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## **ACE-EIA Paper 1/2008**

*For Advice*

# **Environmental Impact Assessment Ordinance (Cap. 499) Environmental Impact Assessment Report Wan Chai Development Phase II and Central-Wan Chai Bypass**

## **PURPOSE**

This paper presents the key findings and recommendations of the Environmental Impact Assessment (EIA) report for the Wan Chai Development Phase II and Central-Wan Chai Bypass (hereafter known as the Project), submitted under section 6(2) of the Environmental Impact Assessment Ordinance (EIAO). The applicant, Civil Engineering and Development Department, and their consultants will make a presentation.

## **ADVICE SOUGHT**

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

## **NEED FOR THE PROJECT**

3. The EIA report points out that the Wan Chai Development Phase II (WDII) is the conclusion of a number of planning studies commissioned by the Government, covering transport infrastructure and development along the shoreline of Central and Wan Chai, that date back to the early 1980s. The main purpose of the WDII project is to provide land for the construction of the Trunk Road, i.e. Central-Wan Chai Bypass (CWB), and other key transport infrastructure including necessary ground level roads for connection to the Trunk Road and to cater for through traffic from Central to Wan Chai and Causeway Bay. The land formed for the above transport infrastructure will provide opportunities for the Government to develop a waterfront promenade for the enjoyment of the public.

## DESCRIPTION OF THE PROJECT

4. The scope of the Project consists of an engineering feasibility study of an urban development project with a study area covering approximately 90 ha in Wan Chai North and North Point area, which constitutes a Schedule 3 Designated Project (DP) under the EIAO being greater than 20 ha in the study area. The following individual Schedule 2 DPs are included in the scope of the development Project:

- (i) **DP1:** The Trunk Road, i.e. CWB, including its road tunnel, slip roads (3 km long dual-3 carriageway with 2.5 km in tunnel form within WDII study area) (Items A.1 and A.7 of Part I of Schedule 2 of the EIAO);
- (ii) **DP2:** Road P2 (0.6 km long dual-2 lane primary distributor road within WDII study area) and other roads which are classified as primary/district distributor roads (Item A.1 of Part I of Schedule 2 of the EIAO);
- (iii) **DP3:** Reclamation works (12.7 ha permanent reclamation and temporary reclamation in ex-Public Cargo Working Area and Causeway Bay Typhoon Shelter (CBTS)) and dredging works (1.15 Mm<sup>3</sup>) (Items C.1 & C.12 of Part I of Schedule 2 of the EIAO);
- (iv) **DP4:** Temporary typhoon shelter (4 ha mooring area) (Item C.5 of Part I of Schedule 2 of the EIAO);
- (v) **DP5:** Wan Chai East Sewage Outfall (1600 mm diameter twin-pipe outfall) (Items F.5 and F.6 of Part I of Schedule 2 of the EIAO); and
- (vi) **DP6:** Dredging for the Cross-harbour Water Mains from Wan Chai to Tsim Sha Tsui (1.1 km long and 1000 mm diameter twin pipelines requiring dredging of 0.06 Mm<sup>3</sup> sediment) (Item C.12 of Part I of Schedule 2 of the EIAO).

5. The Project location is shown in **Figure 1**.

## VIEWS OF THE DIRECTOR AND RELEVANT AUTHORITIES

6. The Director of Environmental Protection (DEP), in conjunction with the relevant authorities, considers that the report meets the requirements of the EIA Study Brief and the Technical Memorandum on Environmental Impact Assessment Process (TM). Comments from the public and the Advisory Council on the Environment (ACE) will be

taken into account before DEP makes the final decision on the approval of the EIA report.

## **CONSIDERATION OF ALTERNATIVES/OPTIONS**

7. The EIA has reported on the consideration of various alternatives/options for the Project including road alignment/elevation/connections/capacity design (such as “deep tunnel”, “shallow tunnel” and elevated/flyover option, and alignment of slip roads); locations of ventilation building/ventilation shaft, location of the eastern tunnel portal, reclamation size/layout, construction methods, etc. The preferred options/designs have taken into account, amongst others, the need of the Trunk Road, alternatives to reclamation, site constraints, engineering practicability and environmental factors.

## **SPECIFIC ENVIRONMENTAL ASPECTS TO HIGHLIGHT**

### Air Quality

8. The key air quality concern is the vehicular air emissions from the eastern ventilation shaft/tunnel portal of the CWB, and open roads in the North Point area where residential developments locate. The EIA has concluded that with the special ventilation design, including zero emission from the eastern tunnel portal, locating the east vent shaft about 250 m away from the nearby residential developments, no adverse air quality impact due to vehicular emissions is expected. To relieve local public concern, electrostatic precipitator will be installed at the east vent shaft to reduce dust impact during operation stage. As an illustration of the potential impact at the nearest residential development from the east vent shaft, i.e. Victoria Centre, for the most critical air pollutant of nitrogen dioxide (NO<sub>2</sub>), the EIA has predicted that the 1 hour NO<sub>2</sub> level would be 78µg/m<sup>3</sup>, which is about 25% of the 300µg/m<sup>3</sup> standard.

