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ACE-EIA Paper 11/2009
For advice

Environmental Impact Assessment Ordinance (Cap. 499)
Environmental Impact Assessment Report
Tuen Mun – Chek Lap Kok Link

PURPOSE

This paper presents the key findings and recommendations of the Environmental Impact Assessment (EIA) report for the development of the Tuen Mun-Chek Lap Kok Link (TMCLKL) (hereafter known as the Project), submitted under section 6(2) of the Environmental Impact Assessment Ordinance (EIAO) (Application No. EIA-174/2009). The Highways Department (the applicant) and their consultants will make a presentation at the EIA Subcommittee meeting if necessary. Comments from the public and the Advisory Council on the Environment will be taken into account by the Director of Environmental Protection in deciding on the approval of the EIA report under the EIAO.

ADVICE SOUGHT

2. Members' views are sought on the findings and recommendations of the EIA report.

NEED FOR THE PROJECT

3. According to the findings of the Northwest New Territories (NWNT) Traffic and Infrastructure Review conducted by the Transport Department, Tuen Mun Road, Ting Kau Bridge, Lantau Link and North Lantau Highway (NLH) would be

operating beyond capacity after 2016 owing to the increase in cross boundary traffic, developments in the NWNT, and possible developments in North Lantau, including the Airport developments, the Lantau Logistics Park (LLP) and the Hong Kong–Zhuhai–Macao Bridge (HZMB). In order to cope with the anticipated traffic demand, two new road sections between NWNT and North Lantau (i.e. TMCLKL and Tuen Mun Western Bypass (TMWB)) were proposed.

4. The proposed TMCLKL, together with the TMWB, will provide, from north to south, a direct route linking NWNT and North Lantau (i.e. linking the Kong Sham Western Highway (KSWH), port back-up areas in NWNT, Tuen Mun River Trade Terminal, the existing EcoPark in Tuen Mun Area 38, the Airport, the proposed LLP, HZMB and North Lantau developments). The new connection will significantly reduce the travelling time between the KSWH and North Lantau.

DESCRIPTION OF THE PROJECT

5. The Project (as shown in the attached **figure**) is to construct a dual two-lane highway connecting the proposed TMWB at the southern coast of Tuen Mun Area 40 and the Hong Kong International Airport (HKIA) and Tung Chung. It includes –

(i) Construction of an approximately 5 km long dual 2-lane road tunnel between Tuen Mun Area 40 and the HZMB Hong Kong Boundary Crossing Facilities (HKBCF) at the north-east of HKIA;

(ii) construction of approximately 4.2 km seawalls and approximately 35.6 ha of reclamation to the Government foreshore and sea-bed at Tuen Mun Area 40 and Lantau for the tunnel portals and the associated roads;

(iii) construction of an approximately 1.6 km long dual 2-lane viaduct between HKBCF and North Lantau Highway (NLH) and the associated roads at Tai Ho;

(iv) construction of a toll plaza at Tuen Mun Area 46 and the associated roads at Tuen Mun;

(v) construction of administration building, ventilation buildings and other

ancillary buildings to facilitate ventilation and tunnel control operation serving the proposed road tunnel in (i) and toll plaza in (iv) above; and

(vi) ancillary works including site formation, slope, drainage, utilities, footbridge, noise barriers, retaining walls, berths and temporary pontoon.

6. The Project constitutes a designated project under –

(i) Item A.1, Part I, Schedule 2 of EIAO : "*A road which is an expressway, trunk road, primary distributor road or district distributor road"*;

(ii) Item A.7, Part I, Schedule 2 of the EIAO: "*A road tunnel more than 800 m in length between portals*";

(iii) Item A.8, Part I, Schedule 2 of the EIAO: "*A road bridge more than 100 m in length between abutments*"; and

(iv) Item C.1, Part 1, Schedule 2 of the EIAO: "*Reclamation works (including associated dredging works) more than 5 ha in size*".

