For discussion
on 27 May 2014

Legislative Council Panel on Development

65TR - Detailed Feasibility Study for Environmentally Friendly Linkage System for Kowloon East

PURPOSE

This paper serves to update Members on the outcome of the two-stage public consultation (PC) exercise on the proposed Environmentally Friendly Linkage System (EFLS) for Kowloon East (KE) [1] completed in February 2014, and to seek Members' support on the proposal to upgrade **65TR** to Category A at an estimated cost of about $92 million in money-of-the-day (MOD) prices for carrying out a detailed feasibility study (DFS) and preliminary site investigation works for the proposed EFLS.

BACKGROUND

2. The Kai Tak Outline Zoning Plan, as approved in 2007 and revised in 2012, had undergone extensive public engagement from 2004 to 2006. It provides for a possible rail-based EFLS, running within the Kai Tak Development (KTD). In December 2009, the Civil Engineering and Development Department (CEDD) commissioned a study to examine its preliminary feasibility. In 2011-12 Policy Address, the Chief Executive announced the initiative to transform KE into an attractive central business district (CBD) to sustain Hong Kong's economic development. In drawing up the EFLS proposal, its important role in enhancing both inter-district and intra-district connectivity of KE has been duly considered.

3. The preliminary feasibility study proposed the EFLS to take the form of a nine-kilometre elevated monorail system with twelve stations. The

[1] KE covers Kai Tak Development, Kwun Tong and Kowloon Bay business areas.

proposed EFLS will form the core of an integrated multi-modal linkage system that also features improved pedestrian facilities, road-based transport and the Mass Transit Railway (MTR) to serve different connectivity objectives viz. strategic, inter-district, intra-district and local levels [2] for the CBD in KE. It would provide efficient intra-district connectivity services within the new CBD, especially for those areas not served by the existing or planned MTR network, and through interchanges with the existing MTR Kwun Tong Line and the future Shatin to Central Link to facilitate inter-district travelling to other districts beyond KE.

4. In December 2011, we informed [3] Members that a two-stage PC on the proposed EFLS would be conducted in early 2012. We updated [4] Members on 17 April 2012 on the progress of the on-going Stage 1 PC and sought views on the EFLS proposal, and provided further updates on the project [5] on 7 January 2013. Views collected from the Stage 1 PC were analysed; detailed responses were given at the three-month Stage 2 PC concluded on 4 February 2014. We informed[6] Members on 25 February 2014 of our plan to consult Members on the proposal to carry out a DFS for the EFLS.

5. During the two-stage PC, we consulted the relevant statutory/ advisory bodies, professional institutions, locals/concerned groups and transport operators, and organised public engagement workshops with a view to soliciting a broad spectrum of opinions from society. In parallel, we uploaded information including study overview, consultation materials and consultation activities to a dedicated website of the EFLS (http://www.ktd.gov.hk/efls) for wider publicity. Details of the stakeholders

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[2] Strategic level means connection to strategic routes that enable quick access to the airport and cross-boundary facilities whilst inter-district level refers to connection with other key office nodes in the territory facilitating business activities. As for the intra-district level, it involves connectivity within KE, in particular, with those areas not well covered by the catchment of existing/planned MTR networks whilst local level means connection within walking distance through pedestrian corridors, footbridges and subways, enhanced footpaths, etc.

[3] Paragraph 3(i) of the paper on "Energizing Kowloon East" to the Legislative Council Panel on Development for discussion on 19 December 2011.

[4] Paper on "Environmentally Friendly Linkage System for Kowloon East" to the Legislative Council Panel on Development for discussion on 17 April 2012.

[5] Paragraph 8(i) of the paper on "Progress Report of Energizing Kowloon East Office and Its Continuing Operation" to the Legislative Council Panel on Development for discussion on 7 January 2013.

[6] Paragraph 20 of the paper on "Progress Report on Kai Tak Development" to the Legislative Council Panel on Development for information on 25 February 2014.

consulted are set out at **Enclosure 1**. Summary reports on the public views and suggestions collected in each stage of PC can be downloaded from the above website.

OUTCOME OF THE TWO-STAGE PUBLIC CONSULTATION

6. We successfully aroused public awareness of the proposed EFLS during the Stage 1 PC and gauged the community's aspirations and expectations on the connectivity for KE. The Stage 1 PC identified a genuine need to enhance the connectivity of KE for the development of a CBD. However, there were diversified views on the proposed elevated monorail system which can largely be categorized into three key issues: (i) need for an elevated rail-based EFLS, (ii) alignment and coverage, and (iii) implications for the Kwun Tong Typhoon Shelter (KTTS).

7. To facilitate the Stage 2 PC, we published and uploaded to the dedicated website on EFLS a public consultation digest (a copy attached at **Enclosure 2**), setting out our responses to the above three key issues. We consider provision of a world-class multi-modal linkage system a vital ingredient for the success of the KE transformation into another CBD in Hong Kong. At the early stage of the KE transformation, it is necessary to provide road-based green transport and improve walking environment progressively to meet the growing traffic demand. In the long term, the limited road space in KE cannot accommodate the substantial increase in traffic arising from the CBD in KE and maintain efficient and reliable connectivity services. As the proposed elevated monorail EFLS could overcome the constraint of limited road capacity in KE and offer a high level of service in terms of reliability, efficiency, safety and level of comfort, it may become the core connectivity option in addition to the road-based green transport, the MTR and the improved pedestrian facilities to serve KE. The proposed alignment and coverage of the EFLS may fill in the services gap of MTR services. Flexibility in station and system design may be explored for future extension of the proposed EFLS. To better serve the Kowloon Bay business area, station locations near and along Wang Kwong Road have been fine-tuned. In view of the strong public aspirations for better use of the water body of KTTS and the concerns of the marine sectors on the impact of the Kwun Tong Transportation

Link (KTTL)[7] on high-mast vessels, the demand of sheltered spaces for high-mast vessels within Victoria Harbour and the opportunity for co-use of the water space at KTTS will need to be further studied. In order to firm up the way forward for the EFLS, we proposed conducting a DFS to address the key issues raised.

8. The Stage 2 PC generated thorough and in-depth discussions amongst various sectors in the community, with positive feedback on the proposed DFS received. Local communities generally supported the proposed EFLS and urged for early implementation or extension to adjacent districts, whilst some commented on the visual impact and the financial viability of the EFLS. Public opinions were similar to those received in the Stage 1 PC and were collated and responded to at **Enclosure 3**. During the Stage 2 PC, we received strong local reactions against the proposed relocation of an EFLS station from Kai Ching Estate to Wang Kwong Road and some suggestions on the EFLS alignment plan proposed in Stage 2 PC (**Enclosure 4)**. We undertook to review the locations of the EFLS stations and ascertain the alignment network under the proposed DFS, together with the best arrangement of pedestrian connections to serve a much wider cluster of developments.

9. During the Stage 2 PC, we received a proposal for the use of modern tramway in lieu of monorail as the EFLS for KE. Comparing with the proposed monorail system, the proponent claimed that modern tramway[8] could be less costly and offer an earlier implementation programme, higher flexibility for line extension or capacity expansion, and easy accessibility at-grade. However, the proponent did not offer any substantiation on the cost estimate, completion timetable and other claimed benefits. The limited road network within the highly built-up areas of Kwun Tong and Kowloon Bay cannot accommodate the tramway without significant impact on other road users. Interchanges with the elevated MTR Kwun Tong Line services would be inconvenient and inefficient and would affect the overall accessibility of the CBD in KE. In sum, we do not consider modern tramway to be a viable alternative solution for KE.

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[7] The KTTL forms part of the proposed EFLS to connect the former runway tip directly to the Kwun Tong waterfront. The proposed alignment runs across the entrance of the existing KTTS and will render some high-mast dumb steel lighters not able to use the typhoon shelter.

[8] The proposed modern tramway is 2.4m wide and 32m long, requiring a width of 6.4m to accommodate a two-way track.

PROPOSED NEXT STAGE OF WORK

Need for DFS

10. The current formulation of the proposed EFLS is a conceptual scheme based on the findings of the preliminary feasibility study. It does not have the level of details that can fully address the three key issues as identified in the two-stage PC. Although public reactions to the proposed EFLS are mixed, the public generally support conducting a DFS to ascertain its financial viability, environmental acceptability, as well as technical considerations covering alignment, system design and implementation programme. We will address the various public concerns on the proposed EFLS in detail under the DFS.

11. The DFS is needed to recommend an EFLS scheme which meets all statutory and Government requirements and is generally accepted by concerned stakeholders; to work out the details and procurement method of the recommended EFLS scheme to such an extent that the Government could take forward the EFLS to the detailed design and construction stages if such decision is made; to determine a cost-effective multi-modal linkage system for phased implementation; to work out detailed mitigation measures to address the impact of the KTTL on high-mast vessels; and to investigate more beneficial use of the water body at the KTTS. The final decision on whether to implement the proposed EFLS would only be made after conclusion of the DFS.

12. In view of the complex, specialised and multi-disciplinary nature of the EFLS and lack of in-house resources, we propose to engage consultants to undertake the proposed DFS and to supervise the preliminary site investigation works as required.

Scope and Nature of DFS

13. The scope of **65TR** comprises a DFS on the proposed EFLS, preliminary site investigation works and public consultation exercise with relevant stakeholders. The DFS includes the following tasks:

(a) Network development review based upon the comments received from the two-stage PC and the latest development [9] of KE, with sensitivity tests on alternative alignments and connections with MTR stations; patronage forecast; associated economic and financial performances assessment; and recommendation of a preferred alignment;

(b) Study to formulate a well-planned integrated multi-modal linkage system by using the proposed elevated EFLS in addition to different kinds of road-based green transport and pedestrian facilities to enhance the connectivity of KE at different stages of the CBD development;

(c) Study to examine a preferred operation mode, station design, related electrical and mechanical works, rolling stock and depot requirements of the EFLS;

(d) Assessment on innovative designs, and arrangements for enhancing attractiveness and cost-effectiveness;

(e) Technical assessments, including preliminary environmental assessment;

(f) Financial assessment, procurement options and implementation programme assessment; and

(g) Topical studies to examine better use of the water body of KTTS and/or Kai Tak Approach Channel, justifications for the KTTL, mitigation measures to address impact of KTTL on high-mast vessels and any reprovisioning options of KTTS to comply with the requirements of the Protection of the Harbour Ordinance.

