For discussion
on 16 July 2014

Legislative Council Panel on Development

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

PURPOSE

This paper provides supplementary information to address Members' concerns on the proposed detailed feasibility study (DFS) and preliminary site investigation works for the proposed Environmentally Friendly Linkage System (EFLS) for Kowloon East (KE) under PWP Item No. **65TR** and seeks Members' support to upgrade the item to Category A, at an estimated cost of about $92 million in money-of-the-day (MOD) prices.

BACKGROUND

2. We briefed Members on the outcome of the two-stage public consultation (PC) exercise on the proposed EFLS at the Panel meeting on 27 May 2014 (Paper No. CB(1)1456/13-14(04)). We also proposed to carry out the DFS to address the three key issues [1] as identified in the two-stage PC exercise. Some Members expressed support to conduct the DFS and urged for earlier implementation of the proposed EFLS. Some Members did not support the proposal due to the following key concerns –

(a) cost and financial aspects of the proposed EFLS;

(b) applicability of modern tramway and other at-grade green transport modes for KE;

(c) procurement approach and implementation programme for the proposed EFLS;

(d) network coverage for the proposed EFLS; and

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[1] The three key issues identified in the two-stage PC are (i) the need for an elevated rail-based EFLS, (ii) alignment and coverage of the proposed EFLS and (iii) implications for Kwun Tong Typhoon Shelter.

(e) implications on the Kwun Tong Typhoon Shelter (KTTS).

3. We have reviewed and revised the scope of the proposed DFS to address Members' key concerns. Supplementary information is provided in the ensuing paragraphs.

SUPPLEMENTARY INFORMATION ON KEY CONCERNS

Cost and Financial Aspects

4. Some Members had concerns about the high capital cost and weak financial performance of the proposed EFLS. In view of the rising trend of construction costs in recent years, the estimated capital cost of $12 billion for the proposed EFLS in 2010 prices as reported in the Paper No. CB(1)1514/11-12(02) of the Panel meeting on 17 April 2012 could become unrealistic. Members queried about the risk of over-expenditure and any net operating loss of the EFLS and requested for more accurate financial and economic assessment. Members also questioned whether there were any successful monorail examples overseas given the recent closure of the Sydney Monorail system.

5. In the proposed DFS, we undertake to conduct a detailed assessment on the financial performance of the EFLS project including estimation of capital cost and economic benefits based on the outcomes of review on the EFLS alignment and stations, update of the patronage forecast, choice of operating system, depot design, associated electrical and mechanical works and rolling stock etc. The DFS will also examine ways to improve financial efficacy of the EFLS project so as to minimize any possible long term financial burden to the Government.

6. Monorail technologies are well established with many applications overseas and in the Mainland, for examples, the monorail lines in Japan [2] and the monorail network in Chongqing [3]. Moreover, there are several new monorail lines under construction in other countries [4]. The recent demolition of the Sydney Monorail was not due to the failure of monorail technology. There were many project specific factors such as its limited service coverage, round trip alignment

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2 The Tokyo Monorail was opened in 1964 as the first monorail for public transportation in Japan and is 17.8 kilometres (km) in length with 11 stations. The Osaka Monorail of 28 km in length with 18 stations has been in operation since 1990. The Okinawa Monorail of 12.9 km in length with 15 stations has been providing commuting service for the city since 2003.

3 Chongqing has the longest monorail network in the world, which is about 75 km in total length. The monorail network is now still expanding.

4 New monorail lines under construction include Daegu Monorail in Korea (24 km in length with 30 stations), Sao Paulo Monorail in Brazil (24 km in length with 17 stations) and Riyadh Monorail in Saudi Arabia (3.6 km in length with 6 stations).

with single direction, and poor connection with other public transport systems, resulting in high fare and low patronage. Besides, the alignment of the Sydney Monorail was in conflict with the planned expansion of the Sydney Convention and Exhibition Centre and other new developments there. Demolition of the Sydney Monorail could give way to the proposed development.

7. Based on the experiences of the above-mentioned monorail projects, we propose a well-planned integrated multi-modal linkage system with the proposed EFLS as the backbone to serve the long term development of KE be further studied. The proposed EFLS will provide two-way services for intra-district movements, and through convenient and well-designed interchanges with the Mass Transit Railway (MTR) stations, will also facilitate inter-district movements. Therefore, the proposed EFLS would be the key component for enhancing the connectivity in KE and bear little resemblance to the Sydney Monorail.

Applicability of Modern Tramway and Other At-grade Green Transport Modes

8. There were suggestions made for adopting modern tramway in lieu of monorail for KE. It was put forward that the construction cost of modern tramway could be less and the fare level was attractive. In view of the claimed benefits, some Members requested to incorporate a detailed study on the viability of the modern tramway in the proposed DFS. Some Members also suggested the DFS to examine alternative at-grade green transport modes such as electric buses and travellators, and to compare their pros and cons.

