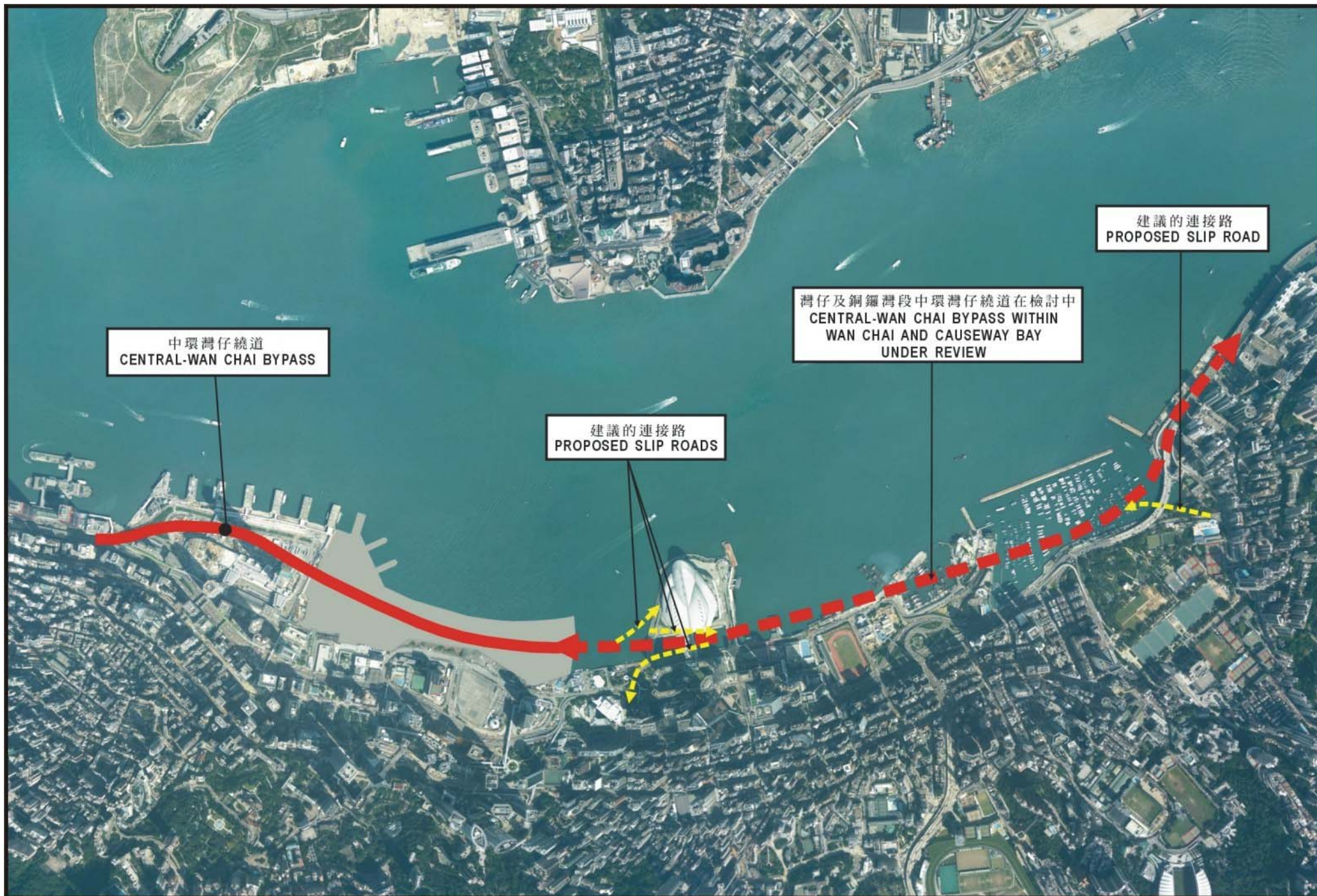
### A1 : Submissions from Organizations / Individuals

Ref.	Name of Organization/Individual	Subject	Date
1	<u>Servicemen's Guides Association</u>	(no title)	15-Aug-2005
2	<u>Member of Public</u>	Central Traffic Suggestion	17-Aug-2005
3	<u>Member of Public</u>	(no title)	23-Aug-2005
4	<u>Clear the Air</u>	(no title)	23-Aug-2005
5	<u>Save Our Shorelines</u>	The submission of Save Our Shorelines is a report prepared by Deloitte Research titled 'Combating Gridlock: How Pricing Road Use Can Ease Congestion' and the report is available to the public through the website of Deloitte Research at <a href="http://www.deloitte.com">www.deloitte.com</a> .	23-Aug-2005
6	<u>Chairman of the Planning, Traffic and Environmental Protection Committee of the Wan Chai District Council Mr Stephen Ng Kam-chun</u>	(no title) *	25-Aug-2005
7	<u>Swire Properties Ltd</u>	(no title)	25-Aug-2005
8	<u>Society for the Prevention of Cruelty to Animals (HK)</u>	(no title)	25-Aug-2005
9	<u>Trade Development Council</u>	(no title)	26-Aug-2005
10	<u>MTR Corporation Ltd</u>	(no title)	26-Aug-2005
11	<u>The Kowloon Taxi Owners Association Ltd</u>	Support the construction of the Central-Wan Chai Bypass *	26-Aug-2005
12	<u>Harbour Business Forum</u>	(no title)	26-Aug-2005
13	<u>Legislative Councillor Dr Hon Kwok Ka-ki</u>	(no title) *	26-Aug-2005
14	<u>Business Environment Council</u>	(no title)	26-Aug-2005 (Submitted through e-mail on 29-Aug-2005)
15	<u>Civic Exchange</u>	(no title)	29-Aug-2005
16	<u>Society for Protection of the Harbour Ltd</u>	Review of Central-Wan Chai Bypass - Is it really needed?	30-Aug-2005
17	<u>Designing Hong Kong Harbour District</u>	(no title)	26-Aug-2005 (Submitted through e-mail)

Ref.	Name of Organization/Individual	Subject	Date
			on 31-Aug-2005)
18	<u>Public Omnibus Operators Association Ltd</u>	(no title)	1-Sep-2005
19	<u>Member of Public</u>	Submission to the Expert Panel	2-Sep-2005

\* submission in Chinese only.