Study Timeframe and Financial Implications

14. We plan to invite tender in July 2014 and conclude the tender evaluation by December 2014. Subject to funding approval by the Finance Committee, we plan to commence the proposed DFS of the EFLS for KE in early 2015 for phased completion by early 2017. Further public consultation

[9] The latest developments of KE will cover the outcome of the International Ideas Competition of the "Kai Tak Fantasy" to be announced in late 2014, intensification of development intensity in KTD and the Territorial Population and Employment Data Matrices published by Planning Department in 2013.

will be conducted at appropriate stages of the DFS, with a view to consolidating public views on the way forward for the proposed EFLS in 2017.

15. We estimate the total project cost of **65TR** to be about $92 million in MOD prices, which will be refined upon firming up the scope of the proposed DFS and preliminary site investigation works.

Environmental Implications

16. The proposed rail-based EFLS is a designated project under Schedule 2 of the Environmental Impact Assessment (EIA) Ordinance (Cap. 499) and an environmental permit is required for the construction and operation of the project. The environmental impact of the proposed EFLS within the KTD area has been broadly addressed in Schedule 3 of the KTD EIA report approved under the EIA Ordinance in March 2009, which recommended to conduct a statutory EIA study to assess the environmental impact of the EFLS and identify mitigation measures in details. The statutory EIA study will be carried out after the decision on whether to proceed with the proposed EFLS has been made upon completion of the DFS. Nevertheless, a preliminary environmental assessment will be conducted under the DFS to evaluate the environmental implications of the EFLS to facilitate decision-making.

17. The proposed DFS and the associated preliminary site investigation works are not designated projects under the EIA Ordinance and will not cause adverse environmental impacts. We have included in the project estimates the cost to implement suitable mitigation measures to control any short-term environmental impacts arising from the proposed preliminary site investigation works. The proposed preliminary site investigation works will only generate very little construction waste. We will require the consultant to fully consider measures to minimize the generation of construction waste and to reuse/recycle construction waste as much as possible in the future implementation of the construction projects.

Heritage Implications

18. The proposed DFS and preliminary site investigation works will not affect any heritage site, i.e. all declared monuments, proposed monuments, graded historic sites/buildings, sites of archaeological interest and Government historic sites identified by the Antiquities and Monuments Office.

Land Acquisition

19. The proposed DFS and preliminary site investigation works will not require any land acquisition.

WAY FORWARD

20. Subject to Members' support and after the tender result is available, we plan to seek endorsement from the Public Works Subcommittee and approval from the Finance Committee tentatively in late 2014 for upgrading **65TR** to Category A, with a view to commencing the proposed DFS in early 2015.

ATTACHMENT

Enclosure 1 – Summary List of Stakeholders Consulted in the two-stage Public Consultation

Enclosure 2 – Stage 2 Public Consultation Digest

Enclosure 3 – Public Comments and Further Responses in Stage 2 Public Consultation

Enclosure 4 – EFLS Alignment Plan Proposed in the Stage 2 Public Consultation

Development Bureau
Civil Engineering and Development Department
May 2014

SUMMARY LISTS OF STAKEHOLDERS CONSULTED IN THE TWO-STAGE PUBLIC CONSULTATION (PC)

Stage 1 PC

In the Stage 1 PC for EFLS conducted during the period between early February and late October 2012, the Civil Engineering and Development Department (CEDD) conducted two public engagement workshops and consulted the following list of statutory/advisory bodies, professional institutions, local forums/concerned groups, and transport operators:-

Category	Parties Consulted
Statutory/Advisory bodies	(a) Legislative Council Panel on Development (b) Kwun Tong District Council (c) Housing and Infrastructure Committee of the Kowloon City District Council (d) Wong Tai Sin District Council (e) Local Vessels Advisory Committee (f) Task Force on Kai Tak Harbourfront Development of the Harbourfront Commission
Professional institutions	(g) Hong Kong Institute of Planners (h) Chartered Institute of Logistics and Transport Hong Kong, Transport Policy Committee (i) Chartered Institution of Highways and Transportation – Hong Kong Branch (j) Royal Institution of Chartered Surveyors Hong Kong (k) Hong Kong Institute of Surveyors (l) Hong Kong Institution of Engineers
Local forums/ Concerned groups	(m) 土瓜灣居民交流會 (n) 啟德新天地 你我齊共建 (o) 麗港城居民諮詢會 (p) Representatives from Marine Trade
Transport operators	(q) Kowloon Motor Bus Company Limited (r) The MTR Corporation Limited

Stage 2 PC

In the Stage 2 PC for EFLS conducted during the period between 28 October 2013 and 4 February 2014, CEDD conducted a public forum and consulted the following list of statutory/advisory bodies, professional institutions, local residents/concerned groups, and transport operators:-

Category	**Parties Consulted**
Statutory/Advisory bodies	(a) Kwun Tong District Council (b) Housing and Infrastructure Committee of the Kowloon City District Council (c) Wong Tai Sin District Council (d) Task Force on Kai Tak Harbourfront Development of the Harbourfront Commission
Professional institutions	(e) Hong Kong Institute of Planners (f) Chartered Institute of Logistics and Transport Hong Kong, Transport Policy Committee (g) Chartered Institution of Highways and Transportation – Hong Kong Branch (h) Royal Institution of Chartered Surveyors Hong Kong (i) Hong Kong Institute of Surveyors (j) Hong Kong Institution of Engineers (k) Hong Kong Institute of Urban Design
Local residents/ Concerned groups	(l) Briefing to Residents of Laguna City (m) Representatives from Marine Trade
Transport operators	(n) Kowloon Motor Bus Company Limited (o) The MTR Corporation Limited (p) Hong Kong Tramways, Limited

連.繫.九龍東.
環保連接系統

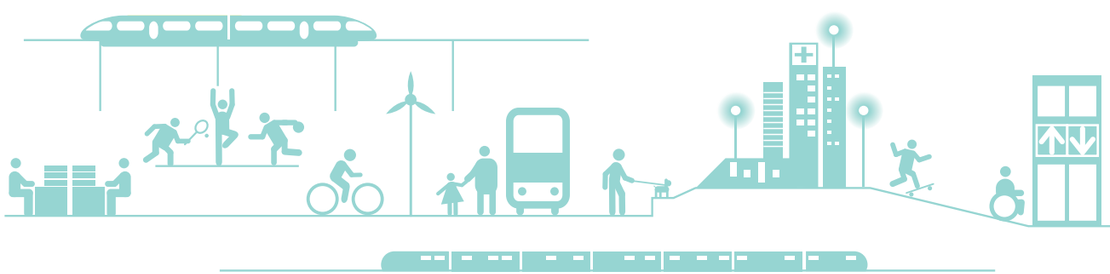
Connecting Kowloon East
Environmentally Friendly Linkage System

第二階段公眾諮詢摘要
Stage 2 Public Consultation Digest

您的意見，我們重視

土木工程拓展署現正研究以一個現代化和便捷的環保連接系統，將九龍東區內的啟德發展區、九龍灣和觀塘連繫起來的可行性，並就擬議環保連接系統方案進行兩個階段的公眾諮詢活動。

第一階段公眾諮詢活動已於2012年2月至10月進行，期間諮詢了不同的法定和諮詢組織、專業學會、運輸機構及關注團體，並舉辦了兩場公眾參與工作坊。根據蒐集所得的意見及建議，公眾普遍支持加強九龍東的連繫，分析結果顯示了下頁所述最受關注的三項議題。



Your Views Are Important

The Civil Engineering and Development Department is studying the feasibility of an Environmentally Friendly Linkage System (EFLS) as a modern and convenient intra-district connector for Kowloon East comprising Kai Tak Development, Kowloon Bay and Kwun Tong, and conducting a two-stage public consultation exercise in regard to the EFLS proposal.

Stage 1 public consultation took place from February to October 2012 and included a series of meetings with statutory and advisory bodies, professional institutions, transport operators and interested groups, as well as two public engagement workshops. The views and suggestions received have revealed overall support for strengthening the connectivity of Kowloon East, and have been analysed to identify the following three issues of most concern shown on the next page.

1 高架鐵路環保連接系統的需要

- 高度暢達的交通對發展九龍東新核心商業區是必要的，但如何實現？
- 關注高建造成本及低預測經營回報
- 可否選擇其他路面環保交通工具模式？
- 為何不能在地面或地底行走？

Need for an Elevated Rail-based EFLS

- Good accessibility is essential for the development of a new Central Business District (CBD) in Kowloon East, but how?
- Concerns about high construction costs and low predicted operating returns
- Alternative option of road-based green transport?
- Why not at ground level or underground?

2 走線和覆蓋範圍

- 在連接觀塘方面，為何不改經現有滑行道橋樑，以取代前跑道末端的擬議觀塘連接橋？
- 可否刪除走線中觀塘連接橋這一段，或延遲興建？
- 可否將環保連接系統伸延至毗鄰地區？
- 哪裏是設置車站的理想位置？
- 連接至港鐵觀塘站的最後一段走線，應選擇取道開源道或敬業街？

Alignment and Coverage

- Why not route via the existing Taxiway Bridge to Kwun Tong, instead of the proposed Kwun Tong Transportation Link (KTTL) bridge from the former runway tip?
- Can the KTTL section be curtailed or implemented at a later phase?
- Can the EFLS be extended to serve adjacent districts?
- Where are the desirable locations for the EFLS stations?
- Should Hoi Yuen Road or King Yip Street be the final leg to Kwun Tong MTR station?