9. Odour is another operation stage air quality issue due to the existing CBTS. Though the Project would not contribute to the existing odour emission, the EIA recommends improving the current odour situation through mitigation measures, such as removal of odorous sediment/deposit by dredging and by washing odorous slime from the seawalls. The predicted residual odour levels at CBTS northern breakwater, which is the most affected planned air sensitive receiver, would be 29 odour units under the reasonably worst-case scenario when compared to the standard of 5 odour units over a 5-second average period. The EIA reports that the odour impact would be expected to be short-term, transient and infrequent with potential exceedance in 0.2% time of a year without causing adverse health effect. The EIA concludes that the residual odour impact

is acceptable. Odour monitoring in the CBTS area is recommended for the first 5 years in the operation stage of the Project, to check for compliance and the need for any necessary additional mitigation measures.

## Noise

10. For the trunk road project, the traffic noise close to residential developments in North Point area is a key concern. The EIA has predicted that after mitigation by the proposed noise barriers and semi-enclosure, traffic noise levels at the noise sensitive receivers (NSRs) in North Point area due to the roads to be constructed/reconstructed under the Project would be 40-65 dB(A) against the traffic noise standard of 70dB(A)<sub>L10(1hour)</sub>. These NSRs include the existing residential developments of Victoria Centre, Harbour Heights, City Garden and the Hong Kong Baptist Church Henrietta Secondary School, all facing the existing Island Eastern Corridor (IEC). Some exceedances in the cumulative noise impact would remain, however, due to contributions from those existing road sections which will not be reconstructed by the Project. Nevertheless, the EIA anticipates that the cumulative noise levels with the Project in place would be lower than the prevailing existing conditions, i.e. the future noise levels would be reduced from the existing range of 68-82 dB(A) to 51-71 dB(A).

11. The noise impact from the eastern ventilation building is also a potential concern due to proximity with the nearby NSRs and its 24-hour operation. With silencers at the fans to reduce the potential noise, the EIA has assessed that the ventilation building should be more than 67 m from the nearest NSRs in order to meet the operational stage night time criteria of 55 dB(A). Under the current proposal, the eastern ventilation building is about 115 m away from the nearest NSR, i.e. staff quarters in the Food and Environmental Hygiene Department Depot. Hence, no ventilation noise exceedance is anticipated.

12. Sections of the existing IEC and its connecting roads will be demolished and reconstructed under the Project. Since the nearest existing NSRs are only about 7 to 42 m from such sections of roads, the EIA anticipates that there would be noise exceedance during the demolition stage and reconstruction stages. The EIA study has considered various measures to reduce the potential construction noise, including the use of saw-cutting method rather than pneumatic breaking method, and use of temporary barriers on piers when demolishing the piers for the marine sections of the IEC. With the implementation of practicable measures, under a reasonable worst-case scenario, the maximum potential noise impact was reduced from 101 dB(A) to 85 dB(A) and the period of such noise exceedance was reduced from 8 months to 1 month within the 8 years

construction period. In addition, the applicant commits to monitor the construction noise and maintain close liaison with the affected/concerned parties to provide appropriate practical relief and remediation, such as scheduling the works to avoid school examination periods, and siting mobile plant away from the NSRs.

### Water Quality

13. The Project will involve dredging and reclamation works including temporary re-provision of the typhoon shelter and temporary reclamation works. The EIA has identified the seawater intakes at Water Supplies Department's (WSD) salt water pumping stations as the most critical water sensitive receivers. The EIA has assessed the cumulative construction water quality impact taking into account concurrent projects such as Dredging Works for Cruise Terminal at Kai Tak, Submarine Gas Pipeline from Ma Tau Kok to North Point, Western Cross Harbour Water Main, Further Development of Tseung Kwan O, etc. The assessment found that the water quality impacts would be within the concerned Water Quality Objectives (WQOs) with the implementation of various mitigation measures, including control of dredging rate, confining filling works behind completed seawall, use of silt curtains and silt screens, and phased implementation of works. For example, the predicted Suspended Solids (SS) levels at the various WSD salt water pumping stations ranged from 2.7 to 10 mg/l which comply with the 10mg/l criterion.

14. The EIA has assessed the hydrodynamic impacts of the Project, including those due to the permanent reclamation, temporary typhoon shelter and temporary reclamation works. The EIA has predicted that the Project would have minimal impact on the hydrodynamic regime of the study area and concluded that impacts are acceptable; and that the changes in tidal flushing will unlikely be more than 1.04%.

