

2006 年 5 月 23 日  
討論文件

立法會  
規劃地政及工程事務委員會

灣仔發展計劃第二期檢討  
優化灣仔、銅鑼灣及鄰近地區海濱的研究  
構想階段公眾參與活動的結果

目的

本文件旨在事務委員會委員介紹「優化灣仔、銅鑼灣及鄰近地區海濱的研究」(下稱「優化海濱研究」)的進展及構想階段公眾參與活動的結果。

背景

2. 因應城市規劃委員會(下稱「城規會」)的要求及鑑於終審法院在 2004 年 1 月 9 日就《保護海港條例》的詮釋所作的裁決，政府決定進行「灣仔發展計劃第二期檢討」，以確保灣仔發展計劃第二期的發展建議能符合《保護海港條例》及終審法院的裁決。

3. 政府接受共建維港委員會(下稱「委員會」)的建議，在進行灣仔發展計劃第二期檢討同時，推展一項由委員會轄下灣仔發展計劃第二期檢討小組委員會(下稱「小組委員會」)所負責名為「優化海濱研究」的公眾參與活動。「優化海濱研究」的目的，是希望為灣仔、銅鑼灣及鄰近地區，建造一個在社會、環境及經濟方面均可持續發展的海旁，以及滿足規劃、運輸和基建方面的需要。這些活動所收集到的意見會提交灣仔發展計劃第二期檢討參考。

4. 「優化海濱研究」分為下列三個階段－

- (a) 構想階段－目的是讓公眾盡早參與，使他們了解灣仔、銅鑼灣及鄰近地區海濱發展的機遇及限制，並表達他們對海濱發展的願景和期望。在這階段議訂的可持續發展原則及指標，會用以評估日後的發展建議。構想階段已於 2005 年年底完結。
- (b) 建立共識階段－根據構想階段的結果擬備概念規劃圖，並按委員會所議訂的海港規劃原則，以及在構想階段所議訂的可持續發展原則和指標進行評估，以期就初步發展建議達成共識。
- (c) 詳細規劃階段－根據在建立共識階段所取得的共識，擬備有關的建議發展計劃大綱草圖，及按照《城市規劃條例》的法定規定及程序，修訂有關的分區計劃大綱草圖。

5. 我們曾在 2005 年 4 月 26 日就「優化海濱研究」的概覽及公眾參與活動的策略，諮詢事務委員會委員。在 2005 年 6 月 28 日，我們亦向事務委員會委員簡報了「優化海濱研究」公眾參與活動的進展，及在已舉辦的活動中所收集到的主要意見。

「優化海濱研究」構想階段的公眾參與活動

6. 在 2005 年 5 月至 7 月，小組委員會共舉行了五個公眾論壇、兩個社區設計坊以及進行了一項意見調查。這些活動提供了一個交換意見及理性討論的平台，並藉此建立共識。公眾對這些公眾參與活動亦反應熱烈。

7. 儘管公眾人士對優化海濱有一定的共識，他們對是否需要興建中環灣仔繞道卻持不同意見。為此，小組委員會委任了一個由本地及海外對運輸及規劃有專門研究的人士組成的運輸專家小組（下稱「專家小組」），就港島北部的可持續運輸規劃，包括是否需要興建中環灣仔繞道，作出檢討及建議。小組委員會亦在 2005 年 9 月 3 日舉辦了一個專家小組論壇，讓專家在考慮過政府和公眾所提交的意見書後，與公眾討論可持續運輸規劃這個議題。這個論壇獲區議會議員、不同社區組織的代表，以及公眾人士的熱烈參與。

8. 專家小組在 2005 年 10 月底完成了一份報告書。報告書在附件一供事務委員會委員參考。專家小組支持興建中環灣仔繞道及兩組分別在灣仔及銅鑼灣的連接路，以提升繞道的效益。專家小組亦認同有需要興建 P2 路，並就可持續運輸規劃建議了一套短期、中期及長期措施。建議的詳細內容載列在專家小組報告書的 3.3 節。

9. 小組委員會在 2005 年 12 月 12 日的會議上確認了專家小組的報告書，並支持興建一條中環灣仔繞道。

### **構想階段的結果**

10. 小組委員會在 2005 年 11 月 12 日舉辦了一個「意見整合論壇」，與公眾分享在構想階段所收到的意見和提議。顧問公司亦藉此整合了這些意見和提議。

11. 小組委員會在 2006 年 3 月 9 日的會議上通過「優化海濱研究」構想階段的報告書。報告書在附件二供事務委員會委員參考。

12. 關於中環灣仔繞道的走線和建造形式，根據小組委員會的要求以及公眾的意見，顧問公司擬備了一份詳細的報告書，就主幹道的整體設計包括水平及垂直的線向，及優化海濱的構思，提交詳細的資料。這份以英

文撰寫的報告書載於附件三的唯讀光碟。報告書的印刷本存放於秘書處，以供事務委員會委員參閱。報告書的摘要則載於附件四。當中幾個重點在下文列出。

### 填海需要

13. 所有經過灣仔發展計劃第二期項目範圍的中環灣仔繞道走線均需要填海。在西邊，主幹道會將中環填海計劃第三期中興建的隧道向東延伸。由於它不可能在地鐵荃灣線的現有隧道結構下面通過，所以須在這隧道結構上面跨過。在兩條隧道的交叉點，中環灣仔繞道隧道結構將會高於海平面，因而需要填海。當在灣仔北的連接道路由隧道升至地面的出入口時，也需要填海。在東邊，中環灣仔繞道則須連接現有東區走廊天橋。如果中環灣仔繞道以隧道形式興建，由隧道接駁天橋的一段需要填海，以便在地面興建隧道出入口。

### 主幹路走線及其建造形式

14. 顧問公司總結指，唯一可行的主幹路走線是沿灣仔及銅鑼灣前濱興建。顧問公司曾研究其他走線方案，包括「離岸」及「內陸」走廊，但因受制於現有的發展與必要的公共服務基建設施，這些方案均不可行。

15. 至於建造形式，顧問公司曾考慮隧道方案與天橋方案。

### 隧道與天橋方案

16. 顧問公司提交了隧道方案的三個不同構想－

- (a) 構想一－中環填海計劃第三期中興建的隧道將會向東延伸，並在海底隧道入口結構體的現有石錨下通過海底隧道，然後隧道將再伸延至銅鑼灣避風塘以東，最後在北面接駁現有東區走廊。



- (b) 構想二 – 中環填海計劃第三期中興建的隧道將會向東延伸，在構想一通過海底隧道的位置以南通過海底隧道，以繞過海底隧道的石錨區，然後隧道再伸延至銅鑼灣避風塘以東。而為了使隧道可直接連接東區走廊，一段現有的東區走廊將拆卸及重建，而現有的維園道亦會遷移。
- (c) 構想三 – 除了會採用構想一中在石錨下通過海底隧道的安排外，細節與構想二相若。

17. 根據天橋方案，中環填海計劃第三期中興建的隧道將向東延展，並在灣仔運動場對開的海旁轉為道路結構，在橫越銅鑼灣避風塘前濱後，直接連接現有的東區走廊。

18. 隧道方案構想一與天橋方案的比較載於附件三的附表4.2及附件四。隧道方案的三個構想的詳細比較，載於附件三的附表4.1及附件四。

19. 鑑於維多利亞港為香港的特殊資產和天然財產，《保護海港條例》要求保護和保存維港，故此在考慮主幹道的方案／構想時，應找出最能達致保護和保存維港的方案。在考慮天橋方案時，填海所得土地和受天橋結構影響的維港海面範圍均需一併考慮。

20. 隧道方案的建造成本和每年經常開支雖然較高，但顧問公司建議採用這方案，因為海港會有較少部分受影響，從而能更好地保護和保存維港，而且視覺方面的影響也比天橋方案為少。

21. 關於隧道方案的構想，顧問公司就構想二和構想三提出下列關注點－

- (a) 填海範圍較大，因要填平銅鑼灣避風塘的角落(構想二是東南和西南角落，而構想三則

是東南角落)；

- (b) 建造期間因東區走廊北角沿岸從城市花園至維園道的一大段須拆卸重建，維園道並要遷移，以致道路要大規模改道，使交通大受影響(構想二和構想三)；
- (c) 要穿越和拆卸維園，以建造重新定線的維園道(構想二和構想三)；以及
- (d) 需要重建現有主要公路，包括東區走廊、告士打道天橋及新建的銅鑼灣天橋(構想二和構想三)。

### *優化海濱的意見*

22. 鑑於公眾的意見，顧問公司提出下列優化海濱的建議－

- (a) 沿灣仔海岸線所平整的土地用以優化海濱。
- (b) 在前公眾貨物起卸區發展作水上康樂用途。
- (c) 伸延維多利亞公園到海濱。
- (d) 保留現有銅鑼灣避風塘或在銅鑼灣避風塘的角位作有限度填海。
- (e) 在現有東區走廊之下提供行人板道/浮橋。

### 未來路向

23. 當局會就擬議的主幹路走線及其建造形式，諮詢有關的區議會、立法會、其他有關機構及團體以及公眾，務求把選定的方案納入灣仔發展計劃第二期檢討的

概念規劃圖內。與此同時，小組委員會會繼續考慮顧問公司就中環灣仔繞道的設計及優化海濱的構思所作的研究結果。

24. 在考慮了所有收集到的意見之後，擬備概念規劃草圖的工作預計於2006年6月完成。

25. 公眾參與活動，如工作坊及社區會議將會於2006年7月舉辦，讓公眾就概念規劃圖發表意見，並達致發展建議的共識。

26. 當經過審慎考慮公眾的提議後，擬備相關的建議發展大綱草圖及分區計劃大綱草圖的修訂方案的工作會隨即展開，預計這些建議發展大綱草圖及分區計劃大綱草圖會在2006年底前呈交城規會考慮。

### 諮詢意見

27. 希望各位事務委員會委員就「優化海濱研究」構想階段公眾參與活動的結果，提出意見。

### 附件

附件一：可持續運輸規劃及中環灣仔繞道專家小組報告

附件二：優化灣仔、銅鑼灣及鄰近地區海濱的研究構想階段 - 公眾參與報告

附件三：Report on “Trunk Road Alignments & Harbour-Front Enhancement”

附件四：主幹道走線及優化海濱的研究報告摘要

房屋及規劃地政局

環境運輸及工務局

土木工程拓展署

規劃署

運輸署

2006年5月

# 可持續運輸規劃及中環灣仔繞道 專家小組報告



2005年10月

# 可持續運輸規劃及中環灣仔繞道 專家小組報告

2005 年 10 月

(中文譯本由共建維港委員會轄下灣仔發展計劃第二期檢討小組委員會秘書處提供，  
報告內容以英文原文為準。)

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## 序

傳統上，本港的運輸和土地用途規劃是由政府經徵詢專家的意見後而作出。過去十年，有更多的非政府團體和市民參與道路建設和市區發展計劃的決定。在優化灣仔、銅鑼灣及鄰近地區海濱的研究構想階段的公眾參與活動中，儘管市民對於優化海濱已達成共識，對於運輸事項卻意見不一。這促使灣仔發展計劃第二期檢討小組委員會召開可持續運輸規劃及中環灣仔繞道的專家小組論壇。專家小組獲邀研究港島北岸的可持續運輸規劃，以及審議中環灣仔繞道是否需要。

專家小組認同理想、計劃和達成共識的價值，作為我們共同選擇改善環境的元素。公眾越來越渴望參與決策的工作。綜合運輸與土地用途規劃以作長期持續發展的需要，已益見明顯；政府應首要處理這問題。對於土地用途與運輸需求管理的事項，也有更多的訴求。在致力改善道路系統和公共運輸服務的同時，絕不可忽略設立海濱行人通道。為確保短期、中期和長期發展策略可持續施行，必須進行審慎的評估和適時的分析。因此，作出與運輸項目有關的投資時，必須整體考慮工程對環境、經濟和社會方面的影響。

在 2005 年 8 月 24 日至 9 月 30 日，專家小組一共舉行了五次工作小組會議，以綜合成員對標題所述事項的意見和建議。專家小組研究了運輸署為這項工程擬備的背景報告，並透過實地視察評估毗連的範圍。在整段期間，專家小組全面鼓勵公眾參與有關的活動，並收到 19 份正式的意見書。於 2005 年 9 月 3 日在香港會議展覽中心舉行的專家小組論壇，專家小組與市民就有關事項進行了詳細討論和對話。考慮到各方人士的意見和建議，專家小組在這份報告中詳細列出建議措施，期望協助政府可更妥善實施可持續運輸規劃，提升我們的生活質素。

可持續運輸規劃及中環灣仔繞道專家小組論壇主席  
林興強教授

2005 年 10 月

## 鳴謝

對於共建維港委員會灣仔發展計劃第二期檢討小組委員會提供良機，讓大家可詳細討論可持續運輸規劃的重要議題，專家小組在此特申謝忱。

有賴公眾的參與，專家小組才可周詳考慮各事項。因此，專家小組感謝提交意見書或在專家小組論壇發表意見的市民。此外，亦向提供場地的貿易發展局，深表謝意。

專家小組能順利完成這項研究，並妥善安排公眾論壇、會議和實地視察，亦感謝環境運輸及工務局、房屋及規劃地政局、土木工程拓展署、規劃署和運輸署提供的所需協助。



## 詞彙

- CBD – 商業中心區
- CFA – 終審法院
- CHT – 海底隧道
- 「走廊」- 港島北岸東西向干諾道中/夏慤道/告士打道走廊
- CTS – 整體運輸研究
- CWB – 中環灣仔繞道
- EHC – 東區海底隧道
- EIRR – 經濟內部回報率
- ERP – 電子道路收費
- 專家小組論壇 – 可持續運輸規劃及中環灣仔繞道的專家小組論壇
- HEC – 共建維港委員會
- HER – 優化灣仔、銅鑼灣及鄰近地區海濱的研究
- HKCEC – 香港會議展覽中心
- OZP – 分區計劃大綱圖

- PHO – 保護海港條例
- RC – 剩餘容車量，用以衡量路口交通情況
- SPH – 保護海港協會
- 小組委員會 – 共建維港委員會轄下灣仔發展計劃第二期檢討小組委員會
- TD – 香港特別行政區政府運輸署
- TPB – 城市規劃委員會
- WDII – 灣仔發展計劃第二期
- WHC – 西區海底隧道
- V/C Ratio – 行車量/容車量比率

## 第 1 章 引言

### 1.1 專家小組的委任

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1.1.1 共建維港委員會在 2004 年 5 月成立，負責向香港特別行政區政府房屋及規劃地政局局長就維多利亞港現有及新海濱的規劃、土地用途和發展事宜提供意見。委員會轄下設有灣仔發展計劃第二期檢討小組委員會(小組委員會)，負責向政府就灣仔發展計劃第二期規劃和工程檢討提供意見。灣仔發展計劃第二期檢討的背景簡介載於附錄一。

1.1.2 政府接納共建維港委員會的建議，加強公眾參與灣仔發展計劃第二期檢討工作。為了達到這個目的，小組委員會展開了由其督導的“優化灣仔、銅鑼灣及鄰近地區海濱的研究”(優化海濱研究)，以配合上述檢討工作。優化海濱研究的結果將會作為灣仔發展計劃第二期檢討工作的參考資料。

1.1.3 優化海濱研究分為「構想」、「建立共識」和「詳細規劃」三個階段進行。研究目的是在制定初步的規劃概念前，讓公眾盡早參與，表達他們對海濱可持續發展的理想和期望，以期達到共識。公眾提出的意見和構思，將成為制定概念大綱圖的基礎。相對一般先有規劃概念才進行諮詢公眾的傳統做法，這是嶄新的嘗試。我們希望藉著盡早加強公眾的參與，可使日後的規劃更能切合公眾的需要和期望。

1.1.4 為了達到優化海濱研究計劃的目標，在 2005 年 5 月至 7 月的構想階段，小組委員會共舉行了五個公眾論壇、兩個社區設計坊以及進行了一項意見調查。

1.1.5 優化海濱研究構想階段期間舉辦的公眾參與活動顯示，儘管公眾對優化海濱已達成相當程度的共識，對運輸事項卻有不同的意見。小組委員會認為，在進入優化海濱研究的下一個階段前，須與有關專家深入討論運輸事項。為此，小組委員會決定舉辦「可持續運輸規劃及中環灣仔繞道的專家小組論壇」(專家小組論壇)。

1.1.6 為貫徹共建維港委員會的工作方針，小組委員會已要求專家小組讓公眾參與公開論壇，並讓有關或有興趣人士藉此機會

向專家小組論壇提交意見。在這原則下，專家小組可自行決定論壇的具體安排。

## 1.2 職權範圍

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1.2.1 儘管小組委員會轄下優化海濱研究專責小組認同，解決港島北岸的交通擠塞問題，須作出整體的規劃，並須確保可持續的解決方法符合海港規劃原則，但它認為，在進入建立共識階段前，必須就是否需要興建中環灣仔繞道作出結論。因此，專家小組的職權範圍是檢討及建議關於港島北岸的可持續運輸規劃，包括是否需要興建中環灣仔繞道。

1.2.2 專家小組無須提出關於繞道的詳細設計意見。

## 1.3 成員名單

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1.3.1 專家小組成員包括本地和海外的專家，他們分別是由優化海濱研究專責小組、香港運輸物流學會、香港工程師學會、香港規劃師學會、香港理工大學土木及結構工程學系、香港科技大學土木工程學系和香港大學土木工程學系提名。

1.3.2 專家小組由香港理工大學土木及結構工程學系土木及運輸工程講座教授林興強教授擔任主席。其他成員包括：

Prof. Michael Bell	英國倫敦帝國學院土木及環境工程學系運輸管理講座教授 (由「優化海濱研究」專責小組提名)
侯道光博士	香港大學經濟金融學院副教授 (由「優化海濱研究」專責小組提名)
熊永達博士	香港理工大學土木及結構工程學系副教授 (由香港理工大學土木及結構工程學系提名)

劉偉棠工程師	奧雅納工程顧問董事 (由香港工程師學會提名)
羅康錦博士	香港科技大學土木工程學系副教授 (由香港科技大學土木工程學系提名)
龐婉儀女士	香港規劃師學會副會長 (由香港規劃師學會提名)
王緝憲博士	香港大學地理學系副教授 (由香港運輸物流學會提名)
黃仕進博士	香港大學土木工程學系副教授 (由香港大學土木工程學系提名)

## 1.4 工作計劃

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1.4.1 專家小組在 2005 年 8 月 18 日組成。除了出席 2005 年 9 月 3 日的專家小組論壇聽取公眾意見外，專家小組亦先後會晤六次，詳情如下：

- 2005 年 8 月 24 日首次會議—決定專家小組論壇的具體安排。
- 2005 年 9 月 2 日第二次會議—向政府部門就所提供的運輸數據以及土地規劃原則進行提問。
- 2005 年 9 月 2 日，實地視察干諾道中與畢打街交界、民耀街、灣仔渡輪碼頭、港灣道與菲林明道交界、告士打道(銅鑼灣段)一帶走廊範圍的現有交通情況。
- 2005 年 9 月 3 日上午舉行的第三次會議—專家小組成員互相交換意見。
- 2005 年 9 月 14 日第四次會議—討論專家小組的建議和報告的格式。
- 2005 年 9 月 30 日第五次會議—檢討報告初稿。

1.4.2 在舉行專家小組論壇前，通過下列四個途徑，誠邀公眾提出意見，以加強公眾參與的工作：

- 先後在 2005 年 8 月 12 日和 22 日向約 700 位人士發出兩份通知書，誠邀他們提交意見書並出席論壇。上述人士包括優化海濱研究的合作伙伴(獲邀協助及推廣該研究計劃的機構)、立法會議員、18 區區議員、城市規劃委員會、交通諮詢委員會、環境諮詢委員會、與灣仔及銅鑼灣海濱有相關利益的人士和曾在優化海濱研究構想階段向小組委員會提交意見書的機構。
- 在 2005 年 8 月 17 至 24 日期間，在南華早報、地區星報和都市日報刊登廣告。
- 向共約 4,700 個社團、環保團體、學校、樓宇業主立案法團、樓宇互助委員會等發出通告。
- 共發放三份新聞稿。

1.4.3 在舉行論壇前，共收到分別來自不同機構和公眾人士的意見書 19 份。運輸署亦有提交一份意見書。這些意見書的概要載於第 2 章，並已上載共建維港委員會的網頁([http://www.harbourfront.org.hk/tc/content\\_page/her\\_pdf\\_1.html](http://www.harbourfront.org.hk/tc/content_page/her_pdf_1.html) 及 [http://www.harbourfront.org.hk/eng/content\\_page/doc/Full\\_Submission-tc.pdf](http://www.harbourfront.org.hk/eng/content_page/doc/Full_Submission-tc.pdf))，供市民閱覽。

1.4.4 審視過運輸署的意見書後，專家小組要求運輸署提供額外的交通分析資料，以確保運輸需求電腦模擬數據的可靠；並要求該署覆核各項假設的理據。其後，運輸署提供了補充的資料。(請參考 [http://www.harbourfront.org.hk/eng/content\\_page/doc/SN-tc.pdf](http://www.harbourfront.org.hk/eng/content_page/doc/SN-tc.pdf))。

1.4.5 在專家小組論壇第二次會議中，獲邀出席的規劃署和土木工程拓展署代表闡釋中環及灣仔區的土地用途規劃，以及若興建中環灣仔繞道的話，各種可行的方案。

1.4.6 出席 2005 年 9 月 3 日專家小組論壇者共 128 人，當中包括 65 名市民和 9 名傳媒工作者。論壇簡介了收到的意見書的內容概要，公眾亦有機會在運輸署發言後和專家小組討論後兩個時段發表意見。

## 1.5 報告概要

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1.5.1 專家小組的檢討是針對紓緩策略性路線(並非地區性道路)的交通擠塞情況而建議可持續的解決方法，報告綱要載列如下：

- 第 1 章載有成立專家小組和制定工作計劃的背景概要。
- 第 2 章分為兩部分：第一部分是根據運輸署提供的資料而說明中環灣仔區的運輸情況；第二部分載有公眾意見和提交的意見書內容的概要。
- 第 3 章詳細載列專家小組有關中環及灣仔區可持續運輸發展規劃的短期、中期和長期建議。
- 共有五個附錄：附錄一載有灣仔發展計劃第二期檢討工作的背景簡介；附錄二列出在公眾諮詢期間提出意見、建議的機構和公眾人士；附錄三和四分別為中環灣仔繞道和 P2 路的位置圖；附錄五載有專家小組活動、工作和會議等圖片。

## 第 2 章 意見書

### 2.1 運輸署提交的意見書

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2.1.1 以下是取材自運輸署提交的意見書，對中環及灣仔地區的交通狀況及中環灣仔繞道背影的簡介。詳細資料可參考共建維港委員會網頁：

[http://www.harbourfront.org.hk/eng/content\\_page/doc/Full\\_Submission-tc.pdf](http://www.harbourfront.org.hk/eng/content_page/doc/Full_Submission-tc.pdf) 及

[http://www.harbourfront.org.hk/eng/content\\_page/doc/SN-tc.pdf](http://www.harbourfront.org.hk/eng/content_page/doc/SN-tc.pdf).

#### 現有道路網

2.1.2 現在商業中心區的主要道路為東西向的干諾道中/夏慤道/告士打道走廊（走廊）。這條走廊為一條雙向四車道的主幹線，是港島北部的一條東西向主幹道。作為市區主幹道，它負有承擔港島東西向長距離交通流量的責任。

2.1.3 同時，走廊也作為一條分幹道，為通往其他區域提供南北向出口，及提供短途連線通往鄰近區域。可是，由於走廊連接許多支路、隧道和高架橋，產生有大量的穿行和合流交通。再加上通往鄰近區域的交通流量巨大，導致這條走廊經已飽和，不能發揮原先作為市區主幹道的功能。由走廊支路或主幹道的任何一個瓶頸路段伸延的車龍都將會造成其他地區的交通阻塞和交通情況的迅速惡化。走廊上或其附近一旦發生小型交通意外或事故，都足以造成道路網中嚴重的交通阻塞和延遲。在某些更嚴重的情況下，還會造成整個商業中心區的交通大阻塞以及整個走廊的完全阻塞。以上情況清楚顯示策略性道路網及中環及灣仔的地區道路網的穩定性及可靠性正處於令人不滿意的狀況。

#### 現有交通模式

2.1.4 現有走廊的交通流量已超過了它的設計容車量。沿著走廊的交通擠塞並不僅在早晚的繁忙時段才發生，每個工作日的早上 8 時至晚上 8 時亦會常常出現。東行往商業中心區的交通車流，經常會沿著林士街天橋和地面的干諾道中排回西隧口。而西行往



商業中心區的交通車流，亦會沿著告士打道排至灣仔運動場。

2.1.5 走廊上的交通擠塞現象亦常常在通往海底隧道、香港仔隧道以及銅鑼灣地區的路段上出現。這些經常出現的車龍佔用了走廊上的道路空間，加劇了來往港島東西部之間不必要的阻延。

## 交通預測

2.1.6 本次評估測試了五組中環、灣仔、銅鑼灣地區於 2016 年的預測交通狀況。在這些測試方案中，模擬了上午和下午繁忙時間的交通流量。

2.1.7 這五組測試方案的假定如下：

方案 A - 建有繞道、P2 路和灣仔發展計劃第二期中的連接路，而位於中區填海第三期的發展計劃將會全部落實；

方案 B - 沒有興建繞道、P2 路或灣仔發展計劃第二期中的連接路，但位於中區填海第三期的發展計劃將會全部落實；

方案 B1 - 沒有興建繞道、P2 路或灣仔發展計劃第二期中的連接路，而位於中區填海第三期的發展計劃將不會落實；

方案 C - 建有繞道和 P2 路，但灣仔發展計劃第二期中的連接路則不興建，而位於中區填海第三期的發展計劃將會全部落實；

方案 D - 建有繞道，但 P2 路和灣仔發展計劃第二期中的連接路則不興建，而位於中區填海第三期的發展計劃將不會落實。

2.1.8 測試方案結果顯示，即使灣仔發展計劃第二期沒有任何發展計劃及刪除位於中區填海第三期的發展計劃，中環灣仔繞道、P2 路和灣仔發展計劃第二期中的連接路仍需興建。測試結果扼要列於下。

表一：五組測試方案的假定及結果扼要

	繞道	P2 路	灣仔區的連接路	中區填海第三期的發展計劃	交道模擬結果	
					繞道沿線主要路段行車量/容車量比率	中環灣仔地區主要路口剩餘容車量
方案 A	✓	✓	✓	✓	除告士打道內街西行線外，普遍在 1 以下	普遍有一些剩餘容車量
方案 B	×	×	×	✓	東西行線均在 1.2 以上，有些高達 1.55	大部份重要路口剩餘容車量為負數
方案 B1	×	×	×	×	大部份西行線路段行車量/容車量比率在 1.2 以上，有些高達 1.53	多個重要路口剩餘容車量為負數
方案 C	✓	✓	×	✓	東行線多處路段行車量/容車量比率在 1 以上，有些高達 1.13	一些重要路口剩餘容車量為負數。
方案 D	✓	×	×	×	大部份東行線路段行車量/容車量比率在 1 以上，有些高達 1.13	大部份位於灣仔重要路口剩餘容車量為負數

## 運輸署提交的意見書摘要

2.1.9 連接香港島東西並通往商業中心區的走廊，正如交通現況所顯示，已經超過了容車量。早前、和近期的策略性交通研究預測，東西走廊交通需求還會進一步增加，這證實了有需要提供一條與走廊平行的海旁主幹道，即中環灣仔繞道，以避免更廣泛和更頻繁的交通擠塞甚至是整個道路網的交通大阻塞。

2.1.10 政府已經實施了一系列交通管理和財政措施，以增加現有道路網的容量和壓抑交通需求。進一步的措施，包括電子道路收費亦已被考慮。所有現有和建議的措施都不能解決沿東西走廊的交通擠塞問題。故此建設繞道是必須的，而電子道路收費可以

輔助繞道但不能取代它。

2.1.11 一項確定該繞道的佈局的區域交通研究已經完成。該研究證實有需要興建繞道，中間還需有連接路才能夠達到興建主幹道的目的，即疏導現有東西走廊的交通，以紓緩現有走廊的擠塞交通。

## 2.2 公眾提交的意見書

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2.2.1 在 2005 年 9 月 3 日舉行專家小組論壇前，專家小組共接獲 19 份公眾提交的意見書。來自不同團體/個別人士的 19 份意見書已上載於網頁 ([http://www.harbourfront.org.hk/tc/content\\_page/her\\_pdf\\_1.html?s=1](http://www.harbourfront.org.hk/tc/content_page/her_pdf_1.html?s=1))。提交意見書的團體及個別人士的名單載於附錄二。

2.2.2 有意見書支持政府增建基礎設施的計劃，即建造中環灣仔繞道以應付預期的運輸需求。另一方面，亦有意見書反對建造中環灣仔繞道。此外，亦有接獲關於可持續運輸規劃的意見。

2.2.3 根據「支持建造中環灣仔繞道」、「反對建造中環灣仔繞道」和「其他意見」三項類別劃分，公眾意見大致如下：

### 支持建造中環灣仔繞道

2.2.4 支持建造中環灣仔繞道的公眾意見：

- 應把交通分流，使其暢順。
- 中環灣仔繞道可使整個社會受惠。
- 中環灣仔繞道將紓緩交通擠塞，改善行車情況。
- 維多利亞港景觀十分重要，但不應因確保景觀不受影響而妨礙經濟發展。
- 灣仔主要道路的負荷已超越其容車量，急須建造中環灣仔繞道。

2.2.5 在支持建造中環灣仔繞道的意見書中，有的載明下列條件和規定：

- 應先全面研究和採用其他的可行方法，包括實施各種運輸需求措施和使用其他運輸工具，以應付已開展的發展計劃所引致的交通情況。
- 在設計上，中環灣仔繞道要把現有地面交通引入地底。
- 中環灣仔繞道應沿海濱地底經分域碼頭建造，以便卸載浮躉可以盡量接近分域碼頭，為來自世界各地的水手提供通往海港的便捷通路。
- 分域碼頭附近的交通燈或過路處位置應列入圖則內。
- 評估運輸影響；釐定現有三條海底隧道的均等收費；為進入商業中心區的交通設立較完善的電子道路收費系統；以及中環灣仔繞道並非建於地面。
- 繞道應以隧道而非高架橋或路面設施方案興建。
- 以兩條坡道把中環灣仔繞道連接東面的興發街和西面的分域街。相信這計劃可盡量減少填海，並可疏導交通和美化海濱。
- 擴展維多利亞公園至海濱走廊；重建現有維園道為維多利亞公園之下的隧道，以鼓勵市民在公園與海濱之間漫步。
- 在灣仔北部設立中環灣仔繞道交匯處，以便由 P2 路駛出的車輛向右轉入菲林明道；減少填海；保留灣仔海濱的大部分現有設施，並設立直達海濱的路面行人通道。
- 在進行中環灣仔繞道發展工程時，要注重考慮優化海濱，以便市民享用。

## 反對建造中環灣仔繞道

2.2.6 反對建造中環灣仔繞道的公眾意見：

- 除了繞道外，公眾並不認為有需要建造擬議的四線地面道路。這樣會令海濱與灣仔其他範圍更為分隔，而且會影響整區的景觀。

- 在建造新的道路基礎設施前，必須先實施其他的運輸措施。
- 政府必須盡快落實 2005 年 4 月決定的措施，以平衡三條海底隧道的運輸流量。這意味著須平衡隧道收費率，尤其是中區和西區海底隧道。
- 在現有運輸網絡設立一條可負載四成直通交通的車道，便很理想。
- 在考慮以無須填海的各種方法解決交通擠塞的問題上，仍未盡全力。然而，交通擠塞的問題仍須解決。
- 不符合《保護海港條例》、海港規劃原則和優化海濱目標。
- 在引進新道路基礎設施前，先盡量採用各類運輸模式，是合理的做法。與這觀點一致，建造北港島線、沙田至中環線和機鐵支線會有助紓緩交通擠塞的情況。此外，在 2012 年之前提早施行港島西線建造工程，亦有助紓緩交通擠塞的情況。
- 鐵路可改善前往海濱和告士打道北面範圍的通道。
- 倍增海底鐵路的行車架次，有助紓緩交通擠塞的情況。
- 不建造中環灣仔繞道可節省相關的建築費（無建築合約罰款的問題）。

## 其他意見

### 2.2.7 其他的公眾意見：

#### 電子道路收費

- 無須待建造另一條行車走廊，才實施電子道路收費。
- 應考慮採用較短軸距的巴士和旅遊車（配合電子道路收費）。
- 根據共建維港委員會的調查結果，七成被訪者原則上不反對電子道路收費或無任何意見。
- 應不時更新電子道路收費的研究資料。
- 可考慮四種道路收費的方法：「走廊」、「地區計劃」、「本地和橫越本地系統」（按行車距離收費）和「綜合」（按運輸工具收

費)。

- 建議 10 項實施道路收費策略，包括：把道路收費納入整體的運輸策略；使用市民可接受的收費；以及保持一個靈活的決策方案等。
- 並不支持只透過電子道收費減少車輛駛入灣仔，而不設立其他分流路線。
- 除非的士業可獲豁免，否則不接受電子道路收費。
- 倘三條海底隧道的收費平衡措施無法解決交通問題，須考慮為進入商業中心區的交通設立較完備的電子道路收費系統。
- 實施道路收費策略應顧及的事項：交通擠塞情況是否已無法忍受？是否已採用過其他的各種補救措施？道路收費是否政治上可行？

### 綜合土地用途和運輸規劃

- 制定整體的土地用途規劃時，應一併考慮運輸事項而不應把其視作附帶問題處理。作出任何建造新運輸基礎設施的決定前，應先研究或採用一切可行的方法，包括善用現有基建。要解決現有和預計的交通問題，不應局限於運輸管理和財務措施，亦應檢討現有/已規劃的土地用途和發展密度/程度等事項。
- 鑑於中環及灣仔填海工程、青洲填海工程、通往大嶼山青洲連接路、貨櫃港口和七號幹線建議發展項目已大幅減少或取消，應檢討預計的運輸增長。
- 中區(擴展部分)分區計劃大綱圖可能容許有關範圍日後增加建築樓面面積接近 1300 萬平方呎，引致前往海濱的交通大幅增加。此外，香港會議展覽中心擴建計劃同樣會引致交通增加。
- 把中區(擴展部分)分區計劃大綱圖交回城市規劃委員會，以修訂現有灣仔北分區計劃大綱草圖，刪除建造繞道所須的填海土地範圍。
- 可能是商業中心區及灣仔規劃額外樓宇密度(尤其是摩天大樓等高空發展計劃)的因素導致有直達交通的需求。
- 區內的現有工業化計劃(位於運盛街的污水處理廠、電力分站、石油氣站和擬建的電力變壓站)違反了綠化和美化海濱一

帶的原則。

- 保留中環至灣仔之間的避風塘、遊艇會、休憩用地、美食中心、附有行人設施的海濱走廊、單車徑和跑步徑。
- 確認灣仔北現有土地租用情況是區內的重要特色。

### 可行的改善措施

- 問題不在於直達交通，而在於周邊範圍的限制而未能容納車輛，導致局部交通擠塞。這些範圍包括銅鑼灣、時代廣場等。
- 改善交通信號設施、泊車政策、舒緩交通措施等；只准在晚間上落客貨。
- 每天上午八時至午夜，禁止所有商用車輛使用中西區海底隧道之間以及干諾道/告士打道之上範圍，專利巴士和電車則除外。
- 沿干諾道/告士打道北面海旁設立的士、小巴、校巴和邨巴上落客區。乘客可在該處轉乘專利巴士或選擇步行。
- 管制在石油氣站輪候的的士車龍。
- 加強管理會議展覽中心一帶的交通。
- 適當調校指示車輛右轉入馬師道的交通燈號；或禁止車輛右轉入馬師道。
- 改善分域碼頭附近的交通燈或過路設施。
- 擴展自動梯網絡。改善/保養通往灣仔北的便捷行人通道；改善灣仔北租客及公眾的泊車設施。
- 施工時密切監測對環境的影響，盡量避免海港受影響。

## 第 3 章 專家小組的意見和建議

### 3.1 可持續運輸規劃

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#### 可持續發展概念

3.1.1 根據聯合國布倫特蘭夫人報告(Brundtland Report, 1987 年世界環境與發展委員會報告第 43 頁),「可持續發展是既滿足當代的需要,同時不損及後代滿足其需要的發展。」專家小組理解可持續運輸發展為可滿足我們當今和日後的社會、經濟和環境目標的發展。

#### 可持續運輸發展的目標

3.1.2 專家小組更認同,可持續運輸發展的目標是適時處理運輸需求,並提供足夠的運輸設施。這目標與香港政府多份內部交通政策白皮書和綠皮書(1974 年、1979 年、1989 年及 1990 年)提倡的三管齊下的原則,完全一致。

#### 可持續運輸規劃的主要事項

3.1.3 專家小組認為,在作出可持續運輸發展規劃前,須考慮下列主要事項:

- *綜合土地用途和運輸發展規劃* — 土地用途規劃與運輸發展規劃互相關連,在規劃時兩者應同時兼顧。現時本港已到達一個階段,土地用途規劃須受運輸基建設施要求的限制。因此,進行土地用途規劃時,必須考慮運輸需求的因素。這一點對在有限空間進一步發展運輸基建設施的市區,尤其重要。
- *考慮環境、經濟和社會方面的因素及其相互關係* — 在評估運輸發展投資時,應整體考慮有關的經濟、環境和社會影響。
- *多樣化和多管齊下的模式* — 可持續運輸發展包括運輸設施、運輸工具(如道路、鐵路、渡輪、車輛和非機動性交通工具)以及各不同類型的乘客。
- *使用恰當的方法或技術* — 選用合適的方法解決個別的問題:無論是在行車道上塗上白色實線、向公共交通乘客提供



資料、增加運輸基礎設施容車量(包括道路和鐵路)、實施道路收費，或綜合上述任何方法，均應妥善處理。

- **供求平衡** — 運輸需求具變動特性，並會因應地區的土地用途和活動改變而變動。為了妥善平衡運輸供求的情況，必須定期檢討短期和長期的土地用途規劃。
- **有效使用現有基礎設施** — 在交通擠塞的情況下，實施有效的運輸管理措施(如重整巴士路線、限制上落客貨、道路收費等)，以確保善用現有運輸設施，是恰當的做法。長遠來說，必須實施道路收費以確保使用率高的運輸基礎設施可持續發揮作用。

## 3.2 建造中環灣仔繞道的需要

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### 具體的問題

3.2.1 專家小組得悉，東西流向的干諾道中/夏慤道/告士打道走廊(下稱走廊)處於重要的策略性位置，它把港島與其他地區的交通連接：東北面連接將軍澳和西貢；西面連香港國際機場；及北面連至中國內陸邊界。倘不能建造中環灣仔繞道，港島北岸走廊的樽頸地帶會逐漸擴大，使交通阻塞的問題更趨嚴重。因此，中環灣仔繞道實在是香港的策略運輸網絡中所欠缺的一部份。中環和灣仔區道路網絡的可靠性至為重要，原因是當這東西流向策略性連接網絡發生嚴重的交通意外時，會導致整個港島道路網絡癱瘓，甚至九龍亦受影響。這對社會在時間、燃油及資源上的損失，均十分嚴重，這是不能接受的。事實上，我們最近(2005年5月9日)剛見證運輸網絡因一宗交通事故而導致癱瘓，令本港整個地區陷入混亂的情況。在這樣的環境下，我們深受運輸網絡不可靠的陰影所威脅。再者，除非收取昂貴的路費，這問題不能單靠實施道路收費就可以解決，因而確立了替代路線的訴求。

3.2.2 專家小組認為，無論從社會、經濟或環境的角度，東西流向的走廊及毗鄰地區經常出現的交通擠塞情況，是無法接受的。數據分析顯示，除非執行嚴厲的措施，否則即使透過運輸管理和財政上的配合措施，對於減少車輛增長和運輸需求，並無成效，社會亦不會接受。

## 設立替代路線的需要

3.2.3 雖然增加走廊附近範圍的基建運輸容車量要數年方可完成，但最終仍會紓緩中環和灣仔區的中期運輸情況，使東西流向交通暢順。因此，專家小組建議應建造一條繞道，作為解決中環和灣仔區日益惡化的交通擠塞的中期措施。專家小組認為，興建中環灣仔繞道，對於改善東西運輸網絡的可靠性，起着重要的作用。專家小組經審慎考慮下列重要問題後，才得出上述結論。

## 需回應的重要問題

3.2.4 如果什麼也不做，可否達致可持續發展？專家小組斷然否定「什麼也不做」的方案。專家小組發現，根據標準運輸預測技術，即使車輛數目不增加或在中環和灣仔區再無進一步的發展計劃，現有道路網絡將無法應付十年後的運輸需求。

3.2.5 是否單靠興建中環灣仔繞道便可達致可持續發展？專家小組亦斷然否定這說法。由於繞道容車量有限，十年後的運輸需求增長會超越其容車量。因此，要確保道路網絡可長期持續發展，須推行運輸管理措施和道路收費，以達到善用基建設施的效果。

3.2.6 單靠推行道路收費能否解決交通擠塞問題？專家小組認為，並無單一的措施可作為解決問題的靈藥。合乎「用者自付原則」的道路收費，是指根據道路收費系統訂立最合適的收費，以紓緩交通擠塞的情況。電子道路收費和區域通行證制度，只是其中兩種紓緩交通擠塞的收費機制，並各有其成本效益。如不改善基建設施和推行運輸管理措施，即使無極嚴重的交通擠塞，而要有效解決現有的擠塞情況，所訂的收費將會極高，公眾能否接納的問題便需要考慮。鑑於為妥善紓緩本港交通擠塞而設計的收費計劃以及其影響等問題仍有待解決，在現階段，社會能否接受道路收費仍未能確定，決策者和市民需審慎研究和商議有關問題。因此，專家小組認為，單靠道路收費並不可作為解決問題的可行方案。

3.2.7 中環灣仔繞道與通往海濱的行人通道是否互相抵觸？專家小組再度否定這個說法。然而，專家小組認為，在興建繞道時，應首先考慮優化通往海濱的行人通道設施。

3.2.8 停止發展計劃是否解決道路擠塞的一個可接受及可持續發展的方法？專家小組認為，無論何時，均可考慮完全不施行任

何發展計劃，但應明確討算相關的資源調配機會(如放棄了的地租等)。然而，可持續發展須妥善平衡經濟、社會和環境各方面的因素。停止發展計劃是不能達到這種平衡的。

3.2.9 繞道與電子道路收費是否互相牴觸？專家小組認為，實施電子道路收費以輔助興建中環灣仔繞道，是長期可持續發展的恰當做法。

### 3.3 建議

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#### 短期措施

##### 運輸管理措施

3.3.1 專家小組認同，在繞道啓用前，須施行一些短期運輸管理措施，如上落客貨管制、改善路口工程、重整公共運輸路線等，以應付走廊交通擠塞問題。

##### 調整隧道收費

3.3.2 專家小組建議，在中環灣仔繞道啓用前，政府應認真考慮以不同收費安排(即隧道收費隨日間不同時段而變更)，重新調整三條橫跨維港的隧道收費，以紓緩交通。一個受有關人士認同的可行計劃，將可在一定程度上減輕各海底隧道口的車龍及擠塞情況，從而使東西交通流向較暢順。

##### 調節發展計劃

3.3.3 專家小組建議，在繞道啓用前，政府應正視調節整個走廊範圍的發展計劃的需要，使交通擠塞情況不會更趨嚴重。

##### 連接海旁的行人通道

3.3.4 專家小組建議，政府應審慎考慮提供連接維港優質行人通道的需要。專家小組得悉，按照建議的發展計劃，將會改善現有連接海旁的行人通道。然而，過渡期間亦應實行改善措施。

## 中期措施

### 優化各樣運輸網絡

3.3.5 由於現有運輸基礎設施無法滿足現有和直至 2016 年的交通流量需求，專家小組支持興建中環灣仔繞道以改善走廊範圍道路網絡的可靠性，及強化各樣服務走廊範圍的公共運輸。即使停止中環填海區發展計劃，及控制全港私家車擁有量，達致數量維持零增長直至 2016 年，現有運輸基礎設施仍無法應付現有和日後的運輸需求。

3.3.6 為了盡量發揮中環灣仔繞道的功能，專家小組亦支持在香港會議展覽中心附近和維園道/告士打道/興發街興建連接繞道的支路。

### 環境和社會方面的關注

3.3.7 專家小組支持優化維港海濱的訴求，並建議政府不但須要於短期內改善連接海旁的行人通道，亦應妥善解決因興建造價過百億元的繞道而帶來的景觀、環境和社會方面的問題。

### P2 路

3.3.8 專家小組認同，在繞道建成前，須興建 P2 路，作為紓緩中環填海區交通擠塞的重要過渡措施。此外，專家小組建議，政府應檢討 P2 路的規模，以配合逐步推行的土地發展計劃。儘管須為 P2 路預留足夠的土地以應付日後全面發展，專家小組仍建議政府研究在 P2 路引進臨時的交通平靜措施(如路拱，委婉名稱為“隱身警察”)，以及在此期間綠化 P2 路預留用地。

### 道路收費

3.3.9 專家小組認同道道路收費作為可持續運輸措施的重要性。道路收費可使交通擠塞情況局限於部分地區，並可減少繁忙地區的車輛廢氣排放，從而改善空氣污染和生活質素。然而，鑑於道路收費計劃可有各種各樣的安排，專家小組建議，政府先就各類收費計劃(電子收費或其他收費模式)的可行性、成效和社會接受程度進行詳細的評估，才審慎考慮是否推行。

## 道路收費與繞道的配合

3.3.10 專家小組認同道道路收費是可輔助繞道的功能。由於預計在 2012 年啓用的中環灣仔繞道與籌備推行電子道路收費的時間吻合，專家小組認為中環灣仔繞道啓用時是推行電子道路收費的機會。長遠來說，增加道路容車量結合推行電子道路收費，是較為可接受和實際可持續的一套措施。

### 長期措施

## 整體的運輸/土地用途規劃

3.3.11 可持續的運輸規劃講求整體處理及規劃交通需求。因此，土地用途和運輸規劃應綜合處理。專家小組認同，政府一直對土地用途和運輸規劃以互動方式處理；並建議政府加強這方面的綜合規劃工作，適度在交通嚴重擠塞的地區，限制發展過多的運輸基礎設施。

## 通往海濱的行人道網絡

3.3.12 專家小組認同社會對連接海濱行人通道與日俱增的渴求；並建議設立覆蓋整個範圍的行人通道網絡，把海濱與毗鄰地區及在該範圍可供使用的各種運輸工具連接，達到連接機動與非機動交通工具的整體效果。

## 事故處理能力

3.3.13 專家小組建議，政府提高處理在走廊上發生交通事故的能力，使中環及灣仔區的伸延道路網絡更加可靠，並隨時準備應付嚴重交通事故引致道路網絡癱瘓等風險。

## 保持剩餘容車量

3.3.14 專家小組亦建議，政府應檢討運輸基建方面的剩餘容車量，以達到較理想的保險水平。舉例來說，當公路最佳的行車量/容車量比率(反映道路交通情況的標準指標)接近 0.9，則應視為暫緩發展的訊號。

## 可持續運輸發展

3.3.15 專家小組建議，爲了提高市民的生活質素，政府應檢討並採納適合香港可持續運輸發展的最佳做法。專家小組認同，政府須爲香港機動和非機動的運輸工具制定可持續的綜合政策、策略和方案。舉例來說，雖然公共運輸的使用比率可能因道路網絡的改善、恰當的道路收費措施、整體的土地用途和運輸規劃等多個因素而增加，但政府仍可藉此機會合理調整各樣公共運輸路線，並加強這些路線與鐵路的連接性。

## 參考資料

世界環境與發展委員會報告(1987) - 我們共同的將來  
(此報告又名聯合國布倫特蘭夫人報告)

一九七四年五月香港內部交通政策綠皮書 - 香港交通政策建議書：  
歡迎各界人士提供意見

一九七九年五月布政司署環境科發表的香港內部交通政策白皮書 - 保持水陸運輸暢通

一九八九年五月香港運輸政策綠皮書 - 邁向二十一世紀

一九九零年一月香港運輸政策白皮書 - 邁向二十一世紀

## 附錄一 灣仔發展計劃第二期檢討簡單背景資料

政府於 2002 年 4 月根據《城市規劃條例》把灣仔北分區計劃大綱草圖刊憲。該分區計劃大綱草圖所涵蓋的範圍，西起香港會議展覽中心西端、東臨銅鑼灣避風塘東邊海堤及興發街、南抵告士打道。大綱草圖亦顯示了政府就興建中環灣仔繞道，和優化灣仔北及銅鑼灣一帶海濱的建議。

保護海港協會有限公司於 2003 年 2 月就城市規劃委員會因應其對《保護海港條例》的詮釋，對灣仔北分區計劃大綱草圖所作的相關決定提出司法覆核。司法覆核最終由終審法院於 2004 年 1 月 9 日作出裁決。

根據終審法院的裁決，只能在證明填海工程有凌駕性的公眾需要時，才可以推翻《保護海港條例》內訂明不准許填海的推定。這需要（即社群的經濟、環境和社會需要）必須是當前迫切的，同時又沒有另一合理的解決方法（所有情況包括對經濟、環境和社會的影響都應該一併考慮）。所謂當前迫切的需要，是遠遠超乎那些“人們樂於擁有的”、應有的、可取的或有益的事物。但另一方面，把這個需要描述為具有“非到最後才會需要”這樣性質的事物，或描述為公眾不可或缺的事物，就未免太言過其實了。