3 對觀塘避風塘的影響

- 公眾期望能更善用避風塘水體
- 海上業界關注觀塘連接橋的21米淨空高度，對高桅杆船隻的影響

Implications for the Kwun Tong Typhoon Shelter

- Public aspirations for more beneficial use of water body at the typhoon shelter
- Marine trade's concerns about the impact on tall vessels due to the 21m clearance under the KTTL

第一階段公眾諮詢概覽
Stage 1 Public Consultation Overview

第二階段公眾諮詢
Stage 2 Public Consultation

第二階段公眾諮詢的目的，是總結及回應第一階段收集所得的公眾意見和建議，並就建議於落實項目實施前進行詳細可行性研究，以處理各範疇的關注，進一步徵詢公眾的意見。

Our aim for Stage 2 public consultation is to sum up and respond to public views and suggestions received in the first stage, and to seek views and suggestions on a proposed detailed feasibility study to address the various concerns before committing to project implementation.

九龍東 — 香港全新的核心商業區

九龍東涵蓋充滿動力的新啟德發展區、觀塘和九龍灣，將發展成為另一個核心商業區，匯集康樂及商業活動，令社區重現活力姿采，並可提供約540萬平方米辦公室樓面面積，相等於兩倍中環現有的數量。

為九龍東區內及與香港其他地區之間提供可靠、快捷、舒適及環保的連繫是實現這一遠大願景的關鍵要素。環保連接系統將成為服務九龍東的綜合多模式連接系統的骨幹。

Kowloon East – a New CBD for Hong Kong

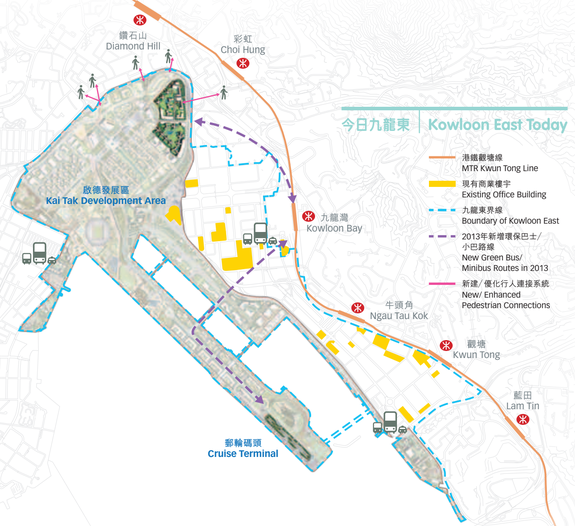
Kowloon East encompassing the dynamic new Kai Tak Development, Kwun Tong and Kowloon Bay districts is set to become another premier CBD, with the opportunity to regenerate communities, integrate leisure and business activities, and provide approximately 5.4 million square metres office space doubling the office space currently available in Central.

Reliable, efficient, comfortable, green connections within Kowloon East and with the rest of Hong Kong are essential to make this ambitious vision a reality. The EFLS will form the backbone of a multi-modal linkage system serving Kowloon East.

連繫九龍東

為了促使九龍東成功發展成為一個核心商業區，一個考慮周全、兼顧各方的連繫系統必不可少。長遠而言，環保連接系統將成為一個綜合多模式連接系統的核心，配合系統內的優化行人設施、路面環保交通工具和港鐵服務，加強九龍東的連繫。

隨著九龍東核心商業區的發展及逐漸成型，為了確保提供高度暢達的交通和緊密的連繫，我們會按循序漸進方式，分階段引進綜合多模式連接系統的各項設施。這個漸進方式已於2013年展開，我們正逐步推行環保路面交通工具，以及改善步行環境，當中包括新建的及優化的行人隧道、行人天橋和擴闊的行人道。



Connecting Kowloon East

A well-balanced connectivity system is essential for the successful development of CBD in Kowloon East. In the long term, the EFLS will form the core of an integrated multi-modal linkage system that also features improved pedestrian facilities, green road-based transport and the MTR.

The elements of this integrated system will be introduced in stages to ensure good accessibility and connectivity as the CBD in Kowloon East grows and starts to take shape. This progressive approach, beginning in 2013, will see the incremental deployment of environmentally friendly road vehicles and improvements to the walking environment with new and enhanced subways, footbridges and widened walkways.

10至15年後，隨著區內商業樓宇、各種設施和旅遊景點陸續落成，交通需求勢必大幅增加，導致路面交通設施不足以應付有關需求，亦難以為不斷擴大的核心商業區提供所需的優質服務。屆時，擬議環保連接系統將投入服務，成為九龍東的連繫骨幹。

我們建議的環保連接系統方案，是一條時尚的雙向高架單軌鐵路，走線全長約9公里，共12個站，以港鐵九龍灣站為起點，穿越啟德發展區後，取道橫跨觀塘避風塘入口的新建觀塘連接橋，最終接駁至港鐵觀塘站。這個建議方案須待擬議的詳細可行性研究妥善處理了公眾諮詢活動蒐集所得的各類關注之後，方能確定。

After 10 to 15 years, as demand grows and more offices, facilities and attractions come on line, and the ground level transport can no longer meet demand or provide the required service levels for the expanding CBD, the EFLS will begin operations to become the core connectivity option for Kowloon East.

Subject to the proposed detailed feasibility study to address the main issues raised in the public consultation, the recommended solution for the EFLS is an elegant elevated 9-kilometre, 12-station monorail running on parallel tracks from the MTR Kowloon Bay Station through the Kai Tak Development, and across a new KTTL above the entrance of the Kwun Tong Typhoon Shelter to the MTR Kwun Tong Station.

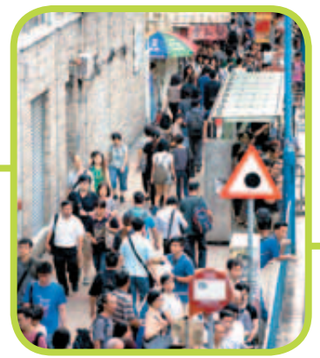
1 高架鐵路環保連接系統的需要
Need for an Elevated Rail-based EFLS

新舊共融的九龍東

Bringing Old and New Together

九龍東涵蓋多個新舊區域，包括啟德發展區、九龍灣和觀塘。港鐵現時只繞著該區的邊緣行走，頗大範圍僅依靠道路交通連繫。過去一直是機場禁區的啟德，更是遠離港鐵和主要道路。在九龍灣和觀塘兩個舊區內，繁忙的街道、狹窄的行人路，加上頻繁的路旁貨物裝卸活動和現存密集的樓宇等客觀環境，對發展或改善不同的交通方案均構成限制。

Taking in Kai Tak, Kowloon Bay and Kwun Tong, Kowloon East is a diverse area of old and new. With the MTR system skirting around its periphery, large parts of Kowloon East are served only by roads, while Kai Tak, formerly a restricted airport area, is far removed from MTR and major road connections. In the older districts of Kowloon Bay and Kwun Tong, busy streets, narrow footpaths, frequent roadside activities and established buildings limit the scope for development or extending transport options.



觀塘及九龍灣的道路現況
Existing road conditions in Kwun Tong and Kowloon Bay

航空照片由地政總署提供 Aerial Photograph from Lands Department

港鐵站的步行覆蓋範圍
MTR Station Walk-in Catchment Coverage

為核心商業區打造世界級的連繫

World-Class Connections for CBD

一個核心商業區的發展及成功需要優質的區內和跨區連接服務，藉以吸引世界級的企業進駐。該等交通連接服務必須規劃周全，除了方便、安全和可靠外，更要全面融合以達至相輔相成的最佳效益。

A vital ingredient for the development and success of a CBD is the availability of high-quality internal and external connections to attract world-class businesses. These connections must be well planned, convenient, safe and reliable, and fully integrated to maximise efficiency.

作為核心商業區內多模式連繫方案的一環，高架單軌鐵路將提供無可比擬的連繫服務，對現時或未來港鐵網絡未達的地區尤其重要。高架單軌鐵路連接港鐵九龍灣站和觀塘站，以及未來沙田至中環線的啟德站，讓乘客可輕易換乘港鐵前往九龍東以外的地區，亦對促進九龍東核心商業區的蓬勃發展發揮催化作用。

An elevated monorail will provide unbeatable connectivity as part of a multi-modal linkage solution within the new CBD, especially for areas not served by the existing or planned MTR network, and to give easy access to the MTR for travel to other districts and beyond. With links to the existing MTR stations at Kowloon Bay and Kwun Tong and the planned Kai Tak Station of the Shatin to Central Link, the monorail will act as a catalyst for the CBD to flourish in Kowloon East.

9:30am
觀塘道
Kwun Tong Road

為何採用高架模式？

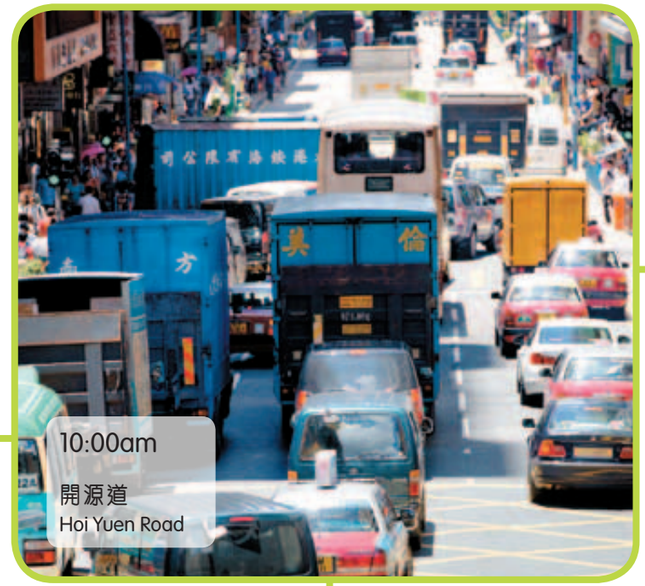
觀塘和九龍灣的道路已經非常繁忙，增設於地面行走的電車或輕鐵系統會大幅減少道路空間，阻擋橫街小巷及大廈出入口，並影響路旁貨物裝卸活動和其他道路使用者的安全。道路交通情況亦會影響系統服務的可靠性和效率。上述情況尚未計算將來有潛力新增400萬平方米辦公室樓面面積後所帶來的交通負荷。

Why Elevated?

