

Tonggu Channel of Shenzhen Port
Application for Approval of an EIA Report Submitted on 24 March 2005
(Application No. EIA – 105/2005)

Reasons for the EIA Report Submitted on 24 March 2005 Not Meeting the Requirements of the EIA Study Brief [No. ESB-107/2003] (the Study Brief) and the Technical Memorandum on EIA Process (TM)

Pursuant to Section 6(3)(b) and 6(6) of the Environmental Impact Assessment Ordinance (the Ordinance), taking into account the advice from the relevant authorities, in particular the Director of Agriculture, Fisheries and Conservation, and having regard to the purpose and provisions of the Ordinance, the Director of Environmental Protection (the Director) has decided that the Environmental Impact Assessment Report (the EIA Report) for Tonggu Channel of Shenzhen Port (the Project) submitted on 24 March 2005 does not meet the requirements of the Environmental Impact Assessment Study Brief (the Study Brief) and the Technical Memorandum on the EIA Process (the TM) for the following reasons:

Failure to Evaluate Adequately the Environmental Impacts and Risks to the Ecologically Valuable Chinese white dolphin
[Requirements under TM Section 4.3, Annexes 8 and 16 have not been met.]

1. The Director has noted that the channel alignment currently proposed in the EIA Report is in close proximity (about 50m from the nearest boundary of the Channel) to areas and/or habitats of high ecological importance supporting a significant population of Chinese white dolphins (CWD) of high conservation value, namely the Sha Chau and Lung Kwu Chau Marine Park (SLMP).
2. CWD or Indo-Pacific humpback dolphins, *Sousa chinensis*, are predominantly distributed in the Northwestern waters of Hong Kong and the Pearl River Estuary. *Sousa chinensis* is listed in the UN Biodiversity Treaty as a protected species and is classified in Appendix I of the Convention on the International Trade in Endangered Species of Flora and Fauna (CITES), which lists those species threatened with extinction. In Hong Kong, *Sousa chinensis* has been protected under the Wild Animals Protection Ordinance (Cap. 170) since 1980 and the Animals and Plants (Protection of Endangered Species) Ordinance (Cap. 187) since 1988. In the Mainland, *Sousa chinensis* is also an animal protected by Chinese State Law.

3. Based on the dredging plan proposed in the EIA Report (Figure 5.6a and Section 5.9 and 5.11), the Director has also noted that capital dredging works during construction of the Project would last for at least 3.5 years and, thereafter, the recurrent maintenance dredging would last for at least 6 to 8 weeks on an annual basis. When the Channel is in operation, there will be potential risks of oil or chemical spills arising from accidents involving oil tankers or container vessels. That being the case, the Project will likely affect substantially the marine environment including CWD and other marine life thus putting them under a high ecological risk when the Project is being constructed and in operation.
4. The Director, taking into account the advice from the Director of Agriculture, Fisheries and Conservation, considers that the EIA Report has not sufficiently demonstrated or substantiated the following claims in the EIA Report:
 - (i) Ecological sensitive receivers in Hong Kong waters are unlikely to be adversely impacted by the Project (Section 7.13.4);
 - (ii) Habitat loss or disturbance is considered to be insignificant (Section 8.8.2);
 - (iii) Degradation of water quality due to dredging is unlikely to have an adverse impact on CWD in the vicinity (Section 8.8.3); and
 - (iv) Potential impacts of an oil/chemical spill on CWD (Section 8.8.13) are considered to be sufficiently minimized.

Failure to Substantiate the Soundness and Adequacy of the Assumptions and Methodologies of the Assessment

[Requirements under TM Section 4.4, Annexes 8, 14 and 16 have not been met.]

5. The EIA Report (Table 5-17b) has adopted a maximum sediment release rate of 25.99 kg/s in the water quality computer model runs for mud dredging in Zone III. The Director is doubtful on the application of this small sediment release rate for mud dredging with overflow. The sediment release rates used in the water quality assessment in the EIA Report were based on the S factors (mass of sediment re-suspended per cubic metre of dredged material) quoted from the report of HR Wallingford, entitled "SR461 – Re-suspension of bed material by dredging". The Director has noted that the S factors quoted in the HR Wallingford report are only typical values and depend on a large number of factors which affect the re-suspension of sediment during dredging besides the method of dredging. These factors include soil characteristics, gas content of bed material, salinity of water column, water temperature, movement of the water

column, and movement of the dredger with respect to the water column. However, no field measured sediment release rate data for mud dredging by Trailing Suction Hopper Dredgers with "limited overflow" and "environmental valve" or substantiation on these factors have been provided in the EIA Report to justify the sediment release rates adopted in the water quality modelling assessment for the Project.