鑑於終審法院在 2004 年 1 月 9 日的裁決，政府決定就灣仔發展計劃第二期進行規劃及工程檢討，以確保灣仔北分區計劃大綱草圖，及位於龍景街附近的中環填海第三期工程東面界限及香港會議展覽中心中間的地帶的規劃，完全符合《保護海港條例》及終審法院的裁決。檢討於 2004 年 3 月展開。

## 附錄二 提交意見書的團體／個別人士的名單

為加強公眾人士的參與，邀請公眾在專家小組論壇舉行之之前，就有關問題上提交見解。在論壇舉行之之前，專家小組共收到十九份由不同團體或個人提交的意見書。提交意見書的團體及個別人士詳列如下。

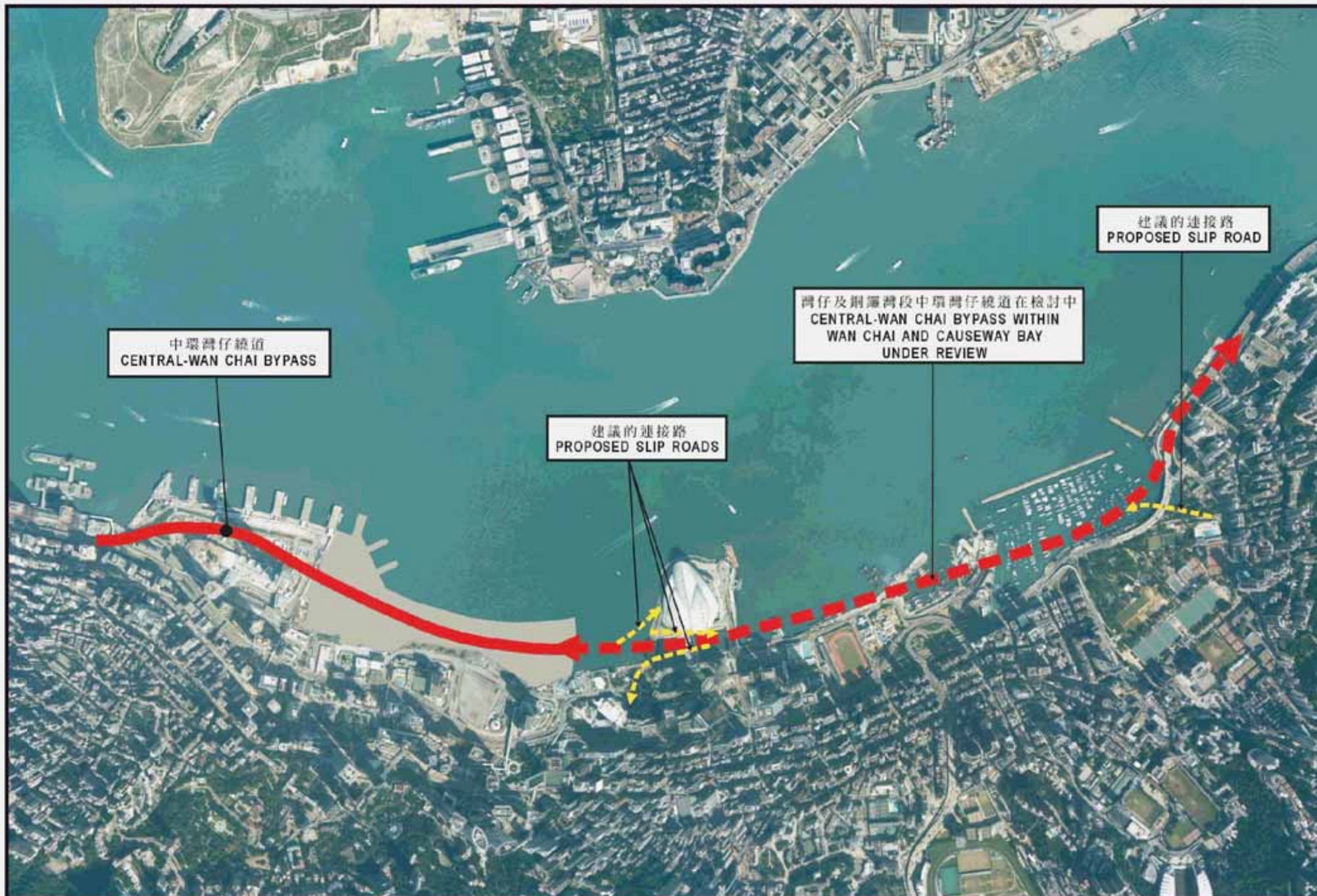
甲 1: 團體／個別人士提交的意見書

編號	團體／個別人士名稱	主題	日期
1	軍人輔導會	(無主題) *	2005 年 8 月 15 日
2	公眾人士	對中環交通的意見 *	2005 年 8 月 17 日
3	公眾人士	(無主題) *	2005 年 8 月 23 日
4	爭氣行動	(無主題) *	2005 年 8 月 23 日
5	保護海岸協會	保護海岸協會的意見書是一份由 Deloitte Research 撰寫，名為 'Combating Gridlock: How Pricing Road Use Can Ease Congestion' 的報告。報告可在 Deloitte Research 的網頁 <a href="http://www.deloitte.com">www.deloitte.com</a> 閱覽 *	2005 年 8 月 23 日
6	灣仔區議會規劃、交通及環保委員會主席吳錦津議員	(無主題)	2005 年 8 月 25 日
7	太古地產	(無主題) *	2005 年 8 月 25 日
8	愛護動物協會	(無主題) *	2005 年 8 月 25 日
9	香港貿易發展局	(無主題) *	2005 年 8 月 26 日
10	地鐵有限公司	(無主題) *	2005 年 8 月 26 日
11	九龍的士車主聯會有限公司	支持興建中環灣仔繞道	2005 年 8 月 26 日
12	海港商界論壇	(無主題) *	2005 年 8 月 26 日
13	立法會議員郭家麒醫生	(無主題)	2005 年 8 月 26 日



編號	團體／個別人士名稱	主題	日期
14	商界環保協會	(無主題) *	2005 年 8 月 26 日 (於 2005 年 8 月 29 日經電郵遞交)
15	思匯政策研究所	(無主題) *	2005 年 8 月 29 日
16	保護海港協會有限公司	檢討中環灣仔繞道是否需要 *	2005 年 8 月 30 日
17	共創我們的海港區	(無主題) *	2005 年 8 月 26 日 (於 2005 年 8 月 31 日經電郵遞交)
18	公共巴士同業聯會有限公司	(無主題) *	2005 年 9 月 1 日
19	公眾人士	給專家小組的意見書 *	2005 年 9 月 2 日

\* 意見書以英文提交



中環灣仔繞道  
CENTRAL-WAN CHAI BYPASS

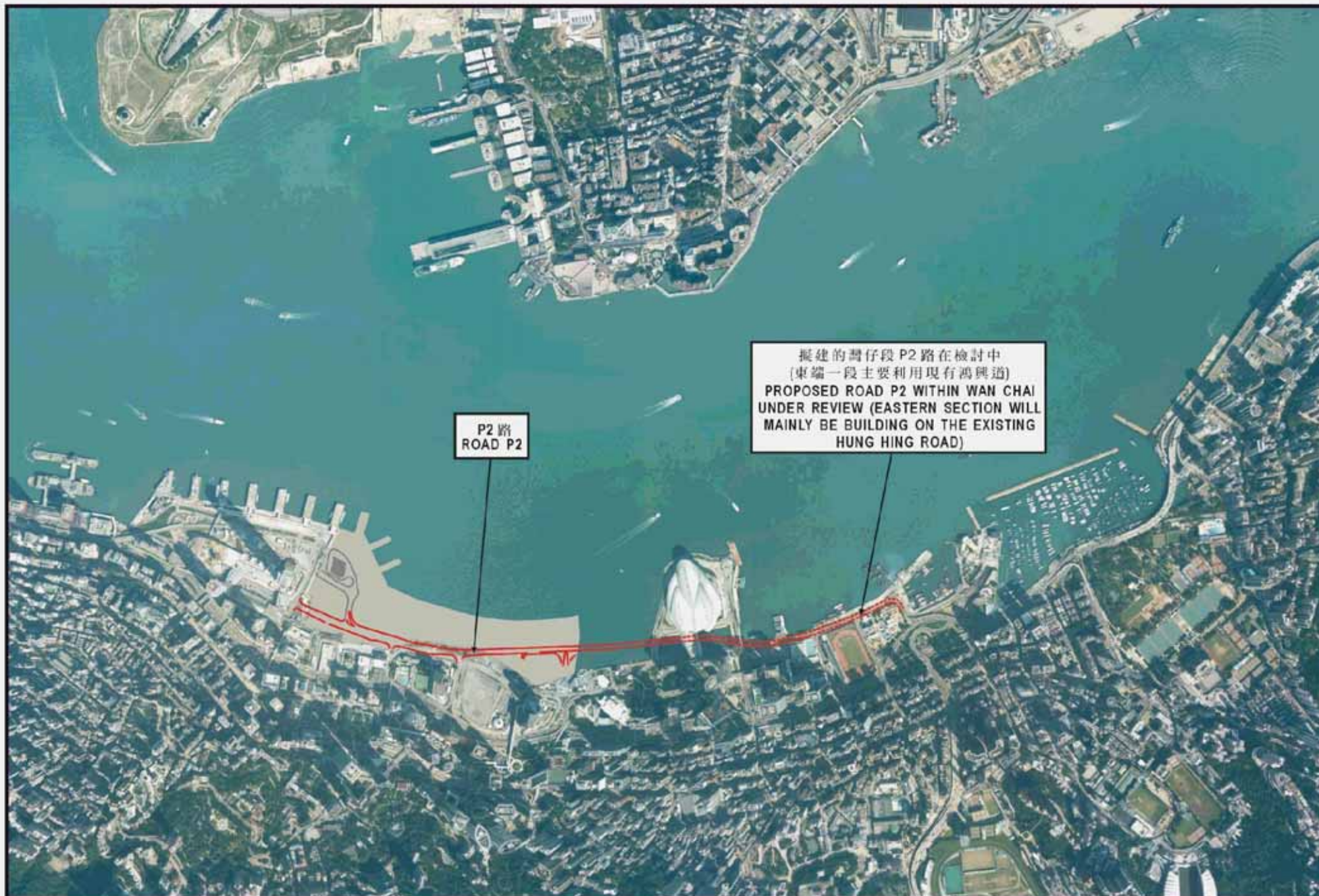
建議的連接路  
PROPOSED SLIP ROADS

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



## 附錄五 - 相片集



相片一 - 專家小組及共建維港委員會轄下灣仔發展計劃第二期檢討小組委員會主席



相片二 - 專家小組視察走廊的交通狀況



相片三 - 二〇〇五年九月三日舉行的專家小組論壇



相片四 - 一個提交意見書的團體在專家小組論壇上補充他們的意見





相片五 - 一位出席專家小組論壇的人士發表她的意見



相片六 - 走廊的交通狀況 (干諾道中)



相片七 - 走廊的交通狀況 (告士打道)



相片八 - 走廊的交通狀況 (告士打道)





相片九 - 走廊的交通狀況 (告士打道)



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# 優化灣仔、銅鑼灣及鄰近地區海濱的研究

HARBOUR-FRONT ENHANCEMENT REVIEW - WAN CHAI, CAUSEWAY BAY & ADJOINING AREAS



構想階段

公眾參與報告

二零零六年三月



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優化海濱研究公眾參與活動引發需由共建維港委員會考慮的議題

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lb	公眾論壇二 東區(31.5.2005)
lc	公眾論壇三 中環及西區(2.6.2005)
ld	公眾論壇四 南區(7.6.2005)
le	公眾論壇五 油尖旺(13.6.2005)

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IVd	其他在民意調查中列出的意見
IVe	書面意見(為意見整合論壇討論而收到的意見)

## 前言

共建維港委員會推展了一項名為「優化灣仔、銅鑼灣及鄰近地區海濱的研究」(下稱優化海濱研究)的公眾參與活動，目的是為了加強公眾在灣仔發展計劃第二期檢討的參與。優化海濱研究的結果將為灣仔發展計劃第二期檢討提供參考。

優化海濱研究包括構想階段、建立共識階段及詳細規劃階段，其意念是在草擬初步規劃概念前，提供機會給公眾參與，讓公眾人士可以在早期階段就他們對海濱的可持續發展，表達願景和期望，並建立共識。公眾表達的觀點和意念會成為制訂初步規劃概念的基礎。希望透過加強早期階段的公眾參與，隨後制訂的概念規劃更能夠反映公眾的需要及期望。

構想階段為期6個月，即2005年5月至11月。在這階段舉行的公眾參與活動包括：5次公眾論壇、2次社區設計坊、民意調查、可持續運輸規劃及中環灣仔繞道專家小組(下稱專家小組)論壇及意見整合論壇。以上活動所得到的意見都收納於這份報告內。總體來說，優化海濱方面的意見是一致的。經考慮過專家小組的全盤建議後，共建維港委員會轄下灣仔發展計劃第二期檢討小組委員會亦支持興建一條中環灣仔繞道。而地面運輸基建的詳細設計則需再作研究，以便考慮其對海濱地區的土地使用、市民享用海濱的機會及填海的影響。

由於部分在構想階段收集到的意見和提議以及專家小組的建議涉及灣仔發展計劃第二期以外地區，亦超越優化海濱研究和灣仔發展計劃第二期檢討的範疇，這些提議和建議亦載列於這報告書的附錄內，以便在適當的渠道跟進。

構想階段完成後，優化海濱研究會進入建立共識階段。在這階段，我們會根據海港規劃原則及在構想階段制定的可持續發展原則及指標，對擬備的概念規劃圖和發展建議作出評估和建立共識。建立共識階段涉及的地域範圍會限制在灣仔發展計劃第二期檢討的範圍內，即由告士打道走廊伸延至海港，並由龍景街附近的中環填海計劃第三期的東面工程界線至銅鑼灣避風塘東防波堤，並包括因應興建中環/灣仔繞道或需伸延至北角的部分。接壤這範圍的海港亦包括在這次檢討內。

本人謹代表共建維港委員會轄下灣仔發展計劃第二期檢討小組委員會，對所有參與構想階段的人士致謝，沒有這些人士的參與，構想階段是不可能有今天的成績。我們期待公眾以同樣甚至更大的熱誠參與優化海濱研究的其餘階段。我們期待與公眾攜手發展一個世界級的海濱，供市民和遊客享用。

梁剛銳

梁剛銳先生  
共建維港委員會轄下灣仔發展計劃第二期檢討小組委員會主席  
2006年3月





## 第一章 引言

### 1.1 優化海濱研究的目的

1.1.1. 灣仔北分區計劃大綱草圖已於2002年4月19日刊憲，建議填海約26公頃用來興建中環灣仔繞道及相關道路網和土地用途。於2004年1月9日，終審法院就有關灣仔北分區計劃大綱草圖(S/H25/1)的司法覆核作出裁判。根據終審法院的裁判，只能在證明填海工程有凌駕性的公眾需要時，才可以推翻《保護海港條例》內訂明不准許填海的規定。

1.1.2. 鑑於終審法院就填海所作的裁決，政府決定就灣仔發展計劃第二期進行全面的規劃及工程檢討，以確保有關計劃完全符合《保護海港條例》的要求和終審法院的裁決。

1.1.3. 共建維港委員會(下稱「委員會」)於2004年5月成立，負責就維港現有及新海濱規劃、土地用途及發展事宜向房屋及規劃地政局局長提供意見。委員會更設立了灣仔發展計劃第二期檢討小組委員會(下稱「小組委員會」)，負責就灣仔發展計劃第二期檢討提出意見。

1.1.4. 政府已接納了小組委員會提出的建議，把「促進公眾參與」定為檢討過程中一項主要元素。為此，一項「優化灣仔、銅鑼灣及鄰近地區海濱的研究」(下稱「優化海濱研究」)由小組委員會督導下進行。優化海濱研究的結果，將為灣仔發展計劃第二期檢討提供參考。

1.1.5. 為了進一步了解優化海濱的機遇和確保公眾對未來分區計劃大綱草圖及建議發展大綱草圖有高度的支持，在整個優化海濱研究過程中制定了

三個階段的公眾參與活動，有系統地廣泛收納公眾意見。

「構想階段」

- 公眾人士可提出理想、期望、概念及可持續發展的原則及指標，以用作擬備概念規劃圖。

「建立共識階段」

- 與公眾評估概念規劃圖以達至共識。

「詳細規劃階段」

- 確保分區計劃大綱草圖及建議發展大綱草圖能反映公眾的共識。

### 1.2 構想階段

1.2.1. 構想階段已於2005年5月22日正式展開，整個構想活動在於促進公眾參與確立主要議題和建立改善海濱的原則。可持續發展的理念是整個優化海濱研究的根本原則。合作伙伴已於2005年1月23日擬備了一套可持續發展的原則及指標。其後，公眾亦被邀請對其作出建議，務求與公眾達至共識，制定一套公眾認同的原則和指標，用來評估在建立共識階段訂定的概念規劃圖。在兩個月的公眾參與期內舉辦了廣泛的公眾參與活動。

1.2.2. 在第一階段的公眾參與活動中，公眾人士被邀請對以下的議題提出建議，以釐定灣仔發展計劃第二期檢討的範圍。

- 灣仔發展計劃第二期檢討背景
- 研究方法及程序
- 整體公眾參與框架
- 沿灣仔、銅鑼灣及鄰近地區海濱的主要考慮議題、限制及機遇
- 理想及其他方案
- 由合作伙伴擬備的可持續發展的原則及指標

1.2.3. 為了方便公眾討論，一套包括中、英文版本的「公眾參與小錦囊」已廣泛派發。此外，一些背景資料，諮詢資料及相關報告亦已上載至共建維港委員會的網站，讓公眾查閱。此外，更設有獨立網站作平台，供市民填寫網上問卷及在研究過程中提供意見。為進一步宣傳此項優化海濱研究，亦印備宣傳單張，概述「公眾參與小錦囊」的內容，並廣泛派發。

1.2.4. 為宣傳構想階段的開始，有超過4,000個全港和地區組織獲邀出席公眾參與活動，包括研究區內多個業主立案法團。亦於中、英文報章上刊登廣告，讓更多的普羅大眾收到此項活動的訊息。





## 1.3 合作伙伴

1.3.1. 為確保一個公開及全面的公眾參與過程，不同界別的組織，包括相關的區議會、社區團體、商界、環保團體和學術及專業組織等都被邀擔當合作伙伴，當中包括：

- 區議會
  - 中西區
  - 灣仔區
  - 東區
  - 南區
  - 油尖旺區
- 地方/社區團體
  - 聖雅各福群會
  - 香港明愛
  - 香港可持續發展公民議會
- 商業機構
  - 地產建設商會
  - 香港總商會
  - 香港工業總會
  - 香港中華總商會
- 關注團體
  - 長春社
  - 香港海洋環境保護協會
- 專業學會
  - 香港建築師學會
  - 香港規劃師學會
  - 香港測量師學會
  - 香港工程師學會
  - 香港園景師學會
  - 香港運輸物流學會

- 美國建築師學會(香港分會)
- 工程界社促會
- 學術機構
  - 香港大學建築系
  - 香港中文大學建築系
  - 香港大學土木工程系
  - 香港城市大學公共及社會行政學系

1.3.2. 在構想階段中，合作伙伴對以下幾方面提供了寶貴意見：

- (i) 檢討海濱發展的限制與機遇；
- (ii) 擬備一套可持續發展的原則及指標初稿；
- (iii) 利用現有的網絡去推廣公眾參與活動；
- (iv) 確保一個高度透明和公正的過程；
- (v) 作為公眾論壇或社區設計坊的主席團召集人或成員



1.3.3. 兩個合作伙伴的工作會議分別於2005年1月23日及2005年4月2日進行。首次會議目的為建立一套可持續發展的原則及指標，第二次會議為收集有關「公眾參與小錦囊」的意見及對公眾參與活動的建議。

## 1.4 公眾參與活動

1.4.1. 在構想階段中，我們舉行了廣泛的公眾參與活動以取得市民意見。為確保不同界別人士，包括較積極的地區關注組織、持分者、當區市民及其他不直接受灣仔發展計劃第二期影響的市民均能夠參加公眾參與活動，活動以如下多種形式進行。

### 公眾論壇

1.4.2. 為了讓較積極地區關注組及持份者有面對面討論及發表意見的機會，論壇於香港及九龍五個區議會區域進行。論壇的主要目的為收集他們對優化灣仔、銅鑼灣及鄰近地區海濱的原則和期望，並收集其對基建和交通上的影響，特別是對可能興建的中環灣仔繞道的意見。同時，亦希望透過公眾論壇去協助建立一套可持續發展的原則和指標，用來在建立共識階段時評估概念規劃圖。

1.4.3. 五次公眾論壇已於以下日期進行：

- 2005年5月23日(灣仔)
- 2005年5月31日(東區)

- 2005年6月2日(中西區)
- 2005年6月7日(南區)
- 2005年6月13日(油尖旺)



### 社區設計坊

1.4.4. 兩次的社區設計坊是為有系統地收集各積極地區關注組及持分者的意見。社區設計坊與公眾論壇不同的地方在於社區設計坊不會深入討論概念及原則，而是集中研究設計概念及在不同繞道走線的初步概念。在社區設計坊裏，參與人士在概略藍圖上表達了他們的意見。同時，在這些公眾參與活動中亦展示了海港範圍的模型和繞道的立體模型，以讓公眾對議題有更清楚的了解。



1.4.5. 兩次社區設計坊已於下列日期進行：

- 2005年6月18日(灣仔)
- 2005年6月25日(油尖旺)

#### 民意調查

1.4.6. 為了確保更多公眾人士，特別是不受直接影響的市民亦可參與，調查採用了不同的方式去收集不同對象的意見：

- 電話訪問範圍覆蓋了整個香港島、九龍及新界（隨機抽樣選出不直接受影響市民）
- 在灣仔發展計劃第二期的不同地點進行路旁訪問（對象為可能受影響的居民、上班人士、遊客及路過者）
- 經由公眾論壇、社區設計坊、網頁、傳真、電郵及信件等途徑收集自行填寫問卷（對象為未能出席公眾論壇及社區設計坊的較積極人士）

#### 書面意見

1.4.7. 為方便未能參與公眾論壇及設計坊的人士自由地發表其意見，我們設計了意見收集表格，並把它們放於「公眾參與小錦囊」內及上載到有關網頁。在公眾論壇和社區設計坊，各參與者亦被鼓勵寫出他們對未來海濱的「最大願望」。另外，我們亦鼓勵市民自行採用各種形式發表意見或提交計劃書。

## 1.5 報告的目的

1.5.1. 本報告目的為總結從構想階段中公眾參與活動收集的意見。詳細的活動記錄、調查及書面意見已分別列於附錄冊內。

1.5.2. 為更深入了解不同對象的意見，我們舉辦了不同形式的活動。報告第二至五章分述了各活動的內容。第六章記錄了可持續運輸規劃及中環灣仔繞道的專家小組論壇的討論。第七章則記錄了意見整合論壇的討論。小組委員會、區議會、城市規劃委員會和立法會的討論則記錄在第八章。第九章包括總結及對政府提出有關概念規劃圖的建議。第十章則簡述優化海濱研究餘下階段的工作。



第二章 公眾論壇

2.1 引言

2.1.1. 五個公眾論壇主要的目的是要向公眾簡報研究的背景和過程，以及鼓勵公眾發表他們有關研究範圍的關注和建議。

2.1.2. 在公眾論壇上，政府官員和顧問公司簡報優化海濱研究的背景和目標、海濱的現況，包括基建和交通運輸方面的問題。然後進行公開討論，讓公眾、政府官員和顧問公司討論兩個主要的題目，即優化海濱和交通問題。最後，參加者分成多個小組，就合作伙伴初步擬制的可持續發展原則給予意見和建議。

2.1.3. 本章的2.2節列出了參加者的背景，並在2.3節總結了有關兩個焦點題目的討論要點。而

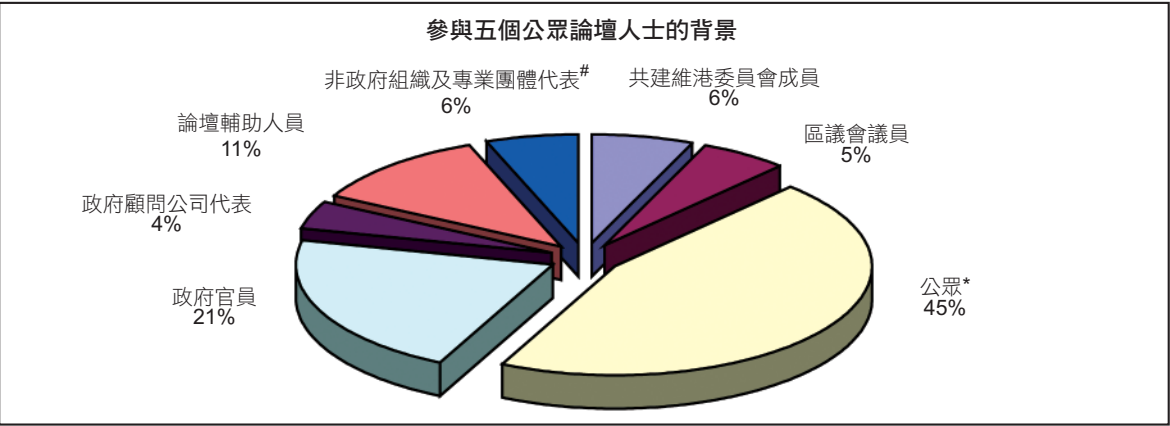
2.4節則整合了經過小組討論達致的可持續發展原則及指標。論壇會議記錄及各小組的討論報告則詳列在附錄冊中。

2.2 參加者的背景剖析

2.2.1. 這五個公眾論壇的參加者共**421**人次，來自不同背景，其中有普羅大眾，非政府組織代表及專業團體，共建維港委員會成員，區議會議員，政府官員與及政府顧問公司(表2.1)。人數最多的為公眾人士，包括市民、老師、學生和其他顧問公司的代表。

圖 2.1 參與五個公眾論壇人士的背景剖析

	共建維港委員會成員	區議會議員	公眾*	政府官員	政府顧問公司代表	論壇輔助人員	非政府組織及專業團體代表 #	合共
公眾論壇	27	23	191	90	18	48	24	421



\*公眾包括市民、老師、學生和其他顧問公司代表

#非政府組織及專業團體代表包括工程界社促會、香港貿易發展局、香港漁民近岸作業協會、綠色學生聯會、保護海岸協會、爭氣行動、香港建築師學會、新世紀論壇、香港愛護動物協會、英國土木工程師學會(香港分會)、業主立案法團聯會、聖雅各福群會、香港可持續發展公民議會和香港海洋環境保護協會。

2.3 公眾討論要點

優化海濱

朝氣蓬勃的海濱

2.3.1. 公眾普遍達至一個共識，認為應該創造一個更具朝氣和活力的海濱，並提供一些休閒活動和設施，如單車徑、散步徑、釣魚設施、露天餐廳和文化設施，並且鼓勵利用水上運動增添海濱的朝氣。同時海濱的形象也是重要的。

連繫性/可達性

2.3.2. 大部分的參加者都認為現時海濱的連繫性和可達性都必須作出改善，以增加公眾與海濱接觸的機會。要達到此目的，應確保提供由東至西連貫的海濱讓公眾享用，並特別在南至北方向，提供設計完善的行人通道網絡，以保持行人可達程度和改善現有海濱和腹地分割的情況。另外，很多參加者建議把維多利亞公園以綠化露天平台形式伸延至海濱。

海濱用地和水上活動的配合

2.3.3. 很多參加者同意海濱用地和水上活動的配合是海濱設計中十分重要的設計原則。為了保護山脊線，海濱地方應該沒有大型或高層建築物，包括寫字樓和住宅，好讓市民充分享用及盡量減少交通流量。並且，興建道路所需的土地面積也應該減到最少，以騰空更多土地來優化海濱及進行娛樂休閒活動。

文化及歷史遺產

2.3.4. 公眾都認同應保存現時海濱的文化和歷史遺產，包括午砲。盡量減少填海以保存社會的天然資產—維多利亞港。而銅鑼灣避風塘亦應視作社會的文化財產，並建議復興已往避風塘文化，如海鮮飲食、舢舨遊，以反映其歷史價值及吸引遊客。

環境質素

2.3.5. 公眾亦普遍關注沿海濱的環境質素，亦建議改善空氣、水質及噪音。並進一步優化周邊的環境，沿海濱栽種較多的花草樹木及進行景觀美化。

即時的海濱改善措施

2.3.6. 除了長遠優化海濱的建議之外，很多參加者認為應即時改善現有狀況，如開放政府土地供大眾享用，清除非法的土地用途，及增設臨時花槽和坐位給市民使用。

運輸議題—支持興建中環灣仔繞道之論據

2.3.7. 很多參加者認為干諾道/告士打道在每個工作天的交通擠塞程度已達到不能接受的地步。中環、金鐘及灣仔的道路交通情況亦變得非常不可靠，交通擠塞大大延長了東西向的行車時間。





2.3.8. 有一位運輸規劃專家提出在過去二十年的城市發展，包括新市鎮、港口及機場不斷西移，所以需要加強東西向的連繫以配合這些發展。為配合不斷的經濟增長及解決長久以來的交通需求，中環灣仔繞道是有必要興建的。

2.3.9. 有些參加者指出中環灣仔繞道正是現時香港策略性連接道路計劃的其中欠缺的一部分，貫通該部分有助解決交通擠塞問題。

2.3.10. 另一位運輸經濟專家認為，如果香港實施電子道路收費，將要收取約港幣40元才節省40分鐘的車程，然而這水平的收費並不是社會願意接受的。該專家並認為興建繞道是實施電子道路收費的先決條件。在經濟及交通規劃角度方面而言，應實施收費與及興建道路以解決擠塞的問題。

2.3.11. 有很多參加者認為如果填海是為興建繞道的話，這是可以接受的，但填海的面積一定要減至最少。

2.3.12. 大部分的參加者都不贊成以高架天橋形式興建繞道，因為這樣會阻礙海濱的景觀。公眾比較偏向以隧道或把道路沉降方式去興建繞道。

2.3.13. 有些參加者認為繞道能減少交通擠塞問題，從而改善空氣質素，現時的交通擠塞問題正對灣仔造成嚴重的空氣污染問題。

## 政府的回應

2.3.14. 興建中環灣仔繞道的原因是要貫通策略性連繫道路中欠缺的一段，並有效地處理沿干諾道/告士打道的交通擠塞問題。政府承諾會依從《保護海港條例》以及終審法院的判決，以最少填海為原則。而所有填海所得的土地會供公眾使用，不會用作賣地之用。

## 運輸議題—反對興建中環灣仔繞道之論據

### 電子道路收費

2.3.15. 一些參加者認為單是採用電子道路收費就能足以解決交通擠塞問題。他們引用了英國倫敦的成功例子。指出電子道路收費的成效，令當地的交通流量在兩年內大大減少了百分之二十四。市民一般都會對電子道路收費作出反應，就如

2005年5月的東區海底隧道加價，市民把私家車留在家中而改乘公共交通工具，正是一個好例證。當實施了電子道路收費而沒有繞道的情況下，路面容量就會騰出，交通流量會減少大約百分之二十四。

### 需求管理

2.3.16. 有些參加者認為需求管理比其他解決交通問題的方法更為重要，亦建議管制三條過海隧道的收費去有效地疏導交通，而告士打道的交通亦可得到紓緩。

2.3.17. 鑑於香港的人口增長開始放緩，有些市民質疑政府對交通需求量的估計。而早前的需求預測亦應該重新覆檢，興建繞道未必需要的。

2.3.18. 其他參加者認為可持續發展的土地規劃能減少交通需求。藉著減少沿海邊密集式和大型的發展項目，交通需求亦會相對下降，額外的P2道路只會進一步佔用了海濱的範圍，妨礙了公眾享用的權利。



### 地下鐵路

2.3.19. 有參加者相信地下鐵路有很大的運載量，能紓緩交通擠塞問題。藉著興建西港島線及南港島線，更多的乘客將由道路分流到鐵路運輸系統。

### 政府的回應

2.3.20. 政府認為單靠電子道路收費不能解決交通問題，電子道路收費需要配合繞道。繞道為不願途經電子道路收費範圍的車輛提供另一個選擇。

2.3.21. 即使三條過海隧道收費能夠協調，興建繞道仍是有需要的，將東西向的交通分流到東區海底隧道和西區海底隧道。現時交通已飽和的告士打道難以擔當此角色。交通需求並非只來自人口增長，就業機會跟整體經濟增長也是其中的原因，而後兩個因素才是推動香港交通需求的主要原因。況且密集式發展，如國際金融中心已經在海濱落成，拆卸該些發展使海濱回覆舊貌是不可能的。加上現時亦有高燃油稅，首次登記稅及牌



## 2.4 整合的可持續發展原則

照費等措施以限制私家車的擁有數量。這證明了單靠交通管理是不能夠解決現有的交通問題。

2.3.22. 在模擬未來交通流量時，已經考慮到有地下鐵路的西港島線及西區海底隧道的影響，但預測顯示仍然會在2011年有嚴重的交通擠塞。地下鐵路無法應付貨運的需求和點到點的物流送遞服務。最後，即使南港島線工程完成，亦只能從巴士乘客中疏導約20,000人次。由於告士打道巴士的佔用率只有百分之五，故此減少150-160輛巴士次數，並不足以緩和告士打道的交通擠塞。

### 可持續發展原則及指標作為指引和評估工具

2.4.1. 可持續發展著重全面和整體的規劃及發展方案。一個全面和整體的方案共分兩範疇：需要廣泛地考慮社會、經濟及環境因素，以及需要有關人士、組織和持分者參與規劃過程。

2.4.2. 優化海濱研究採用一套可持續發展原則來確保研究範圍內有一套全面及整體的規劃。制訂可持續發展的原則和指標是步向這目標的重要一步。

2.4.3. 在2005年1月23日，合作伙伴建議了9個可持續發展原則。這些原則分為社會、經濟及環境三個範疇，並在每一個原則下擬備了一些質量性和數量性的可持續發展指標。研究隊伍亦在公眾論壇上，讓公眾進一步討論初擬的可持續發展原則和指標的應用性。公眾論壇的參加者亦被鼓勵去增加或修改初擬的可持續發展原則指標，以及重整全套原則，令它更能反映他們對研究地區的意願和需要。

2.4.4. 透過公眾參與活動，一共整合了七個可持續發展原則。原有初步的可持續發展指標亦根據參加者的意見，重組以配合一套整合的可持續發展原則。這七個可持續發展原則跟八項海港規劃原則中的五項類似，但它們對灣仔及銅鑼灣海濱更具體的關注，餘下的三個海港規劃原則則較集中在規劃過程，亦被公眾在構想階段內多次提及到，因此這些原則都被接納為一些基礎性可持續發展原則。已整合的可持續發展原則已詳述於表2.1以供參考。我們建議這套已整合的可持續發展原則及有關指標應用於以下兩個用途：

1) 作為一套為公眾倡議的可持續發展指引，引領研究範圍的規劃及發展；及

2) 用作一套評估準則來量度概念規劃圖能否滿足公眾的願景。

2.4.5. 這套已整合的可持續發展原則代表了持份者對於灣仔、銅鑼灣及鄰近地區海濱的期望，而可持續發展指標則進一步給可持續發展原則補充定義。那些指標的目的是要把可持續發展的原則在不同的關注方面上量化。然而不是每個指標都可以量化的，尤其是關於社會文化的指標。

因此，我們提議可持續發展的指標該分為兩個類別：有些指標是可量度及評估的（如沿行人通道提供活動節點、提供到達海濱的不同方式），而有些指標則是在擬備概念規劃圖時作指示用途，充分闡釋可持續發展原則（如有創意地使用三維空間及提供安全的環境）。

2.4.6. 這套可持續發展原則及指標將促進優化海濱研究的可持續發展過程，並為達成共識制定了一套共同的衡量標準。



表 2.1 已整合的一套可持續發展原則和指標

基本可持續發展原則

1. 綜合規劃一個世界級海港
2. 可持續發展的海港
3. 及早並持續的讓持分者參與

為優化海濱研究整合出來的可持續發展原則和指標(由公眾論壇提出)

到達的方便程度和連接性			用途和活動		舒適度和形象	
1. 製造一個有朝氣和吸引力的連貫海濱，適合任何人士享用	2. 確保腹地和海濱有行人連接通道	3. 改善交通情況	4. 確保海濱用地和水上活動用途能配合	5. 保存自然及文化遺產以加強本土特色及認同	6. 提升沿海濱的環境質素	7. 優化景觀、綠化和提高用地的質素
社會指標						
<div><div>適合不同年齡、社群及傷健人士方便到達</div><div>所有人士可以免費使用海濱</div><div>多元化的活動，適合不同時間及不同年紀人士的需要</div></div>	<div><div>沿行人通道提供活動點</div><div>行人包括傷健人士到達的方便程度</div></div>	<div><div>縮短在區內及各區之間的行程時間</div><div>提供不同的交通模式</div></div>	<div><div>提供各種設施以方便公眾享用海濱</div></div>	<div><div>保存和持續發展現存海濱的文化古蹟的活動</div><div>提供地區活動，以加強社會對海港的歸屬感</div></div>	<div><div>透過改善環境質素來提供更多元化的活動讓公眾享用</div></div>	<div><div>為不同年齡、社群及傷健人士提供休憩空間</div><div>提供安全的環境</div></div>
經濟指標						
<div><div>提供多元化的商機(日間及夜間)</div><div>有利不同類型的經濟活動</div></div>	<div><div>沿行人通道提供多元化的商機</div><div>伸延腹地(包括舊區)的經濟活動至海濱</div></div>	<div><div>縮短行程時間所能減省的成本</div><div>減低建築及營運作成本</div></div>	<div><div>推廣及更生本土經濟</div></div>	<div><div>提供具有文化價值的經濟活動</div></div>	<div><div>能源消耗的成本</div><div>改善環境質素的成本效益</div></div>	<div><div>提供商機給性質能配合的小商戶</div></div>

為優化海濱研究整合出來的可持續發展原則和指標(由公眾論壇提出)(續)

到達的方便程度和連接性			用途和活動		舒適度和形象	
1. 製造一個有朝氣和吸引力的連貫海濱，適合任何人士享用	2. 確保腹地和海濱有行人連接通道	3. 改善交通情況	4. 確保海濱用地和水上活動用途能配合	5. 保存自然及文化遺產以加強本土特色及認同	6. 提升沿海濱的環境質素	7. 優化景觀、綠化和提高用地的質素
環境指標						
<ul style="list-style-type: none"> <li>給所有人使用的安全及易達的海濱</li> <li>恰當的建築高度去保存山脊線</li> <li>望向海濱的視野</li> <li>提供休憩用地和社區設施</li> <li>提供活動節點/地標—形象標誌</li> <li>提供可促進水陸活動的基礎設施</li> <li>支援商業性質海上交通需要</li> <li>減少基建及公用設施佔用的土地</li> <li>海濱的連貫性</li> <li>提供有植樹的綠化地方</li> </ul>	<ul style="list-style-type: none"> <li>為豐富行人樂趣所提供的景觀美化網絡</li> <li>新舊區域及海港之間的視野連接</li> <li>與公共交通設施連接</li> <li>與舊區連接</li> </ul>	<ul style="list-style-type: none"> <li>在新發展區的邊陲提供汽車、巴士、單車及旅遊車停泊設施</li> <li>在海濱長廊範圍提供環保的交通工具</li> <li>上落客貨用的通道</li> <li>減少地面交通</li> <li>減低景觀上的影響</li> <li>減低環境影響</li> <li>在灣仔/銅鑼灣提供連接道</li> <li>長隧道的潛在風險</li> </ul>	<ul style="list-style-type: none"> <li>提供設施連接陸地和水上的用途</li> <li>有創意地使用三維空間</li> <li>新舊區域及海港之間的視野連接</li> <li>盡量減少會帶來嚴重交通影響的大型發展，以減低未來需填海的風險</li> <li>遷移不相容及不協調的土地和水上用途</li> <li>靈活運用海濱的空間</li> </ul>	<ul style="list-style-type: none"> <li>新舊區域及海港之間的視野連接</li> <li>恰當建築高度去保存山脊線</li> <li>利用設計元素提高海港形象</li> <li>將填海範圍減到最少</li> <li>盡量減少會帶來嚴重交通影響的大型發展，以減低未來填海的需要</li> <li>土地使用應與自然環境配合</li> <li>改善水質</li> <li>提升海洋生態</li> <li>改善海浪情況</li> <li>保存天然海岸線</li> </ul>	<ul style="list-style-type: none"> <li>循環再用建築物料的程度</li> <li>可持續發展地利用天然資源的程度</li> <li>改善現有基建設施的使用</li> <li>改善空氣流通</li> <li>改善空氣質素</li> <li>改善惡臭氣味的情況</li> <li>改善噪音環境</li> <li>改善水質</li> <li>改善海洋生態</li> <li>改善海浪情況</li> <li>開敞景觀</li> <li>加強綠化</li> </ul>	<ul style="list-style-type: none"> <li>靈活及可持續地運用空間</li> <li>為不同類型使用者提供設施</li> <li>開敞景觀</li> <li>提供有植樹的綠化地方</li> <li>人車分隔</li> <li>恰當的沿海建築高度</li> <li>有創意地使用三維空間</li> </ul>



第三章 社區設計坊

3.1 引言

3.1.1. 兩個社區設計坊的目的是鼓勵參加者去擬備概略的概念規劃圖，以反映他們建議的設計主題，解決有關交通問題的方法和建議土地利用的元素。

3.1.2. 社區設計坊在開始時已簡介了從公眾論壇和初步路旁及電話問卷所收集到的意見，及有關交通問題的技術資料。參加者如有任何疑問，亦提出發問。最後，參加者分為多個小組去就著某個主題，討論解決交通運輸問題的方法、設計原則、沿海濱的土地利用的元素及把概念轉化成概略的概念規劃圖。在每次舉辦的社區設計坊都有六個小組，由於其中一組設計了兩個概念規劃圖，故此在兩次社區設計坊中總共設計了十三個概念規劃圖。

3.1.3. 在3.2節列出了參加者的背景資料剖析，並在3.3節總結了共通的主題和設計要點。有關交通運輸的建議和相對的土地利用元素分別展示在三個概要圖內。有些小組未能完全同意解決交通問題的方法。然而，普遍同意的優化海濱元素都包括了在概要圖內。

3.1.4. 社區設計坊的記錄及各小組的討論報告則詳列在附錄冊中。

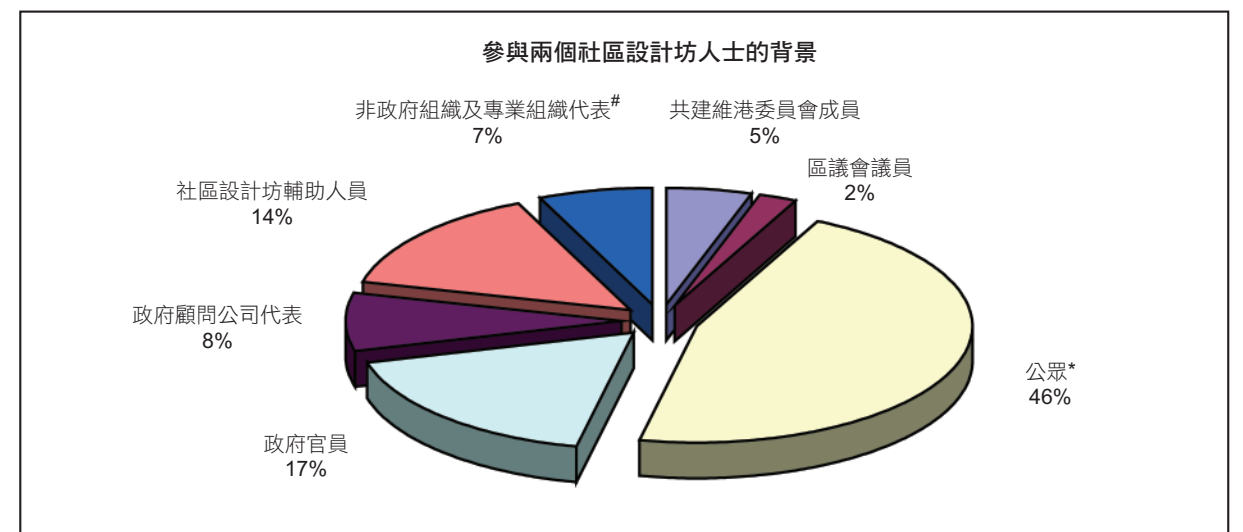


3.2 參加者的背景剖析

3.2.1. 跟公眾論壇類似，兩個社區設計坊的參加者來自不同背景，其中有普羅大眾，非政府組織代表及專業團體，共建維港委員會成員、區議會議員、政府官員與及政府顧問公司共223人參與(圖3.1)，普羅大眾層面包括市民、老師、學生和其他顧問公司代表等成為最大的參與界別。

圖 3.1 參與兩個社區設計坊人士的背景剖析

	共建維港委員會成員	區議會議員	公眾*	政府官員	政府顧問公司代表	社區設計坊輔助人員	非政府組織及專業團體代表 #	合共
社區設計坊	11	5	103	39	18	32	15	223



\*公眾包括市民、老師、學生和其他顧問公司代表

#非政府組織及專業團體代表包括工程界社會、香港貿易發展局、香港漁民近岸作業協會、保護海港協會、爭氣行動、香港運輸物流學會、香港規劃師學會和香港工程師學會。



## 3.3 主要建議的主題和都市設計的原則

### 主題

**3.3.1.** 差不多所有小組都提議創造一個有朝氣和連貫並充分綠化的海濱，讓公眾享用及推廣旅遊業。並應沿海濱提供多用途和多樣化的文化活動、水上運動和休閒活動。優化海濱亦應該著重改善環境質素。保存及優化現存的文化古蹟和天然資源，包括銅鑼灣避風塘，並為海濱建立一個獨有的標誌。

**3.3.2.** 很多小組建議應清除現有不相容的土地用途，例如政府的儲存用地和抽水房。為了進一步美化海濱，一些參加者建議恢復東區走廊下面空間的活力，以容納特色的設計和休閒活動。

**3.3.3.** 大多數小組也同意要是沒有另外的解決方法，而興建中環灣仔繞道以解決交通擠塞問題是有必要的話，他們寧願選擇以隧道形式興建，並認為在水面下的管道形式較為理想，以便有更大的彈性去利用海濱，還可把視覺影響減至最少。在13個概念圖中，一共有十個採取隧道的選擇。（5個選擇深層隧道，4個選擇淺層隧道，1個選擇深層和淺層隧道兩個方案）。1個選擇半地面道

路，2個並沒有在興建中環灣仔繞道的形式上得到共識。根據以上3個主幹道概念的建議，3.3節表述主要連繫深層隧道，淺層隧道和半地面道路的共通土地用途元素。

### 都市設計原則

**3.3.4.** 很多小組認為優化海濱應採取可持續發展的概念。要創造一個具朝氣和活力的海濱，並沿海濱加入一些景點，海濱長廊亦應擴闊以提供足夠用地給文化及休閒活動，並在海濱增加綠化以提高景觀質素。另外，不應在沿海發展大規模或高層建築物，以免阻擋山脊線，並加入地標使之成為海濱的標誌。



**3.3.5.** 很多小組指出應該加強從腹地活動區到海濱的行人連接通道，令更多人可以享受海濱。因此，建議把維多利亞公園以綠化露天平台形式伸延至海濱，進一步提高海濱的環境質素。很多小組支持建設一個行人專用的海濱環境，把交通和行人分隔。

**3.3.6.** 很多小組瞭解要是興建主幹道是最可行的解決交通問題方法的話，便可能需要有一些填海。但全部參加者也在同意設計運輸基建時必定要致力以最少的填海範圍作為凌駕性的原則。

## 3.4 參加者擬備的概略土地利用概念圖

**3.4.1.** 不管能否在交通基建範疇上達至共識，亦不論中環灣仔繞道以什麼方式興建，各個小組明顯地有很多共同的土地用途概念，令海濱變得更朝氣蓬勃和吸引。這些概念主要反映於建議的活動區及其位置上。

### 文化焦點

**3.4.2.** 藉著鄰近香港會議展覽中心、香港藝術中心和香港演藝學院的優勢，任何圍繞香港會議展覽中心的可發展地方應該規劃作文化、休閒及有關配套活動用途，例如：表演場地、浮水的表演台、露天表演場地、博物館、跳蚤市場、賣物會、展覽地方、地下購物中心和停車場。為促進旅遊，有些小組建議把直升機停機坪置於香港會議展覽中心東北面的碼頭的位置。

### 運動/水上活動/娛樂焦點

**3.4.3.** 提議在奇力灣(前公眾貨物裝卸區)和銅鑼灣避風塘興建兩個主要的運動/水上活動/娛樂焦點。第一個焦點提供地方作水上活動，如帆船和遊艇活動，而圍繞海灣的陸地則最好用作海濱長廊，並提供露天茶座和海濱餐廳。

**3.4.4.** 第二個焦點則在銅鑼灣提供更大的空間作划艇、龍舟和經營水上的士、中式帆船等。防波堤可以用作釣魚的地方。要是防波堤的表面能擴闊，亦可以作海濱長廊之用。根據中環灣仔繞道的不同建造形式，會有不同的土地騰空出來。對於興建淺層隧道的概念，避風塘裏會有少量填海，使海濱更寬闊和連貫。在深層隧道概念中，避風塘則會維持現有的情況(包括維園道旁邊狹窄的海濱)，因此，一些小組建議連接海濱和防波堤以擴大海濱長廊。