CONSIDERATION OF ALTERNATIVE OPTIONS

7. Several options and alternatives have been considered during the development, refinement and selection of the scheme of the TMCLKL.

8. The selected alignment and design of TMCLKL has taken into account of the need to minimize the environmental impacts in which the proposed reclamation for the southern landfall can be combined with that for the proposed HKBCF, the total length of seawalls and hence the dredging and filling volumes can be significantly reduced. The selected alignment and location of southern landfall also avoid massive reclamation works near the Brothers Islands where the Chinese White Dolphins (CWD) are more frequented.

9. Tunnel Boring Machine for tunnel construction will be employed instead of Immersed Tube Tunnel so as to avoid extensive dredging and backfilling hence minimizing the disturbance to the CWD and impacts on water quality.

10. The proposed adoption of non-dredged method for reclamation (except for seawall construction) reduces the amount of dredged materials required for disposal and minimizes water quality impact associated with dredging activities.

SPECIFIC ENVIRONMENTAL ASPECTS TO HIGHLIGHT

11. The main environmental issues of TMCLKL are water quality impact, marine ecological impact and air quality caused during the construction and operation of the project.

Water quality

12. The main concerns are related to dispersion/contribution of suspended solid due to dredging and filling activities causing impacts to the marine water environment.

13. The EIA has concluded that with the implementation of a series of mitigation measures (e.g. use of silt curtain, control of filling/dredging rate, filling behind seawalls), the water quality impacts of the Project on sensitive receivers including the Sha Chau and Lung Kwu Chau Marine Park, Tai Ho Site of Special Scientific Interest (SSSI), San Tau SSSI, Butterfly beach and Ma Wan Fish culture zone could be controlled to within the established criteria. An Environmental Monitoring and Audit (EM&A) programme will be put in place to ensure compliance of relevant standards and criteria.

Marine Ecology

14. The construction and operation of the TMCLKL would cause direct loss of about 47 ha of CWD habitat for which mitigation is required. To enhance the CWD habitat, the Administration has made a firm commitment to seek to designate the Brothers Islands as a marine park in accordance with the statutory process stipulated in the Marine Parks Ordinance.

15. A series of mitigation measures during construction stage are recommended such as implementation of dolphin exclusion zone to minimize disturbance to CWD, acoustic-decoupling of noisy equipment on construction vessels to reduce underwater noise, use of bored-piling instead of percussive piling and

imposing a speed limit for related vessels to lessen the risk of collision with CWD. Such measures would help ameliorate the overall ecological impacts during the construction stage.

16. With the above mitigation measures in place, including the committed measure to seek to designate the Brothers Islands as a marine park to mitigate the permanent loss of CWD habitat, the residual impacts of the Project on the CWD would be acceptable.

Air Quality

17. Cumulative impacts from the operation of existing and planned/committed projects in the vicinity of the Project have been taken into account. They include the HKLR, HKBCF, Lantau Logistics Park, Tung Chung East and West Future Development as well as other major existing and planned/committed air pollutant emission sources within the North West New Territories and North West Lantau including the power plants, industrial uses, the proposed Sludge Treatment Facility and the Chek Lap Kok Airport emissions plus the regional wide emissions forming the background. The predicted cumulative pollution concentrations at all identified air sensitive receptors (ASRs), including the ASRs at Tung Chung New Town and Tuen Mun, would comply with the AQO standards, except for the annual Total Suspended Particulates (TSP) level in Tuen Mun during the construction stage.

18. The annual background TSP levels at some sensitive receptors in Tuen Mun are already in excess of the criterion even without the proposed project in place. To reduce construction dust impacts, the EIA recommends implementation of dust control measures which include watering 12 times per day and application of the best practicable dust suppression measures. With these measures in place, under the worst case scenario, the highest predicted annual TSP level in Tuen Mun would be 106 $\mu g/m^3$, as against the annual air quality objective of 80 $\mu g/m^3$. However, contribution due to the project is assessed to be between 0.1 % (0.1 $\mu g/m^3$) and 2.9 % (3 $\mu g/m^3$) of the overall impact. Considering that the contribution from the project is small, the impacts are temporary during the construction period and that TSP is not a parameter for health impact, the residual impacts can be considered acceptable in accordance with the Technical Memorandum (TM) on EIA Process (section 4.4.3 refers).

