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Environmental Impact Assessment Ordinance (Cap. 499)
Environmental Impact Assessment Report

Pier Improvement at Tung Ping Chau

PURPOSE

This paper presents the key findings and recommendations of the Environmental Impact Assessment (EIA) report on “Pier Improvement at Tung Ping Chau” (“the Project”) submitted under Section 6(2) of the Environmental Impact Assessment Ordinance (EIAO) (Application No. EIA-265/2020). The Civil Engineering and Development Department (CEDD) (“the Applicant”) and its consultants will present the report at the meeting of the EIA Subcommittee.

ADVICE SOUGHT

2. Members’ views are sought on the findings and recommendations of the EIA report. The Director of Environmental Protection (DEP) will take into account the comments from the public and the Advisory Council on the Environment (ACE) in deciding whether or not to approve the EIA report under Section 8(3) of the EIAO.

BACKGROUND

3. In 2017 Policy Address, the Government of the Hong Kong Special Administrative Region committed to improving a number of remote public piers to facilitate public access to outing destinations and natural heritage. A list of 10 proposed pier improvement items, including Tung Ping Chau Pier, is recommended under the first implementation phase of Pier Improvement Programme.

4. The Project involves construction of new pier structure extended from the existing pier structure, to ensure safe uses of the pier. There is no planned increment in frequency of Kaito services after the proposed pier improvement.

5. The Applicant submitted the EIA report for the Project for approval under the EIAO. DEP, in consultation with relevant authorities, considered that the EIA report met the requirements in the EIA Study Brief and the Technical Memorandum on EIA Process (TM), for the purpose of its exhibition for public inspection under Section 7(4) of the EIAO.

NEED FOR THE PROJECT

6. Tung Ping Chau pier was constructed in the 1960s, and was upgraded by CEDD in 2006-2007 once due to structural issue under “Improvement Works to Tung Ping Chau Public Pier” (hereafter named “2006 Improvement Works”). The Project is to further upgrade the existing pier for enhancing the pier safety as well as public accessibility to nature heritage in the Hong Kong UNESCO Global Geopark.

7. The two landing steps at the existing pier head are narrow and steep, and do not meet the standard pier design requirements. The length of existing pier head (14-15m) is inadequate to berth the full length of typical passenger vessels (25-30m) alongside the pier, and vessels can only berth at the boat bow. Therefore, the existing berthing condition is undesirable and poses serious safety concerns for passengers boarding on/disembarkation off vessels to the pier. With implementation of the Project, the current substandard conditions of the pier will be rectified and safety enhanced.

8. The Project is supported by Sai Kung North District Rural Committee, Tai Po District Council and Tung Ping Chau Village Representatives.

ENVIRONMENTAL BENEFITS

9. Apart from enhancing pier safety, the Project will also bring about the following environmental benefits:

- (i) **Ecological enhancement:** The Project can benefit the coral communities in the long term by increasing the surface area of hard substratum for the attachment of coral. In addition, eco-tile/eco-concrete is recommended for the provision of hard surfaces to vitalize the ecological functions at sub-tidal

pier structures. The uneven surfaces of eco-tile/eco-concrete would provide microhabitats for various marine organisms to colonize and grow that can promote habitat complexity and enhance biodiversity and ecosystem; and

- (ii) **Landscape and visual quality improvement:** The new pier structure will adopt colour and textural treatment, which is compatible to natural environment, to improve visual appearance of the existing pier.

DESCRIPTION OF THE PROJECT

10. The Project will extend the length of the existing Tung Ping Chau pier from 98m to 124m and increase the width from 2.5m to 6 - 26m at pier head. As shown in **Figure 1**, the proposed pier is located within the Tung Ping Chau Marine Park. Therefore, the Project constitutes a Designated Project under Item Q.1, Part I, Schedule 2 of the EIAO.