3.4.5. 差不多所有小組都建議宣傳避風塘裏的舢舨上吃海鮮/漁人碼頭、大排檔、水上蘭桂坊、觀光旅遊船等。

## 古蹟焦點

3.4.6. 很多小組亦建議在避風塘及周邊的地方，建立一個古蹟焦點，包括香港遊艇會，浮動的天后廟和午砲，他們亦建議興建一個漁人博物館來紀念香港漁民的歷史，而敬記船廠被認為是興建此博物館的適合地點。

## 綠色休憩地帶

3.4.7. 大多數的參加者也希望有多些綠化空間作休憩活動，簡單的草地和種了樹木的地方為最受歡迎，他們亦提議了兩個合適的地方作這種綠化休憩地區，一個是奇力灣的西面，另一個是在東區走廊的下面，後者只適合在興建中環灣仔繞道深層隧道的概念。除了以上靜態的休憩活動，他們還希望在這些地區有釣魚、賣物會、讓狗隻散步的地方和滾軸溜冰的設施，這樣亦可以提升受東

區走廊環境影響的居民的生活質素。但是，即使在淺隧道概念中不會在東區走廊下有任何填海，參加者仍希望在東區走廊下面有海濱行人路/浮橋、藝術及設計擺設，如海豚塑像，務求令海濱顯得更有生機。

## 行人通道的連接

3.4.8. 所有小組也促請政府加強行人通道連接海濱和腹地，貫通杜老誌道、馬師道、屈臣道等。現有的行人橋應該加以改善，以及增加行人橋的數目。很多小組希望把維多利亞公園以綠化露天平台形式伸延至海濱。有一些小組則提議在維多利亞公園下面興建一個地下停車場和商場。

3.4.9. 在建議半地面的中環灣仔繞道的土地用途概念規劃圖上，橫跨路面之上的園境長廊能令公眾和海濱更貼近。如果未能建設一個連貫的露天平台，在適當的位置設立觀景露天平台也可以接受，而平台上的售賣亭亦是受歡迎的設備。

3.4.10. 圖3.2、3.3和3.4概括了中環灣仔繞道在不同形式下(即淺層隧道，深層隧道，半地面道路)共通的土地用途概念。



圖 3.2 中環灣仔線(淺層隧道)的活動區

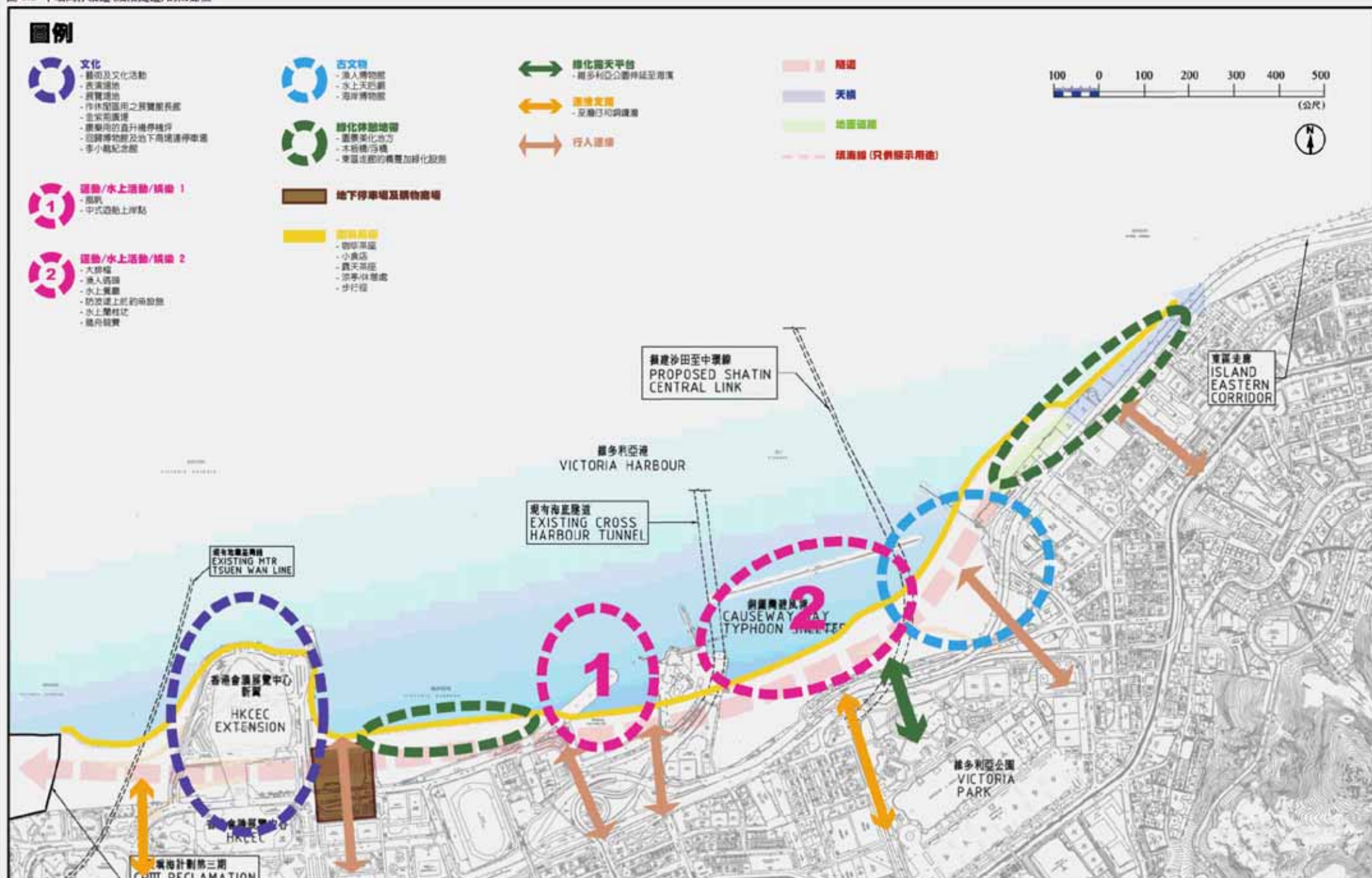


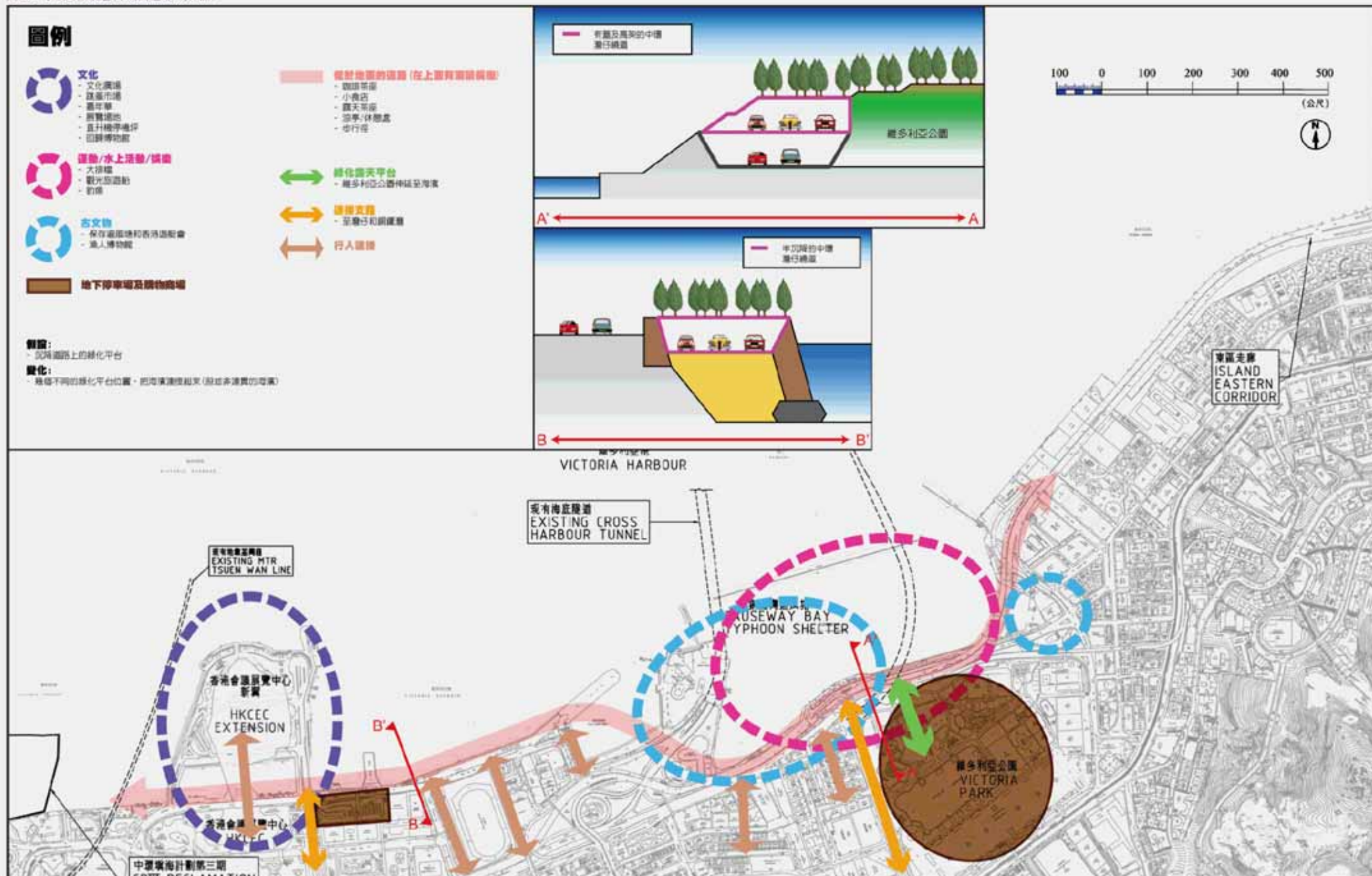


圖 3.3 中環灣仔繞道(深層隧道)的活動區





圖 3.4 中環灣仔繞道(半路面道路)的活動區



## 第四章 民意調查

### 4.1 引言

4.1.1. 民意調查的目的是搜集可能不直接受灣仔發展計劃第二期研究影響的市民意見。為了使問卷可以更廣泛諮詢不同層面的公眾，是次調查一共設計了三套不同形式的調查問卷。詳情如下：

#### 電話調查

4.1.2. 為了確保涵蓋廣泛的社會人士，精簡的電話調查問卷集中在幾個重要的議題上。電話調查由2005年5月30日至6月13日進行，被訪對象為15歲及以上人士，以隨機抽樣方式進行調查。

4.1.3. 成功被訪人數為921人，每個區域至少有300人接受調查，港島區有311人，九龍區有307人和新界區有303人。

#### 路旁問卷調查

4.1.4. 為了收集更多直接受灣仔發展計劃第二期研究範圍影響的市民意見，我們進行了一次路旁問卷調查，務求更清楚當區市民的期望。問卷經過一輪前期試驗，並經修改及獲得通過的。被訪對象為15歲及以上人士，包括路人及司機。

4.1.5. 完成的問卷共161份。調查由2005年5月21日至5月28日，包括星期一至五及周末進行，進行地點則分別為中環、灣仔和銅鑼灣。

#### 自行填寫的問卷調查

4.1.6. 為更廣泛推動公眾參與，另一套問卷亦附於「公眾參與小錦囊」內，在公眾論壇和設計坊派發。另外，問卷亦上載網站，收集公眾的意見。

4.1.7. 這套問卷與路旁問卷類似，不同之處是公眾可自行填寫和受訪對象亦包括15歲以下的年輕人。由於問卷是自行填寫的，所以並沒有資料去確定同一人有否遞交超過一份的問卷。無論如何，這種調查方法對提高公眾意識和參與是有幫助的。

4.1.8. 在第一階段的公眾參與過程中，一共收到306份完成的問卷。其中231份透過在網上遞交，75份透過郵遞、傳真、電郵及各個公眾參與活動遞交。

4.1.9. 根據主要的討論範圍，三套問卷調查的整體分析，將表述於以下章節。有關分析把三套問卷調查結果的主要類同和差異表現出來。至於每種形式問卷的詳盡分析和附圖，則詳列在附錄冊中。

### 4.2 整體分析

#### 1) 對《保護海港條例》和“終審法院裁決”的認識

4.2.1. 雖然維多利亞港填海已成為大眾討論的題目，但問卷調查結果顯示，社會上整體只有百分之三十五的市民認為自己有注意《保護海港條例》和“終審法院裁決”。個別地區如灣仔、銅鑼灣及鄰近地區達至百分之五十，在網上及自行填寫的調查結果更高至百分之七十九。

4.2.2. 這顯示了居住在距離海港較遠的市民對填海較少關注，而那些自行完成問卷的人士，則對議題有更多的關注和認識。

4.2.3. 然而，有較大百分比的人未能指出條例的主要內容/原則或對條例存有誤解，因此，教育市民對此方面認識是有需要的。

#### 2) 灣仔、銅鑼灣及鄰近地區的吸引和問題

4.2.4. 區內在路旁接受調查的人認為“購物方便、便宜”、“交通方便”、“食肆多，娛樂種類多”是這地區的特色。相反，自行填寫問卷結果顯示更多的被訪者認為“新和舊文化歷史的揉合”、“舊式的街道”以及“食肆多”、“交通方便”和“娛樂種類多”才是這些地區的特色。整體而言，被訪者都一致認為交通擠塞、空氣污染和噪音是最重要的三個問題。

#### 3) 對新海濱的期望和未來的角色

4.2.5. 路旁問卷和自行填寫問卷結果顯示，“優美的綠化和景觀設計”和“改善交通擠塞”是最重要的兩個期望。

4.2.6. 電話調查覆蓋全香港、九龍和新界、結果顯示有百分之三十一的被訪者寧願保留現狀。而緊隨的兩個最多人選擇的期望與其他形式的問卷調查結果即“優美的綠化和景觀設計”和“改善交通擠塞”相同。這很可能是因為電話調查的被訪者對當地情況較少留意，因而有較少的動力去改善現狀。

4.2.7. 三個調查中被訪者的期望，與該區的未來角色是一致的。他們都認為高質數的景觀和優美的海旁，以及良好的交通，如增強與地區的連接和改善交通擠塞實為研究地區最需要改善地方。

#### 4) 規劃海濱發展的原則

4.2.8. 在十個原則中，“創造有朝氣和吸引力的海濱”、“充分提高公眾享用的機會”、“提供優美市容景觀和綠化及高質素的空間”和“改善交通情況以方便行人連接各處”都是最多人選擇的。

4.2.9. 然而，自行填寫問卷調查結果顯示“確保公眾參與規劃過程”是第二個最重要的原則，而這和網上及郵寄遞交的問卷結果相符。

4.2.10. 另一方面，電話調查顯示“提供優美市容景觀和綠化及高質素的空間”、“盡量減少能源消耗”和“保存自然及文化遺產和本土特色”是非常重要的，這可能因為他們與海濱有比較遙遠的距離或比較少機會去享受海濱。



5) 上環/中環和銅鑼灣包括干諾道中/夏慤道/告士打道走廊的交通擠塞問題是需要解決的。

4.2.11. 在電話和路旁調查訪問中，分別有百分之七十五和百分之八十一的被訪者認為交通擠塞是一個需要解決的問題。但是，在自行填寫問卷調查中，則有較少的被訪者，約百分之六十七，認為這是一個問題。

4.2.12. 總括來說，大概百分之五至七的被訪者不認為這是一個問題。但電話調查中有百分之三點二，路旁調查中有百分之五和自行填寫問卷有百分之二十一的被訪者認為這是一個問題，卻毋需在現時解決。

#### 6) 解決擠塞問題的措施

4.2.13. “興建主幹道及採取其他交通管理措施”是大部分被訪者認為比較可取的措施，“只採取其他交通管理措施”排行第二，“只興建主幹道”則排行第三。

#### 7) 興建主幹道的形式

4.2.14. 關於興建主幹道的形式，多數路旁調查和自行填寫問卷調查的被訪者(約百分之四十六)比較喜歡以隧道形式興建，而電話調查的被訪者則有較大的百分比選擇以架空天橋興建。這很可能因為他們可以在駕車或乘車經過架空天橋時能欣賞維港景色。

4.2.15. 選擇隧道的被訪者中，大部分都支持在灣仔和銅鑼灣設出入口。

4.2.16. 要留意的是有被訪者寧願忍受交通擠塞，也不接受為興建一條主幹道而填海。選擇這項的路旁調查被訪者佔百分之九，而選擇這項的自行填寫問卷調查被訪者佔百分之二十八。

#### 8) 填海以達致一個連貫性的海濱

4.2.17. 雖然被訪者普遍期望擁有一個由上環/中環連貫到銅鑼灣的海濱，但是大部分的被訪者都不接受因建設連貫的海濱而填海。

#### 9) 被訪者的資料剖析

4.2.18. 三種調查中的被訪者的年齡組別都大致相同。灣仔、銅鑼灣和鄰近地區的路旁調查被訪者所接受的教育程度比電話調查的被訪者高，前者有百分之五十擁有大學/專上學院的教育程度，後者則有百分之二十八。而自行填寫問卷調查的被訪者，擁有該等的教育程度的百分比最高，達百分之八十五。

## 第五章 書面意見

### 5.1 引言

5.1.1. 在每次的公眾論壇和社區設計坊中，參加者都會被邀請將他們對灣仔及銅鑼灣海旁的一個願望寫在紙張上。共收到123張「最大願望」紙。亦有透過傳真/電郵/郵寄及問卷遞交的書面意見，其中4份意見書有詳盡的建議，並附有構圖演繹。它們分別是由林先生、香港遊艇會、太古集團和香港區域直升機場工作組遞交的。

5.1.2. 很多人的願望和意見/建議書都有共同的想法，而這些看法亦已在公眾論壇和社區設計坊表達。因此，在此章只會報告與第二章標題相近的主要新增意見，而詳盡的意見書則記錄在附錄冊中。

### 5.2 優化海濱

#### 朝氣蓬勃

5.2.1. 市民強調用途多樣化(文化交流、文物古蹟和歷史、娛樂、飲食、休閒、寵物愛好者、天然景色的欣賞和社區的融合等)。

5.2.2. 香港遊艇會提出很多水上運動和旅遊活動的建議，包括：

- 帆船訓練中心、具旅遊價值的歷史船隻停泊處、海洋生物展覽及奇力灣(前公眾貨物起卸區)的娛樂設施。
- 重組避風塘內的船隻停泊處以騰出地方舉行龍舟賽事。
- 沿防坡堤設公眾上落泊位供遊艇使用。
- 在香港會議展覽中心東面沿著新建的海堤建大型帆船停泊處。
- 多用途設施以供表演和公眾聚集。
- 支援船艇活動的岸上服務設施。
- 水上的士/渡輪浮橋。

5.2.3. 相比中環的海濱，太古集團建議在研究範圍以及維多利亞公園至海濱之延展範圍，設置一個有別於中環的海濱，並提供都市海灘。沿避風塘設圓形劇場。在奇力灣設水上活動中心、餐廳及多用途碼頭。

5.2.4. 林先生的「海濱夢想」與社區設計坊和民意調查得出的結果有相似的土地利用元素。其他特點包括：

- 沿龍景道和會議道海旁建發亮的噴泉。
- 把龍匯道、分域碼頭街和會議道沉降以提供更多行人專區。
- 在博覽道東設地下巴士和旅遊巴士總站，地面建表演場地。
- 在香港會議展覽中心的西面島嶼建直升機場。
- 在鷹君中心北面現有的巴士總站建文化廣場。
- 在維多利亞公園建地下停車場。

5.2.5. 香港區域直升機場工作組建議在香港會議展覽中心的西北角建本地及跨境的直升機場，作商業和旅遊用途。計劃亦包括提升現有的渡輪碼頭大樓作展覽、餐廳和直升機服務用途，並且翻新現存的天星小輪碼頭作博物館之用。

#### 連繫性/暢達程度

5.2.6. 很多人希望將來會沿海濱長廊設架空列車/電車/行人輸送帶。為了達至連續的海濱長廊，應開放遊艇會或跨越海底隧道的入口作公眾通道，並在東區走廊下興建木板長廊。亦有建議加強水上交通。太古集團和香港遊艇會倡議將維多利亞公園伸延至海濱並設綠化平台於現有道路上去改善暢達程度。

#### 海濱用地和水上活動的配合

5.2.7. 有意見支持撤除沿海濱的不協調用途，例如污水廠設施、垃圾收集站、貨物起卸區等，並提供多些水上活動和水上交通設施。海濱長廊的闊度可在25米的基準上作變化。有意見認為沿海濱只應批准有限數量的廣告牌。

#### 文化/歷史文物

5.2.8. 亦有建議促請政府提供展覽地方展示填海、主權回歸中國以及直升機、海上飛機交通和天星小輪的歷史。其他建議包括保留奇力島餘下的天然海岸線。

#### 環境質素

5.2.9. 香港區域直升機場工作組明白公眾對直升機運作的噪音表示關注。他們重申直升機場遠離住宅用地和沿海濱加設隔音屏障的建議。

5.2.10. 有些人士建議增添海濱活動，令她變得多姿多采，包括建設一個都市海灘去吸引公眾和遊客。

## 5.3 運輸議題

5.3.1. 在公眾論壇/社區設計坊有很多計劃同樣建議改善交通情況和行人通道的連接，並強調只有在沒有其他方法下才建設新的道路基建。有部分意見支持以隧道方式興建中環-灣仔繞道，並同時實施電子道路收費。

5.3.2. 太古集團在策略性連接道路計劃上提出具體建議。建議中最主要的特點是把現在的維園道改建至維多利亞公園地下，並讓中環灣仔繞道更貼近現有的海岸。這樣會把填海範圍減至最少。並在避風塘內中環灣仔繞道下面的範圍保留較大的水面面積。太古集團亦同時建議把現有東區走廊架空部分至敬記船廠一段沉降，使都市海灘享有一個開揚的景觀。

5.3.3. 香港遊艇會建議另一套的道路走線安排。維園道將保留在現址，但連接東區走廊的架空部分則會降低，並以隧道方式連接至敬記船廠西面(與太古集團的計劃相近)。至於銅鑼灣方面，則建議在奇力灣和避風塘內的中環灣仔繞道的有關路段沉降至水底。在這方案下，並沒有建議興建與銅鑼灣的連接路。



## 第六章 可持續運輸規劃及中環灣仔繞道的專家小組論壇

### 6.1 引言

6.1.1. 在公眾論壇及社區設計坊中，儘管公眾人士對優化海濱大致達成共識，他們對運輸事項卻有不同的意見。小組委員會認為，在進入優化海濱研究的下一階段之前，有需要就運輸事項作深入討論。為此，在2005年9月3日舉辦「可持續運輸規劃及中環灣仔繞道的專家小組論壇」（下稱專家小組論壇）。目的是就港島北岸的可持續運輸規劃及是否需要興建中環灣仔繞道，作出檢討。

6.1.2. 專家小組包括本地及海外專家。他們分別由優化海濱研究專責小組、香港運輸物流學會、香港工程師學會、香港規劃師學會、香港理工大學土木及結構工程學系、香港科技大學土木工程學系及香港大學土木工程學系提名。各專家均為義務參與，成員包括：

- 林興強教授(主席)  
香港理工大學土木及結構工程學系土木及運輸工程講座教授
- Prof. Michael Bell  
英國倫敦帝國學院土木及環境工程學系運輸管理講座教授
- 侯道光博士  
香港大學經濟金融學院副教授
- 熊永達博士  
香港理工大學土木及結構工程學系副教授
- 劉偉棠工程師  
奧雅納工程顧問董事

- 羅康錦教授  
香港科技大學土木工程學系副教授
- 龐婉儀女士  
香港規劃師學會副會長
- 王緝憲博士  
香港大學地理學系副教授
- 黃仕進博士  
香港大學土木工程學系副教授



6.1.3. 為鼓勵觀點和意見交流，專家小組論壇歡迎公眾參與，藉此提供一個讓有相關利益和有興趣參與的人士提交意見書的機會。在論壇舉行前，共收到19份分別來自不同機構和公眾人士的意見書。運輸署亦提交了一份詳細的意見書。有關運輸問題的意見和討論與公眾論壇及社區設計坊中所收集到的相似。

6.1.4. 在專家小組論壇中，首先由政府部門講解政府在運輸問題上的論據，接著概述公眾的意見書，並由政府官員作出初步回應。隨後的公開討論環節，提供一個討論平台讓公眾和專家小組對話的機會。

6.1.5. 考慮了政府和公眾人士的意見後，專家小組撰寫了報告書，對港島北岸可持續運輸規劃提出他們的建議。

6.1.6. 專家小組的報告書現已上載至共建維港委員會的網頁供詳細參考。該網址如下：

網頁連結：  
[http://www.harbourfront.org.hk/eng/content\\_page/doc/report\\_of\\_the\\_expert\\_panel\\_c.pdf](http://www.harbourfront.org.hk/eng/content_page/doc/report_of_the_expert_panel_c.pdf)



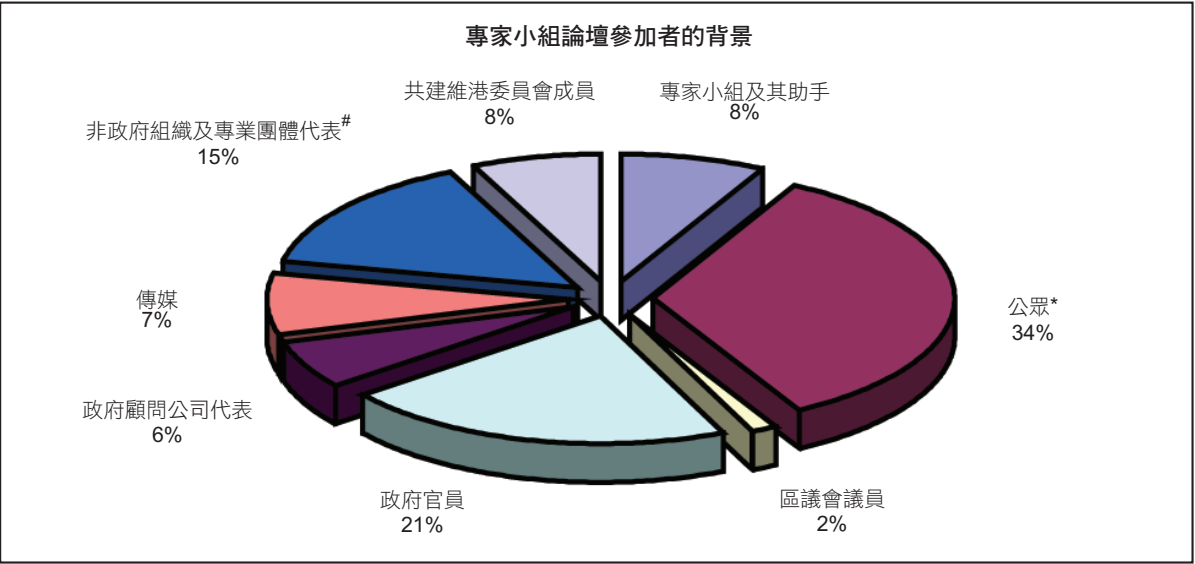
6.2 參加者的背景剖析

6.2.1. 專家小組論壇反應熱烈，共有129名來自不同背景的人士參與。當中包括專家小組及其助手、公眾、非政府組織及專業團體代表、共建維

港委員會成員、區議會議員、政府官員、政府顧問公司代表、工作隊伍及傳播媒介。

圖 6.1 專家小組論壇參加者的背景剖析

共建維港委員會成員	公眾*	區議會議員	政府官員	政府顧問公司代表	專家小組及其助手	非政府組織及專業團體代表 #	傳媒	合共
10	44	2	27	8	10	19	9	129



\*公眾包括：市民、教師、學生、其他顧問及商業公司代表

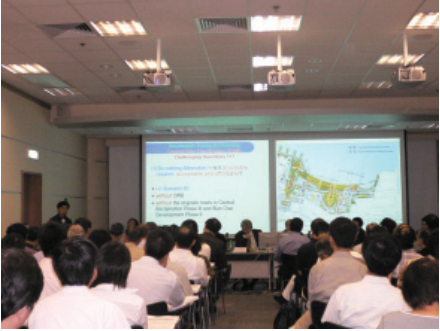
#非政府組織及專業團體代表包括聖雅各福群會、香港民主促進會、香港可持續發展公民議會、保護海港協會、香港區域直升機工作組、英國特許水質和環境管理學會香港分會、香港貿易發展局、愛護動物協會、爭氣行動、思匯、保護海岸協會、香港機場管理局、香港海洋環境保護協會、想創維港及香港建築師學會。

6.3 需回應的關鍵問題：

6.3.1. 在論壇中，專家小組討論了六條關鍵問題，他們的回應節錄如下：

- (1) 如果甚麼也不做，可否達致可持續發展？  
不可以。根據政府的分析，專家小組同意即使假設車輛數目不增加或在中環和灣仔區再無進一步的發展計劃，現有的道路網絡將無法應付十年後的運輸需求。
- (2) 是否單靠興建中環灣仔繞道便可達致可持續發展？  
不可以。由於繞道容車量有限，十年後的運輸需求增長會超越其容車量。
- (3) 單靠推行道路收費能否解決交通擠塞問題？  
不可以。專家小組認為，並無單一的措施可作為解決問題的靈藥，同時公眾亦未必會接受這措施。
- (4) 中環灣仔繞道與通往海濱的行人通道是否互相抵觸？  
不會。在興建繞道時，應首先考慮優化通往海濱的行人通道設施。

- (5) 停止發展計劃是否解決道路擠塞的可接受及可持續發展的方法？  
不是。小組認為可持續發展須妥善平衡經濟、社會及環境各方面的因素。停止發展計劃是不能達到這種平衡的。
- (6) 繞道及電子道路收費是否互相抵觸？  
不會。專家認為，實施電子道路收費以輔助興建中環灣仔繞道，是長期可持續發展的恰當做法。





## 6.4 建議

6.4.1. 專家小組在其報告中就中環和灣仔地區可持續運輸規劃作出了短期、中期及長期建議措施。

### 6.4.2. 短期措施

#### (1) 運輸管理措施

包括上落客貨管制、改善路口工程、重整公共運輸路線等。

#### (2) 調整隧道收費

專家小組建議，政府應該在中環灣仔繞道啟用前，重新調整三條橫跨維港的隧道的收費，以紓緩交通。

#### (3) 調節發展計劃

專家小組建議，在繞道啟用前，政府應正視調節整個走廊範圍的發展計劃的需要，使交通擠塞情況不會更趨嚴重。

#### (4) 連接海旁的行人通道。

過渡期間亦應改善連接海濱的行人通道的設施。

### 6.4.3. 中期措施

#### (1) 優化各種運輸網絡

由於現有運輸基建設施無法滿足現有和2016年的交通流量需求，專家小組支持興建中環灣仔繞道

以改善走廊範圍道路網絡的可靠性，及藉此機會，強化各種服務走廊範圍的公共運輸工具。專家小組亦支持在香港會議展覽中心附近和維園道/告士打道/興發街興建連接繞道的支路，使中環灣仔繞道達致最大的效益。

#### (2) 環境及社會方面的關注

專家小組建議政府應妥善解決因興建繞道而帶來的景觀、環境及社會方面的問題。

#### (3) P2路

專家小組認同，在繞道建成前，須興建P2路，作為紓緩中環填海區交通擠塞的重要過渡措施。此外，專家小組建議，政府應檢討P2路的規模，以配合逐步推行的土地發展計劃。儘管須為P2路預留足夠的土地以應付日後全面發展，專家小組仍建議政府研究在P2路引進臨時的交通管理措施，以及在此期間綠化P2路的預留用地。

#### (4) 道路收費

專家小組認同道道路收費作為可持續運輸措施的重要性。因此，小組亦建議政府應先就各類收費計劃(電子收費或其他收費模式)的可行性、成效和社會接受程度進行詳細的評估。

#### (5) 道路收費與繞道的配合

專家小組認同道道路收費可輔助中環灣仔繞道。他們也認為中環灣仔繞道的啟用亦是推行電子道路



收費的機會。長遠來說，一籃子的措施包括結合電子道路收費和增加道路容車量，是大眾較可接受和較實際的可持續方法。

### 6.4.4. 長期措施

#### (1) 全面和整體的運輸/土地用途規劃

專家小組認同，政府一直對土地用途和運輸規劃採取了互動的處理方法；並建議政府加強這方面的綜合規劃工作，適度在交通嚴重擠塞的地區，限制發展過多的運輸基建設施。

#### (2) 通往海濱的行人道網絡

建議設立覆蓋整個範圍的行人通道網絡，把海濱與毗鄰地區及在該範圍可供使用的各種運輸工具連接，達到連接機動與非機動交通工具的整體效果。

#### (3) 事故處理能力

專家小組建議，政府提高處理在走廊上的交通事故的能力，使中環及灣仔區的伸延道路網絡更加可靠。

#### (4) 保持剩餘容車量

專家小組建議政府應檢討運輸基建方面的剩餘容車量，以達到較理想的保險水平。並以它作為暫緩發展的訊號。

#### (5) 可持續運輸發展

專家小組建議政府應檢討並採納適合香港可持續運輸發展的最佳做法，政府須為香港機動和非機動的運輸工具制定可持續的綜合政策、策略和方案。

第七章 意見整合論壇

7.1 引言

7.1.1. 為了在政府發展及優化灣仔、銅鑼灣及鄰近地區海濱而擬備概念規劃圖前，能讓公眾參與審核及整合在構想階段收到的意見、意念和計劃書，因此舉行了一個意見整合論壇。

7.1.2. 意見整合論壇的主要目的：

- (a) 向公眾匯報在構想階段得到的主要結果。
- (b) 向公眾解釋那些未能進一步在概念規劃圖繼續研究的提案的原因、技術上的問題和其他考慮因素。

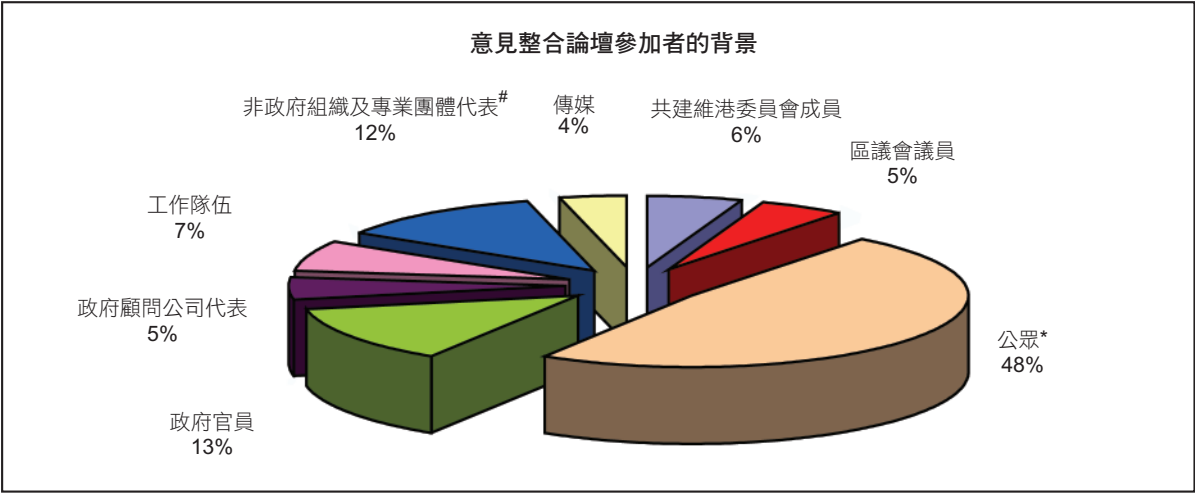
- (c) 概述擬備的概念規劃圖框架，以供建立共識階段的公眾參與。
- (d) 收集公眾對建立共識階段的形式意見。

7.2 參加者的背景剖析

7.2.1. 這次意見整合論壇在2005年11月12日舉行，共有132人參加。

圖 7.1 意見整合論壇參加者的背景剖析

共建維港委員會成員	區議會議員	公眾*	政府官員	政府顧問公司代表	工作隊伍	非政府組織及專業團體代表 #	傳媒	合共
8	7	63	17	7	9	16	5	132



\* 公眾包括：市民、其他顧問及商業公司代表

#非政府組織及專業團體代表包括爭氣行動、香港區域直升機工作組、軍人輔導會、工程界社促會、持續發展委員會、中華總商會、銅鑼灣避風塘互助委員會、英國特許水質及環境管理學會香港分會。

7.3 主要討論內容

7.3.1. 政府灣仔發展計劃第二期工程檢討的顧問，茂盛顧問(亞洲)公司初步研究公眾提交的計劃書後，建議在制定將來的概念規劃圖時放棄考慮那些與第二章所述的海港規劃原則及可持續發展原則相違的計劃書：

- 連接至北角的深層隧道一大規模填海和高成本。
- 地面道路概念一大規模填海，但只有少量用地可作優化海濱之用。
- 天橋概念(沿現有海岸)一破壞景觀以及會對奇力灣水上康樂設施帶來負面影響。
- 天橋概念(沿防波堤)一破壞景觀及對避風塘的使用帶來負面影響。
- 在現存土地上建設中環灣仔繞道一與現有的灣仔電力分站、灣仔污水廠、與沿告士打道的建築物地庫和結構的位置有所衝突，包括香港會議展覽中心、鷹君中心、新鴻基中心、擬建的港島北線、擬建的沙中線及在海底隧道入口附近現有的高速公路網絡的結構。
- 沿灣仔海濱的船隻浮躉繫泊設施一因為浮動碼頭也可能被定義為填海，而且在缺乏新的防波堤下，該設施會受到強風和海浪的影響。
- 連接至防波堤的開合行人橋一在審視開合行人橋的理據前必需確立優化現有防波堤作公眾用途的可行性。
- 在銅鑼灣避風塘的都市海灘一公眾對接觸海水的期望是可以理解的，但即使在淨化海港計劃第二期工程完成後，海水質素仍不適合作經常性與身體接觸的水上活動。另一方面，由於海水流動度低，經常發出臭味。

7.3.2. 茂盛顧問(亞洲)公司建議擬備規劃概念規劃框架包括以下要點：

- 以淺層隧道方式興建中環灣仔繞道為基本，而發展不同的概念規劃圖。
- 在興建中環灣仔繞道後，以公眾提議的活動點來優化沿灣仔的新海濱。
- 把前貨物起卸區發展成一個有活力的海濱。
- 伸延維多利亞公園至海濱地區。
- 保留現有的銅鑼灣避風塘。
- 以適當而最少的填海來改善銅鑼灣避風塘水質。
- 調較中環灣仔繞道的闊度來容納所需要的行車線道、道路緩衝區和結構牆等。該設計應符合隧道中的道路安全的要求。
- 中環灣仔繞道的走線應避免與海底隧道的走線衝突，及在彎位位置提供足夠的視覺距離。
- 設一條維園道西行線支路與中環灣仔繞道連接，以紓緩銅鑼灣地區的交通擠塞。
- 調校在銅鑼灣和告士打道現有的天橋的彎度和高度。
- 連接中環灣仔繞道至東區走廊。





### 7.3.3. 參加者表達的觀點如下：

#### 優化海濱

- 部分參加者促請政府執行臨時的優化措施。
- 有參加者提議應繼續研究連接防波堤的開合式天橋建議，以便有效地利用防波堤。
- 即使不可以在都市沙灘游泳，該建議亦不應被放棄，這可以是市中心的一個地標。
- 有參加者反對在海濱區建直升機場，在以環境保護為主的原因下，只容忍急救服務。
- 香港區域直升機場工作組的代表宣揚他們最新的計劃書，其中包括不填海和設有一座新建築物作減輕噪音之用，還有給公眾享用的地方。
- 有參加者支持重新整合東區走廊以優化維多利亞公園附近的海濱。

#### 運輸的解決方法

- 雖然很多參加者支持隧道方案，但也有一些參加者建議不應放棄高架道路方案。若有好的建築設計，高架道路可增強視覺上的美感，而且它的興建及維修費用亦較便宜。
- 很多參加者表示支持運輸專家小組建議的綜合土地用途及運輸規劃，以及將中環灣仔繞道與交通管理措施包括電子道路收費計劃一併實行。
- 很多參加者憂慮到銅鑼灣連接道會令該區的交通更為擠塞。茂盛顧問(亞洲)公司和政府官員確認連接道可將銅鑼灣地區的交通疏導到中環灣仔繞道。

- 在隧道的設計上進行了一些討論，由於安全是隧道設計上最重要的考慮條件，茂盛顧問(亞洲)公司和政府官員均確認S形道路在安全角度上並不適合。

7.3.4. 在大會表述未來方向的建議後，有參加者認為公眾難以用複雜數列指標來評估概念規劃圖，顧問會留意表述的方式並尋找適當方法，以便公眾能在建立共識階段作出評估。

7.3.5. 在意見整合論壇完結後，茂盛顧問(亞洲)公司所表述的資料已上載到共建維港委員會網頁，讓公眾在兩星期內發表意見。在期內共收到7份書面意見，詳情盡錄在附錄冊中。以下是主要的意見：

- (1) 應有一個整體和綜合的規劃框架。
- (2) 概念規劃圖應以製造長遠的公眾價值，而非以短期和最低成本的方案為目標。
- (3) 海港是一個天然文化遺產，在消除污染時，應該採用清理而非填滿方法。
- (4) 政府應同時減少不協調的海濱用途。
- (5) 將維多利亞公園伸延至海濱地區。

(6) 支持在概念規劃圖保留以下建議意念：

- 連接至防波堤的行人通道(建釣魚碼頭等來增加防波堤的利用價值)。
- 人工海灘(不一定作游泳用途)。
- 浮動船臺(可以是臨時設施)。
- 避風塘內設立龍舟賽道。

(7) 以下是對中環灣仔繞道的建議：

- 應以隧道形式及在最少填海的情況下興建。
- 減少到銅鑼灣和灣仔的连接支路。



第八章 並進的討論

8.1 引言

8.1.1. 除了收集持分者和公眾在公眾論壇、社區設計坊和書面遞交的建議和意見外，還進行了數次與區議會、灣仔發展計劃第二期檢討小組委員

會、城市規劃委員會和立法會的討論，表8.1列出了曾進行的討論，而重點則在往後的章節概述。

表 8.1 構想階段中與其他有關團體的討論

會議日期	討論
	區議會
2005年1月18日	- 灣仔區
2005年4月14日	- 東區
2005年4月21日	- 南區
2005年5月19日	- 中西區
2005年4月8日	城市規劃委員會
2005年4月26日	立法會 規劃地政及工程事務委員會
	第五項：灣仔發展計劃第二期檢討「優化灣仔、銅鑼灣及鄰近地區海濱的研究：公眾參與活動」
2005年6月28日	第四項：灣仔發展計劃第二期檢討和東南九龍發展（只參考優化海濱計劃相關的部分）
2005年7月21日	共建維港委員會灣仔發展計劃第二期檢討小組委員會
	討論擴建香港會議展覽中心中庭的建議（由貿易發展局表述）
2005年8月9日	討論擬建在香港會議展覽中心的政府直升機坪（由經濟發展及勞工局、保安局、民航處及政府飛行服務隊表述）
	討論建議的區域性香港直升機場（由香港區域直升機場工作組表述）

8.2 區議會

8.2.1. 與四個關注的區議會（灣仔區，東區，南區和中西區）就優化海濱研究的公眾參與活動的諮詢分別在2005年1月至5月進行。各區議會的議員都一致支持公眾參與過程。他們亦提出建議改善草擬的公眾參與小錦囊，以及改進參與的過程。上述提議，在構思公眾參與小錦囊和進行公眾論壇及社區設計坊時均有參考。詳細的會議記錄已上載到相關的區議會網頁。

網頁連結：  
<http://www.districtcouncils.gov.hk/wc/chinese/welcome.htm>  
<http://www.districtcouncils.gov.hk/east/chinese/welcome.htm>  
<http://www.districtcouncils.gov.hk/south/chinese/welcome.htm>  
<http://www.districtcouncils.gov.hk/central/chinese/welcome.htm>

8.3 城市規劃委員會

8.3.1. 優化海濱研究的公眾參與過程詳情已於2005年4月8日在城市規劃委員會的會議上表述。城市規劃委員會委員對公眾參與過程都表示支持。至於草擬的公眾諮詢文件，委員會的委員亦提供了建議，在準備最後的公眾諮詢小錦囊時已考慮了該等建議。

8.4 立法會規劃地政及工程事務委員會

8.4.1. 2005年4月26日及2005年6月28日與立法會規劃地政及工程事務委員會分別進行了兩次討論。第一次會議集中對草擬公眾參與報告和構想階段時的公眾參與過程給予意見。第二次會議則集中在優化海濱研究的過程和關注議題。

8.4.2. 在第一次會議中立法會議員對構想階段的公眾參與過程表示支持，並對草擬公眾參與報告提出建議，供準備最後的報告時考慮。

8.4.3. 在第二次會議中，簡述在構想階段公眾參與活動時所收集的意見後，立法會議員在下列議題上表示了不同的建議：

- 整合和分析公眾在問卷中表達的意見。
- 最後規劃決定時公眾意見的角色。
- 興建中環灣仔繞道時有關填海的議題。
- 對改善交通擠塞，除興建道路外，應考慮其他方案。
- 邀請專家和學者進行另一次論壇，去辯論所有在運輸方面可行的解決方法。
- 優化海濱研究的進展。

8.4.4. 這些關注，在擬定和評估建立共識階段的概念規劃圖時，會被考慮。兩次會議的詳盡記錄已上載到立法會網頁。

網頁連結：  
  
<http://www.legco.gov.hk/yr04-05/chinese/panels/plw/minutes/pl050426.pdf>  
<http://www.legco.gov.hk/yr04-05/chinese/panels/plw/minutes/pl050628.pdf>



## 8.5 共建維港委員會灣仔發展計劃第二期檢討小組委員會

### 會展中庭擴建的建議

8.5.1. 貿易發展局在2005年7月21日共建維港委員會灣仔發展計劃第二期檢討小組委員會的特別會議上，簡述了擬擴建會展中庭的計劃。簡單來說，小組委員會的會員並不反對該計劃，但其關注的事情如下：

- 小組委員會關注此項計劃會引起交通、視覺和環境影響，故此有需要考慮進行可持續發展影響評估。
- 計劃並沒有任何優化海濱的建議。
- 貿易發展局能否延遲其申請，讓他們的建議書能全面地與灣仔北的概念規劃圖一併被考慮。
- 貿易發展局應確認會展擴展建議中，利用覆蓋海港的擴充建議會否符合《保護海港條例》。

8.5.2. 以上的意見已遞交城市規劃委員會，為會展的計劃提供意見，這亦會納入在建立共識階段所擬定的概念規劃圖。會議記錄的詳情已上載到共建維港委員會網頁。

網頁連結：  
[http://www.harbourfront.org.hk/eng/content\\_page/doc/subcom\\_3\\_agenda\\_7\\_m.pdf](http://www.harbourfront.org.hk/eng/content_page/doc/subcom_3_agenda_7_m.pdf)

### 興建政府直升機停機坪和區域性香港直升機停機坪的建議

8.5.3. 在2005年8月9日的灣仔發展計劃第二期小組委員會第七次會議，進行了兩個有關上列直升機停機坪的表述。第一個表述由政府有關部門即經濟發展及勞工局、保安局、民航處及政府飛行服務隊一同論述政府直升機停機坪的建議。而第二個是由香港區域直升機坪工作組論述其區域性香港直升機坪的建議。會議結論是一個不管是政府或與公眾共用的直升機升降坪，都應包括在優化海濱研究建立共識階段中擬備的概念規劃圖內。會議亦原則上同意興建升降坪不應有任何方式的填海，無論是傳統或非傳統的填海模式。一名共建維港委員會委員提議應研究把現時奇力灣臨時直升機坪改變為永久設施。會議記錄已上載到共建維港委員會的網頁。

8.5.4. 在2005年12月12日第九次共建維港委員會灣仔發展計劃第二期檢討小組委員會會議上，委員同意放棄在奇力灣保存直升機場的建議，因為這會影響公眾對把奇力灣轉為水上運動和娛樂地區的期望。

8.5.5. 詳細會議記錄已上載至共建維港委員會網頁：

網頁連結：  
[http://www.harbourfront.org.hk/eng/content\\_page/subcom\\_3\\_meetings.html?s=1](http://www.harbourfront.org.hk/eng/content_page/subcom_3_meetings.html?s=1)

## 8.6 意見整合論壇後的表述

8.6.1. 在意見整合論壇之後，代表會德豐(控股)有限公司的顧問在2005年12月12日第九次共建維港委員會灣仔發展計劃第二期檢討小組委員會會議上介紹了他們建議在前敬記船廠斜堤地點興建一個青年旅舍、藝術中心及酒店設施。詳情見該次會議記錄。

### 9.1 結論

9.1.1. 在構想階段各項公眾參與活動中，公眾對以下優化海濱的要求有明顯的共識。公眾亦促請政府應在可能情況下立即採取措施優化海濱的質素和其可享性。

- (a) 於海上及陸上提供不同的設施以增加該區的活力。
- (b) 加強海濱和腹地的連接性及海濱的連貫性。
- (c) 確保陸上和海上的用途和設計相互協調。
- (d) 透過保護自然及文化遺產優化香港的形象特色。
- (e) 海港是最大的天然遺產，減少海港填海是為關鍵。
- (f) 強調綠化、彈性善用空間及減少建築物，從而優化景觀、園景及空間使用的質素。
- (g) 優化環境質素，特別注意避風塘內的水質，以隧道形式興建中環灣仔繞道則得到較多支持。
- (h) 制訂可接受及可持續的方案以解決現有的交通及基礎設施問題。