中環灣仔繞道  
CENTRAL-WAN CHAI BYPASS

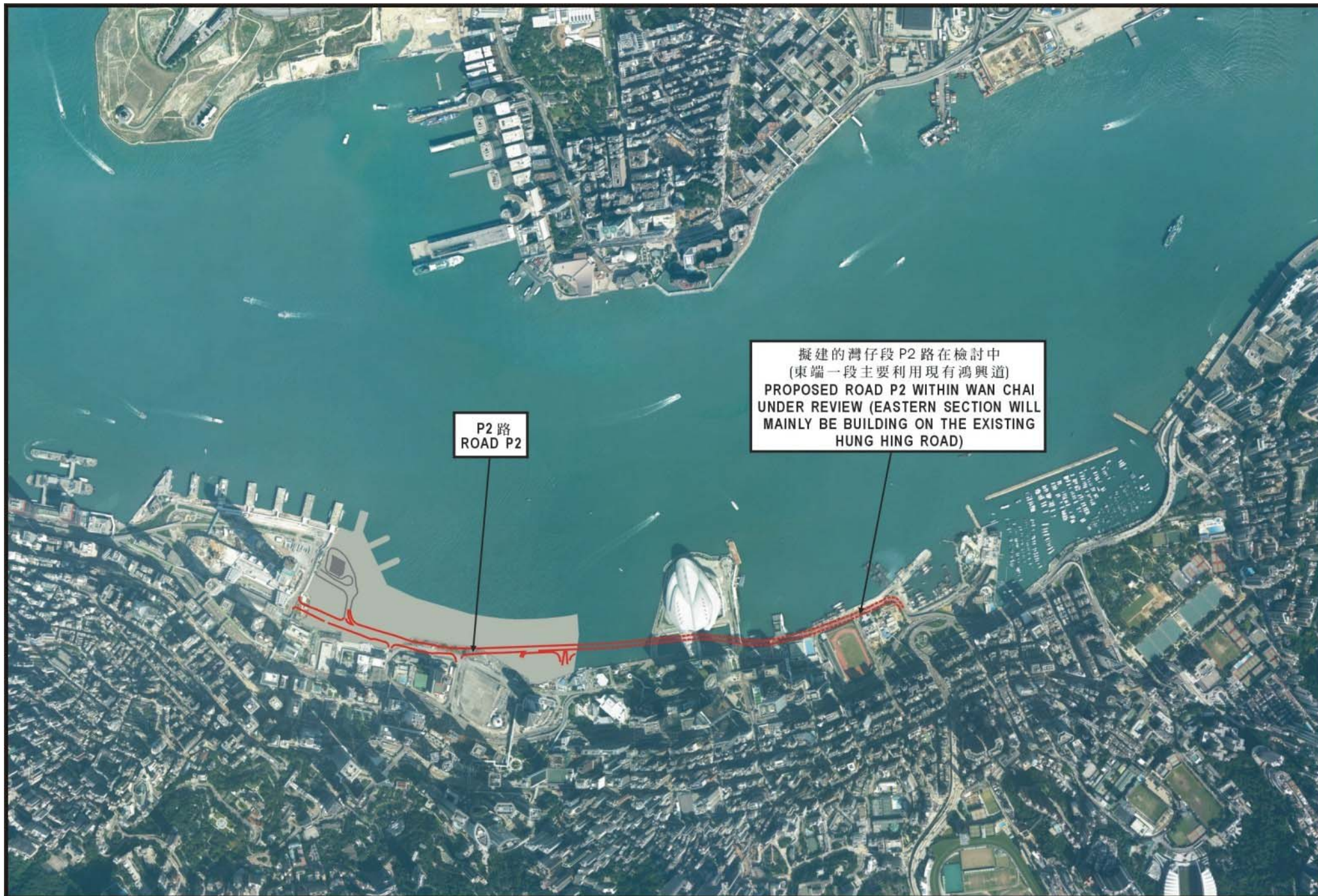
建議的連接路  
PROPOSED SLIP ROADS

灣仔及銅鑼灣段中環灣仔繞道在檢討中  
CENTRAL-WAN CHAI BYPASS WITHIN  
WAN CHAI AND CAUSEWAY BAY  
UNDER REVIEW

建議的連接路  
PROPOSED SLIP ROAD

中環灣仔繞道位置圖  
LOCATION OF CENTRAL - WAN CHAI BYPASS





P2 路位置圖  
LOCATION OF ROAD P2



## APPENDIX V – PHOTO EXHIBITS



Photo 1 - The Expert Panel and the Chairman of the HEC Sub-committee on Wan Chai Development Phase II Review



Photo 2 - The Expert Panel inspecting the traffic conditions along the Corridor



Photo 3 - The Expert Panel Forum on  
3 September 2005



Photo 4 - An organization who has made a submission  
supplementing their views at the Expert Panel Forum





Photo 5 - An attendee expressing her view at the Expert Panel Forum



Photo 6 - Traffic along Connaught Road Central during P.M. peak hour



Photo 7 - Traffic along Gloucester Road during A.M. peak hour



Photo 8 - Traffic along Gloucester Road during P.M. peak hour





Photo 9 -Traffic along Gloucester Road in evening