9. Taking into account Members' views and to facilitate a decision to be made on the proposed EFLS, we will include a topical study on the applicability of other at-grade green transport modes in KE, including the modern tramway, for a comparison among various options under the proposed DFS. As deliberated at the Panel meeting on 27 May 2014, whilst some at-grade green transport is already an option being actively pursued to serve KE in the medium term, the limited road capacity, traffic characteristics and constraints of road network in Kowloon Bay and Kwun Tong will be the major challenges to adopt at-grade green transport in the long term.

Procurement Approach and Implementation Programme

10. Some Members enquired about the procurement method and future operator for the proposed EFLS. In the proposed DFS, we will examine different procurement methods and conduct a market sounding out exercise. As selection of

future operator is hinged on the recommended procurement method, it would be pre-mature to make any decision on future operator for the time being.

11. We note that there were also requests from Members for speeding up the project for earlier implementation as the proposed EFLS had been under planning for quite some time. Furthermore, adequate transport service should be provided to cope with the demand arising from phased completion of Kai Tak Development (KTD).

12. In the proposed DFS, we will examine possible ways to expedite the implementation programme of the EFLS. The proposed EFLS will form the backbone of an integrated multi-modal linkage system that also features improved pedestrian facilities, road-based transport and the MTR to serve the Central Business District (CBD) in KE in the long term. There are separate studies being conducted to transform the Kowloon Bay and Kwun Tong business areas into walkable cities. The proposed DFS would take into account the recommendations of these related studies and examine comprehensive ways to cope with the overall connectivity demand in various stages of the CBD development in KE and KTD.

Network Coverage

13. There were requests for retention of the previously proposed EFLS station at Kai Ching Estate, extension of the EFLS to Kowloon City, and connection of the EFLS with MTR Ngau Tau Kok Station. There were also suggestions for the proposed EFLS to link up attraction nodes in KTD, such as the recently unearthed ancient square well.

14. Under the proposed DFS, we undertake to review the locations of the EFLS stations, especially those in proximity to Kai Ching Estate, and to ascertain the EFLS alignment network together with the optimum arrangement of pedestrian connections in KE to serve a much wider cluster of developments and the areas where the historical remains are found. As there may be opportunities for redevelopments in the adjacent old districts in the future, we will explore design flexibility at the proposed EFLS stations to cater for possible future extension.

15. The preliminary feasibility study of EFLS did not recommend connection with the MTR Ngau Tau Kok Station due to lack of space around the station to accommodate a proper EFLS terminus. The presence of existing viaducts at Kwun Tong Road and the elevated MTR Kwun Tong Line would require the EFLS structure to be built at an elevation of over 25 metres above ground. In addition, interchange between EFLS and MTR would be very inconvenient as the

concourse of MTR Ngau Tau Kok Station is located at ground level. Nevertheless, we will conduct a holistic review on the interchange arrangements with the MTR lines including the connection to MTR Ngau Tau Kok Station under the proposed DFS.

Implications on the KTTS

16. In view of Members' comments, we will strive to advance the completion of the topical study on better use of the water body at KTTS. We will review the need of sheltering space for high-mast vessels in the Victoria Harbour and explore the reprovisioning measures for the affected high-mast vessels using KTTS.

REVISED SCOPE OF PROPOSED DETAILED FEASIBILITY STUDY

17. The project scope of **65TR** comprises a DFS on the proposed EFLS, preliminary site investigation works and public consultation exercise with relevant stakeholders. The revised study scope of DFS, after incorporating an additional topical study as mentioned in paragraph 9 above, includes the following tasks:

(a) Network development review based upon the comments received from the two-stage PC and the latest development [5] of KE, with sensitivity tests on alternative alignments and connections with MTR stations; patronage forecast; associated economic and financial performances assessment; and recommendation on 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

[5] 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, increase in development intensity in KTD and the Territorial Population and Employment Data Matrices published by Planning Department in 2013.

assessment;

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

(g) Topical study to examine better use of the water body at KTTS and/or Kai Tak Approach Channel, justifications for 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; and

(h) Topical study on the applicability of alternative at-grade green transport modes in KE, including the modern tramway, for a comparison among various options.

COST ESTIMATE AND STUDY TIMEFRAME

18. The estimated total project cost of **65TR** is about $92 million in MOD prices, which will be refined upon firming up the scope of the proposed DFS and preliminary site investigation works in late 2014. Subject to funding approval of the Finance Committee, we plan to commence the proposed DFS in early 2015 for phased completion by early 2017. Further public consultation will be conducted at appropriate stages of the DFS to facilitate our recommendation on the way forward for the proposed EFLS in 2017.

WAY FORWARD

19. Subject to Members' support, 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.

Development Bureau
Civil Engineering and Development Department
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