9.1.2. 在這階段，公眾表達了很多可以達致上述優化目標的明確提議，而透過公眾參與，亦制定了一套可持續發展的原則和指標。

9.1.3. 大部份意見支持需要改善干諾道/告士打道走廊一帶交通擠塞問題，以達致全面優化海濱地區。政府提出強而有力的理據，支持以興建中環灣仔繞道為基礎並輔以其他交通管理措施的解決方案。公眾對是否有絕對需要興建中環灣仔繞道有不同的觀點。然而，調查結果顯示，多數人贊

成興建中環灣仔繞道及同時實施交通管理措施。在這問題上，共建維港委員會及政府在2005年9月3日舉行了一個運輸專家小組論壇，對這問題作出公正及深入審議，並依據專家的主流意見得出結論。有關方面向專家小組提供了詳細的交通資料及電腦模擬數據。在這階段並無用以識別各方案對海濱土地使用和海濱享用的影響的詳細道路設計。

9.1.4. 專家小組總結，「什麼也不做」不能達致可持續發展，而只興建中環灣仔繞道或單靠推行道路收費亦不能達致可持續發展。專家小組認為要達致長遠可持續發展，需要興建中環灣仔繞道及推行道路收費，而在興建中環灣仔繞道時提高海濱的易達性以及公眾享用海濱的機會應為優先考慮的要點。小組亦建議了短期、中期及長期措施的策略方案，以達到可持續運輸發展的目標。其中與灣仔發展計劃第二期的概念規劃有關的建議如下：

- (a) 採納整體的運輸及土地使用規劃，和進一步加強這兩方面互動的綜合規劃，並在交通嚴重擠塞地區內，限制過多的運輸基建設施。
- (b) 支持興建中環灣仔繞道，作為策略性道路網的必要連接。
- (c) 支持在香港會議展覽中心附近及在維園道/告士打道/興發街興建連接道。
- (d) 專家小組認同在繞道建成前必須興建P2路，作為紓緩中環填海區交通擠塞的重要過渡措施。專家小組亦建議政府檢討P2路的規模，以配合逐步推行的土地發展

計劃。儘管政府須為P2路預留足夠的土地以應付長期的全面發展，政府亦應研究在P2路引進臨時的交通平靜措施，以及綠化P2路預留用地。

- (e) 改善臨時及長遠的海濱行人連接通道。優化維港海濱地區及妥善解決因興建造價過百億元的繞道而帶來的景觀、環境和社會方面的問題。
- (f) 藉此機會調整各公共運輸路線，並加強這些路線與鐵路的連接性。

9.1.5. 公眾的意見大多集中在香港會議展覽中心及東區走廊之間的海濱地區。但亦有關於會議展覽中心以西包括中環填海計劃第三期的海濱的意見。這些意見指出可持續土地使用及運輸規劃的重要性，及要求檢討在中環填海計劃第三期地區及添馬艦的土地發展的密度；亦有建議在中環填海計劃第三期工程地區建設較莊重的海濱，與灣仔發展計劃第二期較輕鬆的海濱作為對比，及把現存的海濱連接道路沉降，從而改善連接海濱的行人通道等。



## 9.2 建議

9.2.1. 優化海濱研究的顧問公司，根據公眾意見及運輸專家小組的報告，就灣仔發展計劃第二期檢討提供了下列建議：

- (a) 加強整體的運輸及土地使用規劃，並在交通嚴重擠塞的地區內，限制過度的運輸基建發展設施。
- (b) 根據最少兩個繞道方案，即隧道和高架道路，擬備不同的土地使用概念規劃圖。該些概念規劃圖須包括最少填海範圍及各種可能的海濱土地使用建議。而不包含中環灣仔繞道的概念規劃圖，則無須要擬備。雖然公眾關注高架道路所帶來的景觀影響，但在這階段，並不建議刪除高架道路方案，而在下一階段有更全面的資料時，再作考慮。
- (c) 關於P2路、連接道、隧道入口及其他路面設施，顧問公司建議提供更多資料，包括工程細節、被佔用的地面範圍、所需的填海範圍、行人連接通道、對景觀的影響和在不同方案下的交通影響評估，以便進一步考慮。
- (d) 在擬備概念規劃圖時，政府應全面考慮可持續發展的原則及指標，和公眾對優化海濱的措施、活動區，及其內的可能土地用途等建議，有關建議在前章節已經詳述並概括於圖3.2至3.4內，對於個別建議的技術性問題，亦應該提供清晰的解釋。

- (e) 至於直升機坪的提議，政府的兩個停機坪位提議和香港區域直升機工作組的四個停機坪位提議，可以用插圖形式在概念規劃圖上顯示。
- (f) 為了協助公眾在建立共識階段評估概念規劃圖，有需要提供可持續發展指標資料，特別是那些可以量化的指標，例如：建築費用、營運費用、填海面積、因提供地面基建而需增減的海濱面積、建築物高度和體積、休憩用地、污染程度等。以質量評估的其他指標亦應提供。
- (g) 充份利用透視圖，立體模型以及/或電腦模擬影像，協助公眾理解概念。

## 第十章 前瞻

10.1.1. 在建立共識階段，公眾會被邀請對概念規劃圖發表意見，可持續發展原則和指標將成為有用的評估框架。這階段的目的是要得到公眾對最可持續發展的基建安排和相關的優化海濱計劃達成共識。

10.1.2. 當政府與灣仔發展計劃第二期的顧問在準備概念規劃圖工作計劃時，優化海濱研究的專家顧問團隊將會為建立共識階段作準備。

10.1.3. 在概念規劃圖未落實公開給公眾發表意見之前，舉辦一個工作會議，與小組委員會委員以及合作伙伴去確定概念規劃圖能夠反映大多數公眾的意見和解釋那些未能實踐的建議，這個工作會議是會很有用的。



在構想階段期間收集到的部分意見及提議以及專家小組的部分建議涉及灣仔發展計劃第二期以外地區，亦超越優化海濱研究和灣仔發展計劃第二期檢討的範疇。這些提議及建議載列於此附錄內、以便有關組織(包括共建維港委員會)跟進。

土地使用發展

- 共建維港委員會應與城市規劃委員會交換意見，並向有關政府部門建議可行方法監察港島北岸的發展，以保護海港、優化海濱及實施可持續運輸方案。
- 灣仔發展計劃第二期檢討小組委員會贊成專家小組所建議的短期措施中所提出「政府在繞道啟用前，應正視須調節走廊範圍土地使用發展的問題，使交通擠塞情況不會更趨嚴重」。

交通管理

- 灣仔發展計劃第二期小組委員會贊成專家小組提出在繞道啟用前，需要實施一些短期運輸管理措施的建議，例如：上落客貨管制、改善路口工程、重整公共運輸路線等，以應付交通擠塞問題。

可持續運輸系統

- 除了如道路收費等交通管理措施外，政府應該深化在第三次整體運輸研究所作的承諾，利用「整合土地使用、運輸及環境規劃，及以鐵路優先」的原則，制定未來運輸框架。
- 灣仔發展計劃第二期小組委員會贊成專家小組的建議，調整各樣公共運輸路線，並加強這些路線與鐵路的連接。

優化港島北岸海濱的檢討

- 政府應該制訂策略，以進行整體優化港島北岸海濱的檢討，以達致長遠可持續發展。
- 政府應該致力發展可持續發展指標及進行敏感度測試以評估不同方案。此舉在無可避免需要作出取捨的情況下，如取捨滿足車輛容量和在海濱地區容納不協調的用地時，尤其重要。評估過程必須具透明度。

公眾參與活動

- 共建維港委員會應該總結公眾參與活動的經驗及建議如何精簡活動過程，亦應透過廣泛討論，以加強公眾參與方法的認受性。

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協作

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## **CONSOLIDATION OF HARBOUR-FRONT & TRUNK ROAD IDEAS**

### **Trunk Road Alignments & Harbour-Front Enhancement**

April 2006

**MAUNSELL CONSULTANTS ASIA LTD**

# **CONSOLIDATION OF HARBOUR-FRONT & TRUNK ROAD IDEAS**

## **REPORT TO THE HEC SUB-COMMITTEE ON WDII REVIEW ON TRUNK ROAD ALIGNMENTS & HARBOUR-FRONT ENHANCEMENT**

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# **1 INTRODUCTION**

## **1.1 Background**

- 1.1.1 The Sub-committee on Wan Chai Development Phase II (WDII) Review of the Harbour-front Enhancement Committee convened a 'Envisioning Stage – Consolidation Forum', on 12 November 2005, to conclude the public engagement activities of the Envisioning Stage of the 'Harbour-front Enhancement Review – Wan Chai, Causeway Bay and Adjoining Areas' (HER). 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. The forum also provided opportunities to involve the public in consolidating these views before proceeding with the preparation of the Concept Plan(s) for the development and enhancement of the harbour-front of Wan Chai, Causeway Bay and the adjoining areas.
- 1.1.2 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 the harbour-front development with essential transport infrastructure required under the WDII project, this being mainly the need to complete a long-planned strategic road link along the north shore of Hong Kong Island, ie the Trunk Road connecting Rumsey Street Flyover in Central and the Island Eastern Corridor (IEC) to the east of Causeway Bay. Any land that may be formed along the shoreline to facilitate the Trunk Road construction will then provide further opportunity for harbour-front improvement.
- 1.1.3 A number of Trunk Road options have been reviewed together with harbour-front enhancement suggestions put forward by the public, for the derivation of consolidated harbour-front and Trunk Road ideas that would then form the basis of the preparation of Concept Plan(s). In reviewing these various ideas, a number of issues have arisen in respect of Trunk Road alignments and form of construction, and associated requirements of reclamation, the impacts of ground level roads and slip roads on harbour-front planning intentions, and harbour-front enhancement ideas to be taken on board to achieve the public's vision for a high quality and vibrant waterfront. These issues need to be addressed by the Sub-committee on WDII Review in the next stage of the HER project, the Realization Stage.

## **1.2 The CFA Judgement and WDII Review**

- 1.2.1 The Court of Final Appeal (CFA) handed down its judgement on 9 January 2004 in respect of the judicial review on the Draft Wan Chai North OZP (S/H25/1).
- 1.2.2 According to the CFA judgement, the presumption against reclamation specified in the Protection of the Harbour Ordinance (PHO) can only be rebutted by establishing an overriding public need for reclamation. This need (ie 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 a last resort, or something which the public cannot do without.

- 1.2.3 Following the CFA judgement, and in response to a request by the Town Planning Board, Government has undertaken to conduct a planning and engineering review of the development and reclamation proposals for the WDII project (the ‘WDII Review’). WDII proposals, including the Trunk Road, must comply with the overriding public need test.
- 1.2.4 The Harbour-front Enhancement Committee (HEC) was established in May 2004 to advise the Government, through the Secretary for Housing, Planning and Lands, on the planning, land uses and developments along the existing and new harbour-front of Victoria Harbour. 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.
- 1.2.5 The HEC has set up a Sub-committee, namely the Sub-committee on WDII Review, to advise on the WDII Review. The Government has accepted the recommendation by the Sub-committee on WDII Review that enhanced participation should be a key element of the Review. To achieve this, a public engagement exercise, namely the HER, is being carried out under the steer of the Sub-committee on WDII Review. Results of the HER project will provide inputs to the WDII Review.

### **1.3 HER Project and Status**

- 1.3.1 In order to achieve a better understanding of the opportunities for waterfront enhancement and to ensure a high degree of community support for the future draft Outline Zoning Plan (OZP) and the draft Recommended Outline Development Plan (RODP), a 3-stage public engagement strategy has been formulated so as to enable a more structured approach to be adopted to the HER public engagement activities:
- |                         |   |
|-------------------------|---|
| (i) “Envisioning Stage” | Public to provide their visions, wishes and concepts, as well as Sustainability Principles and Indicators as a basis for the development of the Concept Plan(s) |
|-------------------------|---|

- (ii) “Realization Stage” Public to evaluate Concept Plan(s) to arrive at consensus
- (iii) “Detailed Planning Stage” Ensure draft OZP and draft RODP reflect consensus.

- 1.3.2 The Envisioning Stage was formally launched on 22<sup>nd</sup> May 2005, with a wide range of public engagement activities taking place over a two-month public engagement period. The envisioning exercise was to engage the public in identifying the key issues and establishing principles in terms of improving the waterfront. The concept of sustainable development underpins the whole HER project. A list of sustainability principles and indicators have been prepared and agreed through the public consultation process; these agreed sustainability principles and indicators will be used to evaluate the Concept Plan(s) to be developed in the Realization Stage.
- 1.3.3 Following the conclusion of the public engagement activities of the Envisioning Stage, with the ‘Envisioning Stage – Consolidation Forum’, the various issues that have been raised by participants during the Envisioning Stage consultation, in respect of Trunk Road alignments and harbour-front enhancement ideas, will need to be addressed by the Sub-committee on WDII Review as part of the process of consolidating harbour-front and Trunk Road ideas, that would then form the basis of the preparation of the Concept Plan(s) in the Realization Stage. These Concept Plans, for the development and enhancement of the harbour-front under the ambit of the WDII Review, will be created for evaluation and consensus by the public, using the HEC’s harbour planning principles and the sustainability principles and indicators that have been developed during the Envisioning Stage.

#### **1.4 Need for the Trunk Road**

- 1.4.1 The existing east-west corridor (Connaught Road Central / Harcourt Road / Gloucester Road) serving the Central Business District 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 east-west Trunk Road to avoid more extensive and frequent traffic congestion, and even gridlock, on the road network.
- 1.4.2 A district traffic study has confirmed that a dual 3-lane Trunk Road (or Central-Wan Chai Bypass), together with intermediate slip roads, is required to divert traffic away from the existing east-west corridor and to provide adequate relief to the corridor and the local road network. The need for 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.
- 1.4.3 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 Trunk Road 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’ (‘Report of the Expert Panel’).

- 1.4.4 The need for the Trunk Road has therefore been clearly established. What is required now is to take a holistic approach to the planning of the harbour-front, where waterfront land use planning is examined together with the planning of essential transport infrastructure, in line with the principle of sustainable development and the HEC's harbour planning principles. One of the primary concerns in this process is to start off with an acceptable Trunk Road scheme: one that meets functional traffic requirements; is practically feasible to implement; that can avoid reclamation or, if not, then minimise reclamation, in compliance with the PHO and the CFA ruling on the presumption against reclamation in respect of this ordinance.

## **1.5 Envisioning Stage Report**

- 1.5.1 The 'Harbour-front Enhancement Review – Wan Chai, Causeway Bay and Adjoining Areas, Envisioning Stage Public Engagement Report, March 2006' ('Envisioning Stage Report') summarises the public comments received during the Envisioning Stage public engagement exercise. These include input and feedback from public forums, community charrettes, opinion surveys, written submissions, the Expert Panel Forum and the Consolidation Forum, as well as parallel discussions with District Councils, Town Planning Board, Legislative Council and the HEC Sub-committee on WDII Review.

- 1.5.2 The conclusions of the Envisioning Stage Report are extracted and repeated here for reference:

- ♦ In the various public engagement activities in the Envisioning Stage, there is obvious consensus among the public on the need for enhancement of the harbour-front in the following aspects. Indeed, the public urges the Government to take immediate actions wherever possible to enhance the quality and the usage of the existing harbour-front.
  - (a) Increase vibrancy through provision of facilities for diverse use on land and on the water.
  - (b) Enhance connectivity between the harbour-front and the hinterland, and continuity of the harbour-front.
  - (c) Ensure land and marine use compatibility in terms of function and design.
  - (d) Enhance identity of Hong Kong by conserving natural and cultural heritage.
  - (e) Harbour is the greatest natural heritage and minimize harbour reclamation is the key.
  - (f) Enhance visual amenity, landscape and quality of space with emphasis on greening and flexible use of space and less building structures.
  - (g) Enhance environmental quality with particular attention on the existing water quality in the typhoon shelter and the form of CWB in that more support goes to tunnel form.
  - (h) Devise an acceptable and sustainable solution for the present traffic and infrastructure issues.

- There are many specific suggestions for achieving the above enhancement objectives and a consolidated set of sustainability principles and indicators has been developed through the participation of the public.
- There is also majority support for the need to improve the traffic conditions along the Connaught Road/ Gloucester Road Corridor for a comprehensive harbour-front enhancement. The Government has put up a strong case for building the CWB as a fundamental solution with traffic management schemes as complementary measures. There are divided views among the public on the absolute need for the CWB. However, the results of the opinion surveys show a clear majority in favour of constructing the CWB together with traffic management measures. On this issue, HEC and the Government organized a Transport Expert Forum on 3 September 2005 to have an impartial and in-depth deliberation, from which a conclusion based on the majority view of the expert panel has been drawn. The Expert Panel was provided with detailed traffic data and models. No detailed road design information identifying the impact on harbour-front land use and harbour-front enjoyment of the various options was available at this stage.
- The expert panel concludes that doing nothing is not sustainable, and the provision of the CWB alone or implementing road pricing alone is not sustainable either. The panel observes that long term sustainability warrants the implementation of both electronic road pricing and the construction of the CWB. To facilitate access to the waterfront and the enjoyment thereof by the public should be made a priority in the development of the CWB. The panel has put forward short-term, medium-term and long-term measures to achieve a sustainable transport strategy. Of particular reference to the current concept planning for the WDII Review, the panel's recommendations include:
  - (a) Take a holistic approach towards transport/ land use planning and fortify the simultaneous integration of land use and transport planning, placing due emphasis on the limitation of excessive transport infrastructural development in heavily congested areas.
  - (b) Support the construction of CWB as an essential link in the strategic road network.
  - (c) Support the construction of slip roads around the HKCEC and Victoria Park Road/Gloucester Road/Hing Fat Street.
  - (d) Recognize the need for Road P2 as an important *ad interim* measure in addressing traffic congestion in the Central reclamation area before CWB comes about. Suggest Government to 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 Government should explore introducing *pro-tempore* traffic calming measures on Road P2 and greening reserve area in the meantime.
  - (e) Improve pedestrian connections to the harbour-front in the interim and long terms. Enhance the Victoria harbour-front and 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.



(f) Seize the opportunities to rationalize multi-modal public transport routes and improve connectivity with rail.

- The public mostly provided their views and proposals for the waterfront areas between the HKCEC and the IEC. But there were also views expressed for the waterfront areas west of the HKCEC including the CRIII areas. They included the importance of sustainable land use/ transport planning in that a review on the intensity of planned land uses on CRIII and Tamar was called for; a formal waterfront at CRIII as compared with an informal waterfront at WDII; and depressing existing waterfront access roads to enhance pedestrian connectivity to the harbour, etc.

1.5.3 The recommendations of the Envisioning Stage Report are also extracted and repeated here for reference:

- Fortify the integration of land use and transport planning, placing due emphasis on the limitation of excessive transport infrastructural development in heavily congested areas.
- Prepare Land Use Concept Plans based on at least two highway options, viz, tunnel and flyover with minimum reclamation and harbour-front land use possible for each option or option variations. It is not necessary to have a Concept Plan without the CWB. While the public's concern over the visual impact of a flyover option is fully appreciated, it is not recommended to be dropped at this stage until more comprehensive information on the flyover option is provided at the next stage.
- With regard to provision of P2, slip roads, tunnel portals and other surface infrastructure, more details should be provided including engineering details, surface land occupied, reclamation required, pedestrian connectivity and visual impact. The traffic impact for the different options should also be covered.
- In preparing the Concept Plans, the Government should take full account of the sustainability principles and indicators (*as presented in the Envisioning Stage Report*), and the public's suggestions on the harbour-front enhancement measures, activity nodes and the possible land uses within the nodes as reported in previous sections and summarized in Figures 3.2 to 3.4 (*of the Envisioning Stage Report*). If there are technical problems for certain ideas, clear explanations should be provided.
- With regard to the heliport proposals, the government's 2-pad proposal, and the Regional Heliport Working Group's 4-pad proposal may be incorporated as inserts for the Concept Plans.
- To assist the evaluation of the Concept Plans by the public in the Realization Stage, it is necessary to provide information for the sustainability indicators particularly those which can be expressed in quantitative terms, e.g. construction cost, operation cost, reclamation area, reduction/increase in harbour-front land area required for

surface infrastructure, building height and building bulk, open space, pollution levels, etc. Qualitative evaluation of other indicators should also be presented.

- ♦ It is also essential to help the public to visualize the concepts through perspective drawings, physical models and/or computer animations.

## **1.6 Purpose of this Report**

- 1.6.1 In moving forward to the development of the Concept Plan(s) in the Realization Stage of the HER project, a number of issues relating to Trunk Road alignments and form of construction, requirements for reclamation, impacts of highway infrastructure on harbour-front planning intentions, and harbour-front enhancement ideas to be taken on board, raised during the Envisioning Stage consultation, need to be addressed by the Sub-committee on WDII Review.
- 1.6.2 This Report to the HEC Sub-committee on WDII Review outlines the appraisal of these issues and the conclusions in respect of the feasibility or acceptability of Trunk Road alignments and harbour-front enhancement ideas.

## 2 TRUNK ROAD ROUTE ASSESSMENT

### 2.1 Alignment Constraints through the WDII Project Area

- 2.1.1 The derivation of Trunk Road alignments through the WDII project area is constrained by the mainline connections at either end to existing or committed road alignments, slip road connections in Wan Chai North and Causeway Bay, 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 existing development and land uses along the northshore.
- 2.1.2 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.
- 2.1.3 The following paragraphs outline some of the major constraints to the Trunk Road alignment. These are also highlighted in **Figure 2.1**.

#### *Trunk Road Connections*

- 2.1.4 At the western end of the WDII project area, connection is required to the Trunk Road tunnel which will be constructed under Central Reclamation Phase III (CRIII). The optimal Trunk Road alignment through CRIII has already been determined (reference can be made to ‘A Review of Central Reclamation Phase III by applying the Court of Final Appeal’s “Overriding Public Need Test”, April 2004’). The eastern end of the Trunk Road tunnel in CRIII is located to the west of the HKCEC Extension, near Lung King Street, and forms the starting point of the Trunk Road at the western end of the adjacent WDII project area. The Trunk Road is a cut-and-cover tunnel with a road level of –10mPD and top of tunnel structure at around –1mPD (ie above existing seabed level) at this connection point.
- 2.1.5 To the east of the Causeway Bay Typhoon Shelter (CBTS), the Trunk Road needs to connect to the existing elevated IEC road structure at a road level between +12mPD and +15mPD. The Trunk Road must therefore rise onto elevated road structure to make this connection.
- 2.1.6 These connecting constraints mean that all schemes for the Trunk Road alignment through the WDII project area will start off in tunnel at the western end and end up as elevated road structure at the eastern end.

### *Slip Road Connections*

- 2.1.7 One of the key issues for the Trunk Road alignment is to ensure adequate connectivity with the local road network. If the Trunk Road is to achieve its purpose in serving as a strategic east-west link, by getting traffic out of the currently built-up and congested northshore urban area, it must also ensure adequate access to the Wan Chai and Causeway Bay areas. Otherwise, if traffic is unable to get onto or off the Trunk Road at suitable locations, the new road cannot be properly utilised and will not be able to relieve congestion along the Connaught Road Central / Harcourt Road / Gloucester Road corridor.
- 2.1.8 The following slip road connections (illustrated indicatively in Figure 2.1) have been identified as essential in meeting traffic demand and enabling the Trunk Road to adequately perform its function of relieving traffic from the overloaded Connaught Road Central / Harcourt Road / Gloucester Road corridor:
- slip road from the eastbound Trunk Road to Wan Chai North, allowing traffic from the Western and Central areas to Wan Chai and HKCEC to bypass Connaught Road Central, Harcourt Road and Gloucester Road ('Slip Road 1');
  - slip road from Wan Chai North to the eastbound Trunk Road, allowing traffic from the Admiralty area and Wan Chai to Island East to bypass Gloucester Road and Victoria Park Road ('Slip Road 2');
  - slip road from the westbound Trunk Road to Wan Chai North, allowing traffic from Island East to Wan Chai to bypass Victoria Park Road and Gloucester Road ('Slip Road 3');
  - slip road from Victoria Park Road to the westbound Trunk Road, allowing traffic from North Point, Fortress Hill, Tin Hau and Tai Hang areas to Central to bypass Victoria Park Road, Gloucester Road and Harcourt Road ('Slip Road 8').
- 2.1.9 The Trunk Road form of construction, and alignment and level, through Wan Chai North and Causeway Bay must facilitate the provision of these slip roads.

### *MTR Tsuen Wan Line*

- 2.1.10 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 Tsuen Wan Line tunnel. Tunnelling under the MTR Tsuen Wan Line would need to be at sufficient depth (around -60mPD) to avoid disturbance to the existing ground and movement of the MTR tunnel; this depth for the Trunk Road cannot be achieved without exceeding tunnel gradients limitations from the fixed connection to the existing road network at the Central Interchange; conversely, the Trunk Road connection to the Central Interchange and the existing Rumsey Street Flyover cannot be achieved for the resulting deep Trunk Road tunnel under the MTR tunnel. (Further clarification is provided in Section 3.)
- 2.1.11 Moreover, a deep Trunk Road tunnel beneath the MTR Tsuen Wan Line would mean that the slip road connections in Wan Chai North (Slip Roads 1, 2 and 3) cannot be



provided for this scheme, due to gradient limitations; the slip roads cannot rise to ground level from this depth without exceeding maximum permissible road gradients.

- 2.1.12 Instead, Trunk Road schemes that cross over the top of the MTR tunnel need to be pursued. A piled Trunk Road tunnel structure that can span across the MTR tunnel provides a feasible solution. In this case, the Trunk Road tunnel structure will lie completely above the seabed level, with a road level of around -7mPD (the MTR tunnel being an immersed tube tunnel that lies just below the seabed). Taking into account the height of the Trunk Road tunnel, the top of the tunnel structure would then lie above sea level, at a level of around +2.5mPD, and needs to be contained within reclamation.

#### *Cross Harbour Tunnel*

- 2.1.13 The CHT is an immersed tube tunnel constructed in 1970, comprising a 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.
- 2.1.14 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 high 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 for a tunnel box section, or deeper for a bored tunnel section.

#### *NIL and SCL Rail Tunnels*

- 2.1.15 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 proposed 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 with 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.

- 2.1.16 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 CBTS, 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*

- 2.1.17 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.
- 2.1.18 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 would 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. In addition, it would not be possible to provide Slip Roads 2 and 3 to Wan Chai North, as the slip roads cannot rise to ground level from this depth without exceeding maximum permissible road gradients.
- 2.1.19 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.
- 2.1.20 Reprovisioning 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, and is considered to be impractical and unreasonable, even if alternative sites could be found (identifying suitable relocation sites will be difficult). Therefore, 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*

- 2.1.21 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.
- 2.1.22 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.
- 2.1.23 Similarly, existing development along the south side of Gloucester Road forms a barrier to Trunk Road alignments all the way through to Causeway Bay.
- 2.1.24 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).

## **2.2 Trunk Road Route Corridors through WDII Project Area**

- 2.2.1 Three possible corridors can be considered when examining potential Trunk Road alignments between the CWB in CRIII and the IEC to the east of the CBTS (**Figure 2.2**):
- (i) An ‘offshore corridor’, where the Trunk Road alignment turns seawards (northwards) after the connection with the CWB in CRIII and runs through the harbour until turning back to connect with the IEC further east in North Point.
  - (ii) An ‘inland corridor’, where the Trunk Road alignment turns inland (southwards) after the connection with the CWB in CRIII and runs through existing land in tunnel, following roughly the Gloucester Road passageway and joining up with the existing IEC in front of Victoria Park.
  - (iii) A ‘foreshore corridor’, where, after passing through the HKCEC water channel in tunnel, the Trunk Road runs along the Wan Chai shoreline and through the CBTS either as tunnel, at-grade or elevated road, joining up with the existing IEC at the eastern end of the typhoon shelter (or further to the east of the typhoon shelter along the North Point shoreline).

## **2.3 Offshore Alignments**

- 2.3.1 Offshore Trunk Road alignments face a major physical constraint in the form of the HKCEC Extension. Design standards limit the minimum horizontal curvature, which means that, from the connection with the CWB tunnel in CRIII, the Trunk Road will not be able to turn northwards sharply enough to avoid the HKCEC Extension building or its foundations (see **Figure 2.3**).

- 2.3.2 The HKCEC Extension building presents a physical obstruction to elevated Trunk Road alignments, as the road cannot rise steeply enough to clear the roof of the HKCEC Extension (at +71mPD); therefore an elevated offshore alignment is not possible.
- 2.3.3 Keeping the Trunk Road in tunnel is the obvious preference, but, as the Trunk Road will first need to cross over the existing MTR Tsuen Wan Line, the high level of the Trunk Road tunnel (above water level) at this point means that it will not be able to drop down fast enough to avoid conflict with the basement of the HKCEC Extension. The top of the Trunk Road tunnel structure when it reaches the HKCEC Extension building will be at a level of around -0.5mPD while the level of the HKCEC Extension basement is at around -1mPD, then the HKCEC Extension foundation piles extend down to a founding level of around -30mPD. Therefore, Trunk Road tunnel alignments will conflict physically with the HKCEC Extension and its foundations.
- 2.3.4 Further eastwards, an offshore Trunk Road tunnel will need to pass beneath the CHT. As discussed in para 2.1.13 above, construction risk for any Trunk Road tunnel scheme crossing the immersed tube section of the CHT will be very high, with unacceptable consequences in the (likely) event of damage to the CHT.
- 2.3.5 Putting aside the risk of damage to the CHT, an offshore Trunk Road tunnel will need to be constructed as a deep bored tunnel in order to pass beneath the CHT. This will mean that the slip road connections in Wan Chai North (Slip Roads 1, 2 and 3) and in Causeway Bay (Slip Road 8) cannot be provided for this scheme.
- 2.3.6 The high construction risk of tunnelling across the CHT, the inability of providing the necessary slip road connections and, primarily, the physical obstruction of the HKCEC Extension make the Trunk Road offshore alignments not feasible.

## 2.4 Inland Alignments

- 2.4.1 Inland Trunk Road alignments 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.
- 2.4.2 **Figure 2.4** shows a Trunk Road tunnel turning inland (southwards) immediately after the connection with CRIII.
- 2.4.3 After turning southwards from the connection with the tunnel constructed under 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 (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.



- 2.4.4 As it turns inland after passing over the MTR Tsuen Wan Line, the Trunk Road will also need to cross the NIL rail tunnel, 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.
- 2.4.5 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.
- 2.4.6 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.
- 2.4.7 As a consequence of the above physical obstructions and constraints, this Trunk Road inland alignment is found to be not feasible.
- 2.4.8 Alternative inland alignments have been examined with a view to avoiding some of these constraints. **Figure 2.5** shows a Trunk Road tunnel turning inland further east, through the Wan Chai Sports Ground, to avoid conflict with the Harbour Centre and Sun Hung Kai foundations. 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 2.5**) will result in conflict with the major services infrastructure at Hung Hing Road.
- 2.4.9 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 (around 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 an approximately 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.
- 2.4.10 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 previous inland alignment case.

- 2.4.11 In view of the above, these alternative Trunk Road inland alignments are also considered not feasible, primarily due to physical conflict with existing development and infrastructure.

## **2.5 Foreshore Alignments**

- 2.5.1 At the western end of the WDII project area, the passageway through the HKCEC water channel presents a physical constraint to the Trunk Road alignment, both horizontally and vertically, after it passes over the MTR Tsuen Wan Line. An elevated road will clash with the atrium bridge (which has a soffit level around +12mPD and a top of roof level at +41mPD), and cannot be constructed without demolishing this essential element of the HKCEC and its Extension. At-grade road options for the Trunk Road would conflict with the ground level road system. An at-grade Trunk Road would also present a physical barrier that will cut off ground level road and pedestrian access to the HKCEC Extension from Wan Chai North. The water channel itself, on the other hand, provides an opportunity for tunnel options that can be constructed in the narrow gap between the foundations of the HKCEC and the HKCEC Extension.
- 2.5.2 The shallow tunnel through the HKCEC water channel also means that the Wan Chai North slip road connections to the existing ground level road network can be readily provided, while meeting the necessary highway design standards.
- 2.5.3 After leaving the HKCEC water channel, foreshore alignments of the Trunk Road will run along the Wan Chai shoreline and through the ex-Public Cargo Working Area basin ('PCWA basin'). The alignment here is determined mainly by infrastructure constraints, in particular the crossing at the CHT. As mentioned in para 2.1.14, the feasible crossing point (for a Trunk Road in tunnel) is below the CHT approach (portal) structure, at a sufficiently deep level to avoid the CHT rock anchors. Alternately, a Trunk Road on flyover can cross over the CHT portal area. Trunk Road tunnel alignments further north will result in high risk of damage to the immersed tube section of the CHT, while more southerly alignments are constrained by the Wan Chai East Sewage Screening Plant and the Electricity Sub-station on Hung Hing Road.
- 2.5.4 The Trunk Road alignment must then pass through (under or over) the CBTS to connect with the existing IEC to the east of the typhoon shelter. Trunk Road tunnels that do not require reclamation can pass beneath the typhoon shelter without disrupting the marine uses, but Trunk Road flyovers should be kept as close as possible to the CBTS shoreline in order to minimise impacts to the typhoon shelter operations.
- 2.5.5 Other conflicts in the Causeway Bay area to be avoided for foreshore alignments are the RHKYC and the SCL. The provision of Slip Road 8 will also influence the Trunk Road form and alignment; connection from the existing ground level road network can be made to relatively shallow Trunk Road cut-and-cover tunnels or to flyovers, but limitations on tunnel gradients would mean that this slip road connection to deep bored tunnels is not possible.

- 2.5.6 Trunk Road tunnels will need to rise up onto elevated road to connect with the IEC. This connection can be either directly at the eastern end of the CBTS (in which case the Trunk Road tunnel will need to rise up above seabed level through the typhoon shelter to make this connection) or further east along the North Point shoreline (with the Trunk Road tunnel remaining below seabed level through the typhoon shelter and only rising up above the seabed to the east of the typhoon shelter, along the outside of the existing IEC). A Trunk Road flyover can connect directly to the IEC at the eastern end of the CBTS.
- 2.5.7 In conclusion, though, there are no insurmountable constraints to foreshore alignments for the Trunk Road. Foreshore alignments are feasible, and consideration of these alignments is focussed primarily on the determination of the best practical form of construction in overcoming conflicts and minimising impacts and the extent of reclamation.

## **2.6 Summary of Trunk Road Route Assessment**

- 2.6.1 Alternative routeings for the Trunk Road along offshore, inland and foreshore corridors have been examined to determine practicable and feasible Trunk Road alignments. Trunk Road alignments are, however, constrained by existing development along the Wan Chai and Causeway Bay northshore area, existing cross harbour tunnels, proposed rail infrastructure and essential services infrastructure.
- 2.6.2 Offshore alignments are obstructed by the HKCEC Extension, will pose unacceptable risk to the CHT when tunnelling beneath it, and cannot provide the necessary slip road connections. Due primarily to the physical conflict with the HKCEC Extension, Trunk Road offshore alignments are found to be not feasible.
- 2.6.3 Inland alignments are obstructed by existing development in Wan Chai North, including the HKCEC Phase I, Grand Hyatt Hotel, Great Eagle 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.
- 2.6.4 The most reasonable and practical Trunk Road routeing is along the foreshore of Wan Chai and Causeway Bay. After crossing over the MTR Tsuen Wan line, the Trunk Road will run in shallow tunnel through the HKCEC water channel and along the Wan Chai shoreline. Thereafter, the Trunk Road can pass either below the CHT portal in tunnel or over the top of the CHT portal as flyover, continuing through the CBTS to a connection with the existing elevated IEC to the east of the typhoon shelter. The issues to be addressed when appraising foreshore alignments are related mainly to the determination of the best practical form of construction and minimising the extent of reclamation.

### **3 NO-RECLAMATION ALIGNMENTS**

#### **3.1 The Need for Reclamation**

- 3.1.1 The need for reclamation for Trunk Road construction was a primary concern raised during the public engagement activities of the Envisioning Stage. When investigating Trunk Road schemes, any reasonable alignments that do not require or result in reclamation (ie “no-reclamation alignments”) need to be identified and pursued, in accordance with the CFA ruling on the presumption against reclamation in respect of the PHO.
- 3.1.2 In Section 2, offshore and inland alignments, which could conceivably be thought of as “no-reclamation alignments” (if excepting unavoidable reclamation at the tie-in to CRIII), were found not feasible due to conflict with existing development and infrastructure.
- 3.1.3 Trunk Road alignments along the foreshore corridor were found to be feasible. However, foreshore alignments do require reclamation for Trunk Road tunnel construction at the tie-in to CRIII to the west of the HKCEC Extension, through the HKCEC water channel and along the Wan Chai shoreline to the east of the HKCEC Extension, as a minimum.
- 3.1.4 At the connection with CRIII, the Trunk Road tunnel structure will lie above seabed level. Then, as it passes over the MTR Tsuen Wan Line, the Trunk Road tunnel will rise above sea level. Therefore, at the western end of the WDII project area, the Trunk Road tunnel structure must be contained within reclamation.
- 3.1.5 From the high level crossing over the MTR tunnel, at the western end of the HKCEC water channel, even dropping at maximum gradient, the tunnel structure will be above sea level through the western part of the water channel, and will stay above seabed level through the eastern part of the water channel. The most practical engineering solution will be to construct the Trunk Road as a cut-and-cover tunnel after reclaiming the water body between the two seawalls of the Convention Centres.
- 3.1.6 The slip road connections in Wan Chai North (Slip Roads 1, 2 and 3) will also require reclamation as they rise above seabed level to their portals at ground level, in areas where this reclamation is not already formed for the mainline Trunk Road construction.
- 3.1.7 Moving further eastwards, the Trunk Road tunnel will only drop beneath the seabed at it nears the PCWA basin, and will therefore require reclamation for construction of cut-and-cover tunnel along the Wan Chai shoreline.
- 3.1.8 Then, to the east of the CBTS, the Trunk Road needs to connect to the existing elevated IEC road structure at a road level around +15mPD. This means that any Trunk Road tunnel running under the seabed (even if deep enough not to require reclamation) 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.

- 3.1.9 The 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 end for all Trunk Road schemes and at the eastern end for tunnel schemes. In addition, the feasible foreshore alignments will also require reclamation for cut-and-cover tunnel construction though the HKCEC water channel and along the Wan Chai shoreline to the east of the HKCEC Extension. There is, therefore, no possible “no-reclamation” alignment option for the Trunk Road through the WDII area.
- 3.1.10 The following paragraphs examine the unavoidable reclamation requirements in more detail, and investigate other ideas that have been suggested in pursuit of no-reclamation alignments.

### **3.2 MTR Tsuen Wan Line Crossing**

- 3.2.1 After the connection with the CWB tunnel in the CRIII area, the Trunk Road will have to cross the MTR Tsuen Wan Line tunnel. As noted in para 2.1.10, the Trunk Road must not impose any loads on, or cause any significant movement of, this existing MTR immersed tube tunnel.
- 3.2.2 Piled deck structure over the MTR tunnel is a feasible solution that will meet these conditions. 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 Trunk Road tunnel which spans over the MTR tunnel. Details of the scheme, extracted from the detailed engineering design of the MTR tunnel crossing, are shown in **Figure 3.1**. For this scheme, the Trunk Road will cross over the MTR tunnel at a road level of around -6.5mPD and, with the height of the tunnel structure being approximately 9m from road level, a top of tunnel structure level of around +2.5mPD.
- 3.2.3 Reclamation is required for the adjacent cut-and-cover tunnels that tie into the precast tunnel sections over the MTR tunnel, as these are above seabed level. Moreover, the Trunk Road tunnel structure would be above sea level (even above high tide level: mean higher high water level is +2.0mPD) at this crossing point, and this would effectively be regarded as reclamation, anyway.
- 3.2.4 Tunnelling under the MTR Tsuen Wan Line has been suggested as a means of eliminating the reclamation for the crossing over the MTR tunnel. This would need to be at sufficient depth to avoid disturbance to the existing ground and movement of the MTR tunnel. The constraints in this case are: (i) the Trunk Road tunnel connection back to existing road links at the Central Interchange, and (ii) the slip road connections to the ground level road network in Wan Chai North. Neither can be achieved for a deep Trunk Road tunnel beneath the MTR tunnel due to gradient limitations.

- 3.2.5 To illustrate this vertical alignment constraint, **Figure 3.2** shows a deep tunnel alignment where the Trunk Road drops down from the tie-in with the Central Interchange at Central Reclamation Phase I (CRI) at the maximum permissible tunnel gradient to pass beneath the MTR Tsuen Wan Line.
- 3.2.6 The location of the Trunk Road tunnel western portal at CRI is fixed by the connection of the mainline Trunk Road to the Rumsey Street Flyover, which has already been constructed, and by slip road connections at the Central Interchange that must tie into existing roads in Central. Moving the portal further west, in order to provide a longer Trunk Road tunnel length over which the deep tunnel can drop to a lower level when it passes beneath the MTR tunnel, will mean that the mainline Trunk Road and slip road connections at the Central Interchange cannot be made as the road alignments will exceed maximum permissible gradients and cannot comply with highway design standards in respect of road geometry. The location of the western portal of the Trunk Road, therefore, cannot be moved.
- 3.2.7 With the western portal of the Trunk Road being fixed, and the Trunk Road vertical alignment dropping at the maximum permissible gradient to pass under the MTR tunnel, **Figure 3.2** illustrates the consequences in respect of clearance between the MTR immersed tube tunnel and the Trunk Road bored tunnel. As can be seen in **Figure 3.2**, the clearance between the two tunnels only around 5m, whereas the Trunk Road bored tunnel diameter is around 15.5m. Clearance of around 1.5 to 2 times the bored tunnel diameter needs to be provided to keep disturbance of existing ground and movement of the MTR tunnel to within MTRC's statutory limits, so as to ensure that the MTR tunnel is not damaged. Clearly, the available clearance is totally inadequate.
- 3.2.8 Therefore, a deep Trunk Road tunnel passing beneath the MTR Tsuen Wan Line is not feasible. The Trunk Road must pass over the MTR tunnel, and reclamation associated with this crossing is unavoidable.
- 3.2.9 A feasible vertical profile of the Trunk Road tunnel from the western portal in CRI over the MTR Tsuen Wan Line is presented in **Figure 3.3**, which also indicates the reclamation required in WDII at the connection with CRIII and the crossing over the MTR tunnel, where the Trunk Road tunnel rises above seabed level. The determination of this vertical profile takes into account essential related infrastructure such as tunnel ventilation adits that pass over the Trunk Road tunnel structure, below ground level in the limited available space.

### 3.3 IEC Connection

- 3.3.1 At the eastern end of the WDII project area, all Trunk Road tunnel schemes need to rise to a ground level portal and then onto elevated road structure to connect with the existing elevated IEC at a level of around +15mPD. The tunnel will be constructed by cut-and-cover method as the Trunk Road rises to and above the seabed, and reclamation will be required where the tunnel rises above the seabed, up to the start of flyover structure.
- 3.3.2 **Figure 3.4** illustrates the minimum reclamation situation where a cut-and-cover tunnel rises up to ground level immediately to the east of the CBTS eastern breakwater. The

existing land formation in this area, which extends beyond the IEC structure into the harbour, can be put to good use to accommodate the Trunk Road tunnel so as to minimise the extent of new reclamation required. As shown in Figure 3.4, though, this existing area of land is not sufficient to encompass the Trunk Road tunnel and portal entirely; additional reclamation is required both in length and width.

- 3.3.3 The width of reclamation required to accommodate the Trunk Road tunnel is determined by the cross-sectional elements of the Trunk Road tunnel structure, which is located adjacent to the existing IEC foundation piles, and the wave absorbing seawall alongside the tunnel structure. As illustrated in Figure 3.4, the existing width of the formed land is insufficient to accommodate the Trunk Road tunnel structure and its protecting seawall, and an additional width of reclamation, of around 40m, is required.
- 3.3.4 The length of reclamation at this connection to the IEC is determined by the maximum gradient of the tunnel as it rises from seabed level to the tunnel portal at ground level, with reclamation continuing to just beyond the flyover abutment, to the point at which the flyover structure rises to a high enough level to span over the sea. As illustrated in Figure 3.4, an overall length of formed land of around 620m is needed, however the length of the existing formed land is only around 430m, therefore an additional length of reclamation, of around 190m, must be provided.
- 3.3.5 The resulting area of reclamation, around 4ha, is the minimum requirement for Trunk Road tunnel schemes rising up to connect to the existing IEC.

### **3.4 Deep Tunnel Option**

- 3.4.1 A deep bored tunnel option for the Trunk Road has been examined with a view to avoiding reclamation. The idea being that a tunnel constructed by tunnel boring machine (TBM) at sufficient depth below the surface would not require reclamation and can be constructed without disturbing existing facilities and infrastructure.
- 3.4.2 However, at the western end of WDII, at the connection with the Trunk Road tunnel constructed under CRIII and for the crossing over the MTR Tsuen Wan line, the deep tunnel option must start off as shallow cut-and-cover tunnel, in reclamation, similar to all other Trunk Road options. The Trunk Road then stays in cut-and-cover tunnel through the HKCEC water channel and along the Wan Chai shoreline, until it drops down low enough beneath the seabed to change to bored tunnel.
- 3.4.3 The Trunk Road bored tunnel then passes beneath the existing CHT and beneath the proposed SCL tunnels, at a level of around -50mPD in order to provide adequate clearance between the tunnels, before rising up along the North Point shoreline to connect with the existing elevated IEC. Rising from this depth, even at maximum tunnel gradient, means that the connection with the IEC can only be made 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 needs to change to cut-and-cover tunnel, with associated reclamation to facilitate this construction along the North Point shoreline.

- 3.4.4 Therefore, bored tunnel would only be possible through the central portion of the Trunk Road in WDII (under the CHT, under the CBTS and immediately to the east of the CBTS). At the HKCEC and along the Wan Chai shoreline, and along the North Point shoreline for the connection with the IEC, the Trunk Road would be cut-and-cover tunnel, in reclamation. **Figure 3.5** shows the deep tunnel option layout and profile.
- 3.4.5 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.
- 3.4.6 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 can meet the functional requirements.
- 3.4.7 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 CFA ruling on reclamation in relation to the PHO, which requires the minimisation of reclamation when examining alternatives for the Trunk Road.

#### ***Extent of Reclamation for the Deep Tunnel Option***

- 3.4.8 As noted above, 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, in fact, common to all Trunk Road schemes. Reclamation is not required through the CBTS for the deep tunnel option, but is also not required for the permanent works of alternative cut-and-cover tunnel options, where these lie beneath the seabed of the CBTS.
- 3.4.9 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).
- 3.4.10 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.
- 3.4.11 **Figure 3.6** shows the layout of the 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.



- 3.4.12 **Figure 3.7** shows the layout and extent of reclamation of an alternative cut-and-cover tunnel option (as referenced in Section 3.3 above) which rises to connect to the IEC outside 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. The lesser extent of reclamation is due in part to the higher seabed level through the typhoon shelter compared to the seabed level along the North Point shoreline (the alternative cut-and-cover tunnel therefore having less length of tunnel structure above the seabed, requiring reclamation).
- 3.4.13 In examining the extent of reclamation, it can be seen from Figure 3.7 that the alternative cut-and-cover tunnel scheme 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 the North Point ferry piers.
- 3.4.14 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.
- 3.4.15 In short, the deep bored tunnel option requires a greater area of reclamation along the North Point shoreline than the alternative cut-and-cover tunnel option. Moreover, the deep bored tunnel option cannot perform as well as the alternative cut-and-cover tunnel option, due to its deficiency in providing the Slip Road 8 connection.
- 3.4.16 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 cut-and-cover tunnel option, there is no justification or overriding need to continue to pursue this deep tunnel option.

### 3.5 Alternative Trunk Road Tunnel Ideas

- 3.5.1 Alternative Trunk Road and harbour-front enhancement ideas have been submitted by members of the public during the course of the Envisioning Stage consultation, with a view to minimising reclamation and improving the waterfront. Two proposals in particular warrant attention: one from Swire Properties (“A Proposal for the Wan Chai - Causeway Bay Shoreline” submitted to the Sub-committee on WDII Review in July 2005), and another from RHKYC (“Preserving the Vibrancy and Diversity of Victoria Harbour” submitted to the Sub-committee on WDII Review in July 2005).
- 3.5.2 An extract from the Swire’s proposal is shown in **Figure 3.8**. Swire’s submitted their proposal to demonstrate an idea that would allow Victoria Park unfettered access to the

waterfront. As can be seen from Figure 3.8, their scheme involves Trunk Road tunnel construction that does require reclamation along the Wan Chai shoreline and in the corners of the CBTS. This is therefore not a “no-reclamation” idea.

- 3.5.3 An extract from the RHKYC proposal is shown in **Figure 3.9**. RHKYC noted that they had brainstormed with and solicited ideas from various stakeholders including Wan Chai District Council and Eastern District Council, NGOs, sports associations and RHKYC members, in deriving their proposal. As can be seen from Figure 3.9, reclamation will be needed for Trunk Road tunnel construction along the Wan Chai shoreline and in the corners of the CBTS for the RHKYC scheme. This scheme is therefore also not a “no-reclamation” idea.