The roads in Kwun Tong and Kowloon Bay are already busy. Adding a ground-level tram or light rail system would drastically reduce road space, block side streets and building entrances, and compromise roadside activities and safety. The reliability and efficiency of the service would also be affected by traffic conditions. And that is before the additional traffic to serve the potential extra 4 million square metres of office space is factored in.

地面模式會減少道路空間
Other ground-level examples that reduce road space


9:00am
宏照道
Wang Chiu Road


10:00am
開源道
Hoi Yuen Road


Telford Plaza
九龍灣 Kowloon Bay Station
3:00pm
九龍灣
Kowloon Bay


12:30pm
偉業街
Wai Yip Street


6:30pm
觀塘道
Kwun Tong Road


9:30am
開源道
Hoi Yuen Road

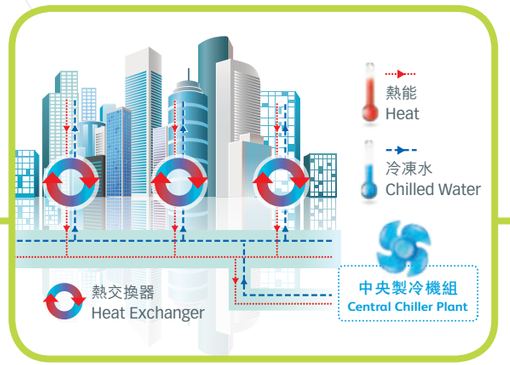

6:00pm
觀塘道
Kwun Tong Road

取道地底？

Going Underground?

與高架單軌鐵路相比，興建地下鐵路系統更為昂貴，而且無法與區內多個現有或已規劃的主要地下設施兼容，例如現有啟德隧道，以及已規劃的區域供冷系統、中九龍幹線、T2主幹路隧道和大規模箱型雨水渠。環保連接系統亦需與高架的港鐵觀塘和九龍灣車站連接，如果設於地下會對換乘造成不便和費時。

Building the transport system underground would be prohibitively expensive and would also conflict with major underground facilities in the area, such as the existing Kai Tak Tunnel as well as the District Cooling System, the Central Kowloon Route, the Trunk Road T2 tunnel and the large-scale stormwater box culverts that are located or planned to run under Kai Tak. The EFLS also needs to link with the elevated MTR stations at Kwun Tong and Kowloon Bay. The interchange would be inefficient and inconvenient if an underground EFLS system is adopted.



區域供冷系統
District Cooling System

啟德河構想圖
Artist's Impression of Kai Tak River

跨越擠迫

高架單軌鐵路的運作不受道路交通擠迫的影響，因此能確保提供便捷而可靠的服務，以配合核心商業區的持續發展，同時避免發生和其他道路使用者因潛在衝突引致的安全問題。

單軌鐵路的支撐結構較其他高架運輸系統輕巧，可在現有道路的中央分隔帶上或在路旁空間興建，大大減少對路面造成的干擾。

Rising Above the Congestion

An elevated monorail is independent of ground level traffic congestion to guarantee the efficient and reliable service required for the sustainable development of the CBD, and also avoids potential safety problems with other road users.

The supporting structures for a monorail are less intrusive than other raised transport options. The slim columns, which can be located within the central dividers of existing roads or in open space next to roads, cause far less disruption at ground level.

全新旅遊熱點

乘搭現代化的單軌鐵路可飽覽維多利亞港的優美景色，勢必成為觀光熱點。對於在啟德郵輪碼頭登岸的旅客來說，這無疑是展開香港旅程的精彩序幕。

環保連接系統將全面開啟市民和遊客前往啟德發展區內各康樂設施之旅途，包括位於前機場跑道末端的「飛躍啟德」、多用途體育園區、公園、海濱長廊和休憩用地。精心設計的單軌列車可成為九龍東品牌和視覺形象的獨特標誌。

A New Attraction

With spectacular views of Victoria Harbour, a futuristic monorail is likely to become a tourist attraction in its own right and an exciting introduction to Hong Kong for passengers at the Kai Tak Cruise Terminal.

From the Kai Tak Fantasy at the tip of the runway, the EFLS will also open up the full range of Kai Tak's leisure facilities including the multi-purpose sports complex and many parks, promenades and open spaces for the public and visitors. And a well-designed monorail can become an iconic element of the district's branding and visual identity.

核心商業區的重要組成部分

Integral Part of CBD

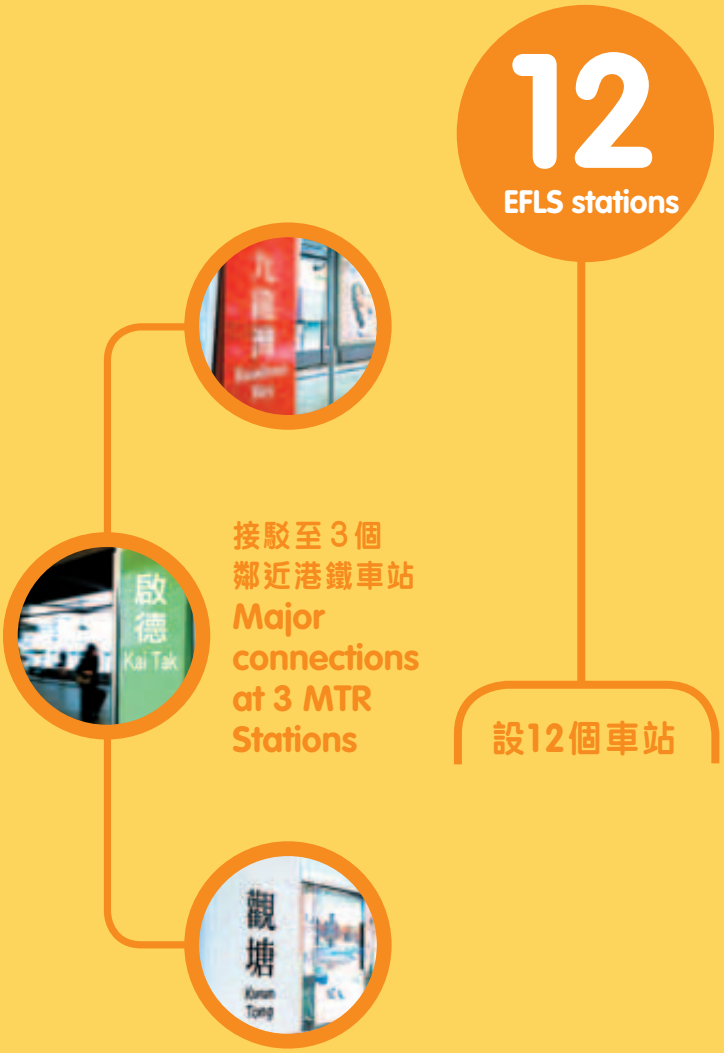
長遠而言，單軌鐵路將成為貫通區內和接駁區外的核心連接系統，促進核心商業區蓬勃發展，令九龍東再展姿采，成為活力十足的商業、休閒和旅遊中心，令全港受惠。雖然涉及較高建造成本，高架單軌鐵路項目作為在九龍東發展核心商業區的重要組成部分，可以滿足社會對優質辦公室用地日益殷切的需求，更有助香港持續的經濟發展。

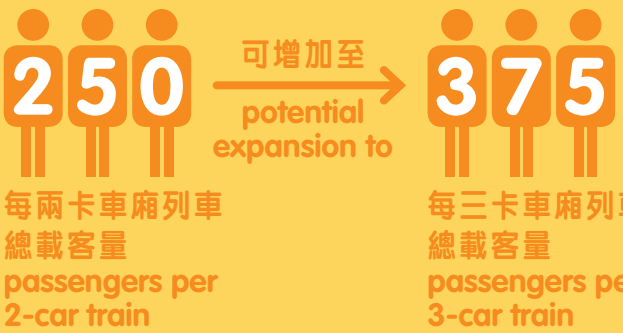
The monorail, over the long term, will be a core system providing both the inter- and intra-district connectivity that will enable CBD to flourish and support the regeneration of Kowloon East into a dynamic business, leisure and tourism centre for the benefit of all Hong Kong. Whilst the project will incur substantial capital investment, it is an integral part of the CBD development in Kowloon East to meet the needs of society in terms of increasing demand for high-grade office space as well as continuing economic growth.