Other Environmental Impacts

19. Other impacts including noise, landscape and visual quality, waste management, fisheries, landfill gas hazard and cultural heritage have been addressed in the report and concluded that, with the implementation of the recommended mitigation measures, the Project would comply with relevant requirements in the TM.

ENVIRONMENTAL MONITORING AND AUDIT

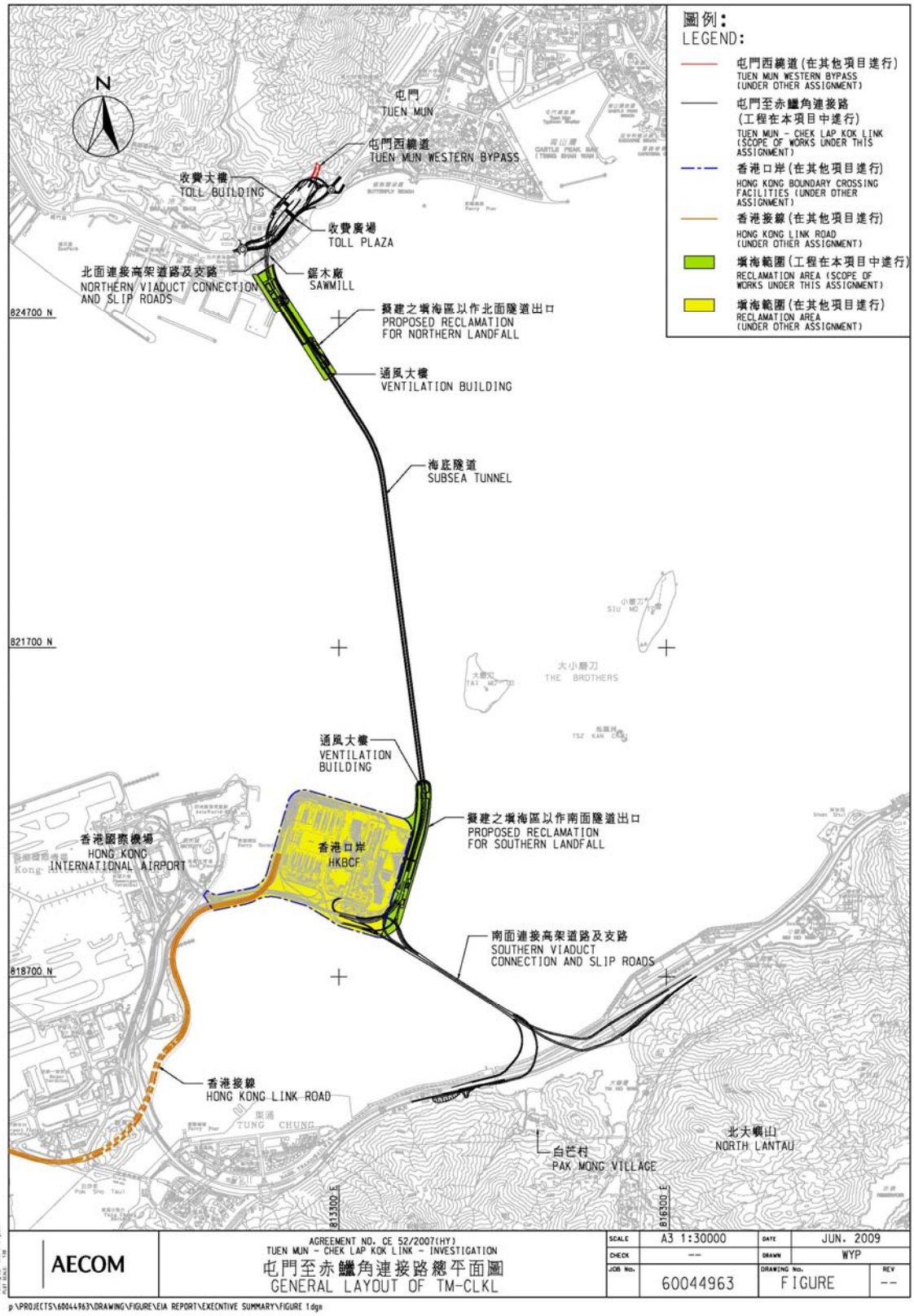
20. The EIA report includes an EM&A Manual which recommends an EM&A programme during the construction and operation phases of the Project.