### **3.6 Double Decking over Gloucester Road**

- 3.6.1 A member of the public has proposed a double-decking idea, which involves the construction of an elevated Trunk Road structure above the existing Connaught Road Central / Harcourt Road / Gloucester Road. The idea being to make use of the air space above the existing road corridor for Trunk Road construction.
- 3.6.2 Connection to Connaught Road Central is proposed through a multi-storey car park building at Rumsey Street or Shun Tak Centre. Leaving aside for now the practicality of having Trunk Road traffic circulating up and down through a car park building to access or exit the Trunk Road, and the road network connectivity requirements in Central, constructing a bridge deck or flyover over the length of Gloucester Road, in the WDII project area, is not feasible.
- 3.6.3 If flyovers are constructed above existing roadways, there must be space for the bridge piers and foundations. The Trunk Road is a dual 3-lane carriageway with an overall elevated deck width of around 30m. This will need to span clear across the existing Gloucester Road, including access flyovers such as Tonnochy Road Flyover and Arsenal Street Flyover, and keep clear of the numerous pedestrian bridges that currently span over Gloucester Road.
- 3.6.4 A portal support structure for the Trunk Road will be required. **Figure 3.10** illustrates the arrangement at two of the critical sections along Gloucester Road. As can be seen, an extremely bulky structure will be required that will result in the loss of existing traffic lanes in both the east-bound and west-bound carriageways of Gloucester Road. Moreover, the structure will be very high, in order to pass over the existing elevated structures along Gloucester Road (Trunk Road level would be at around +23mPD, ie at around the 5<sup>th</sup> or 6<sup>th</sup> floor level of the adjacent buildings along Gloucester Road). Visual impacts and the blocking effects of the double-deck structure will be severe.
- 3.6.5 Traffic impacts are of primary concern when considering the feasibility of this double-deck idea. During construction, two lanes on Gloucester Road will need to be closed in both east-bound and west-bound directions to allow for the portal frame construction and contractor’s working space. With the Gloucester Road corridor already filled to capacity with roads, there is no spare road space for temporary traffic diversions. Then, once the Trunk Road is complete, there will be a permanent loss of one lane in both directions.

- 3.6.6 The consequence will be a loss of around 30% to 40% of road capacity in both directions during construction and a permanent loss of around 25% of road capacity in both directions after construction. This loss of road capacity, from a major strategic road corridor that is already operating over capacity and will continue to operate at or near capacity even after the implementation of the Trunk Road, cannot be tolerated.
- 3.6.7 From both visual and traffic impacts points of view, the suggested double-deck arrangement along Gloucester Road is considered to be not feasible. Similar conclusions can be readily drawn for double-decking along Connaught Road Central and Harcourt Road.

### **3.7 Full Flyover Idea**

- 3.7.1 It has been suggested by a member of the Sub-committee on WDII Review that a Trunk Road in the form of flyover starting from CRIII project boundary all the way to the connection with the IEC should be presented for consideration by the public. This suggestion is in respect of new land formation not being required for flyover, putting aside the question of whether the bridge piers in the harbour would constitute reclamation.
- 3.7.2 The major obstacle for a Trunk Road in the form of flyover starting from the CRIII project boundary is the existing development in Wan Chai North, in particular, the HKCEC Phase I and the HKCEC Extension, and their connecting Atrium Link bridge, which form a physical barrier to elevated road structures (as discussed in Section 2). Full flyover options cannot rise to a high enough level to pass over the HKCEC and/or the Atrium Link (para 2.5.1).
- 3.7.3 Referring to Section 2.6, all Trunk Road alignments must pass through the HKCEC water channel in tunnel, in reclamation. Only after passing through the water channel can the Trunk road rise up onto flyover, therefore a so-called “full flyover” option (having no new land formation) is not possible.

### **3.8 Total Offshore Idea**

- 3.8.1 Following on from the full flyover idea above, an idea of having the Trunk Road alignment completely offshore (ie not constrained by the connecting point with CRIII to the west of the HKCEC) has been considered.
- 3.8.2 A flyover running through the middle of the harbour would clearly be unacceptable, due to marine impacts: pleasure, ferry and commercial shipping would be affected.
- 3.8.3 A Trunk Road tunnel running offshore will be constrained by the crossing beneath the MTR Tsuen Wan Line and the CHT. Similar to the case for a deep tunnel described in Section 3.2, a Trunk Road alignment that turns northwards into the harbour from the connection with the Central Interchange in CRI will not be able to drop down deep enough to pass beneath the MTR immersed tube tunnel with sufficient clearance.
- 3.8.4 Therefore, “total offshore” ideas for the Trunk Road alignment are not feasible.

### 3.9 Quasi No-Reclamation Idea

- 3.9.1 Another suggestion from a member of the Sub-committee on WDII Review is that, even if the top of the Trunk Road tunnel structure is above the existing seabed level, as long as the top of structure is below sea level, this should be presented as an alternative choice instead of constructing the tunnel in reclamation. The preference being that even a shallow water area should be returned to the harbour.
- 3.9.2 **Figures 3.11 and 3.12** show the alternative arrangement for a Trunk Road tunnel option at Wan Chai and North Point respectively, if a minimum of 1m of water depth is provided above the tunnel protection layer at mean low water level.
- 3.9.3 This shallow water depth is inadequate for navigation access by the range of vessels (pleasure craft and ferries) that would require access to the waterfront. In particular, the Wan Chai North cross harbour ferry services would be compromised and there would be no access to landing steps along the existing seawalls.
- 3.9.4 Furthermore, the Trunk Road tunnel structure would be exposed to damage from ship impact, including ocean going vessels in the nearby navigation fairways (and the consequences of structural damage to the road tunnel would be severe). Protection in the form of a rubble mound bund, or breakwater, would be required, as shown in Figures 3.11 and 3.12.
- 3.9.5 As a result, the perceived benefits of “seeing a water surface” along the shoreline rather than reclamation are offset by the reclamation formed by the offshore protective breakwaters. This “quasi no-reclamation”, or “shallow water”, Trunk Road idea:
- nevertheless has a tunnel structure above seabed level that constitutes reclamation under the PHO;
  - results in additional reclamation for the protective breakwaters;
  - compromises marine access to the waterfront, including essential ferry services;
  - results in reclamation that cannot be put to use for harbour-front enhancement.
- 3.9.6 The areas of reclamation of this “quasi no-reclamation”, or “shallow water”, idea, can be compared with the saving in land formation along the shoreline that would otherwise be required under the conventional approach of having cut-and-cover tunnel in reclamation. This could be viewed as ‘water area saved’, as shown in Figures 3.11 and 3.12, and is the area of land (reclamation) that is not required if the tunnel structure were to be left unprotected below sea level, albeit offset against the reclamation areas of the protective breakwaters and the reclamation areas of the tunnel structure above seabed level.
- 3.9.7 When examining the areas of reclamation of the “shallow water idea” and the conventional approach having cut-and-cover tunnel in reclamation, the following observations are made:



Location	“Shallow Water Idea”		Offset against conventional approach of cut-and-cover tunnel in reclamation
	Reclamation for Protective Breakwaters	Area of tunnel structure above seabed (= ‘reclamation’)	Water Area Saved (area of land formation not required if “shallow water idea” is implemented)
Wan Chai	2.5ha	1.5ha	4.5ha
North Point	0.7ha	0.2ha	0.5ha

3.9.8 In view of the above concerns/issues, and without any material benefit in terms of real reduction of reclamation, the “quasi no-reclamation” idea with the provision of shallow water above the Trunk Road tunnel structure is not considered a practical or reasonable idea to be pursued.

### **3.10 Conclusion of the Review of No-Reclamation Alignments**

3.10.1 All suggested alignments for the Trunk Road, and forms of construction, have been examined with a view to determining if there are any that do not require any reclamation for the Trunk Road construction.

3.10.2 It is concluded that there are no “no-reclamation” alignments for the Trunk Road, and even offshore or inland alignments are not feasible. Consequently, it must be accepted that at least some reclamation will be required for Trunk Road construction.

## **4 TRUNK ROAD FORM OF CONSTRUCTION**

### **4.1 Introduction**

- 4.1.1 In reviewing Trunk Road tunnel options, cut-and-cover tunnel construction is considered to be a technically feasible form of construction for implementation of the Trunk Road. Determination of the practicable and feasible form of tunnel construction has taken into account alternative construction methods that may be considered appropriate along the different sections of the WDII project area. Possible variations of Trunk Road cut-and-cover tunnel are examined, with a view to determining practically feasible tunnel ideas that can be consolidated with harbour-front enhancement ideas for carrying forward to the Realization Stage of this project.
- 4.1.2 There is broad support from the public for a tunnel option, especially where this can incorporate suggested harbour-front enhancement ideas while at the same time provide for the functional requirements of the Trunk Road. However, a flyover option is also technically feasible. Notwithstanding that there appears to be little public support for a flyover option, it is the opinion of the Sub-committee on WDII Review that this option should be given further consideration insofar as it does represent a scheme requiring a lesser area of new land formation. At issue is which option, tunnel or flyover, would comply with the PHO. Accordingly, this section also examines a possible Trunk Road flyover idea and compares it with the Trunk Road in tunnel.
- 4.1.3 The possible Trunk Road option arising from these investigations is also examined in respect of flexibility for future submerging of the IEC. The intention being that any Trunk Road scheme that is proposed now will not inhibit such a possibility, for longer term planning for the enhancement of the harbour-front, albeit that this may not arise in the foreseeable future and would need to be justified by relevant social, environmental and economic considerations.

### **4.2 Alternative Tunnel Construction Methods**

- 4.2.1 As described previously, the Trunk Road crossing over the MTR tunnel, at the western end of the HKCEC water channel, and the shallow tunnel (above seabed level) passing through the HKCEC water channel, means that the most practical construction approach in this area will be to construct the Trunk Road as a cut-and-cover tunnel after reclamation along the shoreline to the west of the HKCEC and the water body between the two seawalls of the Convention Centres. This reclamation will also accommodate the slip road connections in Wan Chai North.
- 4.2.2 Along the Wan Chai shoreline, the Trunk Road tunnel remains above the seabed level, therefore, again, cut-and-cover tunnel constructed in reclamation is considered the appropriate form of construction in this area.
- 4.2.3 Immersed tube tunnel form of construction may be used where the tunnel lies just below seabed level; reclamation would not be required for this form of tunnel construction. However, this form of construction is not suitable where the tunnel level rises above

seabed level, as the exposed tunnel section would then be at risk of damage from ship impact, anchors, etc, the tunnel structure would be more susceptible to degradation in an aggressive marine environment, and the protrusion of the tunnel structure above the seabed would restrict marine access to the shoreline. Also, even where the tunnel lies below seabed level, the soft seabed material would need to be excavated so that the immersed tube units lie in a trench on a firm foundation. Along the Wan Chai shoreline, this would involve excavating a deep trench immediately adjacent to the existing seawalls, which would undermine these seawalls. Use of immersed tube is therefore considered not feasible in this instance, and the most practical and reasonable form of construction for the Trunk Road tunnel along the Wan Chai shoreline is cut-and-cover, constructed through reclaimed land.

- 4.2.4 Through the PCWA basin and the CBTS, where the Trunk Road tunnel lies below seabed level, immersed tube or cut-and-cover tunnel construction may be considered. In this case, for cut-and-cover tunnel, temporary reclamation formed to facilitate the tunnel construction can be removed on completion of construction, so that the finished product, ie retention of the existing seabed condition, is the same for both methods. Factors to be considered include: whether the tunnel alignment runs wholly through seabed or partly in existing seabed and partly under existing seawalls and land formation, the latter making cut-and-cover construction more practically feasible (more efficient and cost effective construction with less disruption to existing shoreline facilities and infrastructure) than use of precast immersed tunnel sections that need to be placed in open trenches; the depth of the tunnel (where the tunnel lies at a significant depth below the seabed, for example near the CHT crossing, at -30mPD, major deep and wide trenches will need to be excavated, making immersed tube construction more disruptive with greater impacts); or the tunnel length available for immersed tube construction (short lengths will not be cost effective for the precast fabrication of tunnel units). The form of tunnel construction is an important consideration in respect of avoiding conflict with the SCL, as Trunk Road cut-and-cover tunnel can be constructed across the future SCL alignment with much closer separation allowance. Because the Trunk Road tunnel is on diaphragm wall (piled) supports, it will not be structurally adversely affected by the construction of the SCL tunnels.
- 4.2.5 Where the Trunk Road tunnel rises up above the seabed to ground level, for the connection with the IEC at the eastern end of the CBTS, cut-and-cover tunnel in reclamation will again be the feasible form of construction.
- 4.2.6 Deep bored tunnel construction has also been examined (see Section 3.4), but is not recommended due to reduced traffic performance and the need for a larger area of reclamation along the North Point shoreline.
- 4.2.7 In summary, cut-and-cover tunnel construction is considered to be the practical and feasible form of construction for implementation of the Trunk Road through the HKCEC water channel, along the Wan Chai shoreline and through the CBTS. Permanent reclamation will be required at the HKCEC, along the Wan Chai shoreline and at the eastern end of the CBTS, for the cut-and-cover tunnel, where it lies above the seabed level.

### 4.3 Trunk Road Tunnel Variations

#### *Trunk Road Tunnel Variation 1*

- 4.3.1 Examination of possible Trunk Road tunnel options leads first to Trunk Road Tunnel Variation 1, shown conceptually in **Figure 4.1**. In this tunnel option, the Trunk Road starts off at the connection with CRIII in cut-and-cover tunnel, crosses over the MTR Tsuen Wan Line tunnel and continues through the HKCEC water channel and along the Wan Chai shoreline, in cut-and-cover tunnel, in reclamation.
- 4.3.2 The Trunk Road tunnel passes beneath the CHT portal at a level of around –30mPD; this depth is required in order to avoid conflict with the existing rock anchors of the CHT portal structure. The low level of the Trunk Road tunnel means that the tunnel structure lies entirely below the seabed level of the PCWA basin and the CBTS, only rising up above seabed level to ground level to the east of the CBTS, where the Trunk Road then rises up to connect with the existing elevated IEC. Permanent reclamation in the PCWA basin and in the CBTS is not essential. While temporary works will be required (which may include temporary land formation for tunnel construction purposes) these can be removed afterwards and the existing seabed and water area reinstated.
- 4.3.3 Connection to the IEC is made to the northern side of the existing IEC elevated road structure, which is considered to be the least disruptive form of connection. The existing IEC links back into Causeway Bay (to Victoria Park Road and Hing Fat Street) are retained.
- 4.3.4 Looking beyond the Trunk Road itself to the need and opportunities for harbour-front enhancement, combining harbour-front enhancement with the functional elements of the Trunk Road leads to a consolidated conceptual scheme, that can be used as the basis for the development of a Concept Plan for the harbour-front under the WDII project. An indicative illustration of what the Consolidated Harbour-Front and Trunk Road Tunnel (Variation 1) scheme might look like, after some broad landscape treatment, is shown in **Figure 4.2**. Further details of this consolidated scheme and associated waterfront opportunities are discussed in the following Section 5.

#### *Trunk Road Tunnel Variation 2*

- 4.3.5 A further variation of the Trunk Road tunnel idea is derived by taking on board one of the written submissions from the public, shown earlier in **Figure 3.8**. One of the major features of this submission is the reconstruction of Victoria Park Road further to the south (within the existing Victoria Park) so as to free up more waterfront space along the southern edge of the CBTS. A landscaped deck is provided over the ground level roads to extend Victoria Park to the waterfront. The Trunk Road tunnel is also aligned further south to connect directly into the IEC at the eastern side of the CBTS, with the existing IEC connections to Victoria Park Road reconstructed as tunnel through the south-eastern corner of the typhoon shelter.



- 4.3.6 Although ‘conceptually correct’, the submission does need to be more fully developed with the incorporation of a ‘functionally correct’ Trunk Road layout, leading to ‘Trunk Road Tunnel Variation 2’.
- 4.3.7 To turn the written submission as shown in Figure 3.8 into a functional Trunk Road option, the following factors affecting the configuration of the Trunk Road and its layout need to be considered, with the road layout adjusted as necessary to meet the functional and safety requirements of the Transport Planning & Design Manual (TPDM):
- (i) Trunk Road lane configuration: traffic demand requires a dual 3-lane configuration for the mainline generally, while merging and weaving constraints mean that there will need to be some localised widening to accommodate the entry of slip roads as separate lanes.
  - (ii) Cross-sectional tunnel dimensions: the correct width of Trunk Road tunnel structure must be allowed for, including allowance for lane configuration, road shoulders, tunnel structure, etc.
  - (iii) Conflict with the rock anchors at the CHT portal: the tunnel must be pulled back (southwards) to go around the anchorage zone, so as to avoid the conflict.
  - (iv) Slip Road 8: provision needs to be made for this slip road which caters for traffic from the Causeway Bay and Tin Hau area entering the westbound Trunk Road, going to Central and western Hong Kong Island. However, an eastbound slip road for traffic exiting the Trunk Road in this area, as indicated in the written submission, is not essential and therefore does not need to be provided.
  - (v) Road design standards: highway design standards for the Trunk Road as well as for the proposed reconstruction of Causeway Bay Flyover and Gloucester Road Flyover, including adequate headroom clearances, must be incorporated in the road layout.
- 4.3.8 The resulting road layout for Trunk Road Tunnel Variation 2 is illustrated in **Figure 4.3**.
- 4.3.9 Similar to the case for Trunk Road Variation 1 above, harbour-front enhancement is combined with the functional elements of the Trunk Road to give a consolidated conceptual scheme. **Figure 4.4** gives an indicative illustration of what the Consolidated Harbour-Front and Trunk Road Tunnel (Variation 2) scheme might look like, after some broad landscape treatment.

### ***Trunk Road Tunnel Variation 3***

- 4.3.10 The inland diversion of the alignment in Trunk Road Tunnel Variation 2 to avoid conflict with the rock anchors at the CHT approach ramp structure introduces reverse curves in the road tunnel. Reverse curves in a major highway tunnel are not appropriate. Even where minimum highway design standards can be met, the abrupt changes in curvature and super-elevation will lead to a sudden change in steering attitude of a vehicle negotiating these curves, which could take drivers by surprise. Moreover, vehicles slowing to negotiate the reverse curves will also reduce the traffic performance of the entire Trunk Road. This is an undesirable situation and, especially in tunnels, leads to safety concerns. Situations where vehicles need to slow to negotiate changes in

road alignment, especially where drivers may be caught unaware, create the potential for accidents; the more so where, in tunnels, following vehicles cannot change lanes to avoid vehicles in front of them. The consequences of accidents in tunnels are far more severe than open road situations. As such, these reverse curves should be avoided if at all possible.

4.3.11 Instead of pulling back the tunnel to go around the anchorage zone, conflict with the CHT rock anchors could also be avoided by straightening up the Trunk Road alignment at the CHT, and having the tunnel pass beneath the CHT portal rock anchor zone, similar to the Trunk Road Tunnel Variation 1. By so doing, the alignment concerns of Tunnel Variation 2, expressed above, can be overcome.

4.3.12 **Figure 4.5** shows the resulting Trunk Road Tunnel Variation 3 road layout.

4.3.13 Core features of Tunnel Variation 2 (and the public submission from which this has been derived) are retained in Tunnel Variation 3. These include the idea of reconstructing Victoria Park Road further to the south to free up more waterfront space and the construction of a landscaped deck over the ground level roads to extend Victoria Park to the waterfront, as well as the reconstruction of the existing IEC connections to Victoria Park Road as tunnel through the south-eastern corner of the typhoon shelter. The direct connection of the Trunk Road to the IEC at the eastern end of the CBTS is also retained.

4.3.14 The difference between these two Trunk Road tunnel variations in terms of harbour-front enhancement is simply the lesser extent of reclamation in the CBTS, with Trunk Road Tunnel Variation 3 not having any reclamation at the south-western corner of the typhoon shelter.

4.3.15 Again, combining harbour-front enhancement with the functional elements of the Trunk Road gives a consolidated conceptual scheme. **Figure 4.6** gives an indicative illustration of what the Consolidated Harbour-Front and Trunk Road Tunnel (Variation 3) scheme might look like, after some broad landscape treatment. This scheme is similar to that of Trunk Road Tunnel (Variation 2), except that in this case there would be no change to the existing situation for the promenade in the south-western corner of the CBTS.

#### **4.4 Major Issues of the Trunk Road Tunnel Variations**

4.4.1 Examination of the land use, engineering and environmental aspects of the design and construction of the Trunk Road tunnel variations leads to the following issues that are highlighted as being of particular concern:

- more reclamation due to filling in of the corners of the CBTS (south-east and south-west corners for Variation 2, south-east corner for Variation 3);
- major road diversions and traffic impacts during construction (particularly for Variations 2 and 3);
- intrusion into and demolition of Victoria Park for the construction of the realigned Victoria Park Road (both Variations 2 and 3);

- need for the reconstruction of major existing highway structures, including the IEC, Gloucester Road Flyover and the newly constructed Causeway Bay Flyover (both Variations 2 and 3);
- demolition of the Police Officers' Club (Variation 2);
- air quality concern at the tunnel portal, due to close proximity of residential units (all tunnel variations, but more so for Variations 2 and 3).

### ***Area of Reclamation***

- 4.4.2 All the Trunk Road tunnel variations (Variations 1, 2 and 3) require reclamation along the North Point shoreline for cut-and-cover tunnel and tunnel portal construction. However, Tunnel Variations 2 and 3 also result in reclamation in one or more of the corners of the CBTS, which is not required for the Trunk Road Tunnel Variation 1.
- 4.4.3 Tunnel Variation 2 requires reclamation in the south-western corner of the typhoon shelter for shallow cut-and-cover Trunk Road tunnel construction, and in the south-eastern corner of the typhoon shelter for reconstruction of the IEC and the Victoria Park Road connections in tunnel. Tunnel Variation 3 requires reclamation in the south-eastern corner of the typhoon shelter for reconstruction of the IEC and the Victoria Park Road connections in tunnel.
- 4.4.4 These additional areas of reclamation will need to be justified in meeting the 'overriding public need test' as required by the CFA ruling on the PHO, bearing in mind that an alternative Trunk Road tunnel option is available that does not require these more extensive areas of reclamation.

### ***Road Diversions and Traffic Impacts***

- 4.4.5 Construction of cut-and-cover tunnel across the entrance to the CHT for Trunk Road Tunnel Variation 2 will require major traffic diversions and result in severe disruption at the CHT portal and approach roads area, affecting both northbound and southbound CHT traffic. With the roads in this area already operating well over capacity, major traffic diversions in this area would quite likely result in a gridlock situation during peak hours, for both the Hong Kong Island-bound traffic and the Kowloon-bound traffic. The CHT is an extremely important strategic network link, and gridlock here would have far-reaching effects; this situation is considered intolerable.
- 4.4.6 Instead, with the Trunk Road passing beneath the CHT portal rather than across the entrance to the CHT, for Trunk Road Tunnel Variations 1 and 3, traffic diversions and disruption at the CHT portal area are avoided.
- 4.4.7 Extensive temporary road diversions will also be required to facilitate the tie-in to the IEC and the demolition of a considerable length of the existing IEC along the North Point shoreline, for Tunnel Variations 2 and 3. The existing IEC will, in effect, need to be reconstructed as a new (albeit temporary) road of similar proportions to the existing, from the Tong Shui Road interchange to Victoria Park Road. Victoria Park Road and Gloucester Road will also require extensive road diversions for their reconstruction.

- 4.4.8 These road diversions will inevitably result in traffic impacts and severe disruption to traffic flows. In particular, traffic diversion ‘black spots’ would be expected at the Tong Shui Road interchange on the IEC, at Victoria Park Road / Hing Fat Street junctions and at the Victoria Park Road / Gloucester Road interface area (including Gloucester Road northbound and Inner Gloucester Road). And, as noted in para 4.4.5 above, Tunnel Variation 2 will also have a traffic diversion black spot at the CHT.
- 4.4.9 **Figure 4.7** illustrates schematically the areas of major road diversions and the expected traffic diversion black spots for Tunnel Variations 2 and 3. Figure 4.6 also shows the comparative case for the Trunk Road Tunnel Variation 1. As can be seen, the extent of temporary road diversions is very much less for Trunk Road Tunnel Variation 1 and, with the IEC road diversions not intruding into the Tong Shui Road interchange and with the existing IEC connections through to Victoria Park Road being retained, and no reconstruction of Victoria Park Road and the Gloucester Road and Causeway Bay flyovers, there are no particular traffic diversion black spots.

#### ***Demolition of Victoria Park***

- 4.4.10 For both Tunnel Variations 2 and 3, the existing Victoria Park Road will be realigned further southwards (inland) to allow more area along the Causeway Bay promenade for an extension of Victoria Park to the harbour-front promenade. These new roads will intrude into the entire northern part of the park and construction of the new roads will require the demolition and reconstruction of this northern part of Victoria Park. In particular, the entire existing raised ‘knoll’ area in the north-western part of the park will need to be demolished. **Figure 4.8** shows the extent of the intrusion into Victoria Park.
- 4.4.11 The construction works will cause severe disruption to park users and will remove a large part of the existing leisure area from public use for several years during the construction period. Whilst the new deck over the reconstructed Victoria Park Road will enable the extension of the park to the waterfront and, in terms of area, generally give back the existing area lost to road construction, the existing knoll area of the park is heavily wooded with large mature trees and these cannot be readily replaced on the new deck over Victoria Park Road.

#### ***Impacts on Existing Highway Structures***

- 4.4.12 For both Tunnel Variations 2 and 3, the existing IEC (from Victoria Park Road to Tong Shui Road interchange outside City Garden in North Point) will need to be demolished and reconstructed as underpass and at-grade roads. The new Causeway Bay Flyover (currently under construction) and the existing Gloucester Road Flyover will also be demolished and reconstructed to suit the realigned Victoria Park Road layout.
- 4.4.13 Apart from the resulting traffic impacts due to this demolition of highway structures (as discussed above), there will be a major generation of public fill material to be disposed of and noise and air quality impacts to nearby residences during the demolition period.



- 4.4.14 In any event, the soundness of a decision to demolish existing road bridges (and especially, in the case of the Causeway Bay Flyover, where these have only recently been constructed) simply to reconstruct them 100m away, is debateable.

#### ***Demolition of Police Officers' Club***

- 4.4.15 For Tunnel Variation 2, the Trunk Road alignment will pass beneath the Police Officers' Club (POC). Conflict with the POC foundations, and the cut-and-cover form of construction for this shallow tunnel, mean that the POC will need to be demolished.

#### ***Air Quality at the Tunnel Portal***

- 4.4.16 Polluted air emissions from road tunnel portals is always a major concern, especially where there are nearby residential uses. The area of concern for all three tunnel variations is at the eastern tunnel portal at North Point, where there are existing residential buildings close to the shoreline. For Tunnel Variations 2 and 3, the Trunk Road tunnel portal will be located on the line of the existing IEC, in even closer proximity to the residential buildings than Tunnel Variation 1. In the case of Tunnel Variation 1, the portal is located to the north of the existing IEC highway structure, which will provide some shielding and buffer, and there is a greater separation between the tunnel portal and the residential units; there would therefore be a lesser degree of air quality impacts.
- 4.4.17 Although the acceptability or otherwise of the tunnel portal layout, from the environmental point of view, has yet to be determined, the potential adverse air quality impacts should be borne in mind when examining the appropriateness of these tunnel variation options.

### **4.5 Comparison of the Trunk Road Tunnel Variations**

- 4.5.1 **Table 4.1** provides a comparison between the Trunk Road Tunnel Variations 1, 2 and 3, in broad terms, in respect of key indicators: area of reclamation, impacts to existing traffic, technical highway concerns and impacts to existing highway structures, impacts to existing development, planning and land use considerations, environmental concerns, time for construction and costs.
- 4.5.2 It should be noted that the areas of reclamation given in Table 4.1 are the areas of permanent reclamation, and include a notional allowance for reprovisioning requirements (for ferry pier, salt water pumping station, cooling water pumping stations, etc) associated with each of these tunnel variation options.
- 4.5.3 It should also be noted that there will be a requirement for temporary works (including temporary reclamation) to facilitate cut-and-cover tunnel construction and for temporary traffic diversions. These temporary works will be required in the PCWA basin and in the CBTS. In the CBTS, the extent of the temporary works, for all three tunnel variations, will be such that the existing moorings will need to be relocated outside the typhoon shelter during the construction period.

**Table 4.1 Comparison of Trunk Road Tunnel Variations**

	<b>Tunnel Variation 1</b>	<b>Tunnel Variation 2</b>	<b>Tunnel Variation 3</b>
Area of permanent reclamation	15 ha	18.5 ha	16.5 ha
Impact to existing traffic	<ul style="list-style-type: none"> <li>Some disruption at new tie-in to IEC</li> </ul>	<ul style="list-style-type: none"> <li>Major disruption due to demolition of IEC and new tie-in to IEC</li> <li>Major disruption due to reconstruction of Victoria Park Road, Causeway Bay Flyover and Gloucester Road Flyover</li> <li>Major disruption at CHT approach roads due Trunk Road tunnel construction</li> </ul>	<ul style="list-style-type: none"> <li>Major disruption due to demolition of IEC and new tie-in to IEC</li> <li>Major disruption due to reconstruction of Victoria Park Road, Causeway Bay Flyover and Gloucester Road Flyover</li> </ul>
Other technical concerns (impacts to highways structures, etc.)	<ul style="list-style-type: none"> <li>Localised reconstruction of existing IEC at City Garden for merging with the Trunk Road</li> </ul>	<ul style="list-style-type: none"> <li>Reverse curves at the CHT area: undesirable for Trunk Road in tunnel</li> <li>Reconstruction of Victoria Park Road and associated connections and Causeway Bay Flyover and Gloucester Road Flyover</li> <li>Demolition of existing IEC from Victoria Park Road to City Garden</li> </ul>	<ul style="list-style-type: none"> <li>Reconstruction of Victoria Park Road and associated connections and Causeway Bay Flyover and Gloucester Road Flyover</li> <li>Demolition of existing IEC from Victoria Park Road to City Garden</li> </ul>
Impacts to existing development	Existing development not affected	POC needs to be demolished	Existing development not affected

		<b>Tunnel Variation 1</b>	<b>Tunnel Variation 2</b>	<b>Tunnel Variation 3</b>
Planning and land use concerns	Along Wan Chai shoreline	Land formed can be used for harbour-front enhancement and pedestrian access to the waterfront	Land formed can be used for harbour-front enhancement and pedestrian access to the waterfront	Land formed can be used for harbour-front enhancement and pedestrian access to the waterfront
	PCWA basin	PCWA basin can be developed into a vibrant marine recreational facility	PCWA basin can be developed into a vibrant marine recreational facility	PCWA basin can be developed into a vibrant marine recreational facility
	Northern side of Victoria Park	Victoria Park can be extended to the harbour-front via a landscaped deck over the ground level roads	Victoria Park is reconstructed with a wide landscaped deck over the ground level roads, to a widened promenade	Victoria Park is reconstructed with a wide landscaped deck over the ground level roads, to a widened promenade
	CBTS	The existing CBTS is preserved as far as possible	Filling in the corners of the CBTS can be used for additional waterfront uses	Filling in the south-east corner of the CBTS can be used for additional waterfront uses
Environmental concerns	Noise & Air	<ul style="list-style-type: none"> <li>• (Lesser) air quality concern at tunnel portal</li> <li>• Noise at tie-in to IEC (short 'new road' section)</li> </ul>	<ul style="list-style-type: none"> <li>• Air quality concern at tunnel portal</li> <li>• Noise along reconstructed IEC (long 'new road' section)</li> </ul>	<ul style="list-style-type: none"> <li>• Air quality concern at tunnel portal</li> <li>• Noise along reconstructed IEC (long 'new road' section)</li> </ul>
	Water Quality	No major operational impacts due to the scheme	No major operational impacts due to the scheme	No major operational impacts due to the scheme
	Visual	No significant visual impacts	No significant visual impacts	No significant visual impacts
Time for construction		7 years	8 years	8 years
Costs ( <i>incl WDII works &amp; CWB in WDII</i> )	Total Construction	HK\$20B	HK\$28B	HK\$25B
	Total Annual Recurrent	HK\$110M	HK\$125M	HK\$123M

- 4.5.4 As can be seen, neither Tunnel Variation 2 nor 3 perform as well as the Trunk Road Tunnel Variation 1. The major issues associated with the Tunnel Variations 2 and 3 include additional reclamation due to filling in of the corners of the CBTS, major traffic disruption, demolition of a large part of Victoria Park, demolition and then reconstruction of major highway structures, and air quality concerns at the tunnel portal area in North Point. The reclamation issue is particularly important in respect of the PHO; the Trunk Road Tunnel Variation 1 requires a lesser extent of reclamation than that associated with the Tunnel Variations 2 and 3.

#### **4.6 Trunk Road Flyover**

- 4.6.1 **Figure 4.9** shows a Trunk Road flyover option. Same as for the tunnel option, the Trunk Road starts off at the connection with CR111 in cut-and-cover tunnel, crosses over the MTR Tsuen Wan Line tunnel and continues through the HKCEC water channel and along the Wan Chai shoreline, in cut-and-cover tunnel. Alignment constraints through the HKCEC water channel, including the HKCEC atrium link bridge and ground level road access, mean that the Trunk Road will need to stay in tunnel through the HKCEC water channel, only rising up to a tunnel portal along the Wan Chai shoreline. As for the case with tunnel options, reclamation is required along this part of the shoreline for Trunk Road construction.
- 4.6.2 The road then rises up onto elevated road structure to cross over the PCWA basin, then over Kellett Island (and the CHT portal), and stays on elevated structure to the connection with the existing IEC at the eastern side of the CBTS, at a level of around +14mPD. No permanent reclamation (land formation) is required in the PCWA basin, the CBTS or along the North Point shoreline.
- 4.6.3 The flyover alignment is kept to the south of the typhoon shelter to minimise physical intrusion into the mooring areas and disruption to the marine users. For this alignment, the new elevated road must tie directly into the IEC at the location of the Hing Fat Street slip roads, with new connections to Victoria Park Road replacing the existing elevated road through the south-eastern corner of the CBTS. The same slip road connections to the local road network in Wan Chai North and in Causeway Bay are provided as for the tunnel option, and the Trunk Road maintains the same overall dual 3-lane configuration.
- 4.6.4 The net extent of reclamation along the Wan Chai shoreline, which is shown indicatively in Figure 4.9, is considered the minimum for Trunk Road tunnel and portal construction, under the flyover option.
- 4.6.5 Harbour-front enhancement is somewhat more limited for the Trunk Road flyover option, and is essentially restricted to making use of the land formation along the Wan Chai shoreline. Even here, though, the new waterfront area is partly occupied by the tunnel portal which constrains the extent of leisure area. The PCWA basin cannot be properly used as a marine recreational facility due to the highway bridge piers occupying the water area and the low headroom clearance of the flyover. In Causeway Bay, the new elevated road running along the northern side of Victoria Park and the Causeway Bay promenade makes implementation of a landscaped deck over Victoria Park Road, for an extension of Victoria Park to the waterfront, impractical.

- 4.6.6 Nevertheless, harbour-front enhancement can be combined with the functional elements of the Trunk Road to give a consolidated conceptual scheme. Similar to the case for Trunk Road tunnel variations above, **Figure 4.10** gives an indicative illustration of what the Consolidated Harbour-Front and Trunk Road Flyover scheme might look like, after some broad landscape treatment.

#### *Comparison of Tunnel and Flyover Options*

- 4.6.7 **Table 4.2** overleaf provides a comparison between the tunnel and flyover options in broad terms, in respect of key indicators: affected area of the Harbour, impacts to existing traffic, technical highway concerns and impacts to existing highway structures, planning and land use considerations, environmental concerns, time of construction, and costs. Trunk Road Tunnel Variation 1 is used as the basis of tunnel option comparison. The key issue that is of concern in respect of the PHO is the area of the Harbour that will be affected by the tunnel and flyover options. Further elaboration of this issue is given in the following paragraphs.

#### *Area of the Harbour affected by the Trunk Road Tunnel and Flyover Options*

- 4.6.8 The PHO requires the Harbour to be protected and preserved as a special public asset and a natural heritage of the Hong Kong people, and establishes a presumption against reclamation in the Harbour. Notwithstanding that there is an overriding need for reclamation for the project, it is essential to find the option that will best serve to protect and preserve the Harbour, with the minimum area of the Harbour affected by reclamation. In this regard, the area of the Harbour affected by the alternative Trunk Road tunnel and flyover options is of greater concern. The flyover structures over water will impinge upon the water area of the Harbour and their visual impacts do not promote the protection and preservation of the Harbour. Moreover, where the marine use of existing water areas is restricted due to the presence of highway structures and the like, these affected water areas may not be regarded as “protected” or “preserved” for the purposes of the PHO.
- 4.6.9 Therefore, when examining Trunk Road options, and especially when examining the flyover option, the land formation by physical reclamation is taken into account together with the water areas of the Harbour affected by flyover structures in order to come up with an option that may serve best to protect and preserve the Harbour. **Figures 4.11** and **4.12** illustrate these affected areas of the Harbour, for the tunnel and flyover options respectively. These areas, for the tunnel and flyover options, are estimated to be as follows:



Affected Area of Harbour	Tunnel Option <sup>1</sup>	Flyover Option
(a) Land formed <sup>2</sup>	15 ha	11.5 ha
(b) Flyover structures over water <sup>3</sup>	0.5 ha	3 ha
(c) Affected water area <sup>4</sup>	-	4 ha

Notes:

1 Tunnel Variation 1 is used for comparison purposes.

2 Land formed by conventional reclamation.

3 The plan area of elevated highway structures that cross over water.

4 Areas of the Harbour obstructed by Trunk Road structures, or where marine uses are restricted.

4.6.10 The areas of land formed as given above are the areas of permanent reclamation, and include a notional allowance for reprovisioning requirements (for the Wan Chai ferry pier, salt water pumping station, cooling water pumping stations, etc) associated with each of these tunnel and flyover options. These reprovisioning requirements and any associated reclamation will be firmed up when the more detailed Concept Plans are developed, along with possible smoothing out of sharp corners along the shoreline.

4.6.11 It should also be noted that there will be a requirement for temporary works (including temporary reclamation) to facilitate the Trunk Road tunnel construction and for temporary traffic diversions. These temporary works will be required in the PCWA basin and in the CBTS. In the CBTS, the extent of the temporary works, for both the tunnel and flyover options, will be such that at least some of the existing moorings will need to be relocated outside the typhoon shelter during the construction period.

4.6.12 These temporary works areas are over and above the permanent works areas (para 4.6.9 (a) and (b) above), but are not considered as “areas affecting the Harbour” when comparing the alternative options insofar as these are temporary (for the duration of the construction period) and solely for the purpose of achieving the end product (ie in order to ultimately achieve minimum reclamation). The temporary works won’t cause permanent damage to the Harbour. Only the residual areas of the permanent works are assigned to the Trunk Road options as “areas affecting the Harbour”.

**Table 4.2 Comparison of Tunnel and Flyover Options**

		<b>Tunnel Option</b>	<b>Flyover Option</b>
Affected area of the Harbour:			
(a) Land formed		15 ha	11.5 ha
(b) Flyover structures over water		0.5 ha	3 ha
(c) Affected water area		-	4 ha
Impact to existing traffic		Some disruption at new tie-in to IEC	<ul style="list-style-type: none"> <li>• Major disruption at new tie-in to IEC</li> <li>• Major disruption due to reconstruction of Victoria Park Road connections</li> </ul>
Other technical concerns (impacts to highways structures, etc)		Localised reconstruction of existing IEC at City Garden for merging with the Trunk Road	Reconstruction of existing IEC from Victoria Park Road to Victoria Centre
Planning and land use considerations	Along Wan Chai shoreline	Land formed can be used for harbour-front enhancement and pedestrian access to the waterfront	Land formed is partly occupied by the tunnel portal which constrains the extent of area for harbour-front enhancement and pedestrian access to the waterfront
	PCWA basin	PCWA basin can be developed into a vibrant marine recreational facility	Highway bridge piers and the low headroom clearance of the flyover restrict the development of the PCWA basin as a recreational facility
	Northern side of Victoria Park	Victoria Park can be extended to the harbour-front via a landscaped deck over the roads	With the flyover running along the northern side of Victoria Park, the landscaped deck over Victoria Park Road and extension of Victoria Park are impractical
	CBTS	The existing CBTS is preserved as far as possible	Part of the water area and the existing promenade will be occupied by bridge piers

		<b>Tunnel Option</b>	<b>Flyover Option</b>
Environmental concerns	Noise & Air	<ul style="list-style-type: none"> <li>Air quality concern at tunnel portal</li> <li>Noise at tie-in to IEC (short 'new road' section of IEC)</li> </ul>	Significant air and noise impacts along flyover section in Causeway Bay and reconstructed IEC at North Point ('new road')
	Water Quality	No major operational impacts due to the scheme	No major operational impacts due to the scheme
	Visual	No significant visual impacts	Significant impacts in Wan Chai and (especially) in Causeway Bay (flyover along part of Wan Chai shoreline and through CBTS)
Time for construction		7 years	6 years
Costs (including WDII works & CWB in WDII)	Total Construction	HK\$20B	HK\$11B
	Total Annual Recurrent	HK\$110M	HK\$75M

4.6.13 In most respects, it is found that the Trunk Road tunnel option (Tunnel Variation 1) performs better than the flyover option. The tunnel option:

- will result in a lesser affected area of the Harbour;
- will cause less traffic disruption during construction;
- will not require any major reconstruction of existing highway structures;
- will have more opportunities for harbour-front enhancement and providing access to the waterfront;
- will cause less extensive air and noise impacts (although air quality at the tunnel portal will need to be carefully addressed);
- will have no significant visual impacts (the flyover, on the other hand, will have significant visual impacts along the harbour-front).

4.6.14 Only in respect of time for construction and costs can the flyover option be seen as performing better than the tunnel option.

4.6.15 The key issue of concern is: "which option would serve best to protect and preserve the Harbour?" In addressing this question, the area of the Harbour that is affected by the Trunk Road options should be taken into account, including not only land formed by reclamation but also the impingement of highway structures on the existing water areas and the restricted use of water areas due to the presence of the highway structures (ie the

areas where the functionality of the Harbour is adversely affected). Add to this the visual aspects of the flyover option (viewed in terms of “preserving the Harbour”), and the Trunk Road tunnel option is clearly the option that would serve best to protect and preserve the Harbour.

#### **4.7 Trunk Road Tunnel – Engineering Proposals**

- 4.7.1 The Trunk Road Tunnel Variation 1 concept (illustrated in Figure 4.1 earlier) has been developed in more engineering detail so as to confirm its engineering feasibility. The Trunk Road tunnel layout through the WDII project area is shown in **Figure 4.13**. This scheme is considered to represent a practically feasible Trunk Road option, that meets minimum reclamation requirements.
- 4.7.2 The vertical profile of the Trunk Road tunnel scheme, including the section of the Trunk Road through CRIII, is given in **Figure 4.14**.

#### **4.8 Flexibility for Future Submerging of the IEC**

- 4.8.1 There have been suggestions from the public that the existing IEC should be submerged (to be replaced with tunnel structures) to reduce the visual impacts along the Causeway Bay and North Point shoreline. For Tunnel Variations 2 and 3, the existing IEC (from Victoria Park Road to outside City Garden in North Point) is suggested to be demolished and reconstructed as underpass and at-grade roads. However, for the Trunk Road Tunnel Variation 1, the existing IEC is retained.
- 4.8.2 The possibility of converting the existing elevated IEC into tunnel form in the future, for the Trunk Road Tunnel Variation 1, has been investigated, to ascertain whether, in the event of implementation of this Trunk Road tunnel scheme, any long term proposals for submerging the IEC, beyond the ambit of the WDII project, are not precluded. In examining the highway alignment aspects of such a variation, **Figure 4.15** shows a possible arrangement for reconstructing the existing IEC (from Victoria Park Road to outside City Garden in North Point) under the Trunk Road Tunnel Variation 1 proposal.
- 4.8.3 Comparing the Trunk Road tunnel schemes in respect of a possible future demolition and reconstruction of the IEC from North Point eastwards, from a highway alignment point of view, the Trunk Road Tunnel Variation 1 scheme will allow this opportunity and, indeed, Tunnel Variation 1 is preferred in this respect, as an extension of the Trunk Road tunnel further eastwards to replace the existing elevated IEC could be carried out with less traffic disruption than would be the case for Tunnel Variations 2 and 3.
- 4.8.4 It should be stressed, though, that the feasibility of the future submerging of the IEC will depend upon factors other than just the examination of the localised area of highway connection to the IEC, above. The feasibility of such a scheme still needs careful consideration, which will require much more detailed investigation of planning, engineering, traffic, marine and environmental impacts and issues.

## **5 HARBOUR-FRONT ENHANCEMENT**

### **5.1 The Public's Vision**

- 5.1.1 During the Envisioning Stage consultation, a number of harbour-front enhancement ideas were put forward by the public for consideration. These harbour-front enhancement ideas have been reviewed together with Trunk Road ideas, for the derivation of consolidated harbour-front and Trunk Road ideas. The consolidated ideas would then form the basis of the preparation of the Concept Plan(s) for the development and enhancement of the harbour-front of Wan Chai, Causeway Bay and the adjoining areas in the Realisation Stage of this project.
- 5.1.2 The general sentiment of the public, in respect of harbour-front enhancement and Trunk Road ideas, expressed through the Envisioning Stage consultation, includes:
- a keen desire for a high quality and vibrant waterfront with good accessibility;
  - a preference for having the Trunk Road in tunnel;
  - generally, an acceptance of the need for reclamation for shallow tunnel construction at the HKCEC and along the Wan Chai shoreline;
  - but, rather have tunnel options that do not result in reclamation in the CBTS.
- 5.1.3 In the following paragraphs, the harbour-front enhancement ideas put forward by the public are reviewed in relation to the possible Trunk Road tunnel option. Practical and reasonable opportunities for harbour-front enhancement are identified that can be incorporated in the preparation of the Concept Plan(s) in the following Realization Stage.
- 5.1.4 On the other hand, harbour-front enhancement ideas that require reclamation (or represent reclamation in respect of occupying an area of the Victoria Harbour sea), where this requirement is not provided for by necessary reclamation formed for Trunk Road construction, are not pursued at this stage. The need for reclamation for these harbour-front enhancement ideas will need to be justified in their own right under the PHO, and should therefore be pursued separately to the WDII project proposals.

### **5.2 Proposed Harbour-front Enhancement Ideas**

- 5.2.1 In view of the obvious need for enhancing the existing harbour-front of Wan Chai, Causeway Bay and adjoining areas, the emphasis in public submissions and public engagement exercises has tended to focus on the land and marine uses that would improve the quality, public amenity and accessibility of the waterfront areas.
- 5.2.2 Of the harbour-front enhancement ideas that have been received from the public at public forums and charrettes and through written submissions, during the course of the Envisioning Stage consultation process, those that are considered reasonable and worthwhile to pursue include:



- (i) making use of the land formation along the Wan Chai shoreline (required for all Trunk Road schemes) for harbour-front enhancement;
- (ii) developing the PCWA basin into a vibrant marine recreational facility;
- (iii) extending Victoria Park to the harbour-front by decking over Victoria Park Road; or possibly by moving Victoria Park Road southwards into Victoria Park, which would be reconstructed with wide landscaped deck over the roads, thereby creating more waterfront promenade space;
- (iv) preserving the existing CBTS as far as possible;  
*or (as a variation on this theme)*
- (v) limited reclamation at the two corners of the CBTS, to enhance these areas as landscaped promenade, whilst still retaining the main body of the typhoon shelter and its cultural significance;
- (vi) constructing a boardwalk along the North Point shoreline.

5.2.3 **Figure 5.1** highlights these harbour-front enhancement ideas.

5.2.4 These ideas have been examined together with Trunk Road functional requirements to determine, through a holistic approach to harbour-front and transport planning, how the harbour-front enhancement ideas can be combined with the functional needs of the Trunk Road to form a consolidated harbour-front concept.

5.2.5 A practically feasible Trunk Road tunnel option has been proposed in Section 4 above (Figure 4.13). This tunnel option is used as the basis for consolidation of the harbour-front enhancement ideas suggested through public consultation.

### 5.3 Opportunities for Harbour-front Enhancement

5.3.1 The harbour-front enhancement ideas received from the public (listed above) have been combined with the functional form of the Trunk Road tunnel to examine various opportunities for harbour-front enhancement, making use of the minimum necessary areas of reclamation together with possible shoreline treatment. The following consolidated ideas for harbour-front enhancement and public enjoyment have been identified.

5.3.2 At the connection with CRIII and the HKCEC, reclamation is required for Trunk Road tunnel construction. The area to the west of the HKCEC could be developed as a 'cultural district', with spaces for arts and cultural fairs, performance venues, and the like. This could extend to the HKCEC Extension promenade as an 'expo promenade' that would include the Golden Bauhinia Square.

5.3.3 Subject to more detailed land use planning evaluation, a landscaped deck could extend from the Hong Kong Academy of Performing Arts (HKAPA) across the ground level roads to the waterfront, linking up the existing and the new cultural and entertainment harbour-front areas.

- 5.3.4 Another landscaped deck could extend from the Arts Centre and public garden outside the Grand Hyatt Hotel, over Road P2 to the promenade at the west side of the HKCEC Extension. The possibility of linking this up with the HKCEC Atrium Link and roof garden could be examined, turning this landscaped deck into a leisure and informal exhibition area.
- 5.3.5 Along the Wan Chai shoreline, reclamation is also required for Trunk Road tunnel construction, providing opportunity for the creation of a 'green leisure zone'. A landscaped recreational promenade could be developed incorporating harbour-front cafes and the like to add vibrancy to the waterfront. The reprovisioned Wan Chai ferry pier would be located on this waterfront.
- 5.3.6 Primary accessibility is envisaged via a landscaped deck that could be constructed over the existing Wan Chai North PTI (subject to land use planning considerations), connecting the existing podium level pedestrian circulation system of Harbour Centre, Great Eagle Centre, China Resources Building, HKCEC and other hinterland development, across Hung Hing Road (which is realigned to tie in with Road P2), to the waterfront and the ferry pier.
- 5.3.7 The PCWA basin would not be reclaimed, and could be turned into a 'marine recreational zone', for public use, and with mooring facilities for visiting sailing ships providing sight-seeing opportunities for local residents and visitors alike.
- 5.3.8 There is no residual reclamation in the CBTS for this Trunk Road tunnel option, providing positive response to the suggestion of preserving the CBTS as far as possible and retaining its cultural heritage value (this area could be regarded as the CBTS 'cultural heritage zone'). Whilst some reclamation in the corners of the typhoon shelter would provide further opportunity for waterfront enhancement, such reclamation is not necessary for this Trunk Road scheme and would therefore need to be justified in its own right under the PHO; this is not pursued here.
- 5.3.9 A landscaped deck over Victoria Park Road enables Victoria Park to be extended to the harbour-front from the existing raised 'knoll' area at the north-western corner of the park; however, in view of the limited promenade area available to provide a landing for this connection at the waterfront, staircase and lift access from the deck to the promenade need to be provided.
- 5.3.10 An additional connection is proposed to link up the marine recreational zone at the PCWA basin to the CBTS cultural heritage zone, via a pedestrian bridge over the CHT portal area. A bold aesthetic design is called for, to focus attention away from the surrounding road infrastructure. This bridge will enhance the existing limited, and traffic impacted, pedestrian route from the Wan Chai shoreline to the CBTS.
- 5.3.11 Along the North Point shoreline, where reclamation is required for Trunk Road tunnel construction, another leisure zone along the new shoreline could be created. Harbour-front leisure facilities with views out across the harbour would need to be integrated with landscaping to buffer the road infrastructure behind.