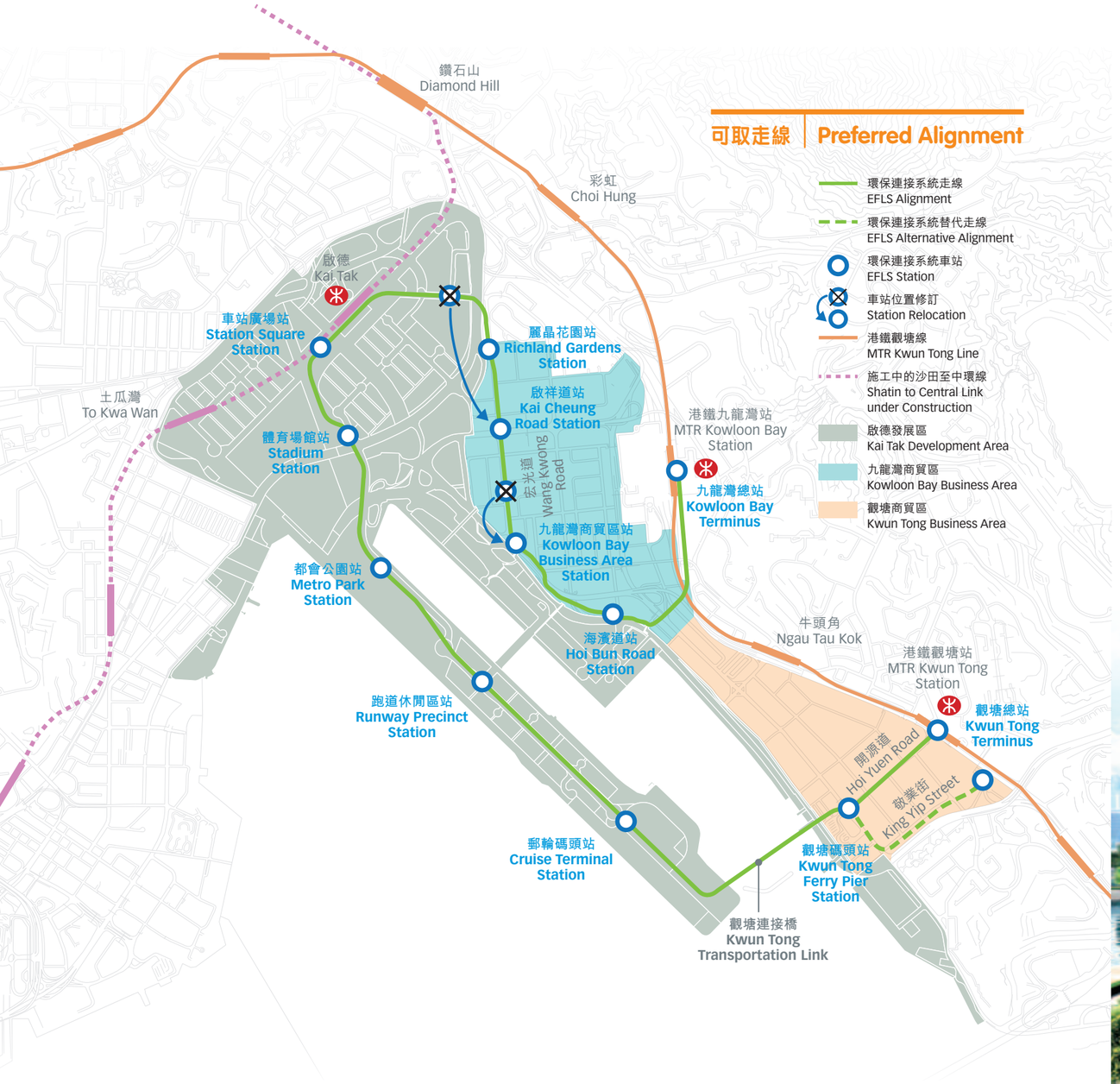
2 走線和覆蓋範圍
Alignment and Coverage

環保連接系統建議概覽

EFLS Proposal Overview







可取的環保連接系統走線方案

綜合第一階段公眾諮詢活動蒐集的意見，為避免與港鐵服務範圍重疊，以及為九龍灣商貿區提供更佳的服務，我們已對環保連接系統的部分車站位置作出修訂。修訂方案基本上保留了該單軌鐵路走線的主要特色，包括連接港鐵九龍灣站和觀塘站，以及在啟德站換乘未來的沙田至中環線。

開源道或敬業街？

單軌鐵路連接港鐵觀塘站的最後一段走線有兩個方案 — 取道開源道或敬業街。前者位置接近港鐵站，兩車站之間的接駁較為直接方便；後者空間較為寬敞，對環境和交通的影響較輕微，而且可以促進敬業街一帶的商業發展。兩個方案均會被納入擬議詳細可行性研究，作進一步探討。

Preferred EFLS Alignment Option

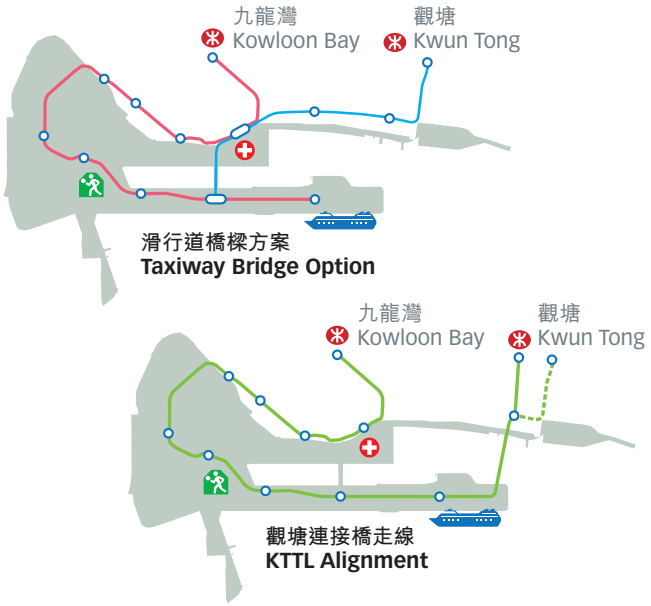
In response to the first stage of the public consultation, the proposed locations of some of the EFLS stations have been refined to avoid overlapping service catchment areas and enhance public access to the commercial developments at Kowloon Bay. Major connections at the MTR Kowloon Bay and Kwun Tong Stations, and interchange with the future Kai Tak Station of the Shatin to Central Link will remain as the key elements of the EFLS alignment.

Hoi Yuen Road or King Yip Street?

Two possible options remain for the final leg of the monorail to MTR Kwun Tong Station – Hoi Yuen Road or King Yip Street. The first is more direct with a convenient connection to the station; while the other is a more spacious site, meaning less environmental and traffic impact and may boost commercial development in the area. Both will be included in the proposed detailed feasibility study for further investigation.

取道滑行道橋樑或跑道末端？

有建議重新設定環保連接系統走線，改經偉業街和現有滑行道橋樑，以取代擬議觀塘連接橋，省卻相關的建造費用，並避免對觀塘避風塘的影響。



支持取道滑行道橋樑方案的理據

- 無須興建淨空高度21米的橋樑，可避免影響觀塘避風塘
- 增強九龍灣和前跑道末端之間的連繫
- 更緊密連繫九龍灣和觀塘的商貿區

支持經觀塘連接橋原定走線的理據

- 觀塘和前跑道末端直接相連，為休閒、康樂和旅遊樞紐的發展計劃發揮協同效應，並為郵輪碼頭，多用途體育園區和「飛躍啟德」帶來效益
- 換乘港鐵觀塘線的乘客可更平均分布於觀塘站及九龍灣站（取道滑行道橋樑的走線方案很可能會使港鐵九龍灣站不勝負荷）
- 不會影響已規劃的發展項目，包括位於前南面停機坪的醫院區
- 可保留開源道及敬業街走線方案的可行性
- 精心設計的觀塘連接橋，可成為九龍東一個矚目的地標

基於原定走線較取道滑行道橋樑的方案優勝，我們建議保留跑道末端至觀塘之間的觀塘連接橋。

Taxiway Bridge or Runway Tip?

A suggestion was made to realign the EFLS route via Wai Yip Street and the existing Taxiway Bridge midway along the former runway to avoid the need for a new KTTL bridge with its associated costs and implications for the Kwun Tong Typhoon Shelter.

In Favour of the Taxiway Bridge Option

- No impact on the Kwun Tong Typhoon Shelter caused by the KTTL with a bridge clearance of 21 metres
- Enhanced connectivity between Kowloon Bay and the end of the runway
- Better connectivity between the Kowloon Bay and Kwun Tong business areas

In Favour of the KTTL Alignment

- A direct link between Kwun Tong and the former runway tip will create synergy for the development of a leisure, recreation and tourism hub and benefit the cruise terminal, the multi-purpose sports complex and Kai Tak Fantasy
- Balanced interchange traffic between the Kwun Tong and Kowloon Bay MTR Stations (The Taxiway Bridge option would likely overload Kowloon Bay MTR Station)
- No impact on planned developments, including hospital sites at the former south apron
- Both Hoi Yuen Road and King Yip Street alignment options remain viable
- A well-designed KTTL monorail-cum-pedestrian and cycle track bridge could become an iconic landmark of Kowloon East

With a clear edge over the Taxiway Bridge option, the route via the KTTL – the bridge from the former runway tip to Kwun Tong – remains the recommended option.

跨越九龍東

有關研究探討了伸延環保連接系統至毗鄰地區的可能性，該等已發展的舊區包括土瓜灣、九龍城和新蒲崗等。鑑於對住宅區的噪音及景觀影響、樓宇私隱受到侵擾的關注及道路空間不足，難以容納高架鐵路的支撐結構等環境條件上的限制，我們現時不建議擴大連接系統的覆蓋範圍，但在進行擬議詳細可行性研究時，會考慮在設計上容納彈性，讓連接系統可於日後延伸。

土瓜灣
To Kwa Wan

九龍城
Kowloon City

Beyond Kowloon East

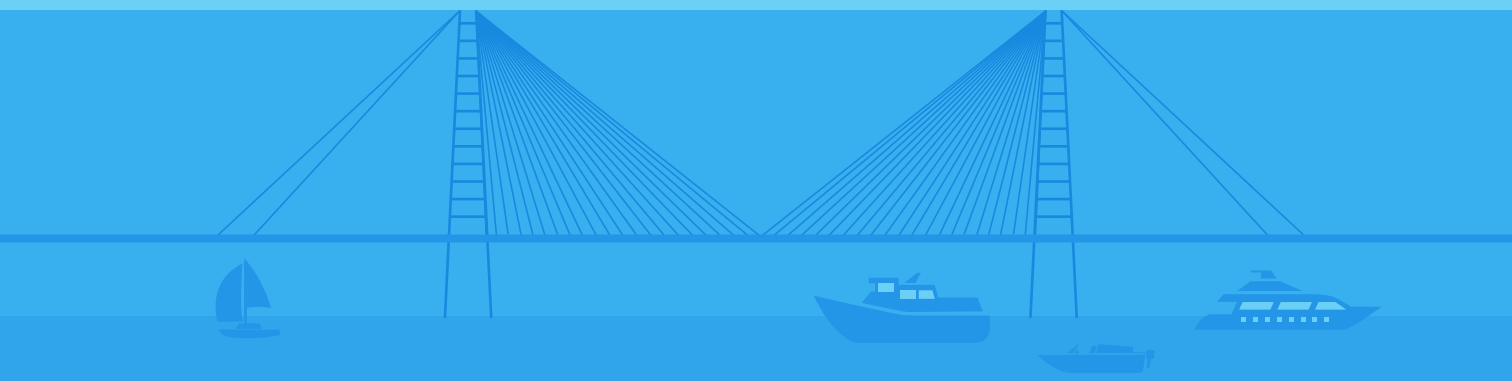
Opportunities for enlarging coverage of the EFLS to adjoining older developed districts, including To Kwa Wan, Kowloon City and San Po Kong have been explored. This was not pursued due to concerns about the noise and visual implications in residential areas, privacy issues, and inadequate road space to accommodate the supporting structures. However, the possibility of building in the flexibility for future expansion of the EFLS will be considered in the proposed detailed feasibility study.