6. Based on the oil spill modelling results, Section 5.11.33 of the EIA Report stated that the mudflats in Mai Po and Inner Deep Bay Ramsar Site would not be affected within 2 hours of an oil spill. Moreover, Section 5.15.6 of the EIA Report stated that immediate action should be required in the event of a major spill near the northern end of the proposed Tonggu Channel and near SLMP and the response team should arrive at the scene within one hour after a spill occurs so as to minimize the potential adverse marine ecological impacts on SLMP. With reference to these statements, the Director is of the view that there are unfounded assumptions in the EIA Report that various existing or proposed enhancement to emergency response plans for oil spillage currently in force in Hong Kong and the Mainland could cater for these response times. In particular, the Director has noted the advice from the Director of Marine that in the event of an oil spill in Tonggu Channel within Hong Kong waters, the response team of Marine Department's Pollution Control Unit after being notified is estimated to be on scene in about 2.5 hours during office hours and about 4 hours after office hours.
7. The Director also finds that the requirement for an "Emergency Spill Response Plan" that aims to contain and/or remove the accidental spillage so as to prevent and/or to minimize exposure to contaminants by environmentally sensitive receivers/ areas such as CWD and the mudflats in the Mai Po and Inner Deep Bay Ramsar Site as specified in Section 3.4.1.5(xi) of the Study Brief has not been fully met.
8. The proposed Channel would lie along the Pearl River Estuary where there is huge volume of sedimentation. The estimated rate of sedimentation based on which the frequency of maintenance dredging is predicted has to be technically sound. In the event that the sedimentation rate along the proposed Channel is under-estimated in the EIA Report, maintenance dredging of a higher intensity and/or frequency than the level predicted in the EIA Report would have to be carried out. This would cause more severe and persistent adverse impacts on CWD. Based on the references quoted in the EIA Report (物理模型試驗研究報告), the physical model testing for sedimentation has some limitations and

further testing would be required to obtain more reliable sedimentation information. In addition, the Director has drawn upon the actual local experience where more frequent maintenance dredging than that predicted in the EIA was required at SLMP for the Aviation Fuel Receiving Facility. The Director considers that more weight shall be given to long term, persistent and/or frequent environmental impacts in determining a project's environmental acceptability. The EIA Report has failed to provide further substantiation to justify the sedimentation rates and the frequency of maintenance dredging.

9. Overall from the assessment of water pollution point of view, the Director considers that the EIA Report does not meet the requirements under Section 4.4 and Annex 14 of the TM. As a result, the EIA Report fails to adequately evaluate the environmental impacts and risks to CWD arising from the Project in accordance with Annexes 8 and 16 of the TM.

Failure to Demonstrate the Adequacy, Practicality and Effectiveness of the Proposed Mitigation Measures

[Requirements under TM Section 4.4, Annexes 8, 14 and 16 have not been met.]

10. Sections 2.4.23 and 8.10.6 of the EIA Report stated that peak calving season of CWD between April and July should be avoided for work that is deemed to be particularly risky to the dolphins. The EIA Report considered that the implementation of this mitigation measure is important for the protection of CWD in the area (Section 8.10.6), however it has not justified why under the precautionary principle this mitigation measure should not be applicable to Zones II and III that fall into the National Pearl River Estuary Chinese White Dolphin Nature Reserve. Furthermore, the Director of Agriculture, Fisheries and Conservation is of the view that the dolphin calving peak should be the period from April to August (inclusive) instead of from April to July as assumed in the EIA Report. The precautionary principle has not been fully upheld for this likely substantial ecological risks and disturbance to the ecologically valuable CWD. The requirements under Section 4.4.3(a)(x) of the TM have not been met.
11. Based on the dredging plan proposed in the EIA Report, the Director has doubts over the practicality of controlling "dredging only during flood tide" within the Hong Kong waters (Zone I of the channel alignment) as a mitigation measure to minimize impacts on the sensitive receivers, including SLMP. The EIA Report has not demonstrated the practicality of proper implementation of such control measure with previous success examples in similar site conditions. The

computer modelling results indicate that, if such control measure is not effective, dredging in Zone I during ebb tides would cause exceedance in suspended solids in SLMP by over 100% of the acceptance criteria.

12. Equally of major concern is that the proposed dredging plan in the EIA Report allows “no overflow during dredging in Zone II” and “limited overflow in Zone III”. Notwithstanding paragraph 5 above, the modelling results indicate that, if these measures are not properly implemented, such as dredging with overflow in Zone II or mis-location of dredgers in Zone III to Zone II, there will be exceedance in suspended solids in SLMP by over 110% and 210% of the acceptance criteria respectively.
13. Section 8.10.5 of the EIA Report proposed the use of “Porpoises Detector” to supplement visual spotting of CWD during night-time works and under adverse weather to avoid dolphin collisions with construction vessels. The Director, taking into account the advice from the Director of Agriculture, Fisheries and Conservation, has serious doubts about the effectiveness of the Porpoises Detector to detect CWD and to implement the proposed dolphin exclusion zone of 300 metres radius around the dredgers, especially during night time.
14. In view of the high ecological value of the habitats/species that will likely be directly affected by the Project when it is being constructed, the Director has reservations on the feasibility, practicability and effectiveness of the recommended mitigation measures (paragraphs 10 to 13 above) to minimize the likely adverse environmental impacts on water quality and CWD when it comes to the actual implementation. The requirements under Section 4.4.2(k) of the TM have not been met.

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