- 5.3.12 A boardwalk could be extended from this North Point leisure zone, along the North Point shoreline, although possible marine access restrictions and future plans for this stretch of shoreline should be borne in mind. This idea may need to be taken up with harbour-front enhancement planning for the North Point waterfront.
- 5.3.13 **Figure 5.2** provides an illustration of the consolidated ideas for harbour-front enhancement and Trunk Road tunnel, with the incorporation of the above waterfront opportunities and some broad-brushed landscape treatment.
- 5.3.14 **Figures 5.3 to 5.5** illustrate similar consolidated harbour-front enhancement ideas for the alternative Tunnel Variations 2 and 3, and for the Trunk Road Flyover.

#### **5.4 Achieving the Public's Vision for Harbour-front Enhancement**

- 5.4.1 Feedback from the public during the Envisioning Stage consultation indicates a desire for having the Trunk Road in tunnel, with acceptance of necessary reclamation along the Wan Chai shoreline that can be used for harbour-front enhancement, and the PCWA basin is turned into a marine recreational facility, but having no (or minimal) reclamation in the CBTS which should be preserved as far as possible. Victoria Park should be extended to the harbour-front by decking over Victoria Park Road.
- 5.4.2 These harbour-front suggestions from the public have been combined with the functional form of the Trunk Road tunnel to identify consolidated ideas for harbour-front enhancement. These include:
- a cultural district to the west of the HKCEC, for arts and cultural fairs, performance venues, and an expo promenade;
  - a green leisure zone along the Wan Chai shoreline, with landscaped recreational promenade;
  - a marine recreational zone at the PCWA basin, for public use;
  - a cultural heritage zone at the CBTS, preserving the existing typhoon shelter, and with a landscaped deck providing an extension of Victoria Park to the waterfront;
  - another leisure zone along the North Point shoreline, with a possible boardwalk extension along the North Point shoreline.
- 5.4.3 These practical and reasonable ideas for harbour-front enhancement can be further developed and incorporated in the preparation of the more detailed Concept Plan(s) for the project.

## **6 EFFECTS OF GROUND LEVEL HIGHWAY INFRASTRUCTURE**

### **6.1 Introduction**

- 6.1.1 In the previous section, harbour-front enhancement ideas were examined together with Trunk Road functional requirements to determine, through holistic consideration of harbour-front and transport planning, how the harbour-front enhancement ideas can be combined with the functional needs of the Trunk Road for the derivation of consolidated harbour-front and Trunk Road ideas.
- 6.1.2 Associated with the Trunk Road are various essential elements of highway infrastructure at ground level, such as tunnel ventilation and administration buildings, the Road P2 ground level road, slip road connections from the Trunk Road to the local road network in the Wan Chai North area, and a slip road connection to Trunk Road in the Causeway Bay area, which ensure functionality and adequate connectivity of the Trunk Road and the local road network.
- 6.1.3 This highway infrastructure and ground level road connections have been incorporated in the determination of consolidated ideas for harbour-front enhancement. Nevertheless, in view of the emphasis of the HER on harbour-front enhancement and improved accessibility, concerns have been expressed that, this ground level highway infrastructure, in particular the slip roads as they rise up from the Trunk Road tunnel to ground level roads, may compromise the HEC's harbour planning principles by taking up valuable waterfront land use space and affecting pedestrian accessibility.
- 6.1.4 This section examines the impacts of these roads on the harbour-front planning intentions, to determine whether the HEC's harbour planning principles would be compromised by the presence of these roads.

### **6.2 Tunnel Ventilation Buildings, Road P2 and Slip Road Connections**

- 6.2.1 Provision of essential transport infrastructure is a key element of the WDII project. The need for the Trunk Road has been demonstrated in a district traffic study to relieve the existing east-west corridor (Connaught Road Central / Harcourt Road / Gloucester Road) which is already operating beyond its capacity.
- 6.2.2 The district traffic study also confirmed that, in addition to the Trunk Road, a complementary ground level road system comprising an east-west Road P2 and 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.
- 6.2.3 The need for Road P2 and the slip roads has also been confirmed by the Expert Panel, who recognise the need for Road P2 as an important *ad interim* measure in addressing traffic congestion in the Central reclamation area, and who further support the provision of slip roads at the HKCEC area and at the Victoria Park Road / Gloucester Road / Hing Fat Street passageway to magnify the benefits of the Trunk Road.

- 6.2.4 With the Trunk Road proposed in tunnel over most of its length, tunnel ventilation is an important element in the design and operation of the Trunk Road. Mechanical ventilation systems are required, with clean air being pumped into the tunnel and polluted air being extracted through ventilation buildings. Operation of the tunnel systems also requires a substantial administrative function, which requires administration and operative rooms in an administration building. Planning for the Trunk Road must include these infrastructural facilities.

### ***Tunnel Ventilation Buildings***

- 6.2.5 The ventilation system for the Trunk Road tunnel requires the construction of three buildings: the West Ventilation Building, located at the west portal in CRIII; the Central Ventilation Building, located near the central portion of the Trunk Road tunnel; and the East Ventilation and Administration Building, located at the east portal at the eastern end of WDII.
- 6.2.6 Ventilation systems requirements have been examined for the new longer Trunk Road tunnel than was originally proposed, and the land requirements for these ventilation and administration buildings reviewed for the upgraded ventilation systems. For the tunnel ventilation of the new Trunk Road tunnel, the West Ventilation Building will continue to occupy the same footprint as the original proposal (although the building height may need to be increased by one floor). The Central Ventilation Building will be a two-storey building that will occupy an area of approximately 0.1ha. This will be located in the highway amenity area in between ground level roads (Road P2 and Slip Road 3), away from the waterfront area and just to the west of the HKCEC, as highlighted in **Figure 6.1**. The East Ventilation Building, which is combined with the Administration Building, will be a three-storey building that will occupy an area of approximately 0.3ha. This building will be located over the footprint of the tunnel structure as to rises to the east portal on the North Point shoreline, as highlighted in **Figure 6.2**.
- 6.2.7 The ventilation building locations have been chosen such that they can provide for the essential engineering ventilation requirements, without which the Trunk Road tunnel cannot operate, and to minimise as far as possible the impacts on the harbourfront, by locating these facilities within road amenity areas or over the tunnel structures at the portal, where waterfront activities would be limited in any event.

### ***Road P2***

- 6.2.8 The major element of the future ground level road system is Road P2, which runs east-west from CRI to connections with the existing road network in Wan Chai North. Road P2 is a dual 2-lane primary distributor that serves both local east-west movements and the distribution of north-south traffic movements.
- 6.2.9 In the Central area, Road P2 will relieve the already intolerable traffic congestion at Man Po Street, Man Yiu Street, Man Cheung Street and Connaught Place, by drawing traffic away from the Connaught Road Central bottleneck. If this congestion continues to worsen, it will seriously affect the operations of Exchange Square, Hong Kong Airport Express / Tung Chung Line MTR Station, One and Two International Finance Centres,



hotel developments, ferry piers and other commercial developments in the area. The gridlock will in turn cause traffic blockages in other roads feeding into the area, including Pedder Street and Queen's Road Central.

- 6.2.10 Moving eastwards, Road P2 also serves to provide access to the existing and new development areas through CRIII and WDII, drawing local traffic away from the Connaught Road Central / Harcourt Road / Gloucester Road corridor. Road P2 enables eastbound connection from the CRI and CRIII areas to the Trunk Road and (extending along Hung Hing Road and Victoria Park Road) to Causeway Bay.
- 6.2.11 Deteriorating north-south traffic conditions (between the Admiralty and Wan Chai hinterland areas and the northshore and east-west corridor) are due to the current distribution of this traffic along Harcourt Road / Gloucester Road, where major weaving and merging movements on this congested corridor cause delays, and short north-south connecting roads to the northshore area with closely spaced and congested junctions (eg Fleming Road, where blockages at the junctions with Hung Hing Road and Harbour Road causes tailbacks all the way back to Hennessy Road). Road P2 will provide an alternative distribution routeing for the north-south traffic, and the new junctions with the north-south connecting roads along Road P2, with their improved capacity, will relieve the current congestion problems on these roads.
- 6.2.12 The Road P2 alignment has been planned to run over the top of the Trunk Road tunnel through CRIII and the HKCEC water channel, to the connection with Fleming Road, in order to minimise the overall road "footprint" and the area of land sterilised by highway infrastructure. The area occupied by Road P2 within the WDII project area, albeit within the footprint of the Trunk Road tunnel, is around 1.1ha.
- 6.2.13 The new junction with Fleming Road / Hung Hing Road will improve traffic conditions along Fleming Road, by moving critical bottleneck junctions (Fleming Road / Hung Hing Road and Fleming Road / Harbour Road) further apart to overcome the current congestion caused by tailbacks along Fleming Road through Harbour Road. **Figure 6.1** highlights the Road P2 layout in the WDII project area.
- 6.2.14 Along the Wan Chai shoreline, the existing Hung Hing Road in front of the Wan Chai North PTI is realigned to connect with the new Road P2 / Fleming Road junction, but the current Hung Hing Road alignment in front of the Wan Chai Sports Ground is retained. This slight realignment of Hung Hing Road provides additional space at the PTI to relocate the existing bus terminus at Expo Drive East, thus freeing up the area adjacent to the Golden Bauhinia Square for waterfront promenade, while the retention further east of the existing Hung Hing Road alignment means that there is no intrusion by new roads into the new Wan Chai waterfront area.

### ***Slip Roads 1, 2 and 3***

- 6.2.15 The slip road connections in Wan Chai North are also indicated in **Figure 6.1**. Three slip road connections are proposed, to tie into the ground level road layout:

- Slip Road 1, for traffic from Central and the western districts of Hong Kong Island to exit the eastbound Trunk Road tunnel, going to Wan Chai. This slip road also allows traffic connection from the Trunk Road eastbound to Causeway Bay and Tin Hau, as no direct slip road connection from the Trunk Road is provided in Causeway Bay for this movement.

If this slip road is not built, the traffic would have to use Gloucester Road eastbound and Queensway. Overloaded traffic conditions would occur in particular along Gloucester Road eastbound along the section between Fenwick Street and Fleming Road.

- Slip Road 2, for traffic from the Admiralty and Wan Chai areas to enter the eastbound Trunk Road tunnel, going to the IEC and then North Point and the eastern districts of Hong Kong Island.

If this slip road is not built, the traffic would have to use Gloucester Road eastbound and Hung Hing Road. As a result, both these roads would be congested, in particular Gloucester Road along the section between Fleming Road and Tonnochy Road.

- Slip Road 3, 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 and beyond to the Wan Chai hinterland and Admiralty.

If this slip road is not built, the traffic would have to use Victoria Park Road westbound, Gloucester Road westbound and inner Gloucester Road. This diverted traffic would overload Victoria Park Road westbound as well as inner Gloucester Road, with little change from today's congested conditions. In addition, diverted traffic would use Tonnochy Road Flyover to access Wan Chai North, with traffic flow on Harbour Road increasing as a result and the junctions with Fenwick Pier Street and Fleming Road overloaded.

6.2.16 These Wan Chai North slip roads (Slip Roads 1, 2 and 3) provide essential connectivity between the Trunk Road and the local road network, by drawing traffic away from the overloaded sections of Connaught Road Central / Harcourt Road / Gloucester Road. If access to the Trunk Road is not available, it cannot be properly utilised. The demand for a bypass comes not just from traffic from the western side of Hong Kong Island to the eastern side of the Island; traffic to/from intermediate areas such as Admiralty, Wan Chai and Causeway Bay also contribute to the congestion in this area. Restricting access to the Trunk Road for this traffic will undermine its purpose in relieving traffic congestion on the overloaded east-west corridor.

6.2.17 The need for an accessible Trunk Road is supported by traffic studies that indicate a high level of demand for the Wan Chai North slip road access onto and off the Trunk Road. Traffic forecasts indicate a peak hour traffic demand for the three slip roads as high as the flows on some sections of Gloucester Road today. Without access to the Trunk Road, this traffic will remain on the Connaught Road Central / Harcourt Road / Gloucester Road corridor.

### ***Slip Road 8***

- 6.2.18 The slip road connection in Causeway Bay is indicated in **Figure 6.2**, which also shows the proposed landscaped deck over Victoria Park Road, based on the consolidated ideas for harbour-front enhancement and Trunk Road tunnel (as described in Section 5 and illustrated in Figure 5.2). In order to avoid intrusion into the typhoon shelter, and associated reclamation, the slip road is proposed as a tunnel running along the northern boundary of Victoria Park.
- 6.2.19 Slip Road 8 is proposed 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. The only other access to the eastern end of the Trunk Road is via the IEC, with the closest connection to the local road network being at Tong Shui Road, in North Point. Traffic from the Causeway Bay, Tai Hang, Fortress Hill and Tin Hau areas therefore needs Slip Road 8 to access the Trunk Road, otherwise all traffic from these areas going to Central would have to continue using Gloucester Road / Harcourt Road / Connaught Road Central.
- 6.2.20 The need for an accessible Trunk Road is supported by traffic studies that indicate a high level of demand for this slip road. The addition of Slip Road 8 to the road network not only allows traffic from the Causeway Bay and Tin Hau areas going to the Central and Western districts to bypass the congested Gloucester Road, it also results in an overall reduction of traffic on the Gloucester Road westbound corridor. The relief provided to the existing roads in Causeway Bay, in particular, will be significant: reduced traffic along Gloucester Road, especially in the section outside Excelsior Hotel / Sino Plaza, will largely resolve the current congestion problems in this area and on local roads feeding into this area. Without Slip Road 8, the section of Gloucester Road outside the Excelsior Hotel will continue to operate over capacity, as will roads feeding into this area, such as Gloucester Road Flyover. The current congested situation in this area will continue, even with the Trunk Road itself in place.

## **6.3 The Effects of Slip Roads 1, 2 and 3 on Harbour Planning**

- 6.3.1 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 (refer to section 1.2). 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.
- 6.3.2 **Figure 6.3** 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 (subject to further land use planning assessment) to the waterfront at the western end of WDII and linking to the CRIII waterfront;

- via a landscaped deck over Road P2 from the Arts Centre and public garden outside the Grand Hyatt Hotel, to the promenade at the west side 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 PTI (subject to land use considerations) and over Road P2 to the Wan Chai waterfront and ferry pier;
- via a proposed footbridge over Road P2 connecting the existing Wan Chai Training Pool podium to the Wan Chai leisure waterfront;
- via a proposed footbridge along Wan Shing Street and over Hung Hing Road, that can link up with existing footbridges back into Causeway Bay.

6.3.3 These grade separated connections can be supplemented by at-grade pedestrian connections at the signalised junction of Road P2 / Fleming Road.

6.3.4 As can be seen from Figure 6.3, 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.

6.3.5 **Figure 6.4** 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.

6.3.6 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.

6.3.7 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 highway amenity areas, not waterfront activity areas. The area occupied by the ground level slip roads is not significant, in total only around 0.65ha. 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.

6.3.8 On the other hand, the inclusion of the slip roads will improve vehicle access to Wan Chai North and the future waterfront, but without forming barriers to pedestrian access to the waterfront.

## 6.4 The Effects of Slip Road 8 on Harbour Planning

6.4.1 As for the case with Slip Roads 1, 2 and 3, there is a concern that the slip road in Causeway Bay may compromise HEC's harbour planning principles, by sterilising 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.

- 6.4.2 **Figure 6.5** illustrates the accessibility potential of the consolidated ideas for the Causeway Bay area (incorporating the Trunk Road tunnel base idea). In addition to a continuous east-west waterfront promenade, the major north-south linkage is provided via the landscaped deck that creates an extension of Victoria Park to the Causeway Bay waterfront.
- 6.4.3 This grade separated connection would be supplemented by at-grade pedestrian connections at the signalised junctions at Victoria Park Road / Hing Fat Street, providing access from the Tin Hau area.
- 6.4.4 As can be seen from Figure 6.5, 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 the waterfront area and the presence of the slip road does not affect harbour-front accessibility.
- 6.4.5 **Figure 6.6** 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 primary activity routes in this area are highlighted, being the main pedestrian flow paths along the waterfront and back into Victoria Park.
- 6.4.6 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 routes (or pedestrian flow paths). Although there is a small loss of park space (around 0.2ha) along the northern boundary of Victoria Park, there would therefore be no major gain in harbour-front planning terms, if the slip road were to be omitted.

## **6.5 Summary of Ground Level Highway Infrastructure Impacts**

- 6.5.1 Trunk Road tunnel ventilation requires the provision, within the WDII project area, of a Central Ventilation Building and an East Ventilation and Administration building. These buildings, which house essential infrastructure without which the tunnel cannot operate, are located within road amenity areas or over the footprint of the Trunk Road tunnel structure in less sensitive waterfront promenade areas. These facilities will not compromise harbour-front accessibility or planning.
- 6.5.2 Road P2 is an essential element of the new road network, serving local east-west traffic movements and the distribution of north-south movements. Road P2 is planned to run within the footprint of the Trunk Road, to minimise the area sterilised by highway infrastructure. The road does not impinge upon the new waterfront promenade area, and pedestrian connections over the top of Road P2 ensure that the road does not compromise harbour-front accessibility.
- 6.5.3 Three slip road connections (Slip Roads 1, 2 and 3) to the Trunk Road are proposed in Wan Chai North, for traffic from Central and western Hong Kong Island, and for traffic from the IEC and eastern Hong Kong Island, to/from Wan Chai and surrounding areas. The slip roads enable traffic to be diverted away from the Connaught Road Central / Harcourt Road / Gloucester Road corridor and ensure that the Trunk Road is properly



and effectively utilised. These slip roads tie into a ground level road layout, of which Road P2 is the major component.

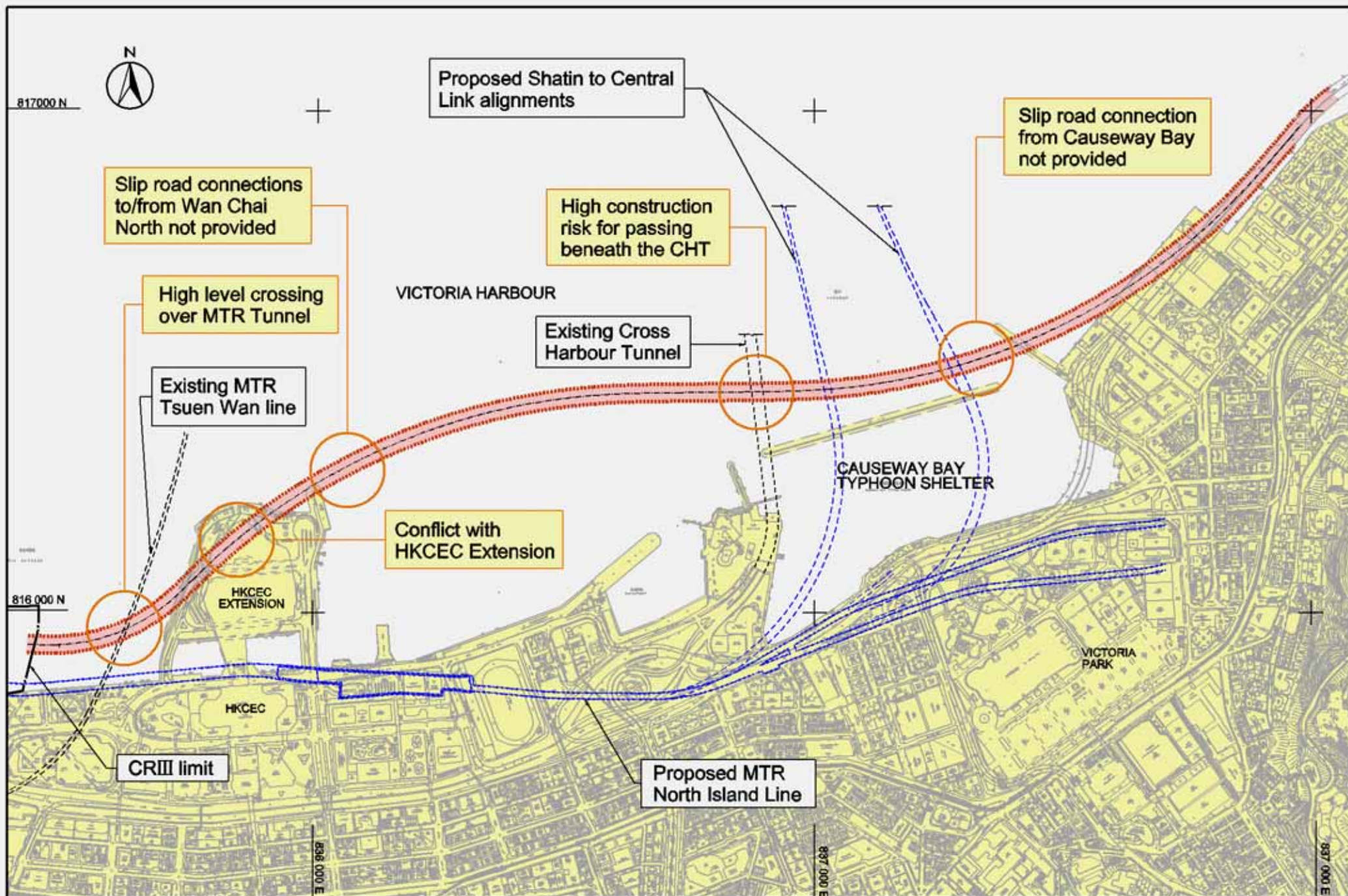
- 6.5.4 A slip road connection (Slip Road 8) to the Trunk Road is also proposed in Causeway Bay, taking traffic from the Causeway Bay, Tai Hang, Fortress Hill and Tin Hau areas to Central and the western districts of Hong Kong Island.
- 6.5.5 The effects of these slip roads on harbour-front accessibility 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 vehicular access to Wan Chai North, Causeway Bay and the waterfront area.



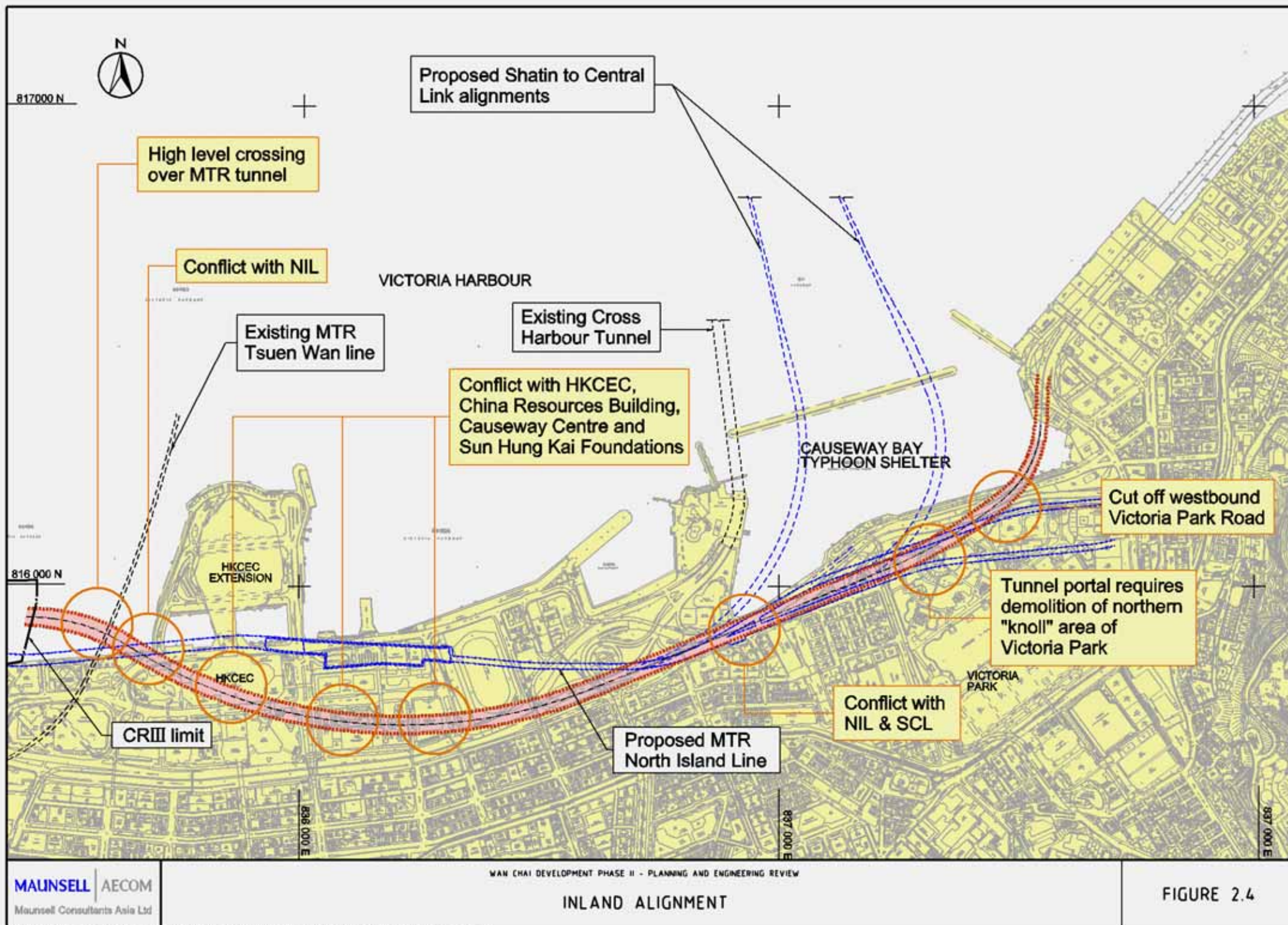




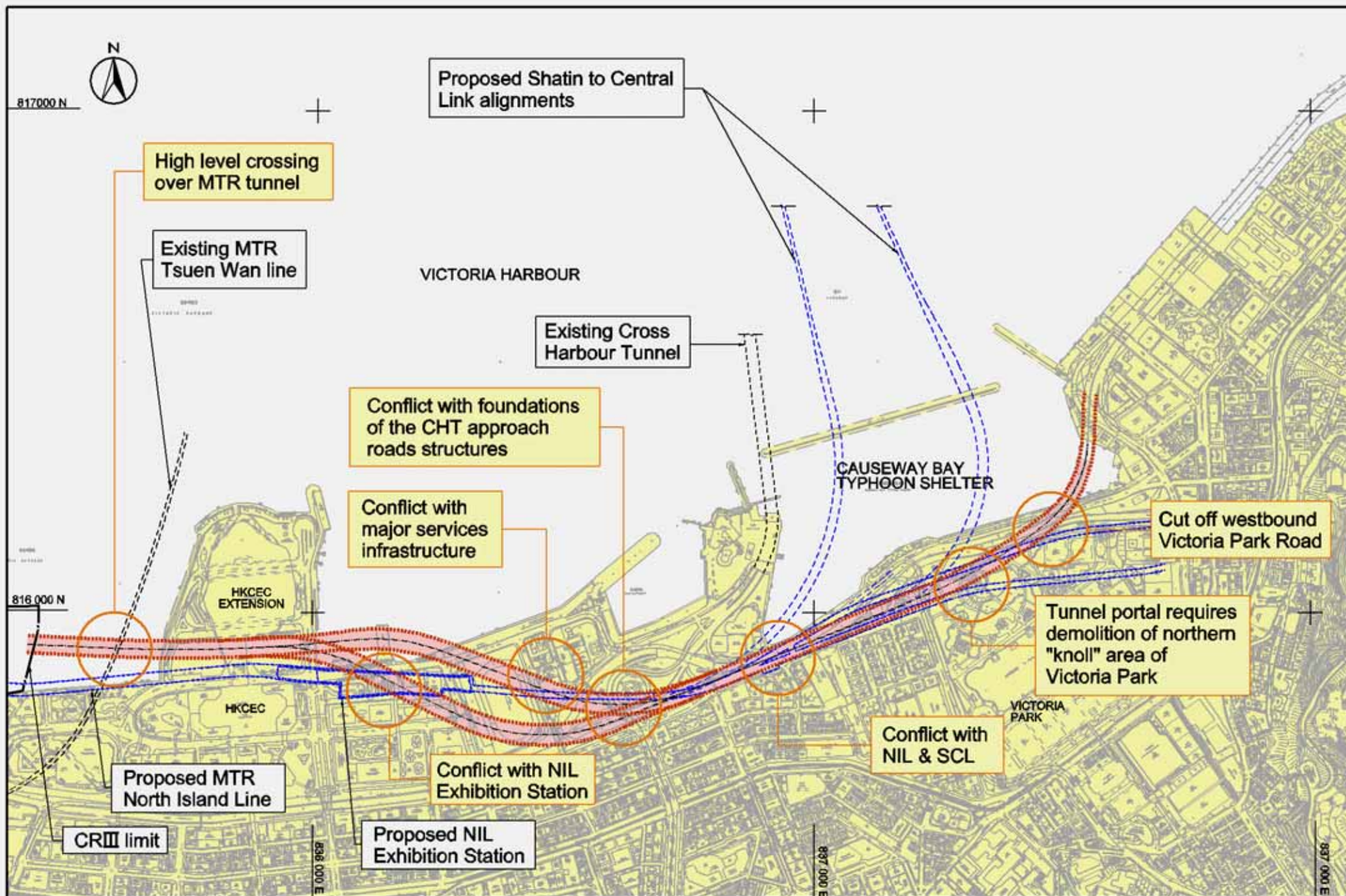




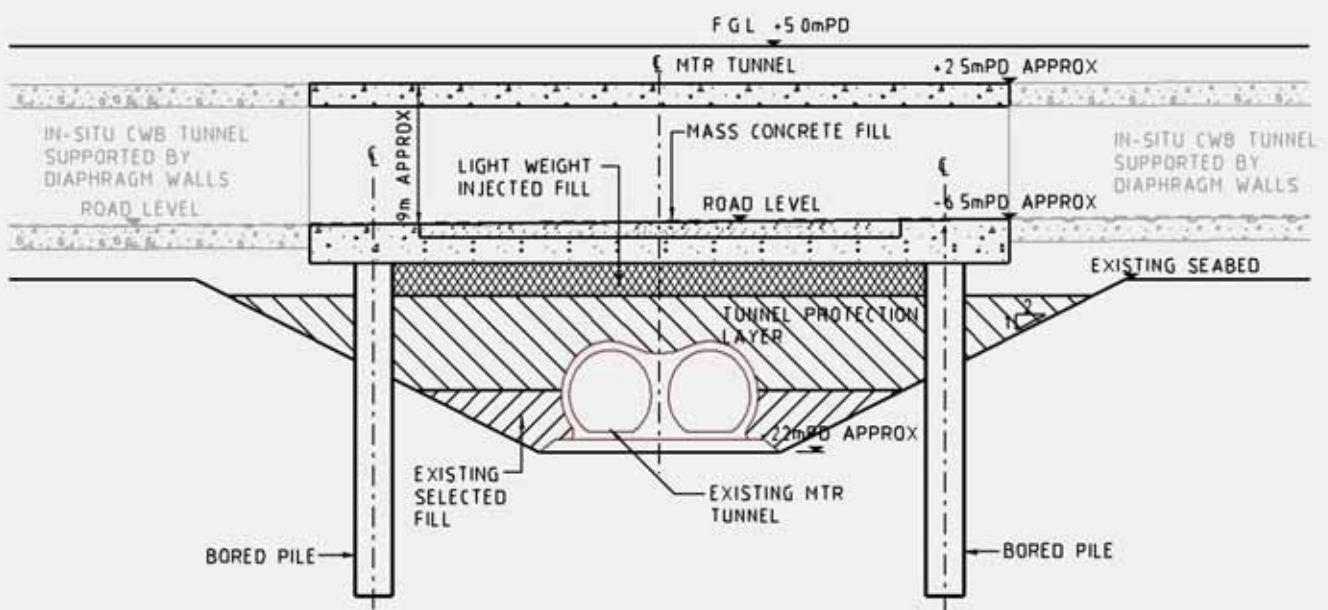
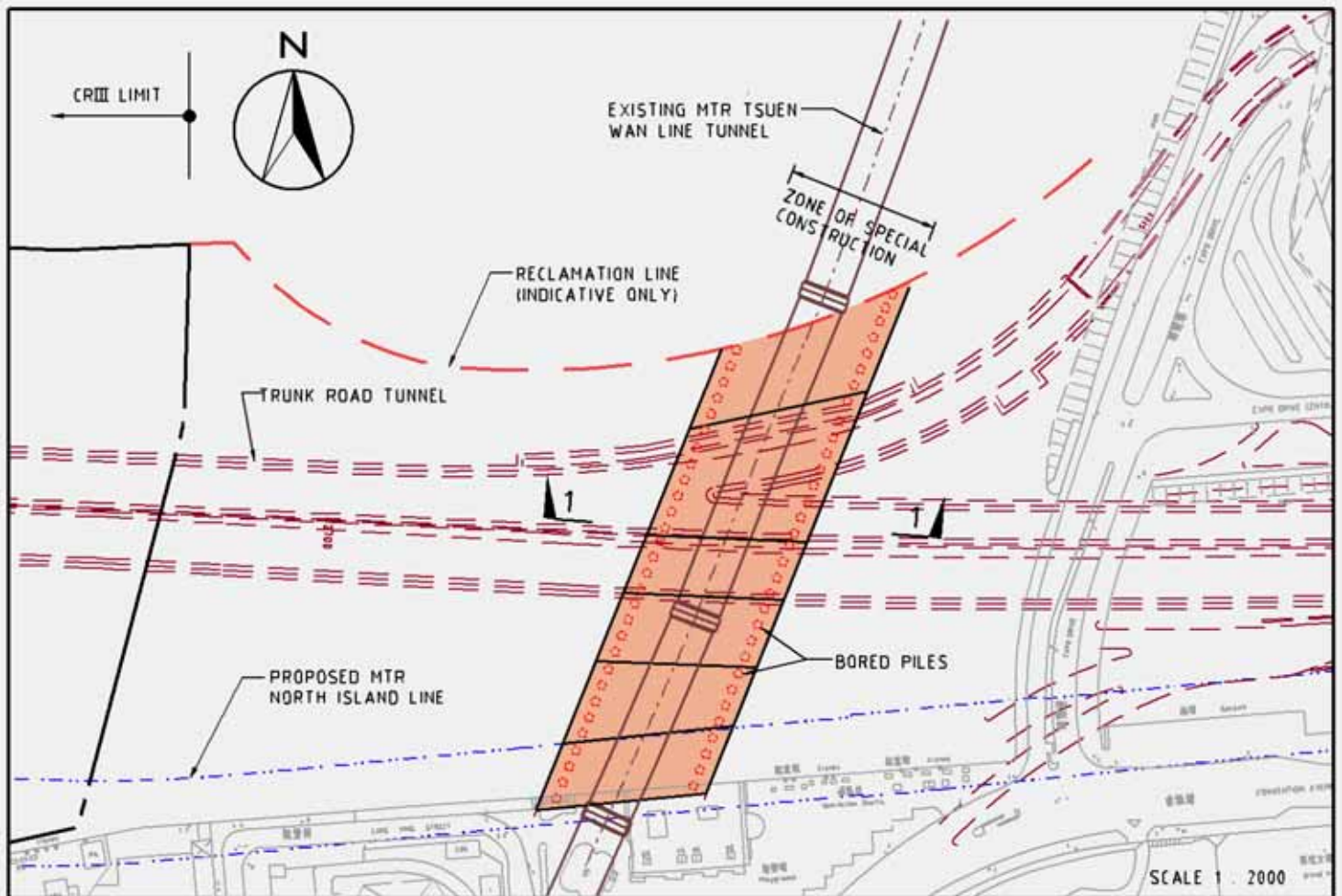




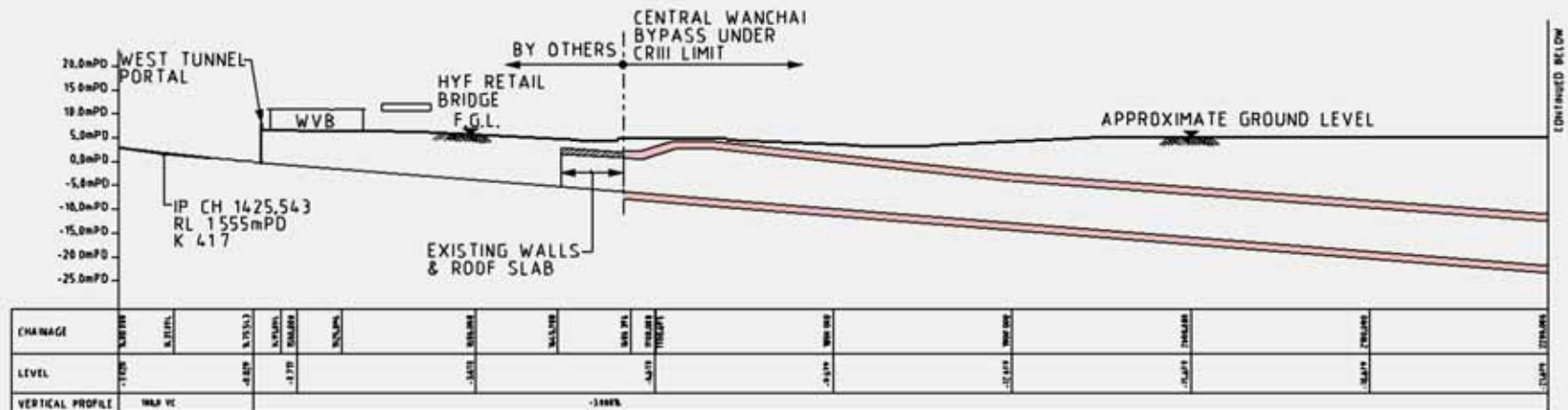






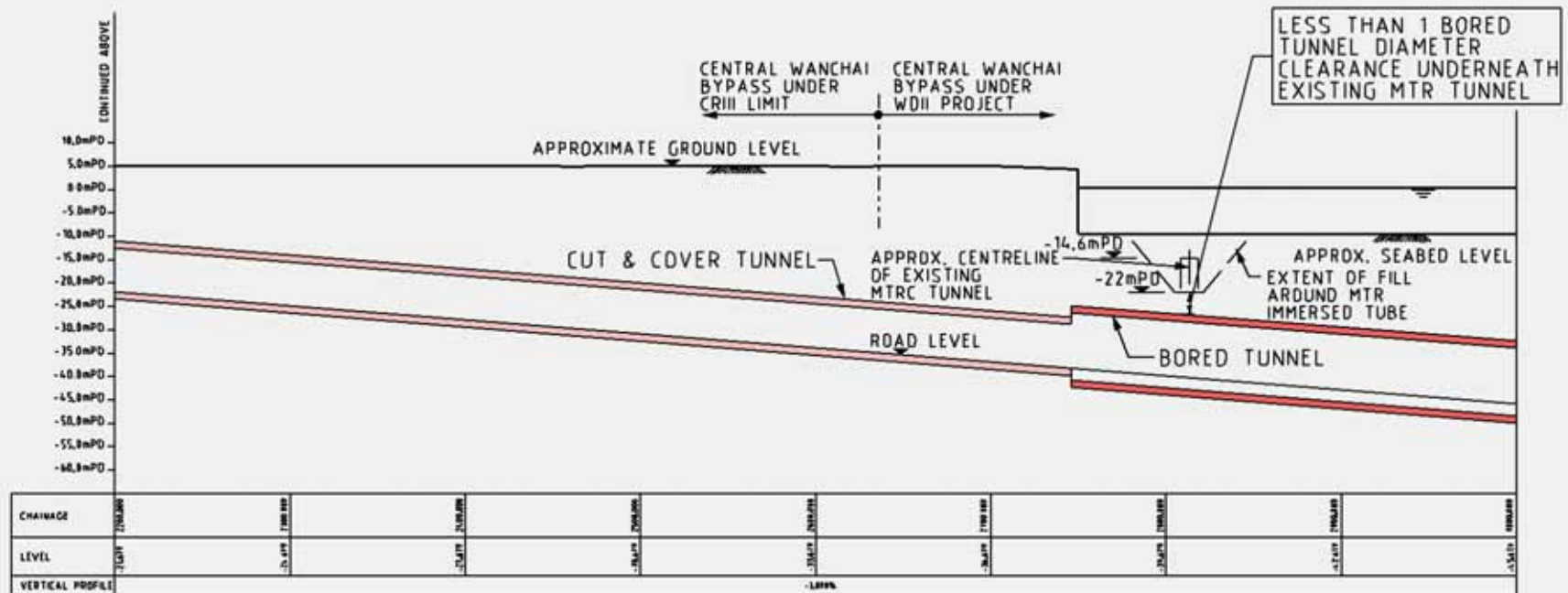


SECTION 1-1  
(ILLUSTRATIVE SECTION OVER MTR TSUEN WAN LINE)



### VERTICAL PROFILE

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VERT. SCALE 1:1500

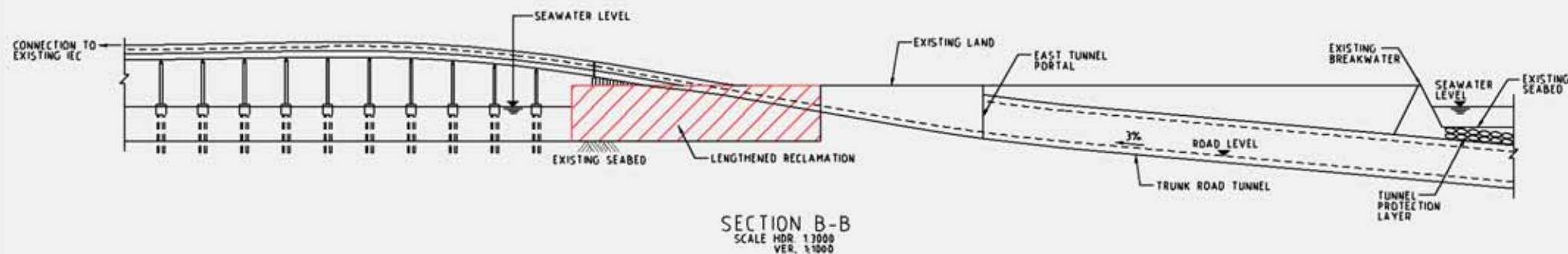
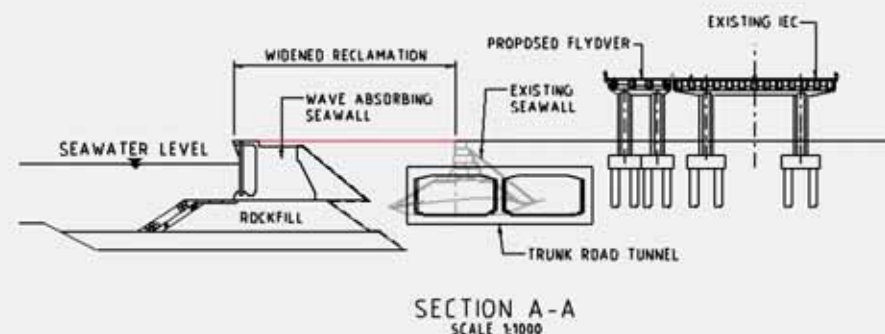
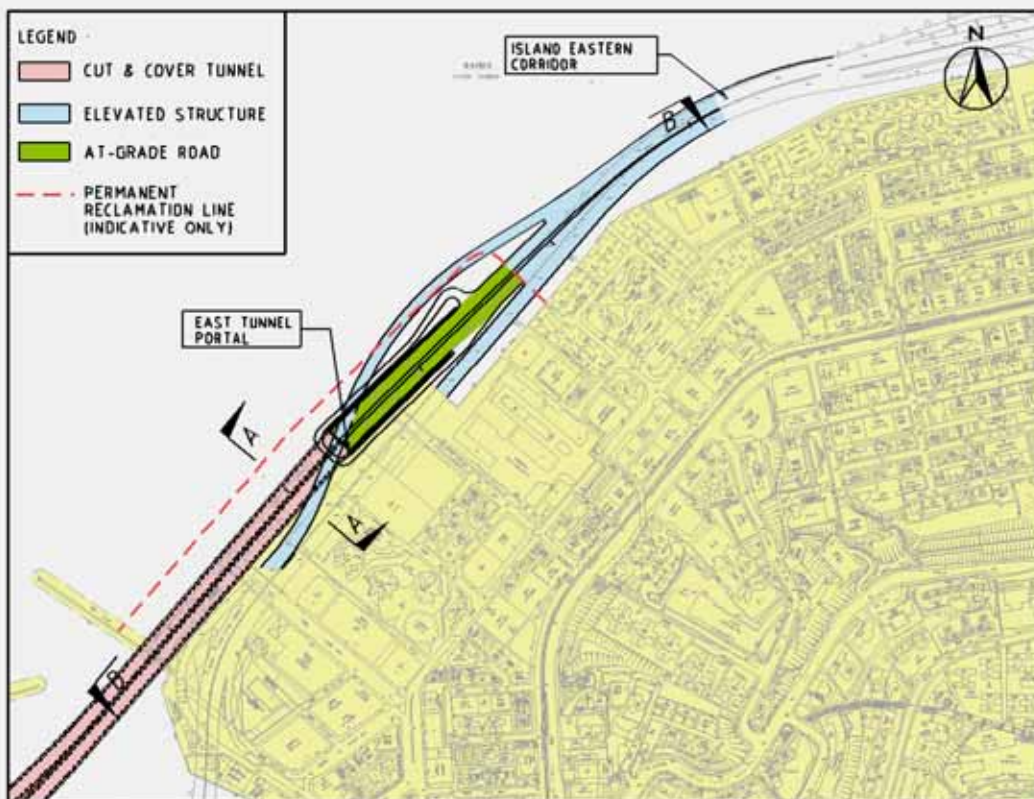