21. Given that the HKBCF, HKLR, TMCLKL will be implemented concurrently, an Environmental Project Office will be established by the applicant during the construction of these projects to oversee the cumulative construction impacts in the North Lantau Area.

PUBLIC CONSULTATION

22. The applicant has made the EIA report, EM&A Manual and Executive Summary available for the public to comment under the EIAO from 14 August 2009 to 12 September 2009. Members will be briefed on any public comments received at the meeting.

August 2009
Environmental Assessment Division
Environmental Protection Department


圖例:
LEGEND:
屯門西繞道(在其他項目進行)
TUEN MUN WESTERN BYPASS (UNDER OTHER ASSIGNMENT)
屯門至赤鱲角連接路(工程在本項目中進行)
TUEN MUN - CHEK LAP KOK LINK (SCOPE OF WORKS UNDER THIS ASSIGNMENT)
香港口岸(在其他項目進行)
HONG KONG BOUNDARY CROSSING FACILITIES (UNDER OTHER ASSIGNMENT)
香港接線(在其他項目進行)
HONG KONG LINK ROAD (UNDER OTHER ASSIGNMENT)
填海範圍(工程在本項目中進行)
RECLAMATION AREA (SCOPE OF WORKS UNDER THIS ASSIGNMENT)
填海範圍(在其他項目進行)
RECLAMATION AREA (UNDER OTHER ASSIGNMENT)
N
屯門
TUEN MUN
屯門西繞道
TUEN MUN WESTERN BYPASS
收費大樓
TOLL BUILDING
收費廣場
TOLL PLAZA
北面連接高架道路及支路
NORTHERN VIADUCT CONNECTION AND SLIP ROADS
鋸木廠
SAWMILL
擬建之填海區以作北面隧道出口
PROPOSED RECLAMATION FOR NORTHERN LANDFALL
通風大樓
VENTILATION BUILDING
海底隧道
SUBSEA TUNNEL
824700 N
821700 N
818700 N
大小磨刀
THE BROTHERS
通風大樓
VENTILATION BUILDING
擬建之填海區以作南面隧道出口
PROPOSED RECLAMATION FOR SOUTHERN LANDFALL
香港國際機場
HONG KONG INTERNATIONAL AIRPORT
香港口岸
HKBCF
南面連接高架道路及支路
SOUTHERN VIADUCT CONNECTION AND SLIP ROADS
香港接線
HONG KONG LINK ROAD
東涌
TUNG CHUNG
白芒村
PAK MONG VILLAGE
北大嶼山
NORTH LANTAU
813300 E
816300 E
AECOM
AGREEMENT NO. CE 52/2007(HY)
TUEN MUN - CHEK LAP KOK LINK - INVESTIGATION
屯門至赤鱲角連接路總平面圖
GENERAL LAYOUT OF TM-CLKL
SCALE A3 1:30000
DATE JUN. 2009
CHECK ---
DRAWN WYP
JOB No. 60044963
DRAWING No. FIGURE
REV --
p:\PROJECTS\60044963\DRAWING\FIGURE\EIA REPORT\EXECUTIVE SUMMARY\FIGURE 1.dgn