新蒲崗
San Po Kong

九龍東與鄰近地區的跨區往來，例如紅磡、彩雲和鯉魚門等九龍東以外地區的交通需求，以及連接安達臣道和安達臣道石礦場上坡的發展區，需要以更廣泛的角度全面考慮，採用一個多模式連接系統以應付需求。擬議環保連接系統屬低載客量的鐵路系統，主要為九龍東提供區內連繫服務，難以應付額外跨區的整體交通需求。

Inter-district travel between Kowloon East and adjacent districts such as Hung Hom, Choi Wan and Lei Yue Mun as well as linking to uphill developments at Anderson Road and Anderson Road Quarry needs to be considered in a wider perspective taking account of a multi-modal linkage system. Given that the EFLS is a light capacity rail system serving intra-district movements, it cannot cater for these inter-district transport needs.

3 對觀塘避風塘的影響 Implications for the Kwun Tong Typhoon Shelter



避風塘水體的其他用途？

觀塘避風塘的面積約30公頃，位置接近維多利亞港中心地帶。在不久的將來，它會被新建的海濱長廊及其他康樂設施圍繞。避風塘連同啟德明渠進口道的水體將有潛力發展成為水上運動中心及休閒的好去處。

觀塘避風塘的周邊地區正在發生蛻變，由前觀塘公眾貨物裝卸區，前機場和舊工業區正轉化為充滿現代氣息的商業、康樂和旅遊中心。從第一階段公眾諮詢可見，公眾殷切期望觀塘避風塘能夠與時並進，為大眾利益而加以善用，並建議考慮加入水上運動、划艇以及締造更優美的景致。

觀塘避風塘
Kwun Tong Typhoon Shelter

擬議觀塘連接橋
The proposed Kwun Tong Transportation Link

啟德明渠進口道
Kai Tak Approach Channel

航空照片由地政總署提供 Aerial Photograph from Lands Department

Other Use of Water Body at the Typhoon Shelter?

As a sheltered 30-hectare expanse of water near the heart of Victoria Harbour soon to be surrounded by newly-created waterfront promenades and recreational facilities, the Kwun Tong Typhoon Shelter, together with the Kai Tak Approach Channel, has the potential to become a valuable water sports centre and leisure amenity.

With the surrounding areas undergoing a dynamic transformation from a disused airport, previous public cargo working area and old industrial districts into a modern business, recreational and tourism centre, the Stage 1 consultation clearly showed a public aspiration for the Kwun Tong Typhoon Shelter to reflect this change and be put to more beneficial use for the good of the wider community. Water sports, boating and a more pleasant vista were high on the agenda.

對高桅杆船隻的限制

擬議觀塘連接橋是一條可以同時容納單軌鐵路、行人道和單車徑的橋樑，其距離海面的淨空高度約為21米，而且位於避風塘入口處，所以會對高桅杆船隻尤其是高桅杆非自航鋼躉構成高度限制。

觀塘公眾貨物裝卸區自2011年關閉以來，觀塘避風塘的商業海上活動大幅減少，因此在平日應有空間釋出該水體作其他活動用途。此外，於颱風襲港期間使用避風塘的高桅杆非自航鋼躉數目較之前數年顯著減少。鑑於觀塘避風塘的使用現況，擬議詳細可行性研究將探討讓避風塘水體與其他用途並存的可能性，以及在其他地點為受影響船隻提供替代避風泊位的需要和方式。我們會與海上業界保持緊密溝通。

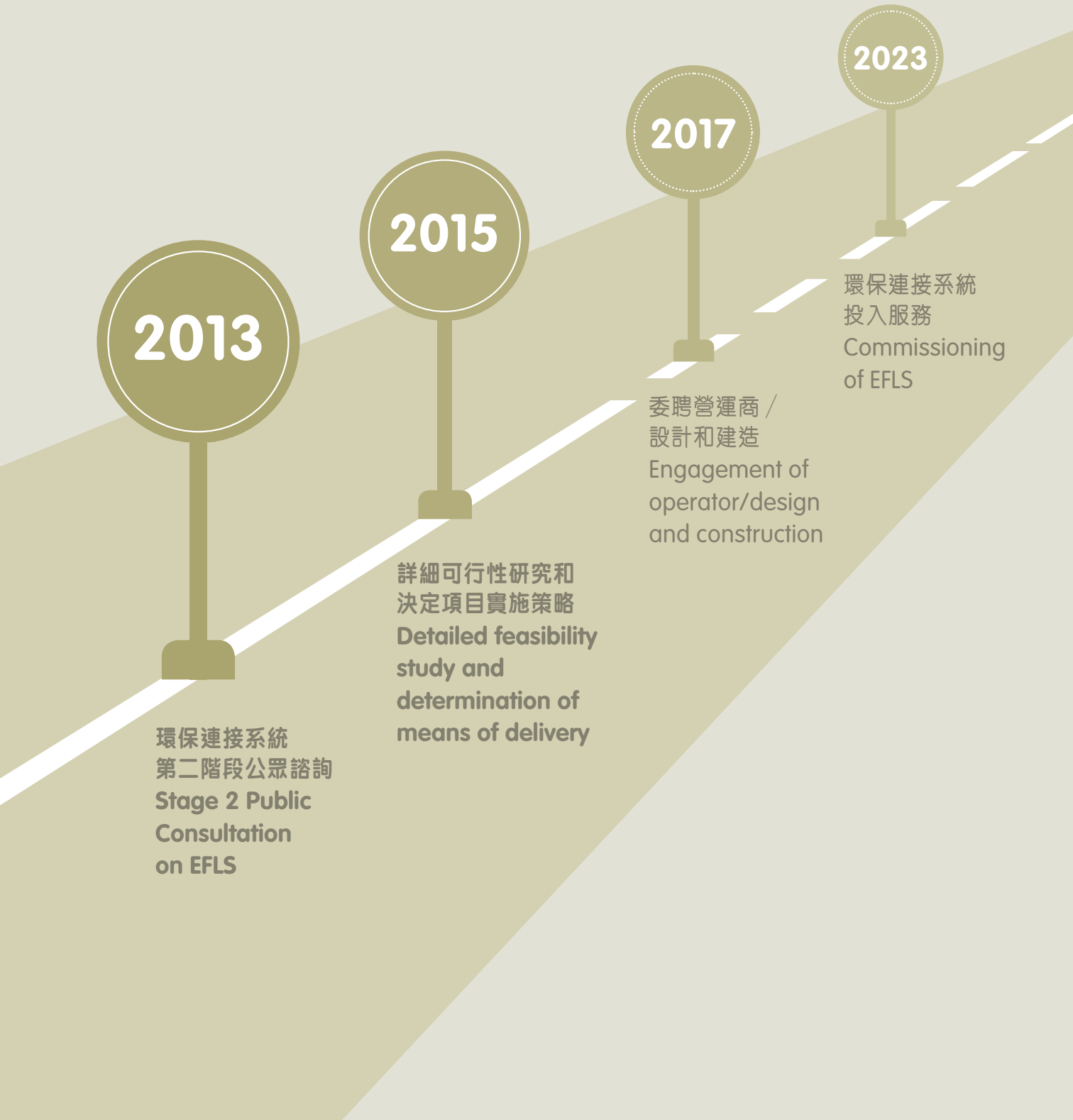
觀塘避風塘 — 攝於2013年8月14日颱風尤特襲港期間
Kwun Tong Typhoon Shelter – a photo taken on 14 Aug 2013 during typhoon Utor

Restricted Access for Tall Vessels

The clearance of about 21 metres above the sea for the proposed KTTL – a monorail-cum-pedestrian bridge with a cycle track over the entrance of the typhoon shelter would limit access for tall vessels, especially high-mast dumb steel lighters.

Since the closure of the Kwun Tong Public Cargo Working Area in 2011, commercial marine activities in the typhoon shelter have drastically reduced, which would free the area for other activities. Also, compared to previous years, notably fewer high-mast lighters have sought shelter in the area during typhoons. Taking into account the current usage at the Kwun Tong Typhoon Shelter, the proposed detailed feasibility study will explore the scope to release the water body for co-use with other activities and will investigate the need for and way forward of alternative sheltered spaces for the displaced vessels. Close communication with the marine industry will be maintained.