### VERTICAL PROFILE

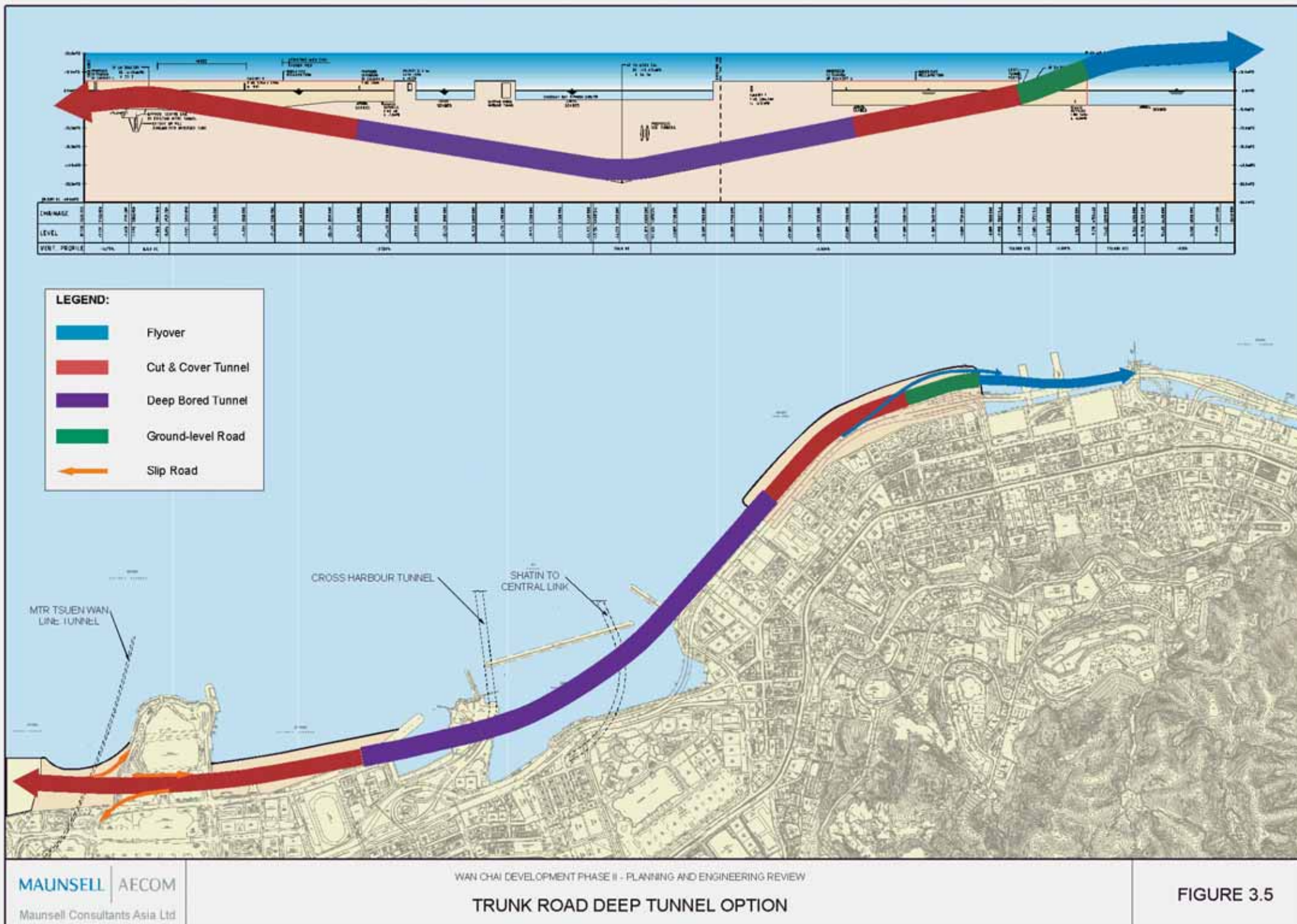
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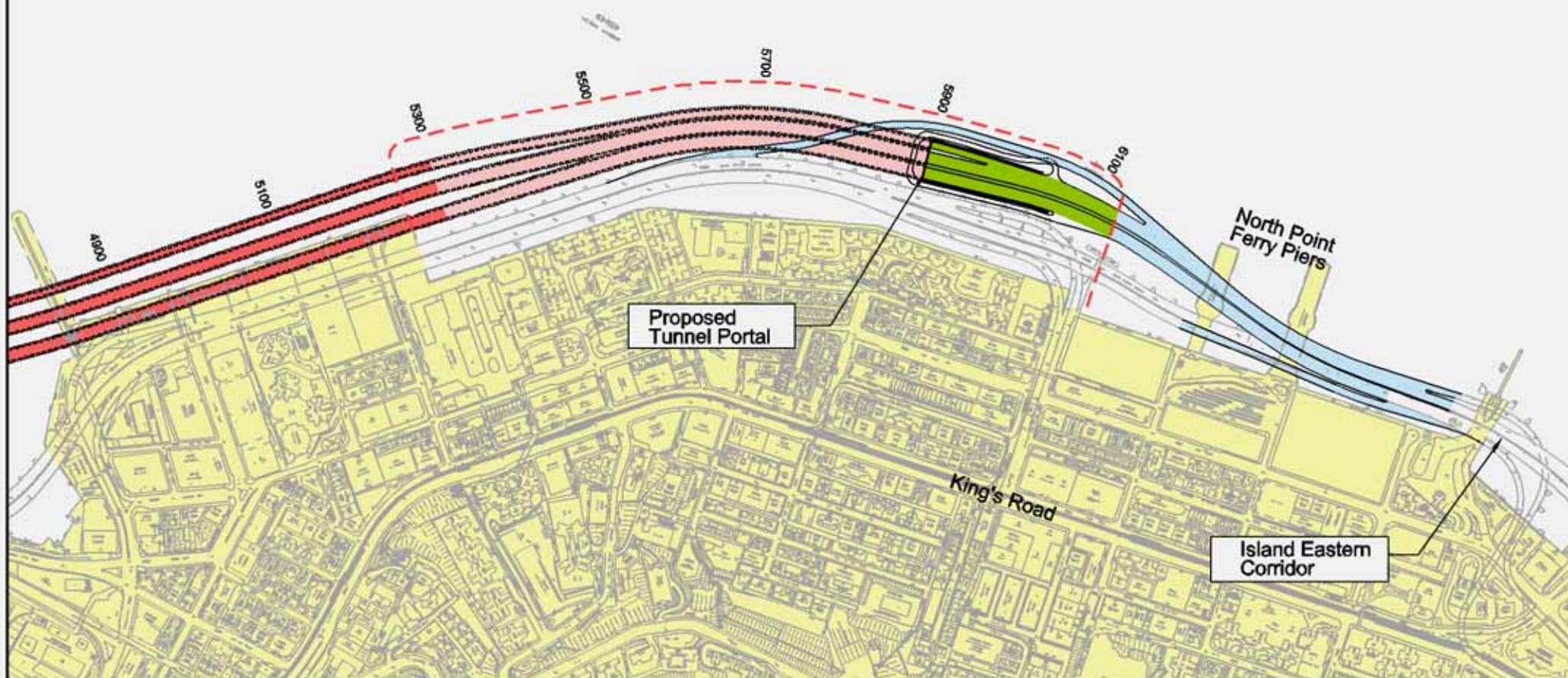






Legend :

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

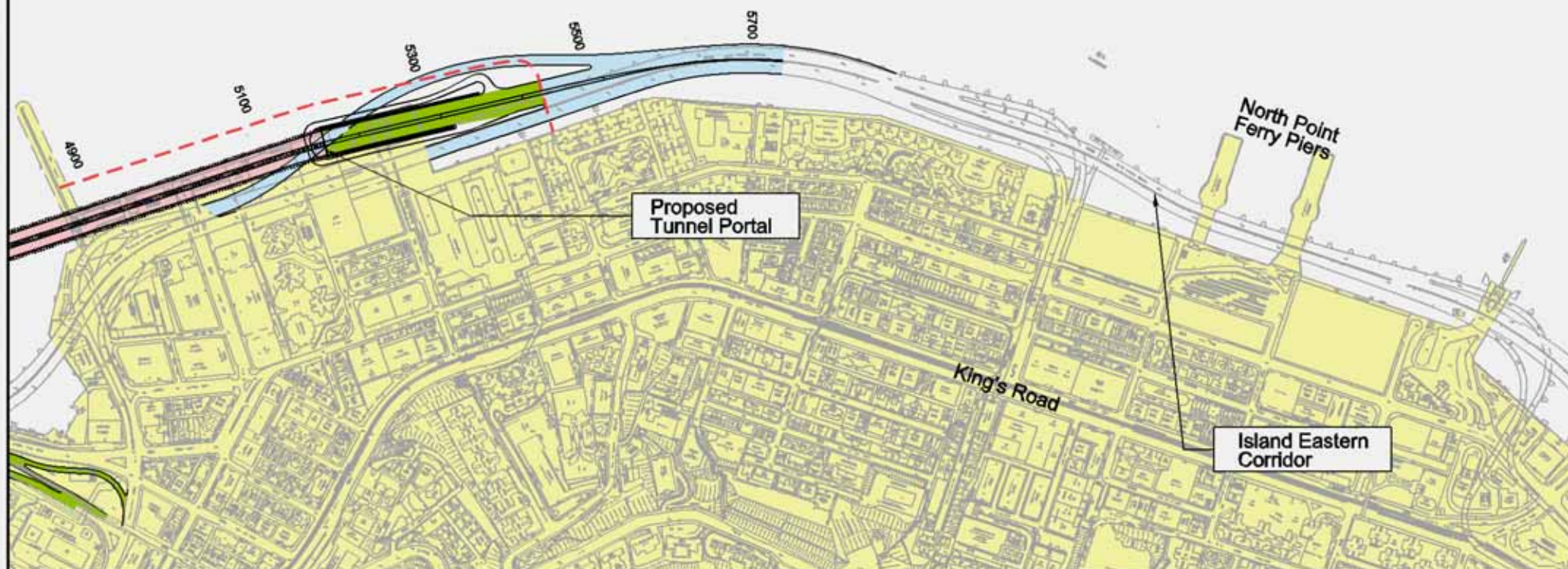


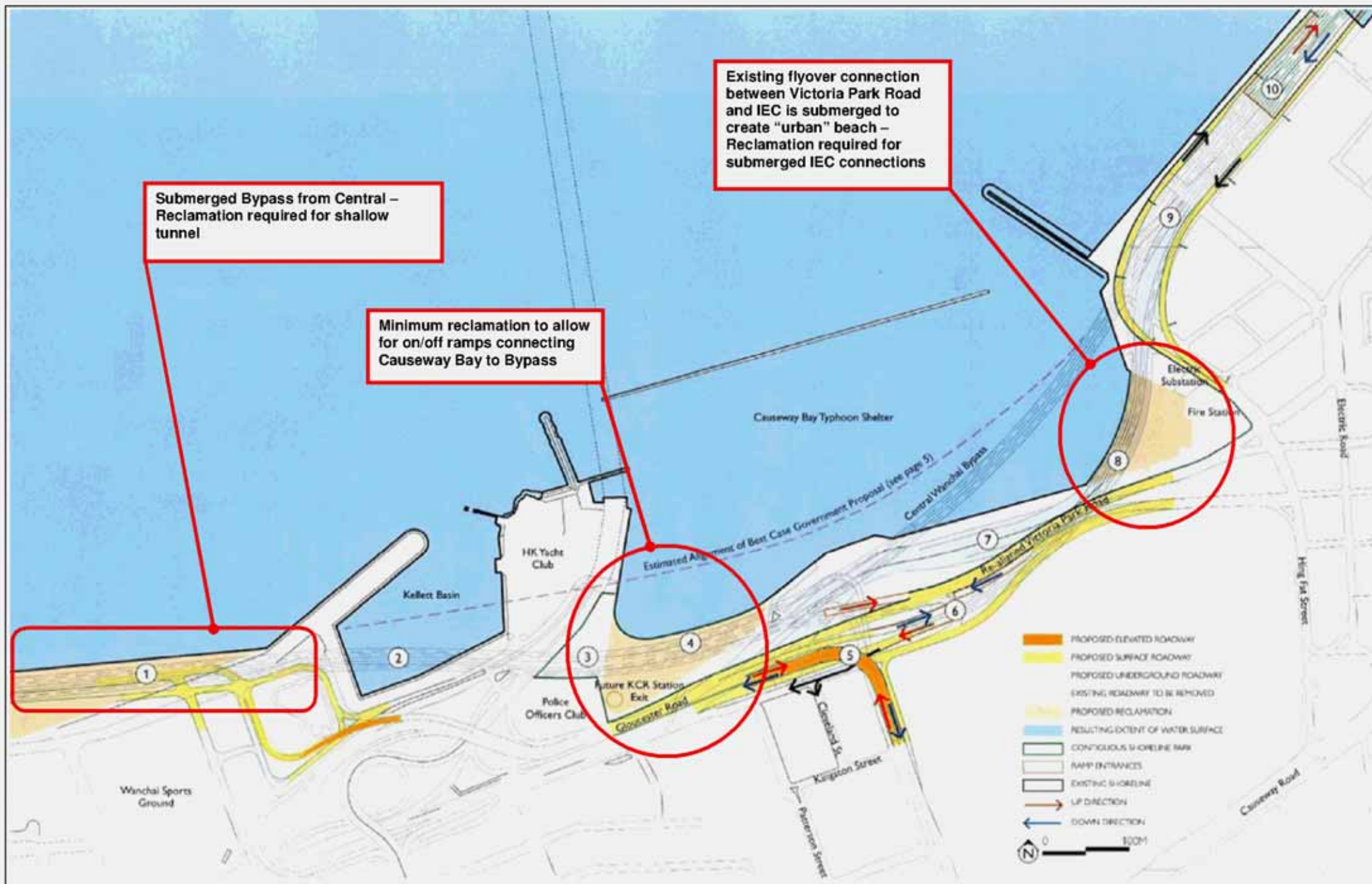




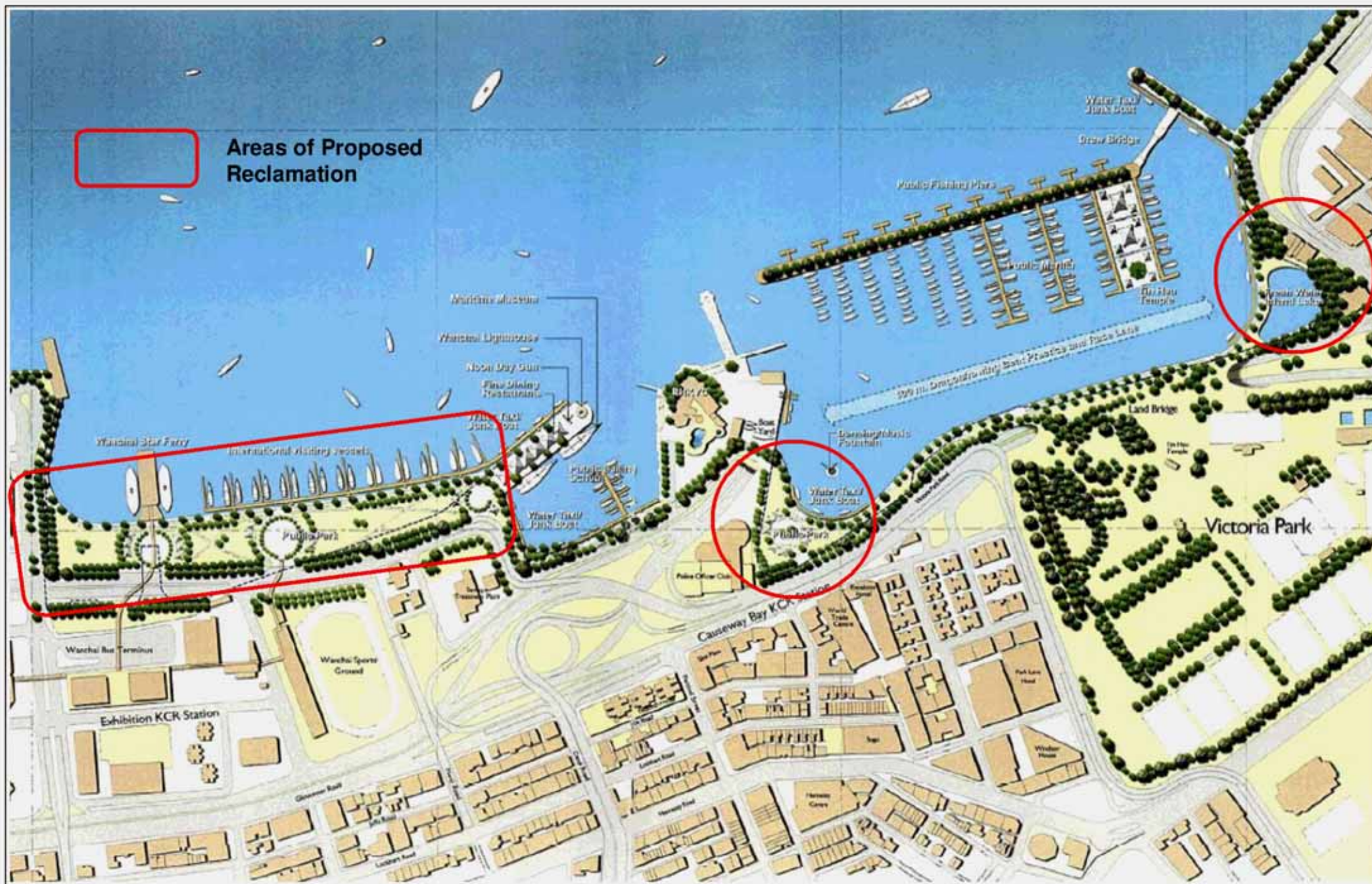
**Legend :**

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

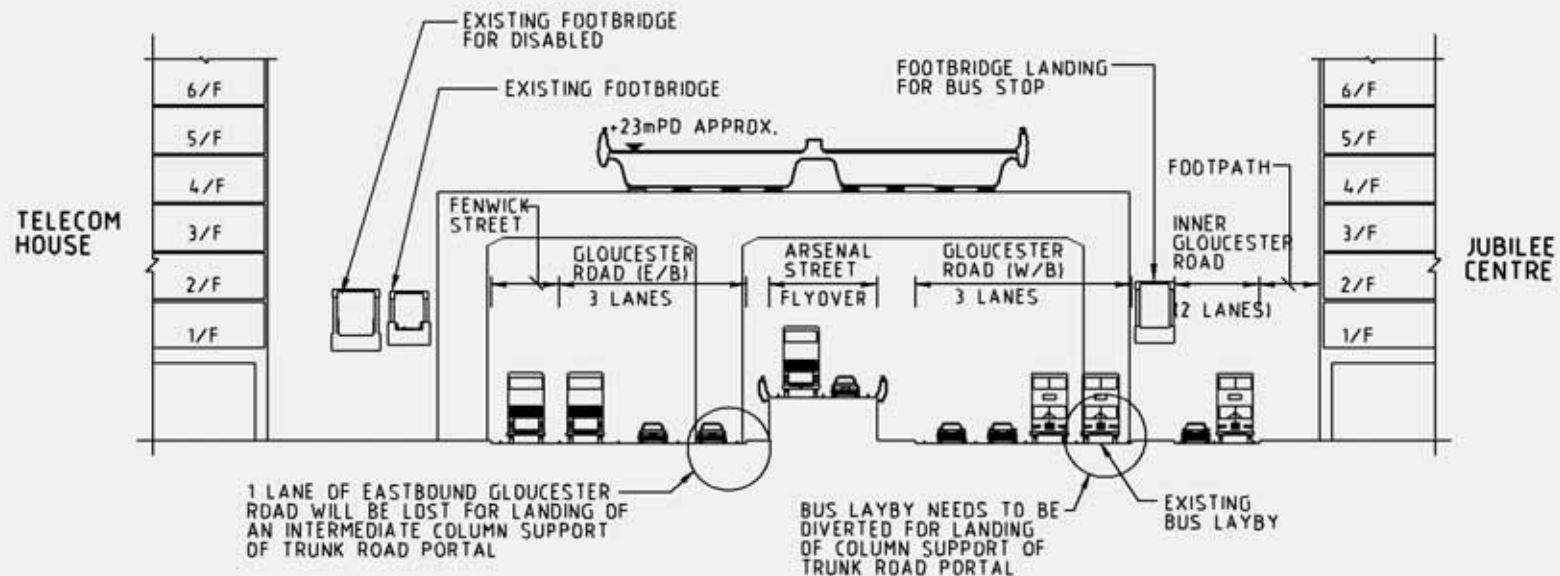




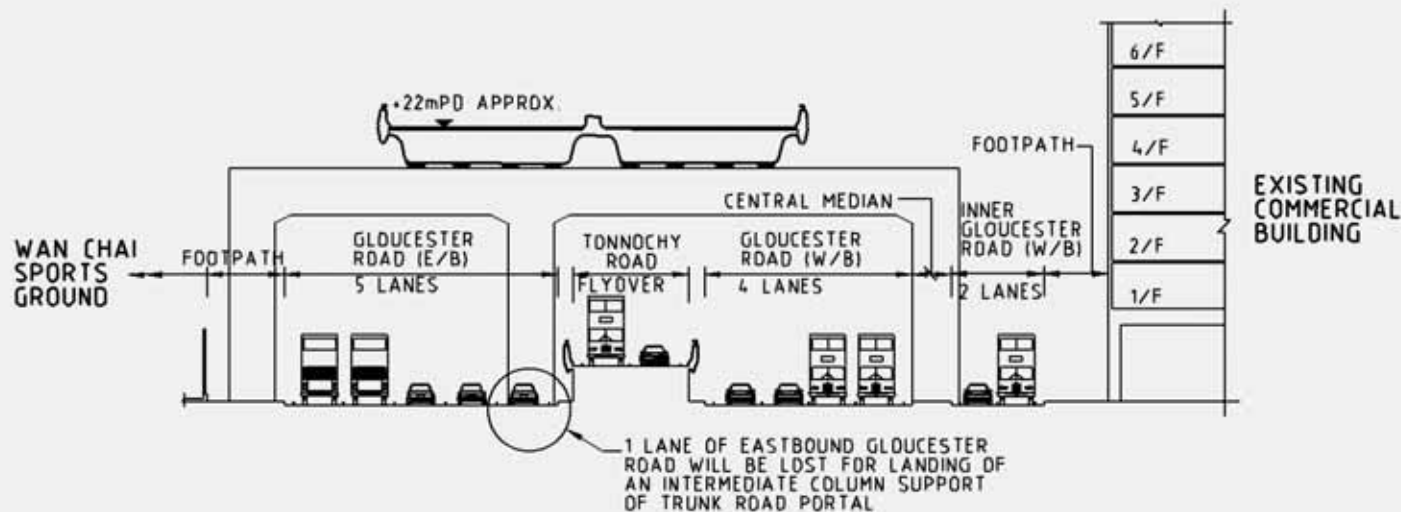








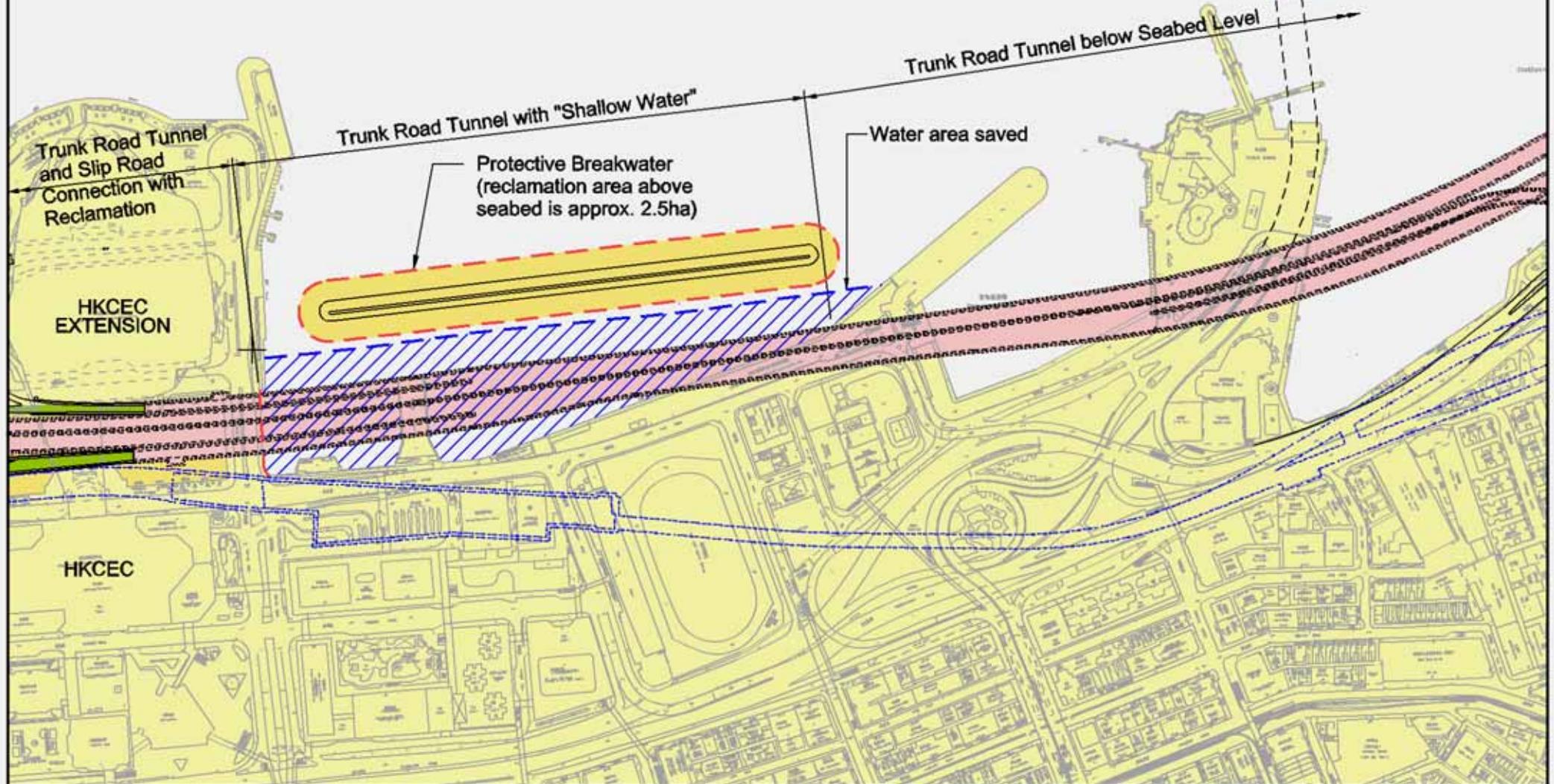
CROSS-SECTION OF GLOUCESTER ROAD ADJACENT TO TELECOM HOUSE  
WITH DOUBLE-DECKING OF TRUNK ROAD ELEVATED STRUCTURE  
SCALE 1 : 500



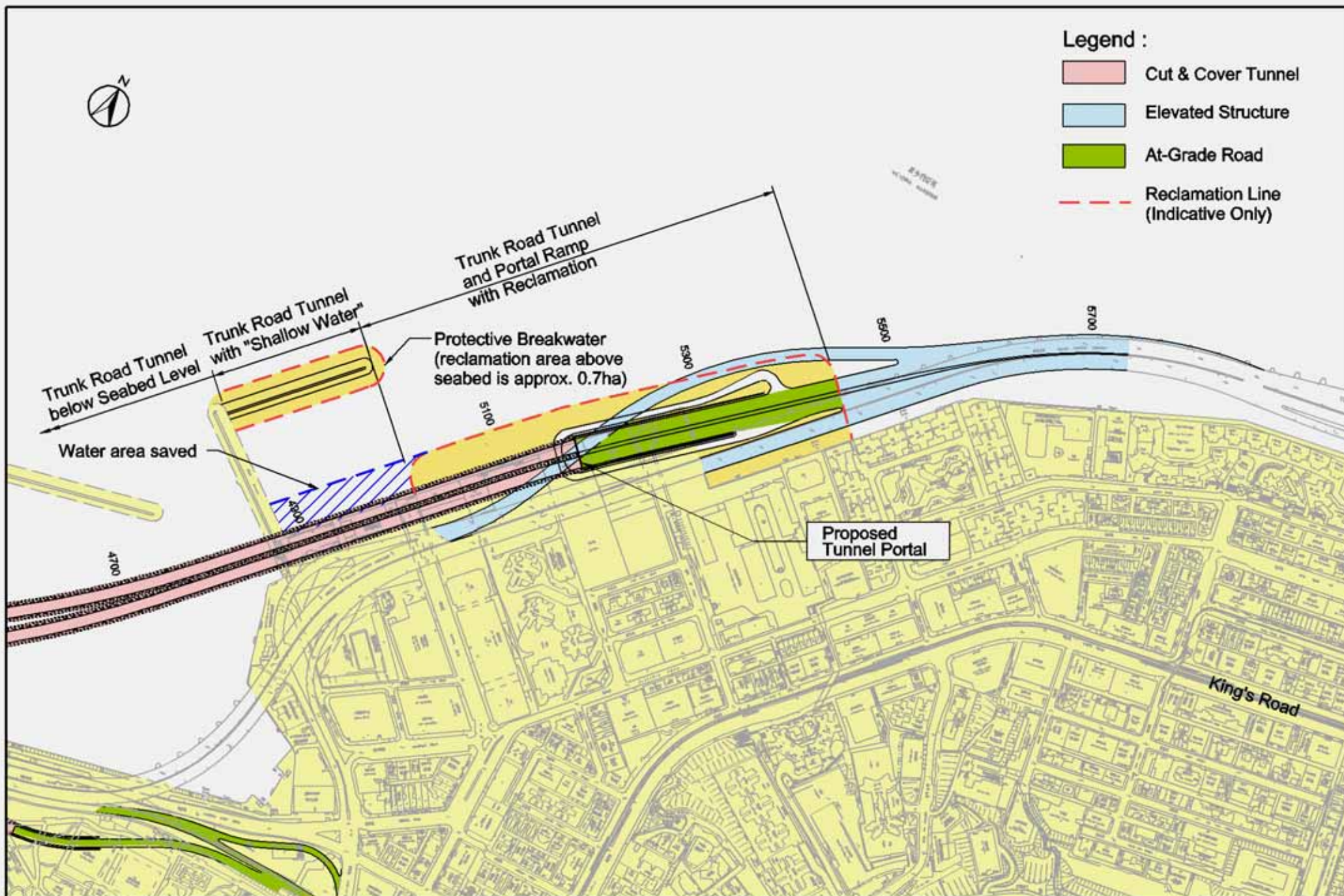
CROSS-SECTION OF GLOUCESTER ROAD ADJACENT TO WAN CHAI SPORTS GROUND  
WITH DOUBLE-DECKING OF TRUNK ROAD ELEVATED STRUCTURE  
SCALE 1 : 500

Legend :

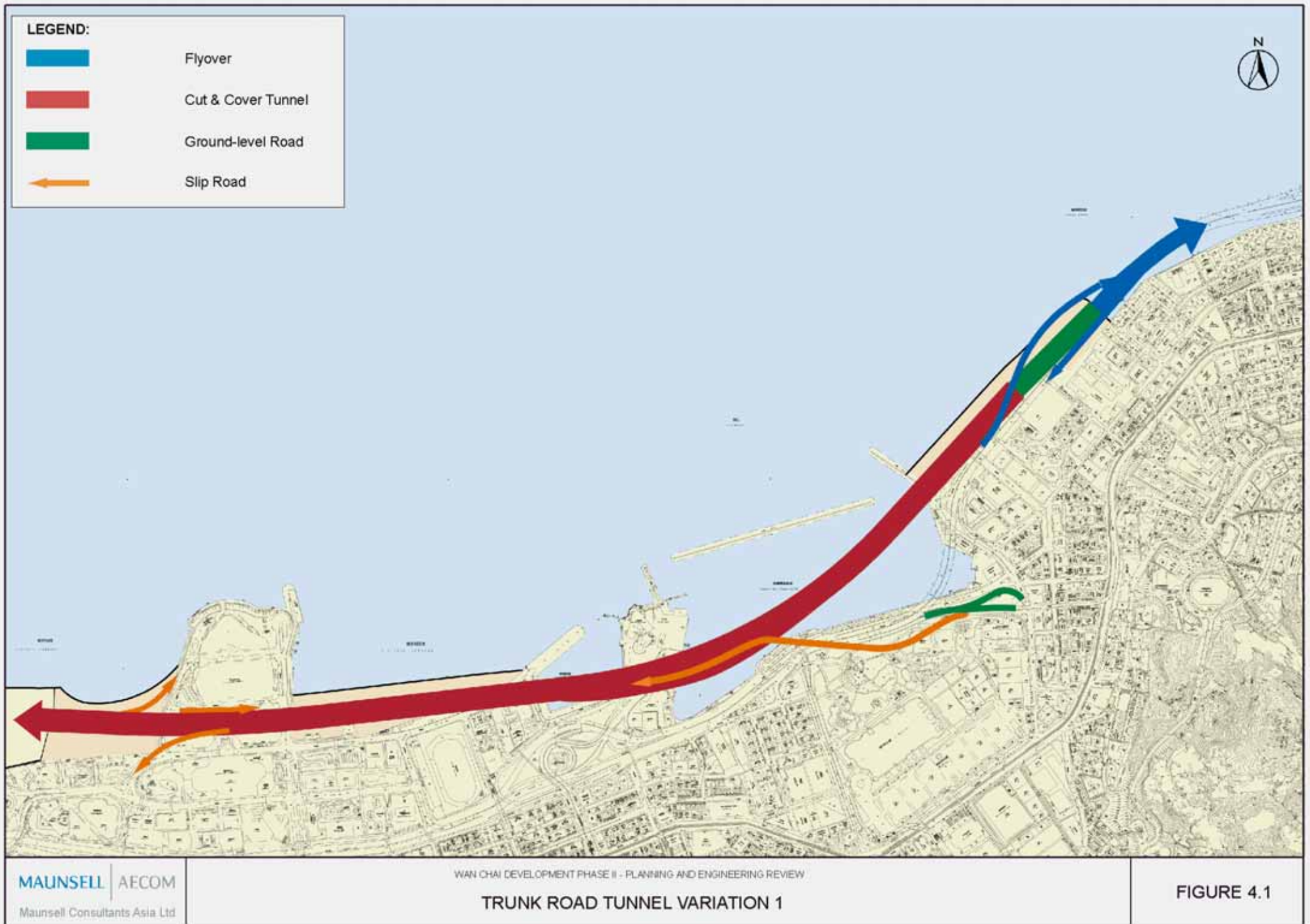
- Cut & Cover Tunnel
- At-Grade Road
- Reclamation Line (Indicative Only)





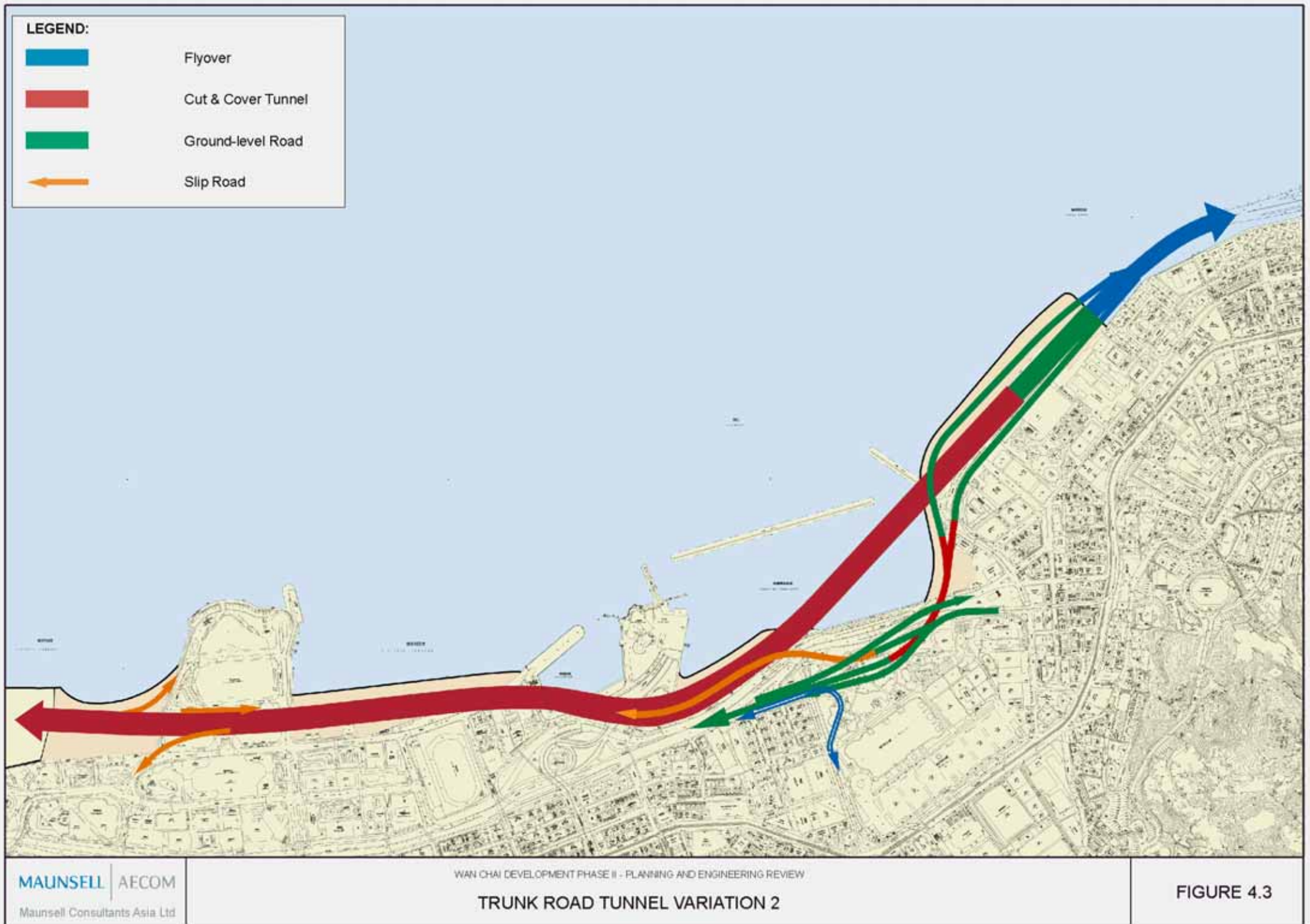






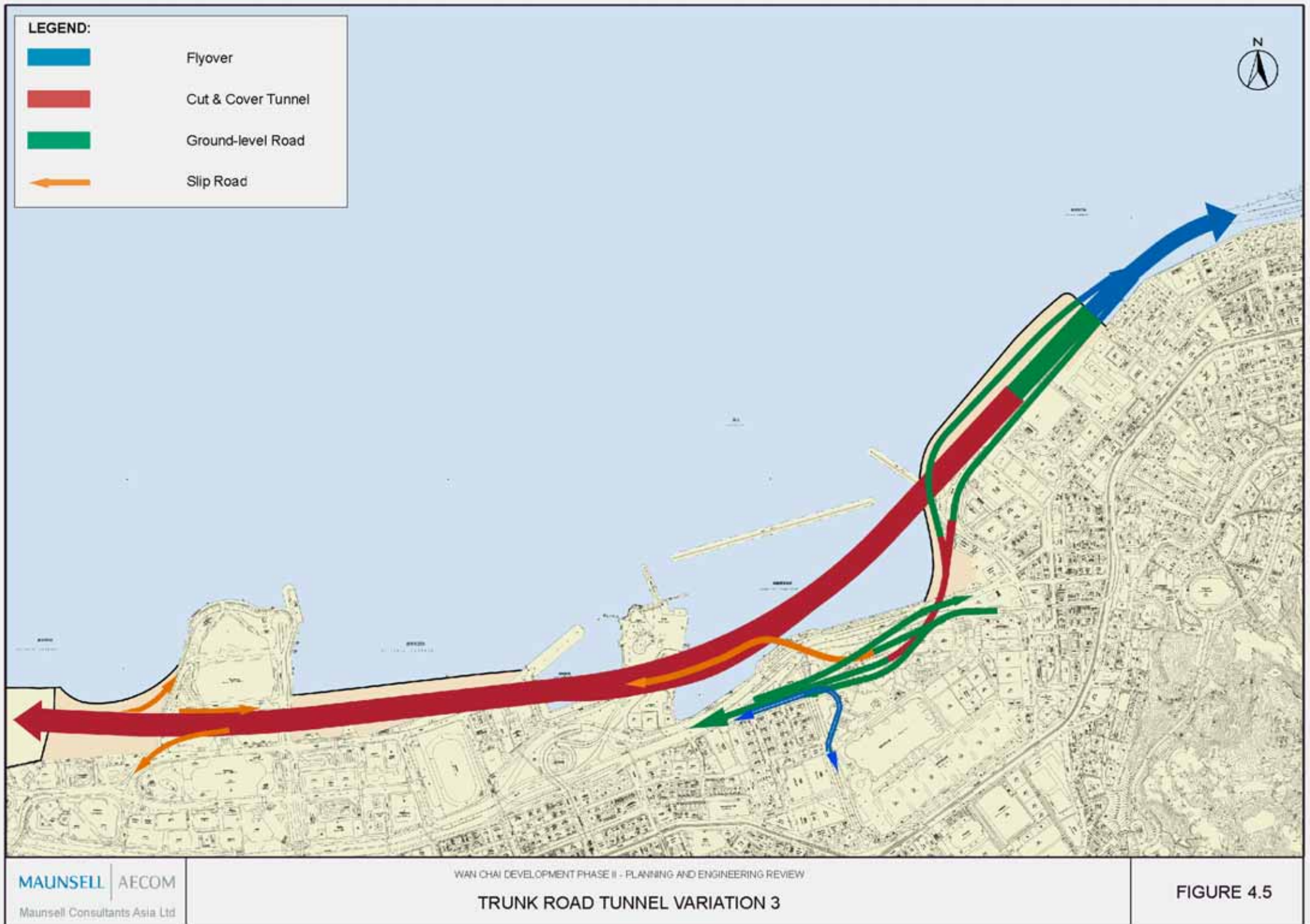








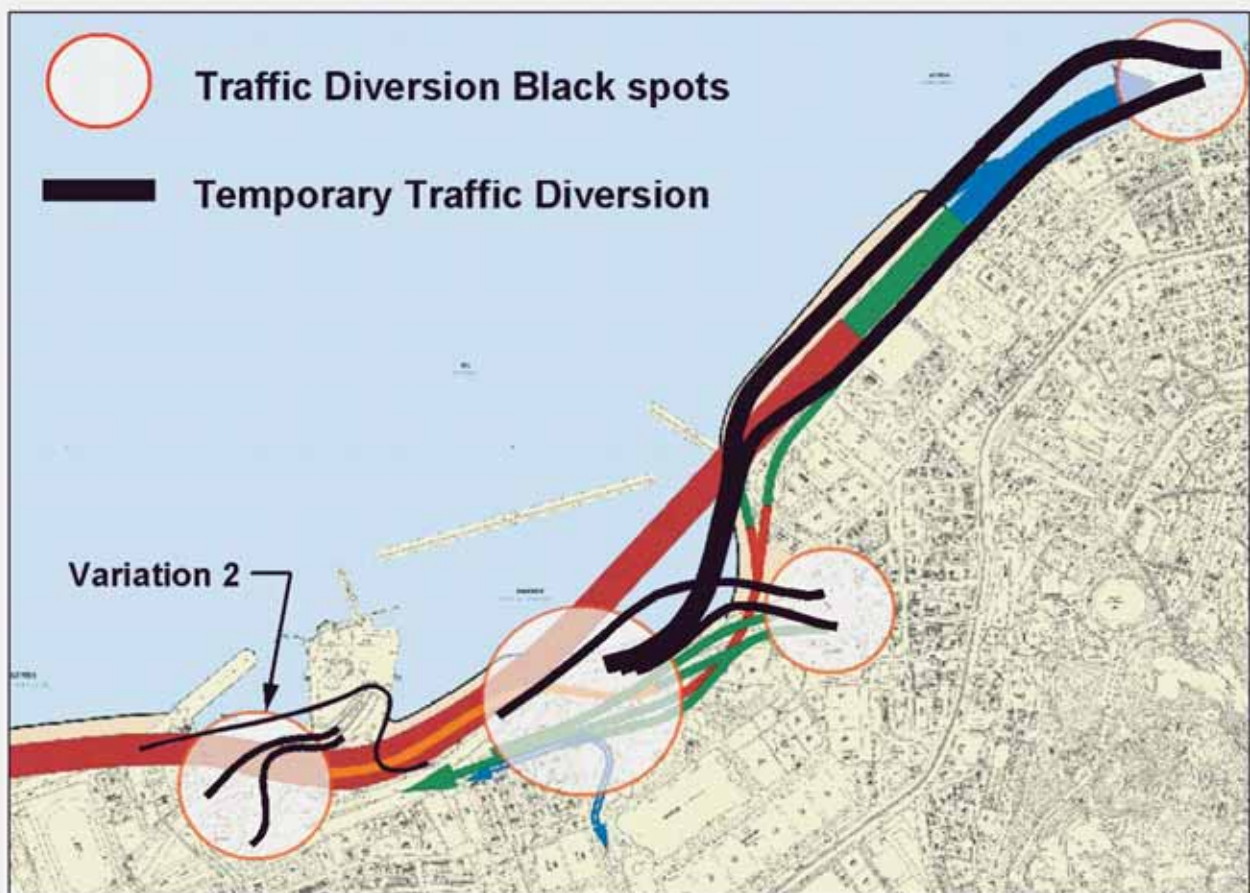
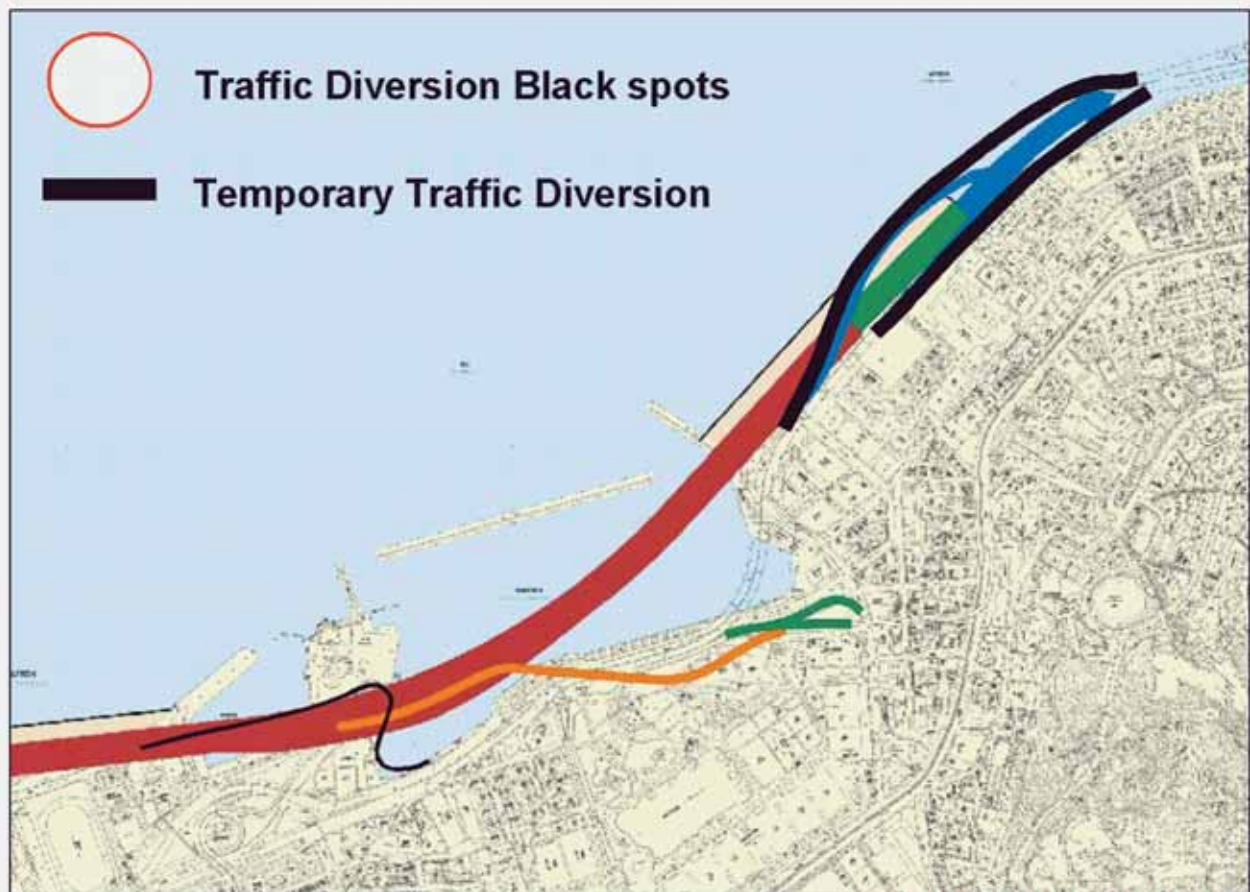










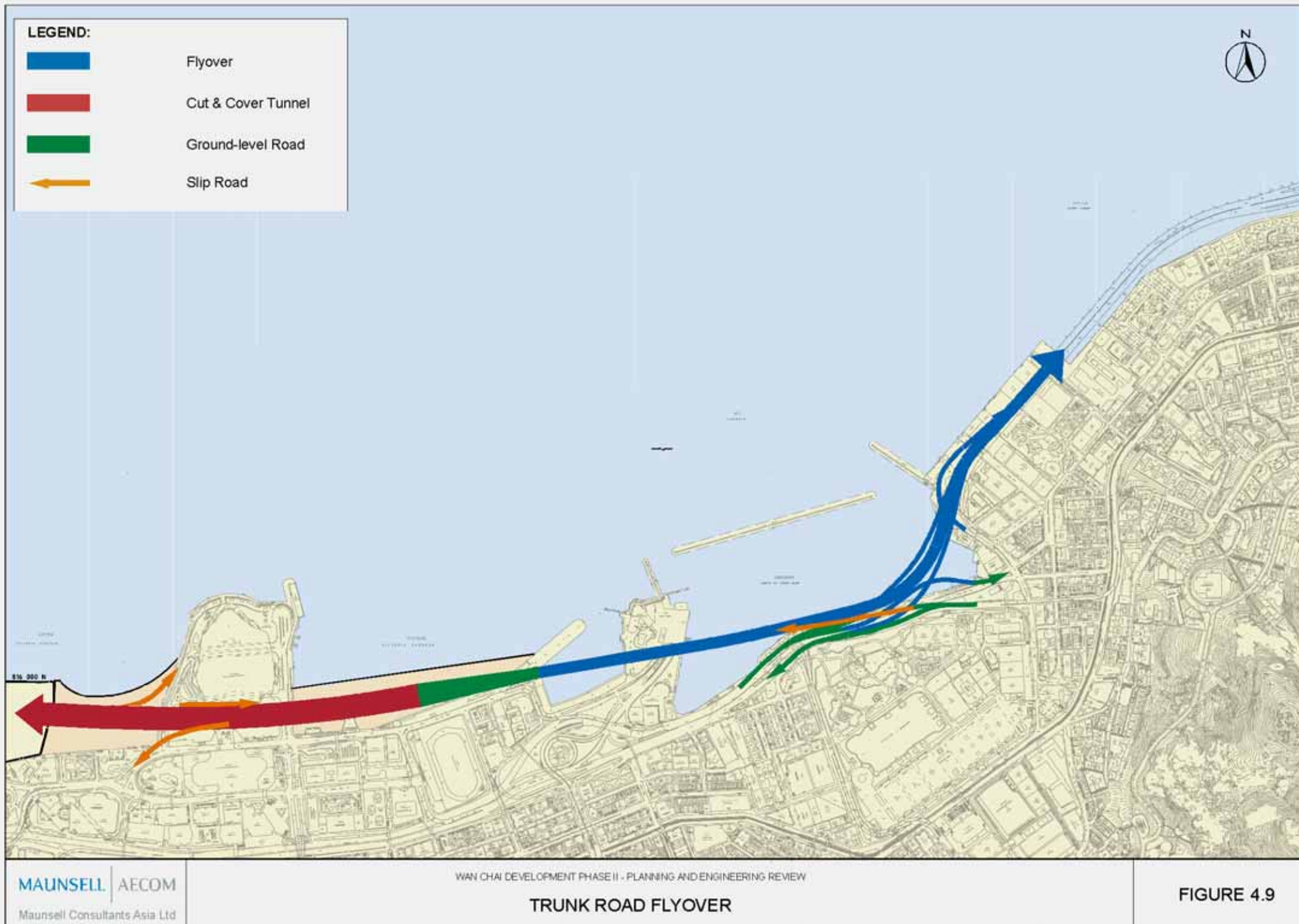




EXTENT OF INTRUSION INTO  
AND DEMOLITION OF VICTORIA  
PARK FOR TRUNK ROAD TUNNEL  
VARIATIONS 2 & 3

Existing Victoria Park















-  NEW LAND FORMED (PERMANENT RECLAMATION)  
 FLYOVER STRUCTURES OVER WATER  
 RECLAMATION LINE (INDICATIVE ONLY)