15. The EIA has predicted the operational water quality assessment to be in full compliance with the WQOs (including compliance with the standards for the bottom and depth-averaged Dissolved Oxygen, Total Inorganic Nitrogen, and Unionised Ammonia) except some localised areas near the stormwater outfalls within the CBTS. The EIA does not anticipate unacceptable water quality impact during the operation stage of the Project.

16. The EIA has also assessed the water quality impacts of the interim construction stages, taking into account the temporary typhoon shelter and temporary reclamation works; and concluded that the impacts are acceptable after implementation of the recommended mitigation measures.

### Landscape and Visual Quality

17. The proposed eastern ventilation shaft, noise barriers/semi-enclosure and Slip Road No. 8/tree felling in Victoria Park would cause landscape and visual impacts. The EIA has recommended mitigation measures, including architectural/outlook design for the eastern ventilation shaft to suit the harbour-front environment; transparent panels for the noise barriers and semi-enclosure; alternative alignments/design for the Slip Road No. 8; minimisation of tree felling; landscaping improvements; and planting of about 1500 number of new trees to compensate for about 571 number of affected trees. None of the affected trees is a “Champion Tree” or “Registered Old and Valuable Tree”. The EIA has concluded that residual landscape and visual impacts would be acceptable. The Planning Department has reviewed the EIA report and advised that the landscape and visual assessment of the report had met the requirements of the EIA Study Brief and the TM.

### Waste Management Implication

18. Among a total of 1.15 Mm<sup>3</sup> of marine sediment which requires disposal under the Project, about 0.05 Mm<sup>3</sup> of the sediment from the CBTS is Category H sediment and has failed the biological screening. Such type of sediment therefore requires special marine disposal using geosynthetic containers. The applicant has completed a trial test report to demonstrate the successful application of the disposal method under local Hong Kong situation. The trial tests were undertaken in accordance with one of the conditions specified by the ACE when endorsing the previous EIA report on “Wan Chai Development Phase II Comprehensive Feasibility Study”, which was approved by DEP under the EIAO in August 2001. The applicant has appended the trial test report at Appendix 6.2 of the current EIA report to meet the previous requirement specified by the ACE.

19. The Project would generate about 2.9 Mm<sup>3</sup> of construction and demolition materials. About 1.2 Mm<sup>3</sup> will be reused on site and about 1.7 Mm<sup>3</sup> will require disposal to public fill reception facilities for other appropriate uses.

### Land Contamination

20. There is a disused shipyard, i.e. “A King Marine”, at the eastern corner of the CBTS. The decommissioning of the shipyard is not a Schedule 2 DP under the EIAO due to the small size/scale of the shipyard. Re-provision of the existing floating Tin Hau

Temple to this land site is proposed in the Project. The EIA has conducted a land contamination assessment as part of the Schedule 3 EIA. The EIA has identified about 633 m<sup>3</sup> of soil contaminated mainly with heavy metals that requires remediation. The EIA has included a combined Contamination Assessment Report/Remediation Action Plan which proposes cement solidification/stabilisation and landfill disposal for the site clean-up.

### Marine Ecology

21. The dredging and reclamation works of the Project would affect subtidal and benthic habitats in the project area (12.7 ha permanent loss and 10.7 ha temporary loss). The EIA has included a dive survey and found 19 colonies of corals of common species on small boulders within the project area. The EIA considers that the corals and the affected habitats are of low ecological importance (very low to low value); and recommends translocation of the corals to a suitable location such as Junk Bay. The EIA concludes that there would be no adverse residual marine ecological impact. The Agriculture, Fisheries and Conservation Department has reviewed the EIA report and advised that the marine ecological assessment of the report had met the requirements of the EIA study brief and the TM.

### Cultural Heritage

22. The EIA has included a marine archaeological investigation and concluded that there was no marine archaeological resource within the study area; and no further archaeological investigation or mitigation measures is needed.

### Other Environmental Impacts

23. The EIA report has also assessed the potential impacts of construction stage air quality (mainly dust), operational stage waste management, sewerage impact and sewage treatment implications, and recommended mitigation measures to minimize them. The EIA report concludes that, with appropriate mitigation measures in place, the anticipated impacts are considered acceptable in terms of meeting relevant requirements under the TM.

## **ENVIRONMENTAL MONITORING AND AUDIT**

24. The EIA report includes an Environmental Monitoring and Audit (EM&A) Manual which recommends an EM&A programme during both the construction and operation

phases of the Project, in particular for construction phase water quality, noise and dust, post-translocation coral condition; and operation phase noise, air quality near the eastern ventilation shaft and odour level near the CBTS.

## **PUBLIC CONSULTATION**

25. The applicant has made the EIA report, EM&A manual and Executive Summary available for public comment under the EIAO from 20 December 2007 to 18 January 2008. Members will be briefed about any comments received from the public at the meeting.

**January 2008**

**Environmental Assessment Division**

**Environmental Protection Department**