未來路向
Next Move for the EFLS



未來路向

我們已經考慮了第一階段公眾諮詢活動所提出的問題，現提交的建議應最適合滿足未來九龍東發展的連繫需求。

在作出落實環保連接系統決定之前，仍有一些關鍵的議題必需作更深入的研究，例如：

- 車站及車廠的設計與佈局、運作系統的選擇和營運維修的規格概述
- 初步環境影響評估
- 提升財務效益的方法、項目實施的策略和詳細的建造成本及財務表現評估
- 為日後擴建預留的設計彈性
- 在環保連接系統啟用之前後，如何透過綜合多模式連接系統增強九龍東與毗鄰地區的連繫
- 如何能更善用在啟德一帶的水體，以及如何處理因高桅杆船隻避風泊位減少而引致的問題

因此，我們建議就環保連接系統進行詳細可行性研究，並歡迎您就研究範疇提供寶貴意見。

Next Move for the EFLS

We have looked at the issues raised in the first stage of the public consultation to develop an EFLS proposal which offers the optimal solution to meet the connectivity needs of Kowloon East in the coming decades.

Before a decision is made on the proposed EFLS, we need a more in-depth study to ascertain critical issues, including:

- the technical design of stations and depot, the choice of operating system and operation and maintenance requirements;
- preliminary environmental impact assessment;
- ways to improve the financial efficacy of the project, project implementation strategy as well as more detailed capital cost estimates and financial assessments;
- flexibility for future expansion of the EFLS network;
- enhancement of multi-modal connectivity of Kowloon East with neighbouring areas before and after the EFLS implementation; and
- more beneficial usage of the water body at Kai Tak and concerns about the loss of sheltered space for tall vessels.

We recommend a detailed feasibility study be conducted and would welcome your views on the elements to be included in this study.

發表您的意見

您的意見尤為重要。我們誠意邀請您參與第二階段公眾諮詢活動，並就擬議詳細可行性研究發表您的意見。請於2014年2月4日或之前以下列方式將您的建議和意見送交土木工程拓展署。

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如欲了解更多公眾諮詢資料及最新消息，請瀏覽環保連接系統的網頁 http://www.ktd.gov.hk/efls

聲明：凡在<<環保連接系統第二階段公眾諮詢>>過程中向發展局或土木工程拓展署提供意見和建議的個人或團體，將被視作同意發展局或土木工程拓展署可將部分或全部的內容（包括個人姓名及團體名稱）公布。如您不同意這個安排，請於提供意見和建議時作出聲明。

Voice Your Views

Your views are important. We invite you to participate in the Stage 2 public consultation activities and send your suggestions and views, in particular, on the proposed detailed feasibility study, to the Civil Engineering and Development Department by email, fax or post on or before 4 February 2014.

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Website

For more information on public consultation activities and all the latest news, please visit the EFLS website at http://www.ktd.gov.hk/efls

Disclaimer: A person or an organisation providing any comments and suggestions to the Development Bureau or Civil Engineering and Development Department on the "Stage 2 Public Consultation on Environmentally Friendly Linkage System" shall be deemed to have given consent to the Development Bureau or Civil Engineering and Development Department to partially or wholly publish the comments and suggestions (including the names of the individuals and organisations). If you do not agree to this arrangement, please state so when providing comments and views.

發展局
Development Bureau

CEDD
土木工程拓展署
Civil Engineering and Development Department

AECOM

PUBLIC COMMENTS AND FURTHER RESPONSES IN STAGE 2 PUBLIC CONSULTATION

An overview of the public views received during the Stage 2 public consultation (PC) indicates that the feedback on the proposed detailed feasibility study (DFS) was positive. Public feedbacks received in regard to our responses to each of the three key issues identified in the Stage 1 PC and the proposed DFS together with our further responses are summarized in the following table.

Public's Feedbacks on Responses to Key Issues Identified in Stage 1 Public Consultation	Further Responses
Issue 1 The Need for an Elevated Rail-based Environmentally Friendly Linkage System (EFLS)	
• Public generally agreed that good connectivity was essential for developing a central business district (CBD) in Kowloon East (KE) and concurred that coverage of existing and planned MTR services in KE was limited, serving only the peripheral areas. They understood the limitations of Kai Tak being an ex-airport with restricted access and the road capacity constraint in Kwun Tong and Kowloon Bay and support the need of an integrated multi-modal linkage system for KE.	• In view of the importance of an integrated multi-modal linkage system for KE, the DFS will investigate and identify measures to enhance the connectivity of KE at different stages of CBD development.

Public's Feedbacks on Responses to Key Issues Identified in Stage 1 Public Consultation	**Further Responses**
• Public generally appreciated the role of the proposed EFLS to serve intra-district and inter-district movements in KE. District level opinions were in general supportive of the proposed EFLS in the form of elevated monorail, with some urging for further extension to adjacent old districts and early implementation.	• The DFS will explore design flexibility of the proposed EFLS to cater for possible future extension when circumstances permit as well as the implementation programme of EFLS, including phased implementation.
• There were public concerns about the high capital cost of the proposed EFLS and the recent closure of Sydney Monorail; some queried if there were any successful examples overseas. There were also concerns about inconvenient access to elevated monorail stations and safety arrangement for emergency evacuation.	• The proposed DFS will study the financial assessment and cost-effectiveness of the proposed EFLS. The final decision as to whether to implement the EFLS will only be made after conclusion of the DFS. • There are successful monorail examples overseas and in the Mainland. We note expanding monorail network in Chongqing and many new monorail lines are under construction in countries such as Korea, Brazil and Saudi Arabia, serving as part of their public transport systems. The decision of the Government of New South Wales to demolish the Sydney Monorail was not because of the failure of monorail technology. There were many contributing factors such as limited service coverage, round trip with single direction, poor connection with their light rail system or other

Public's Feedbacks on Responses to Key Issues Identified in Stage 1 Public Consultation	Further Responses
	public transport systems, resulting in high fare and decreasing patronage. The line did not allow for integrated fare transfers between local subways or bus connections and the alignment contravened with the planned expansion of the Sydney Convention and Exhibition Centre and other new developments. Unlike the design of the Sydney monorail, the proposed EFLS, in the form of monorail, will form part of an integrated multi-modal linkage system for KE. It will provide two-way services to serve intra-district movements and through convenient interchanges with three MTR stations to facilitate inter-district movements. Adopting an EFLS fare level comparable with that of MTR, the preliminary feasibility study (PFS) of EFLS forecasted a daily patronage of about 200,000 in year 2031. It is not appropriate to reject the proposed EFLS only because of the closure of Sydney Monorail.
• Some suggested replacement of monorail by other less costly and more flexible road-based transport modes, including modern tramway, Urban Light Transit (ULTra)[1], rubber-tyred	• To address the connectivity issue and select the most suitable EFLS for KE, we must consider two critical determining factors, i.e. the geographical characteristics and constraints of KE and the functional requirements of the proposed linkage

[1] ULTra is an example of Personal Rapid Transit. ULTra uses an automated fleet of four to six-seat electric vehicles moving along a network of elevated tracks to carry passengers point to point. Stations are located on track separated from the main track so that stopped vehicles do not interfere with the passing traffic.

Public's Feedbacks on Responses to Key Issues Identified in Stage 1 Public Consultation	Further Responses
Automatic People Mover (APM)[2], bus rapid transit (BRT)[3], electric buses, or even creating a comprehensive network for cycling and walking. • A proposal for using modern tramway in lieu of monorail as the EFLS system for KE was advocated. The proponent claimed that modern tramway could incur much lower capital cost and offer a much lower fare level, which attracted widespread discussions amongst the public. "Support" views based mainly on its claimed low capital cost/fare whilst "Against" views challenged its applicability in KE.	system. Prior to considering the cost and financial performance, a chosen option must satisfy these two fundamental requirements. Our broad assessments on the various suggested alternative road-based systems are elaborated below:- *(a) Modern Tramway* Kwun Tong and Kowloon Bay are well built-up areas with limited road space and many other road users. It could hardly accommodate a new modern tramway without significantly changing the road configuration and impact on other road users. The proposed modern tramway is about 2.4 m wide and 32 m long. Provision of two-way at-grade track would occupy nearly two traffic lanes plus an additional lane at locations with tram stations. If operated with dedicated corridor and priority at junctions, there is hardly space for road/junction widening to accommodate the system and other road users will have to be displaced. The 32m-long tram would block existing vehicular accesses to buildings which are closely spaced at some locations. If operated with shared road space with other users,

[2] APM is a light capacity elevated rail system, of which the train capacity is comparable to that of monorail. The APM requires a slab structure for mounting its guideway.

[3] BRT is a bus-based mass transit system, in which buses operate within a fully dedicated right of way in order to avoid traffic congestion.

Public's Feedbacks on Responses to Key Issues Identified in Stage 1 Public Consultation	Further Responses
	its efficient operation will depend very much on the traffic condition and the provision of a high level of services, i.e. in terms of reliability, efficiency and safety, required by a CBD could hardly be achieved. Moreover, the approved Kai Tak Outline Zoning Plan (OZP) does not make allowance for an at-grade tramway system. To align tramway at open spaces, such as Metro Park, Station Square and along promenade would have significant impacts on other park users. Any major amendments to the OZP would affect the implementation of Kai Tak Development (KTD). In sum, we do not consider modern tramway applicable in the specific context of KE. *(b) Urban Light Transit (ULTra)* ULTra is not suitable for KE as it carries only about 4 to 6 persons per car, which is far below the capacity requirement for KE, estimated to be about 6000 passengers per hour per direction during peak periods. The proposed 2-car monorail, carrying about 250 people per train and running at two minutes headway, is capable to meet the demand. *(c) Rubber-tyred Automatic People Mover (APM)* APM requires a slab structure for mounting guideway, which looks much bulky whereas monorail runs on beam girder guideway and have less blockage to daylight/ventilation. While