WAN CHAI DEVELOPMENT PHASE II - PLANNING AND ENGINEERING REVIEW

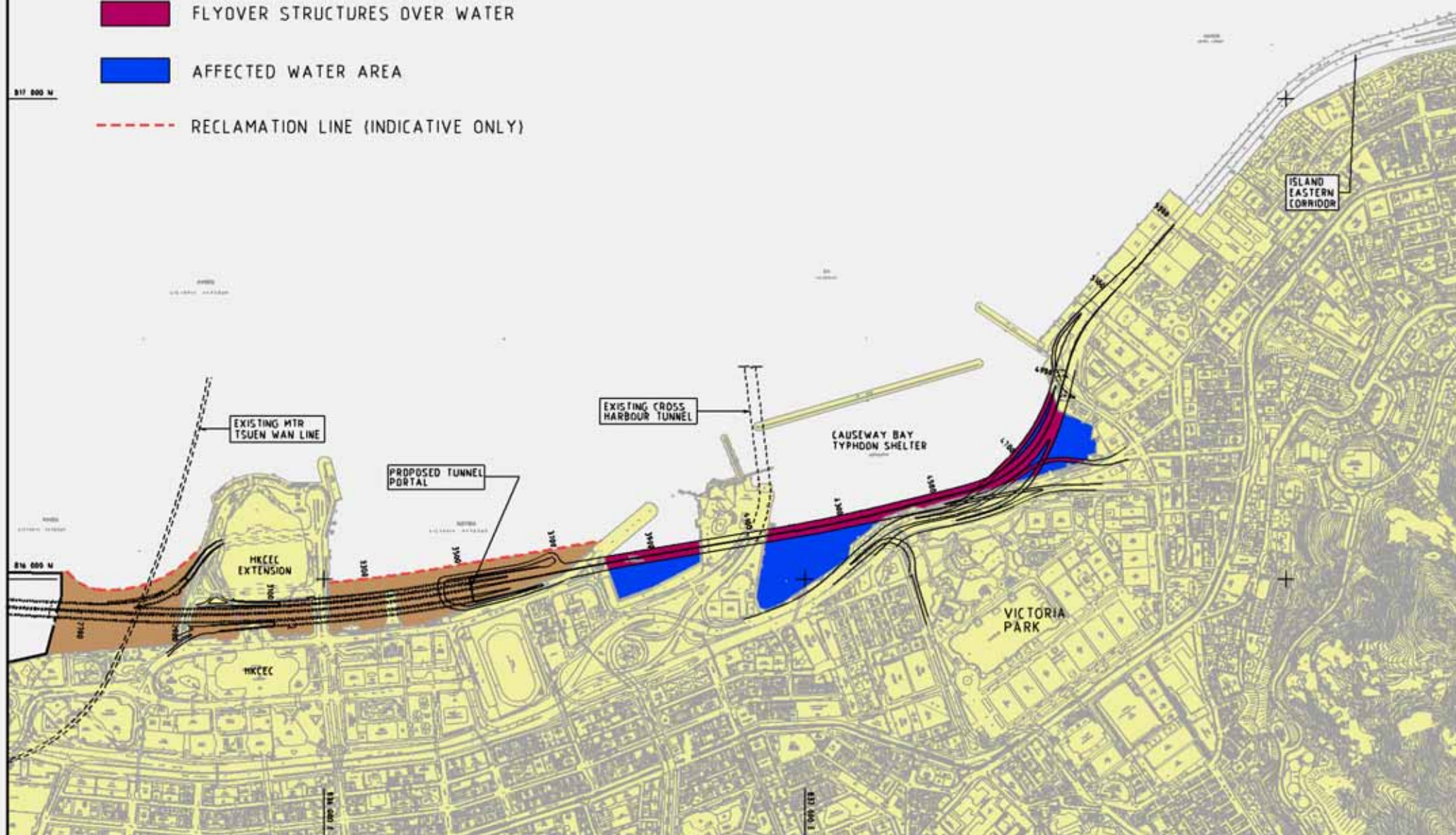
### AFFECTED AREAS OF THE HARBOUR - TUNNEL

FIGURE 4.11

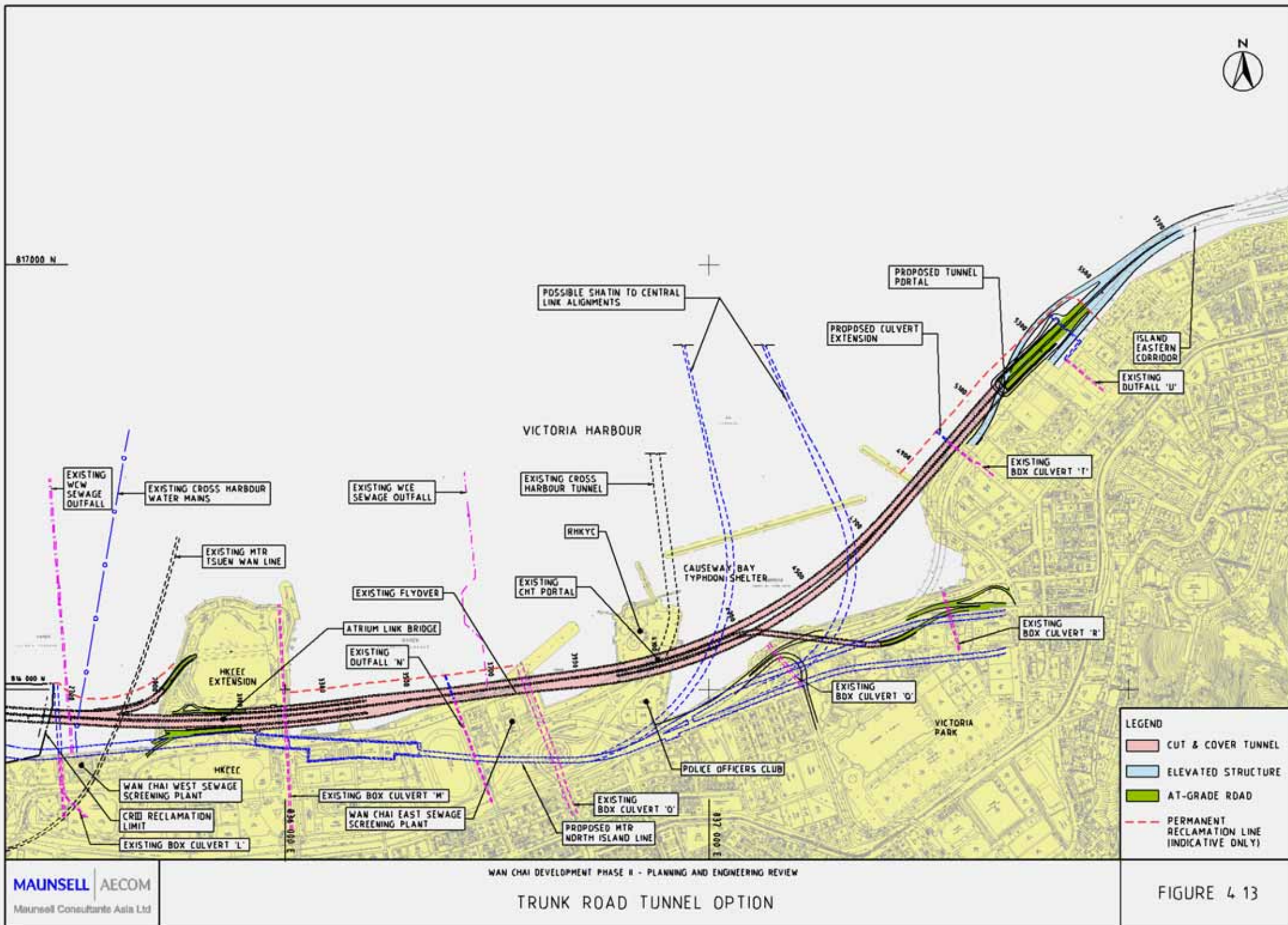


# LEGEND

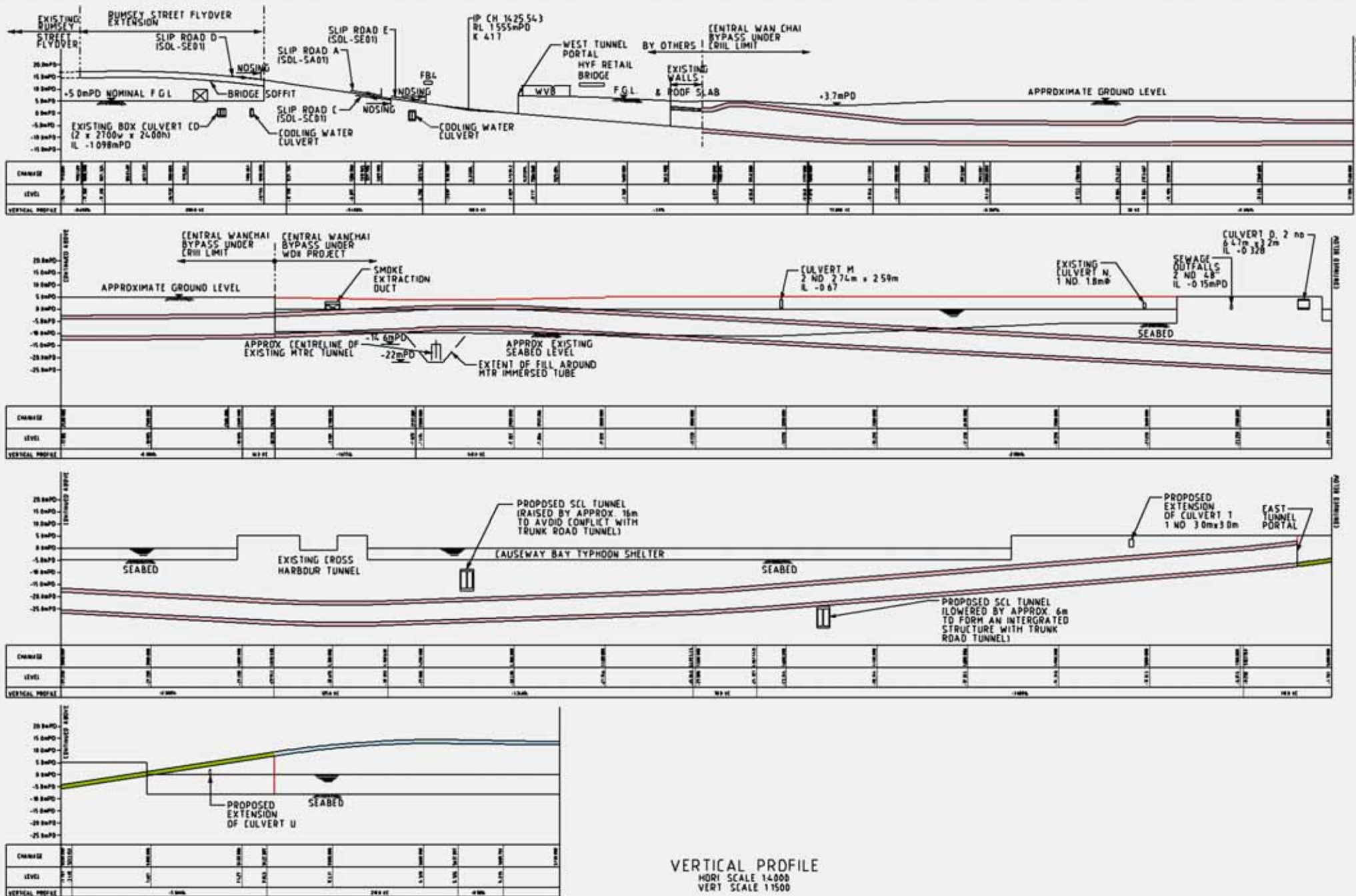
- NEW LAND FORMED (PERMANENT RECLAMATION)
- FLYOVER STRUCTURES OVER WATER
- AFFECTED WATER AREA
- RECLAMATION LINE (INDICATIVE ONLY)

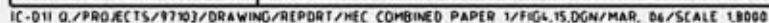








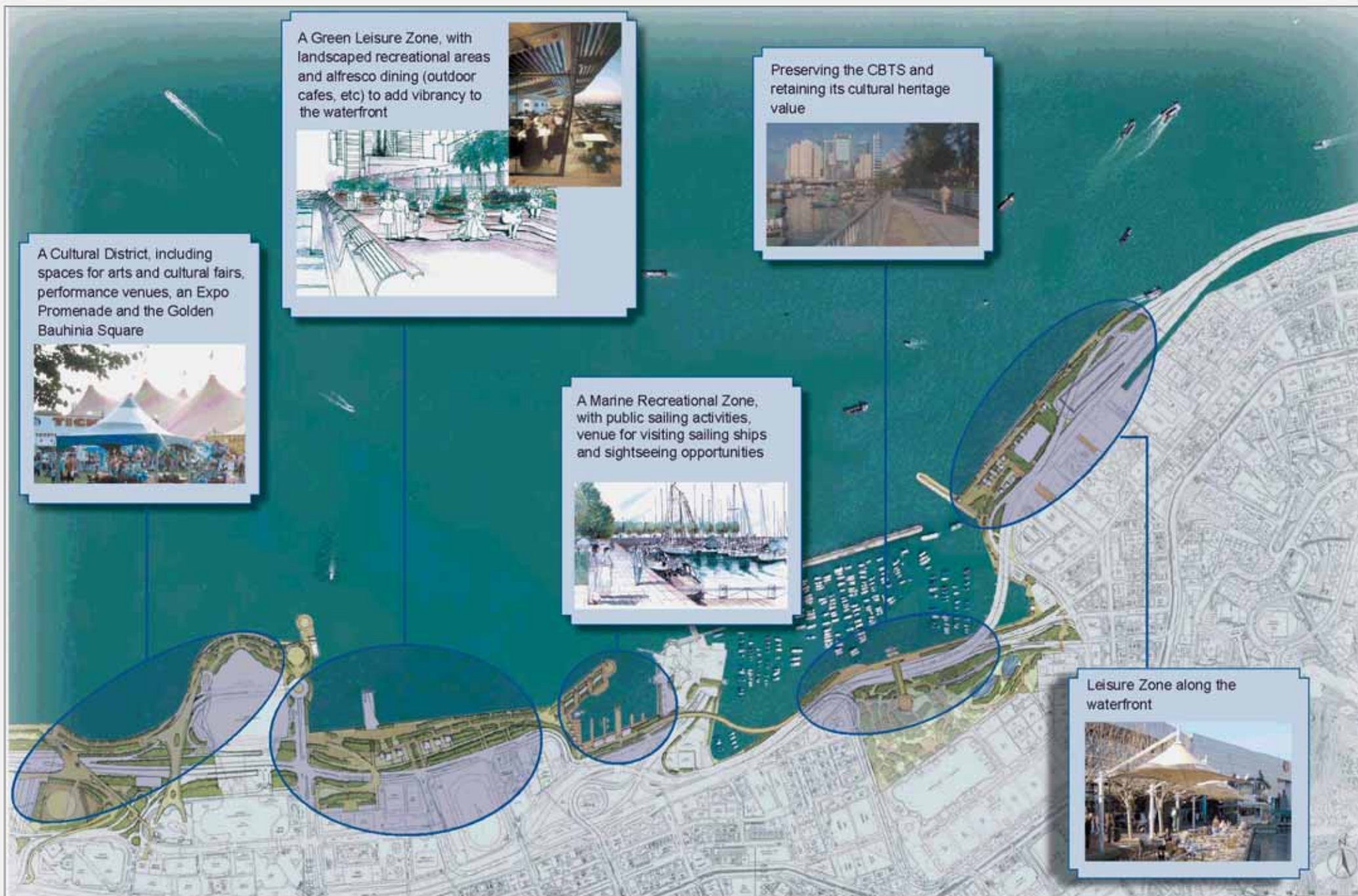


















A Green Leisure Zone, with landscaped recreational areas and alfresco dining (outdoor cafes, etc) to add vibrancy to the waterfront



A Water Recreational and Entertainment Zone, with fishermen's wharf, floating restaurants and landscape deck extending Victoria Park to the harbour-front



A Cultural District, including spaces for arts and cultural fairs, performance venues, an Expo Promenade and the Golden Bauhinia Square



A Marine Recreational Zone, with public sailing activities, venue for visiting sailing ships and sightseeing opportunities



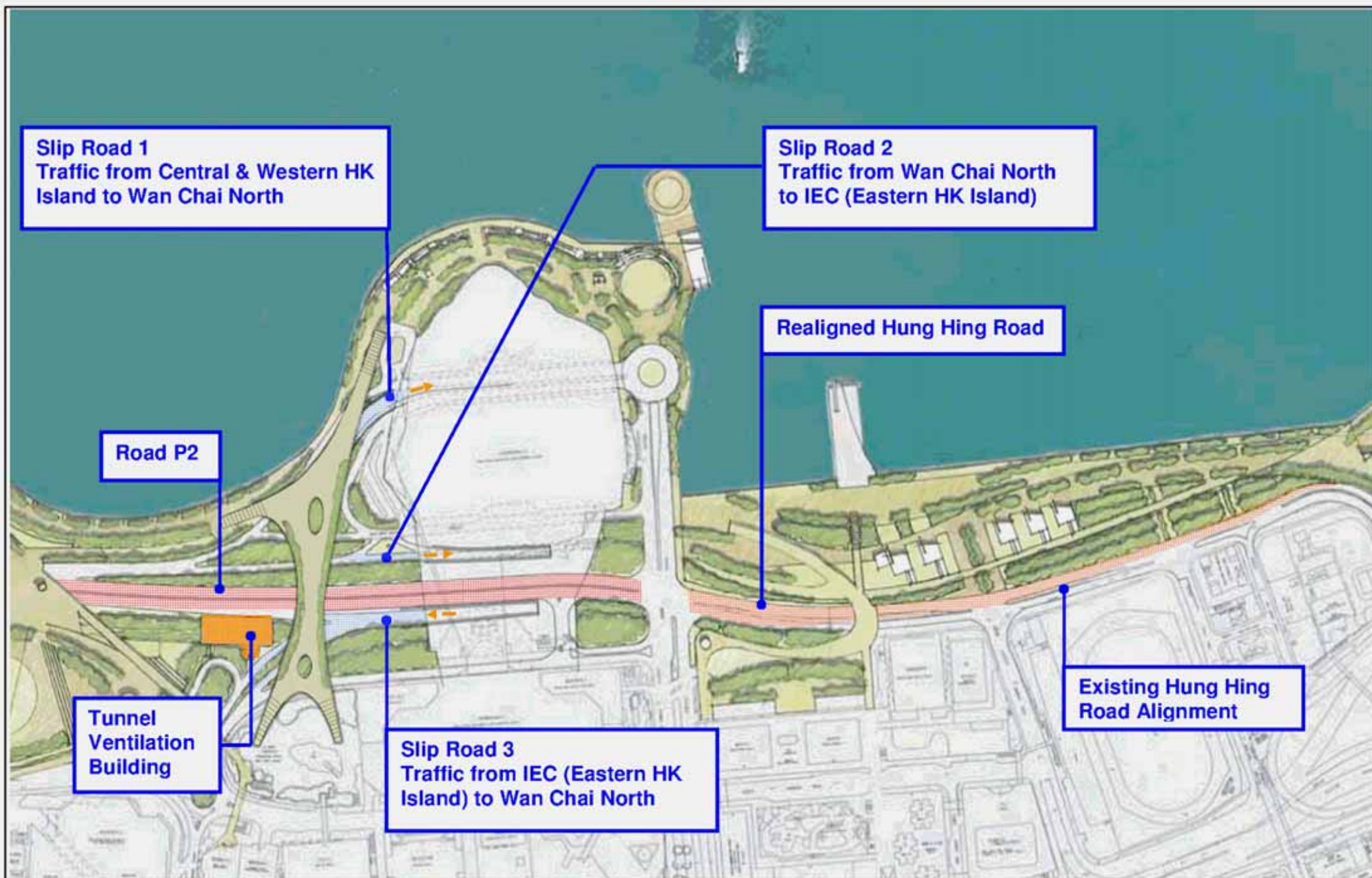
A Green Leisure Zone, with landscaped recreational areas







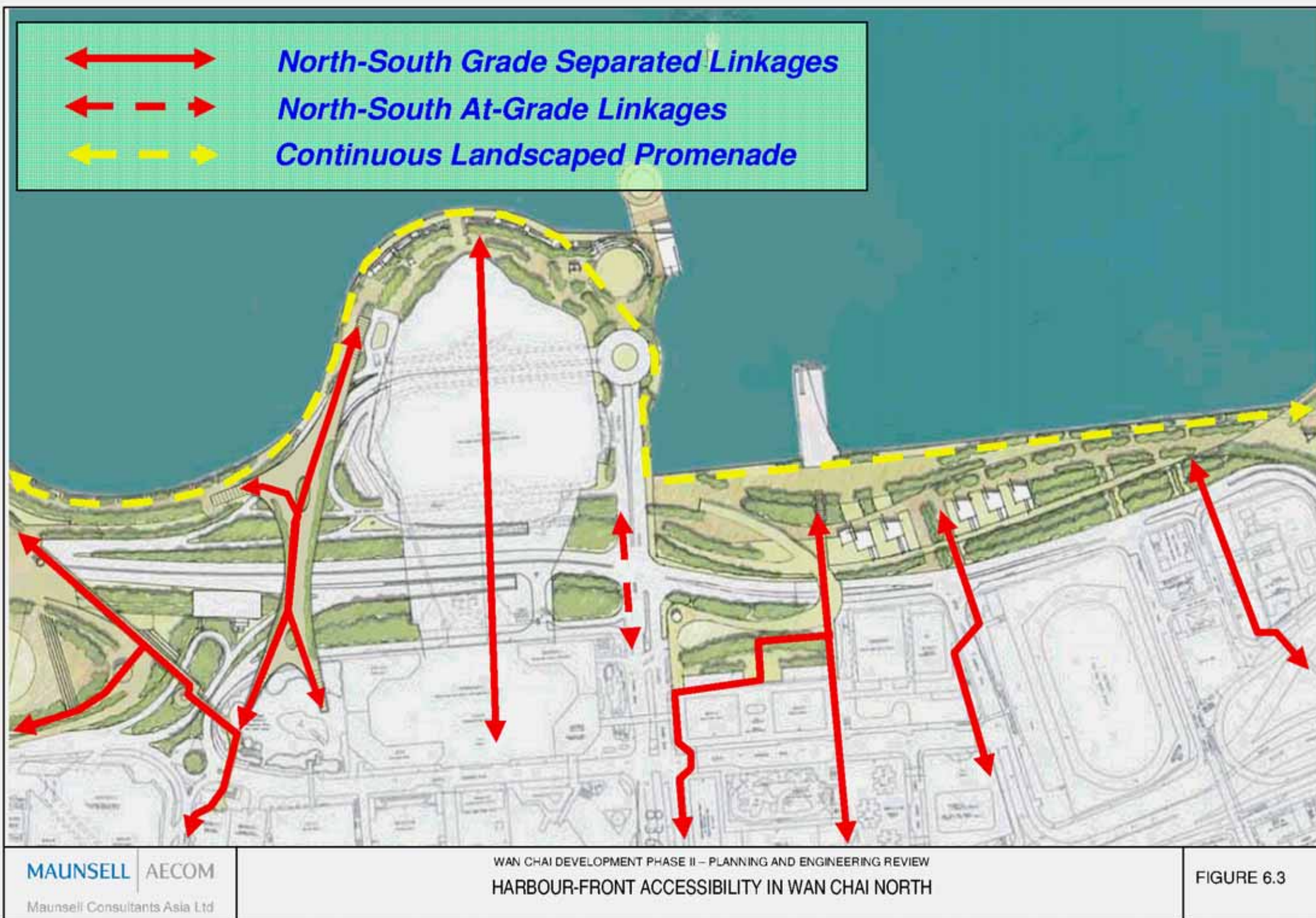




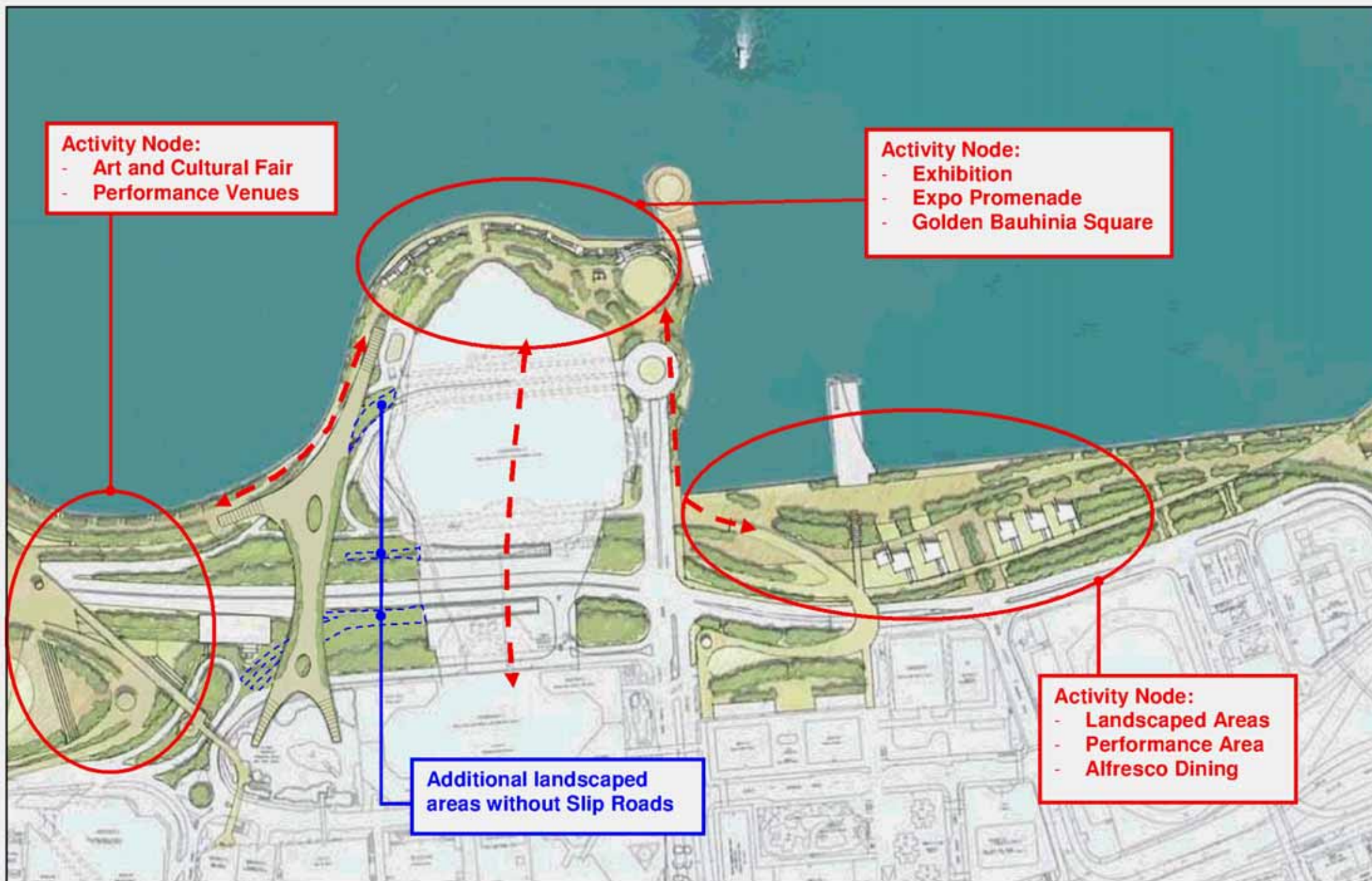




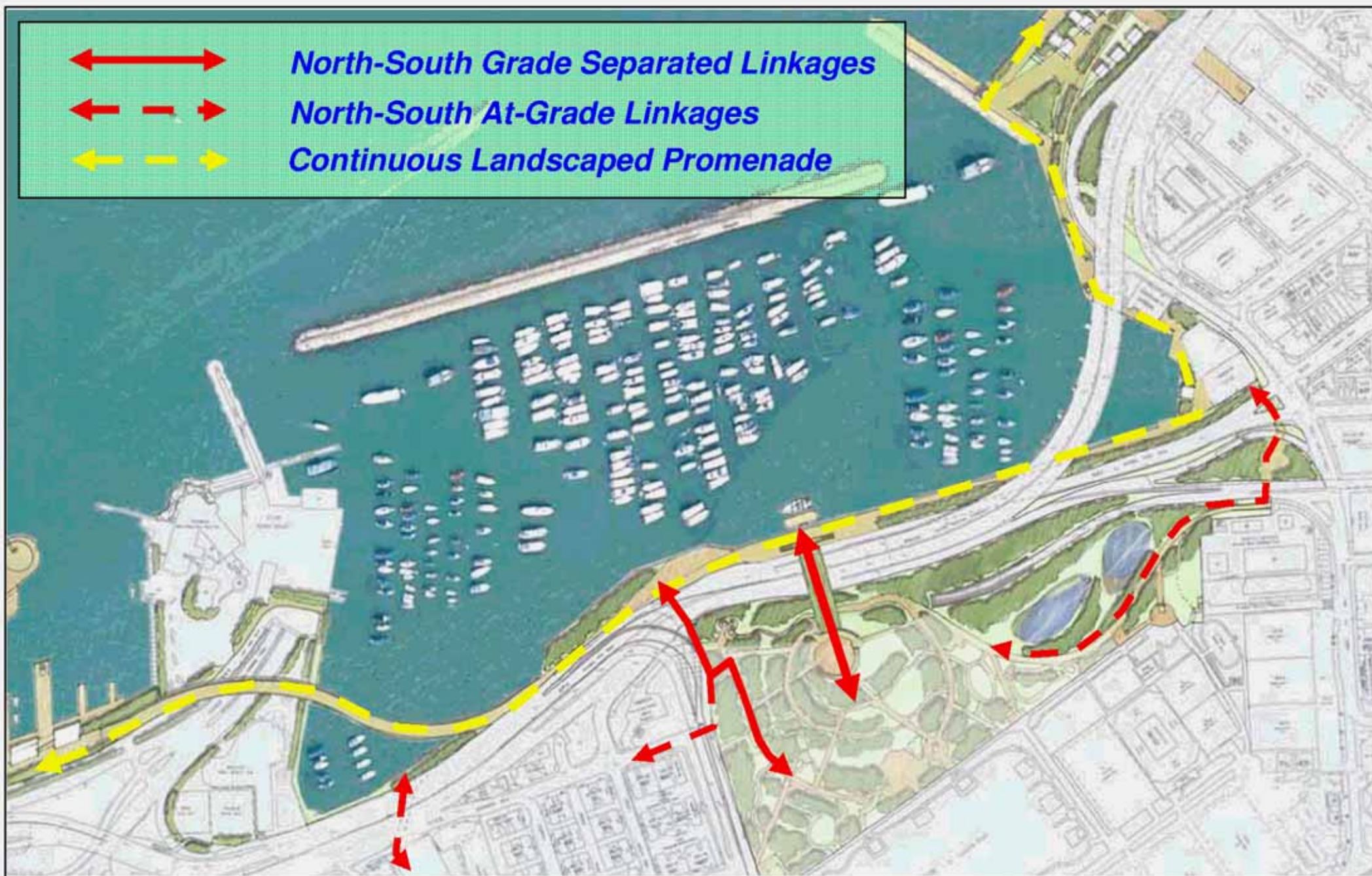
















主幹道走線  
及優化海濱的研究報告摘要

序言

「優化海濱研究」的構想階段於 2005 年 11 月結束。這階段的公眾參與活動包括：5 次公眾論壇、2 次社區設計坊、民意調查、可持續運輸規劃及中環灣仔繞道專家小組(下稱：專家小組)論壇及意見整合論壇。公眾對這些活動反應熱烈並提供了很多寶貴意見。

總體來說，公眾對優化海濱方面的意見是一致的。經考慮過專家小組的全盤建議後，共建維港委員會轄下灣仔發展計劃第二期檢討小組委員會(下稱：小組委員會)亦支持興建一條中環灣仔繞道。而地面運輸基建的詳細設計則需再作研究，以便考慮其對海濱地區的土地使用、市民享用海濱的機會及填海的影響。

負責灣仔發展計劃第二期檢討的顧問(下稱：顧問)，根據小組委員會的要求擬備了四份文件，分別以深層隧道方案、內陸走線、在灣仔北的一、二和三號連接道路及在銅鑼灣的八號連接道路，以及「零填海」走線為題，供小組委員會在 2006 年 3 月 9 日的會議上考慮。

小組委員會委員於該會議上要求顧問提供包括橫向及垂直走線的主幹道整體設計資料及優化海濱的意見。因應小組委員會的要求，顧問擬備了一份以英文撰寫的【主幹道可行走線及建造形式的初步研究結果】詳盡報告，向小組委員會提供有關的資料，並就主幹道及優化海濱的整體規劃提出數個概念，及指出各個概念的利弊和就《保護海港條例》的考慮。

本摘要旨在概述報告中對主幹道走線及優化海濱概念的以下各要點：

1. 建造主幹道的需要
2. 主幹道的可行走線



3. 完全避免填海的可行性
4. 主幹道建造形式
5. 優化海濱
6. 地面公路基建

## 1 建造主幹道的需要

- 1.1 現時商業中心區的主要道路為東西向的干諾道中/夏慤道/告士打道走廊(下稱：走廊)。這條走廊為一條雙向四車道的主幹線，是港島北部的一條東西向主幹道。作為市區主幹道，它負有承擔港島東西向長距離交通流量的責任。正如交通現況所顯示，這條走廊已經超過了容車量。早前、和近期的策略性交通研究預測，東西走廊交通需求還會進一步增加，這證實了有需要提供一條與走廊平行的海旁主幹道，即中環灣仔繞道，以避免更廣泛和更頻繁的交通擠塞甚至是整個道路網的交通大阻塞。
- 1.2 政府已經實施了一系列交通管理和財政措施，改以增加現有道路網的容量和壓抑交通需求。政府亦已考慮了進一步的措施，包括電子道路收費。所有現有和建議的措施都不能解決沿東西走廊的交通擠塞問題。故此建設繞道是必須的，而電子道路收費可以輔助繞道但不能取代它。
- 1.3 由本地及海外專家所組成的專家小組，在檢討關於港島北岸的可持續運輸規劃後，在他們的【可持續運輸規劃及中環灣仔繞道專家小組報告】中也表示支持興建中環灣仔繞道、其位於灣仔及銅鑼灣的兩組連接路及 P2 路。

## 2 主幹道的可行走線

### 2.1 考慮因素

#### 2.1.1 在研究可行的主幹道走線時，須考慮下列主要限制：

- 在西面連接在中環填海計劃第三期所建的主幹道隧道
- 在東面連接現有東區走廊天橋
- 連接在香港會議展覽中心附近和維園道/告士打道/興發街的連接道路
- 避免對地鐵荃灣線隧道結構的影響
- 避免影響海底隧道的結構及與隧道進出口下面的石錨衝突
- 預留空間予擬建的鐵路：沙田至中環線及北港島線
- 避免對現有基建設施（如灣仔電力分站、灣仔污水廠），及沿告士打道的大廈群（如會議展覽中心、君悅酒店、灣仔政府大樓、中環廣場、萬麗海景酒店、鷹君中心、海港中心、華潤中心及新鴻基中心等）地庫及地基的影響。

### 2.2 主幹道走線

#### 2.2.1 在研究主幹道的可行走線時，可考慮下列三條沿灣仔及銅鑼灣海岸的走廊：

- 「離岸」走廊
- 「內陸」走廊
- 「沿岸」走廊

#### 2.2.2 考慮到上文所述的主要限制，如現有建築物及主要基建設施，「離岸」及「內陸」走廊是不可行的。主幹道須沿灣仔及銅鑼灣的「沿岸」走廊作為走線。



### 3 完全避免填海的可行性

3.1 由於興建主幹道必須符合《保護海港條例》的要求，主幹道的整體規劃及設計的首先考慮是完全避免填海的方案(俗稱「零填海」方案)是否可行。

#### 3.2 填海需要

3.2.1 在西邊，主幹道會將中環填海計劃第三期中興建的隧道向東延伸。由於它不可能在地鐵荃灣線的現有隧道結構下面通過，所以需在這隧道結構上面跨過。在兩條隧道的交叉點，主幹道隧道結構將會高於海平面，因而需要填海。當在灣仔北的連接道路由隧道升至地面的出入口時，也需要填海。此填海需要將不會因應主幹道的走線或建造形式而有所改變。

3.2.2 在東邊，主幹道則需連接現有東區走廊天橋。如果主幹道以隧道形式興建，由隧道轉為天橋的一段亦需填海，以興建隧道出入口的結構。

3.2.3 故此，所有經過灣仔發展計劃第二期項目範圍的主幹道走線均需要填海。

#### 3.3 深層隧道方案

3.3.1 研究亦有考慮以隧道鑽挖機器興建主幹道的概念，即深層隧道方案，以期可避免或減少填海。研究的結論是，深層隧道方案所需的填海範圍較以明挖回填形式興建隧道為多，而因為高低差距太大，深層隧道不能提供在銅鑼灣的 8 號連接道路，故建成的主幹道在功能上亦較差。基於須盡量減少填海的原則，這方案不應跟進。

#### 3.4 其他公眾意見

3.4.1 研究亦包括一些泛稱不需要填海而可興建主幹道的公眾意見，但結論是這些意見是技術上不可行，或意見本身已包括某程度的填海。

3.5 基於以上各項研究的結論是，不可能有「零填海」方案。

## 4 主幹道建造形式

4.1 研究主要分析了以不同的隧道或天橋形式興建主幹道的方案，下文將闡述及比較這些不同的構想及方案。

### 4.2 隧道方案

4.2.1 就以隧道形式興建主幹道的方案，研究提交了三個不同構想及每個構想的相應海濱優化概念，有關概念的圖示見附圖一至六。下述三個構想的要點：

#### 構想一

4.2.2 中環填海計劃第三期興建的隧道將會向東延伸，並在海底隧道入口結構體的現有石錨下通過海底隧道，然後隧道將再伸延至銅鑼灣避風塘以東，最後在北面接駁現有東區走廊。

#### 構想二

4.2.3 中環填海計劃第三期興建的隧道將會向東延伸，在構想一通過海底隧道的位置以南通過海底隧道，以繞過海底隧道的石錨區，然後隧道再伸延至銅鑼灣避風塘以東；而為了使隧道可直接連接東區走廊，現有的一段東區走廊將重建。除此之外，為了擴闊銅鑼灣避風塘的沿岸海濱及建造一個延伸維多利亞公園的寬闊綠化平台，維園道及相連的道路將向較內陸的地方遷移。

#### 構想三

4.2.4 除了會採用構想一中在石錨下通過海底隧道的安排外，細節與構想二相若。



### 4.3 天橋方案

4.3.1 以天橋方案興建主幹道，中環填海計劃第三期興建的隧道將會向東延伸，並在灣仔運動場對開海旁轉為高架道路結構。有關方案及相應海濱優化概念的圖示見附圖七及八。

4.3.2 鑑於維港為香港的特殊資產和天然財富，《保護海港條例》要求保護和保存維港，故此在考慮主幹道的方案時，應找出最能達致保護和保存維港的方案。在考慮天橋方案時，填海所得土地和受天橋結構影響的維港海面範圍均需一併考慮。

### 4.4 方案及構想的比較

4.4.1 隧道方案與天橋方案的比較節錄於附表一。

附表一 隧道方案及天橋方案的比較

		隧道方案	天橋方案
維港受影響的面積 透過填海提供土地面積 天橋覆蓋水面的面積 受影響的水面面積		15 公頃 0.5 公頃 -	11.5 公頃 3 公頃 4 公頃
對現時交通的影響		在與現有東區走廊的接駁位有嚴重影響	<ul style="list-style-type: none"> <li>在與現有東區走廊的接駁位有嚴重影響</li> <li>因改建維園道連接路造成嚴重影響</li> </ul>
其他技術上考慮（對現有公路結構的影響等）		由於要連接主幹道，近城市花園的東區走廊須要重建	需要重建從維園道的維多利亞中心的現有東區走廊
規劃及用途考慮	沿灣仔海岸	填海得到的土地可改作優人往來的海濱及濱海地帶	部份填海得到的土地需要用作建造海濱，因此限制善用地道出入口，優化往來的土地

		隧道方案	天橋方案
	前公眾貨物裝卸區	前公眾貨物裝卸區活 可發展成一個海上活動中心	天橋的柱、躉及橋身的發 對出限制，隻帶了卸動 高展區為一個海上活
	維多利亞公園北部	透過興建一個跨越平 地將維多利亞公園	由於天橋沿維多利 越公園北部繞過海濱，利 多的維園道以延至海濱能 興綠化公平台將不
	銅鑼灣避風塘	可保存現有的銅鑼 灣避風塘	部份海面及現有海 濱將被天橋柱躉佔
環境考慮	噪音及空氣	<ul style="list-style-type: none"> <li>空氣質素的考慮只局限在隧道出入口處</li> <li>局限在與現有東區走廊的接駁較短的新路段有噪音的考慮（較短的新路段）</li> </ul>	沿銅鑼灣及重建的 東區會走有主要空 及噪音影響氣
	水質	沒有重大的影響	沒有重大的影響
	景觀	沒有顯著的景觀影響	由灣仔發展計劃第二期的工程及在該工程範圍內的中環灣仔 於天橋部分會經過對 灣仔避風塘，其景觀是帶 銅鑼灣及海濱尤為重要
建築時間		7 年	6 年
成本費用*	總建築成本	200 億元	110 億元
	每年營運費用	1.1 億元	0.75 億元

\*（包括灣仔發展計劃第二期的工程及在該工程範圍內的中環灣仔繞道）

4.4.2 研究認為隧道方案較能達致保護及保存維港的目的，其要點如下：

- 天橋方案影響維港的範圍會較大；
- 天橋方案對景觀及現有交通和公路結構的影響較大；以及
- 在提供機會優化海濱和改善直達海旁通道方面，隧道方案

遠比天橋方案優勝。

不過，天橋方案的建築成本及每年營運費用均較低。

#### 4.4.3 三個隧道方案構想的比較載列於附表二。

附表二 主幹道隧道方案三個構想的比較

	構想一	構想二	構想三
永久填海範圍	15 公頃	18.5 公頃	16.5 公頃
對現時交通的影響	在與現有東區位 走廊有些影響	<ul style="list-style-type: none"> <li>因拆卸現有東區走廊及建造新連接道路會造成嚴重影響</li> <li>因改建維園道、銅鑼灣天橋及告士打道天橋會造成嚴重影響</li> <li>因在海底隧建造主幹道的隧道會造成嚴重影響</li> </ul>	<ul style="list-style-type: none"> <li>因拆卸現有東區走廊及建造新連接道路會造成嚴重影響</li> <li>因改建維園道、銅鑼灣天橋及告士打道天橋會造成嚴重影響</li> </ul>
其他技術上考慮結 (對的影響等)	由花園須 要連接主 近東區部	<ul style="list-style-type: none"> <li>繞道隧道在海圍理彎 經過現有隧道出現反 向彎道</li> <li>需要改建維園道及相 關連接路，銅鑼灣天 橋及告士打道天橋</li> <li>需要拆卸由城 市花園的現 有東區走廊 路段</li> </ul>	<ul style="list-style-type: none"> <li>需要改建維園道及相 關連接路，銅鑼灣天 橋及告士打道天橋</li> <li>需要拆卸由城 市花園的現 有東區走廊 路段</li> </ul>



		構想一	構想二	構想三
對現有建築物的影響		對現有建築物沒有影響	需要拆卸警官俱樂部	對現有建築物沒有影響
規劃及用地用途	沿灣仔海岸	填海可得的土地用作改善海濱及往來	填海可得的土地用作改善海濱及往來	填海可得的土地用作改善海濱及往來
	前貨物裝卸區	前貨物裝卸區可發展為一個貨物活動中心	前貨物裝卸區可發展為一個貨物活動中心	前貨物裝卸區可發展為一個貨物活動中心
	維多利亞公園	透過興建一條平台公濱路，將園地化利至海濱	興建一條平台公濱路，將園地化利至海濱	興建一條平台公濱路，將園地化利至海濱
	銅鑼灣避風塘	可保存現有的避風塘	可利用填平銅鑼灣兩個避風塘作用途	可利用填平銅鑼灣兩個避風塘作用途
環境考慮	噪音及空氣	<ul style="list-style-type: none"> <li>空氣質素只局限在出入口處，而影響較小</li> <li>局限在與東區接駁的有影響的路段（較短的新路段）</li> </ul>	<ul style="list-style-type: none"> <li>空氣質素的局限在出入口處</li> <li>重建的東區會產生較大的噪音（較長的路段）</li> </ul>	<ul style="list-style-type: none"> <li>空氣質素的局限在出入口處</li> <li>重建的東區會產生較大的噪音（較長的路段）</li> </ul>
	水質	沒有重大的影響	沒有重大的影響	沒有重大的影響
	景觀	沒有顯著的景觀影響	沒有顯著的景觀影響	沒有顯著的景觀影響
建築時間		7 年	8 年	8 年
成本費用*	總建築成本	200 億元	280 億元	250 億元

		構 想 一	構 想 二	構 想 三
	每 年 營 運 費 用	1.1 億 元	1.25 億 元	1.23 億 元

\*（包括灣仔發展計劃第二期的工程及在該工程範圍內的中環灣仔繞道）

## 5 優化海濱

5.1 根據構想階段所收集的意見，下列為合理的優化海濱建議：

- 優化因興建主幹道在灣仔海旁所平整的土地；
- 發展前貨物裝卸區為活力海灣；
- 延伸維多利亞公園至海濱；
- 盡量保留現有銅鑼灣避風塘；或在銅鑼灣避風塘內灣作適量填海；
- 沿東區走廊至北角興建浮橋。

5.2 結合上述的優化海濱見意，附圖二、四、六及八展示了優化海濱及主幹道的整體概念。

5.3 隧道方案中可行及合理的的優化海濱概念簡述如下：-

- 文化區－位於會議展覽中心以西，包括文化及藝術博覽、表演場地及博覽道海濱長廊；
- 綠化休憩地帶－位於灣仔海濱，包括優化園景康樂活動場地及露天餐廳（露天茶座等）以增添海濱的活力；
- 水上活動地帶－位於前貨物裝卸區，包括公眾航海活動、遊船停泊及觀光場地；
- 水上康樂活動消遣地帶－位於銅鑼灣避風塘，以保留現有銅鑼灣避風塘為原則，包括一個連接維多利亞公園及海濱的綠化露天平台；
- 另一幅位於北角海濱的綠化休憩地帶，成為一個優化園景康樂活動場地。

5.4 天橋方案的優化海濱概念，就只有位於會議展覽中心以西的文化區及位於灣仔海濱的綠化休憩地帶。



## 6 地面公路基建

- 6.1 研究依據共建維港委員會議定的海港規劃原則，審視了以兩組連接道路及 P2 路為重點的相關地面道路基建對海濱規劃的影響，結論是有關基建不會影響海濱的規劃。

茂盛（亞洲）工程顧問有限公司

2006 年 5 月

圖例:



天橋



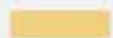
隧道



地面道路



連接道路



填海範圍





綠化休憩地帶  
包含優化園景康樂活動場地及  
露天餐廳（露天茶座等）以增  
添海濱的活力



保存現有銅鑼灣避風塘及保留其  
文化遺產的價值



文化區  
包含文化及藝術展覽、表演  
場地、博覽道海濱長廊及金紫  
荊廣場



水上活動地帶  
包含公眾航海活動、遊船停泊  
及觀光場地



沿海濱的休憩地帶



灣仔發展計劃第二期檢討

主幹道隧道方案構想一的整合優化海濱概念



圖例:



天橋



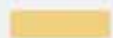
隧道



地面道路



連接道路



填海範圍





綠化休憩地帶  
包含優化園景康樂活動場地及  
露天餐廳（露天茶座等）以增  
添海濱的活力



水上康樂活動消遣地帶  
包含漁人碼頭、綠化露天水上餐廳及連接維多利亞公園  
及海濱的平台。



文化區  
包含文化及藝術展覽、表演  
場地、博覽道海濱長廊及金紫  
荊廣場



水上活動地帶  
包含公眾航海活動、遊船停泊  
及觀光場地



綠化休憩地帶  
優化園景康樂活動場地





圖例:



天橋



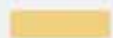
隧道



地面道路



連接道路



填海範圍





綠化休憩地帶  
包含優化園景康樂活動場地及  
露天餐廳（露天茶座等）以增  
添海濱的活力



水上康樂活動消遣地帶  
包含漁人碼頭、綠化露天水上餐廳及連接維多利亞公園  
及海濱的景觀平台。



文化區  
包含文化及藝術展覽、表演  
場地、博覽道海濱長廊及金紫  
荊廣場



水上活動地帶  
包含公眾航海活動、遊船停泊  
及觀光場地

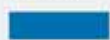


綠化休憩地帶  
優化園景康樂活動場地

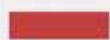




圖例:



天橋



隧道



地面道路



連接道路



填海範圍



綠化休憩地帶  
包含優化園景康樂活動場地



文化區  
包含文化及藝術展覽、表演  
場地、博覽道海濱長廊及金紫  
荊廣場