Public's Feedbacks on Responses to Key Issues Identified in Stage 1 Public Consultation	Further Responses
	the associated capital, maintenance and operating costs of the two systems are of similar order, the monorail system has an edge over APM in terms of visual impact. *(d) Bus Rapid Transit (BRT)* Similar to modern tramway, BRT requires an exclusive traffic lane for operation. Hence, the congested road network in KE could hardly accommodate the system. *(e) Electric buses and a Comprehensive Network for Cycling and Walking* We encourage the use of electric buses and well-designed walkway system in KE as they have different roles to play in the integrated multi-modal linkage system to satisfy different travel needs. Trial schemes are being arranged to test suitability of electric buses for use in Hong Kong. The Energizing Kowloon East Office of the Development Bureau has commissioned studies to improve the pedestrian environment in Kowloon Bay and Kwun Tong business areas. However, in the long term, due to the constraints imposed by the existing densely developed buildings in Kowloon Bay and Kwun Tong, there is inadequate space for improving the existing road network to cope with the substantial increase in traffic in KE arising from the CBD. Hence, it is not feasible to

Public's Feedbacks on Responses to Key Issues Identified in Stage 1 Public Consultation	Further Responses
	rely solely on road-based green transport.
• Some appreciated the limitations of tramway due to the constraints of KE and urged government to focus the DFS on investigation of an elevated rail-based EFLS and expedite its implementation to support CBD development in KE. A few also suggested a parallel study be done on other road-based options (including electric buses and walking corridors) as fallback solutions for not choosing the monorail proposal after the DFS.	• In the DFS, we will not merely investigate the elevated rail-based EFLS, but also look into the connectivity requirements in KE before the implementation of EFLS by formulation of a well-planned integrated multi-modal linkage system. The DFS will investigate and identify measures to enhance the connectivity of KE at different stages of CBD development.
Issue 2 Alignment and Coverage of the Proposed EFLS	
• **Views on station locations:** ➢ In particular, residents of the public housing estates in Kai Tak requested the retention of a EFLS station near Kai Ching Estate as previously proposed in Stage 1 PC; ➢ Some considered the proposed station at Richlands Garden could be better positioned to serve a wider catchment;	• The DFS will revisit the locations of the proposed EFLS station and associated connections to serve a wider catchment. As for the suggested additional EFLS station at Hung To Road and retention of the previously proposed Wang Kwong Road Station, the proximity to other proposed EFLS stations has to be considered.

Public's Feedbacks on Responses to Key Issues Identified in Stage 1 Public Consultation	Further Responses
➢ Some suggested adding a station near Hung To Road, and retaining the previously proposed Wang Kwong Road Station.	
• **Views on Coverage of EFLS**	
➢ There were separate requests to extend the proposed EFLS to adjacent districts, including To Kwa Wan, Kowloon City, San Po Kong, Hung Hom, Sau Mau Ping, Ngau Tau Kok and Lei Yue Mun; ➢ There was general support for government's proposal to explore in the DFS design flexibility of EFLS for future extension to adjacent districts if opportunities arise in the long term. At the same time, some suggested interim measures to serve these areas should be considered.	➢ We have examined the feasibility to extend the EFLS to adjoining districts, including To Kwa Wan, Kowloon City and San Po Kong in the PFS. The study did not recommend any extension into these highly build-up areas as it would have noise and visual implications as well as privacy concerns in residential zones. In addition, these areas are very congested and would hardly have adequate road space to accommodate the supporting structures of EFLS. In the long term, there might be opportunities to increase developments in the adjacent districts through redevelopments. As such, the DFS will explore design flexibility of the proposed EFLS to cater for possible future extension when circumstances permit. ➢ For better connections between neighbouring areas and the KTD, the DFS will investigate measures such as strengthening road-based public transport services and enhancing pedestrian linkages to facilitate mobility of people.

Public's Feedbacks on Responses to Key Issues Identified in Stage 1 Public Consultation	Further Responses
	➢ Inter-district travel between KE and other districts such as Hung Hom, Sau Mau Ping and Lei Yue Mun would need to be considered in a much wider perspective under the network planning and development of our comprehensive public transport system. The proposed EFLS is a light to medium capacity rail system serving mainly intra-district movements within KE, it should not be treated as a heavy mass transit mode to resolve inter-district transport needs beyond KE.
➢ There was no objection to further study alternative alignments at Hoi Yuen Road and King Yip Street in the DFS to review their synergy with the CBD development, financial implications and impact on local traffic before finalizing the choice.	➢ Noted for further consideration in the DFS.
➢ If extension to To Kwa Wan was not feasible, some asked for shifting the alignment closer to the edge of To Kwa Wan, i.e. around the western periphery of the Multi-purpose Sports Complex (MPSC);	➢ To meet the required turning radius of monorail, shifting the EFLS alignment as suggested would likely encroach upon the MPSC site and might be in conflict with other planned facilities along the waterfront. Nevertheless, the DFS will carry out sensitivity tests on this option and explore any synergy for integrating EFLS station with the MPSC.

Public's Feedbacks on Responses to Key Issues Identified in Stage 1 Public Consultation	Further Responses
• **Views on interchange connection with MTR:** ➢ In view of the congestion of MTR Kwun Tong Station, some suggested interchange with MTR Ngau Tau Kok (NTK) Station instead; similarly, some suggested connection with MTR Yau Tong Station to provide a more convenient interchange for people to/from Hong Kong Island;	➢ There are limited space around the NTK MTR Station for construction of a proper EFLS terminus, even with the removal of the Elegance Road Garden and the adjoining primary school. The presence of viaducts at Kwun Tong Road and the elevated MTR Kwun Tong Line would make the EFLS viaduct about 25m above ground. This would cause serious visual impact and would be very inconvenient for interchange with the NTK MTR concourse at ground level. ➢ Although connection with MTR Yau Tong Station might offer convenient interchange for people to/from Hong Kong Island, swapping the interchange connection from Kwun Tong to Yau Tong would diminish the role of EFLS to serve the CBD in KE. Moreover, the resulting increase in alignment length would increase capital/maintenance and operating costs, and may affect the financial viability of the EFLS project. Nevertheless, we would review the network development of EFLS and carry out sensitivity tests in the DFS to ascertain the optimum choice of network. ➢ We are fully aware of people's concerns about further overloading of MTR Kowloon Bay and Kwun Tong Stations by

Public's Feedbacks on Responses to Key Issues Identified in Stage 1 Public Consultation	Further Responses
	the additional patronage brought by EFLS. The DFS would examine direct and convenient interchange arrangements with MTR stations, taking into account MTR station capacity.
• **Views on linkage between Kwun Tong and Kowloon Bay Business Areas:** ➢ Some considered lack of direct connection between the two Business Areas and suggested realignment of EFLS via the existing Taxiway Bridge and Wai Yip Street instead of via the Kwun Tong Transportation Link (KTTL) to improve connections.	➢ We have already compared the merits and demerits of both alignment options in our Stage 2 Public Consultation Digest at Enclosure 2. As the KTTL routing has an edge over the Taxiway Bridge alignment, KTTL was recommended as the preferred alignment option for further study. To ascertain the choice of EFLS alignment, we would review the network development in the DFS and carry out sensitivity tests on alignment options. The DFS will also investigate ways to enhance accessibility of KE through integrated multi-modal linkage system.
Issue 3 Implications for Kwun Tong Typhoon Shelter (KTTS)	
• As the KTTL would impose restriction on high mast vessels from using the KTTS,	• The DFS will examine the need and reprovisioning measures for the affected high-mast vessels. The marine trades will be

Public's Feedbacks on Responses to Key Issues Identified in Stage 1 Public Consultation	Further Responses
representatives of the marine trades reiterated the importance of keeping the KTTS for marine safety and urged for proper mitigation measures to address the loss of sheltered spaces in the KTTS. They requested that decision on the KTTL should be subject to satisfaction of the marine trades on the proposed mitigation measures.	consulted during the process with a view to achieving a practicable option which is acceptable to the trades.
• There were conflicting views on the height of the KTTL. Some worried about suitability and safety for pedestrian walking or cycling at height, whereas others considered the need to explore better use of the water body for other activities.	• The DFS will explore other possible beneficial use of the water body in Kai Tak, and review the optimum height of the KTTL and its associated implications on the potential use of the water body.

Other comments for consideration in preparing the scope of the DFS
Technical Aspect
(1) critically review the patronage forecast and adequacy of train capacity to cope with future demand;
(2) assess the need for a station based on the updated patronage forecast, and determine their locations, taking into

Other comments for consideration in preparing the scope of the DFS
account local district characteristics and cultural heritages;
(3) consider adopting a smaller walk-in catchment area than that of an MTR (i.e. a walking distance shorter than 500m) station due to the short-haul travel nature of the EFLS;
(4) design auxiliary facilities of elevated EFLS station to provide barrier-free access for the disabled and pedestrian linkage to nearby shopping malls, buildings, the landscaped deck at the ex-runway, or major public transport interchanges;
(5) design convenient and seamless connection at MTR/EFLS interchange stations, in particular, interchange with the future Kai Tak Station of SCL, investigate the congestion problem at the interchange MTR Kwun Tong and Kowloon Bay Stations, and consider if additional escalators would be required for passenger circulation;
(6) assess the environmental impacts, including visual and noise impacts, of the elevated EFLS;
(7) study the social impact, including impact on the local community and the potential business opportunities or any benefits for the local people or community;
(8) study the traffic impact, in particular, if existing bus services are to be re-routed from Hoi Yuen Road to make way for the proposed EFLS, during both construction and operation stages;
Financial and Implementation Aspect
(9) set an affordable fare level for the EFLS;
(10) address the concern about financial viability of the EFLS project, and further investigate the ways to improve financial efficacy of the project, with a view to avoiding long-term subsidy by the Government;
(11) study carefully the sustainability and affordability of the system;
(12) committing to the monorail system should be subject to further quantitative and comprehensive assessments on

Other comments for consideration in preparing the scope of the DFS
financial viability as well as social and environmental impacts; ***Topical Studies*** (13) examine the roles of other road-based transport modes together with the proposed EFLS to address traffic issues in KE; and (14) examine the implications of KTTL on both existing and potential future use of the water body at KTTS. **Further Responses:** All the above suggestions will be taken into account in preparing the scope of the DFS.

第二階段公眾諮詢的環保連接系統建議走線圖

EFLS Alignment Plan Proposed in the Stage 2 Public Consultation