11. The scope of the Project includes the following:

- (i) construction of new pier structure (pier head with floating pontoon) extending from existing pier structure (“New Pier”);
- (ii) provision of temporary berthing and mooring facilities (“Temporary Pier”), and subsequent removal of Temporary Pier after the New Pier is available for berthing;
- (iii) site investigation works for detailed design; and
- (iv) associated facilities (e.g. barrier-free access, canopy, seats) and landscaping works, etc.

CONSIDERATION OF ALTERNATIVE OPTIONS

12. The EIA report has considered alternative options for the development of the Project, including alignment, design, construction method and construction sequence to avoid and minimize environmental impacts. The key alternative considerations and outcomes in the EIA report are highlighted below:

Alignment and Design

- (i) The pier shape and alignment are carefully designed and optimized to minimize the footprint and pile numbers in order to avoid impact to high

coral distribution area based on the coral mapping findings, and also minimize disturbance to seabed and environmental impacts to Tung Ping Chau Marine Park;

- (ii) The pier design has avoided the demolition of existing pier in order to minimize waste generation and potential water quality impact from marine works;

Construction Method and Sequence

- (iii) Prefabrication construction method for pier structure will be adopted to minimize on-site casting activities, and minimize on-site waste generation;
- (iv) The Project will be carried out successively (i.e. without overlapping of works for Temporary Pier construction, New Pier construction and demolition of Temporary Pier) in order to minimize cumulative environmental impact for Tung Ping Chau Marine Park;
- (v) During piling construction, there will be at most two piles constructed concurrently. The Project will adopt double pile casings with Y-shaped funnel, instead of adopting conventional silt curtain to avoid potential injury to adjacent coral colonies due to silt curtain movement; and
- (vi) During demolition of Temporary Pier, all piles will be cut one by one to minimize any potential impact. The Project will adopt wire saw cutting to remove the piled foundation of Temporary Pier. Compared to the conventional demolition work by mechanical means (e.g. using chisel and grab), this method can minimize vibration impact and suspended solid elevations to nearby coral colonies and water body.

SPECIFIC ENVIRONMENTAL ASPECTS TO HIGHLIGHT

Water Quality

13. The EIA recommended the following protective measures to avoid direct/indirect impact to water quality of Tung Ping Chau Marine Park include:

- ◆ Only one closed grab excavator at any single time;
- ◆ Double casings with Y-shaped funnel for piling construction; and

- ◆ All pier superstructures are prefabricated off-site.

14. In particular, all piling constructions will be carried out with the use of one closed grab excavator at any single time and within double casings installed with Y-shaped funnel so that any accidental spillage of muddy water would be confined within the casing and further protected by Y-shaped funnel to avoid impact to the water bodies outside works area. Such construction method has been adopted in previous projects and proven to be effective to prevent accidental release of muddy water to marine water. No open sea dredging will be carried out. Moreover, muddy water will not be discharged within the boundary of Tung Ping Chau Marine Park, Plover Cove (Extension) Country Park, Ping Chau Site of Special Scientific Interest (SSSI) and the other identified water sensitive receivers. With implementation of the recommended mitigation measures and good site practice, adverse water quality impact is not anticipated during the construction stage.

15. The piled foundation would take up only small footprint (about 20 m²) of seabed in Tung Ping Chau Marine Park. The design of pile foundation has adopted typical configuration to other pier of similar water depth setting. Given the small scale of the pier and the proposed pile foundation with sufficient spacing, hydrodynamic changes in the flow regime are limited and adverse water quality impact is not anticipated during the operation stage

Ecology

16. A 14-month ecological field survey was carried out. 531 coral colonies of 46 species were recorded in the coral mapping survey, which show similar pattern to the coral colonies distribution identified in the 2006 Improvement Works. According to the coral mapping results, a total of 90 hard coral colonies were recorded within the plan view area of the proposed pier extension and Temporary Pier (including 12 colonies on the existing pier head to be directly affected and 78 colonies on seabed beneath the proposed pier extension and Temporary Pier to be indirectly affected). No species of conservation importance, other than corals, were recorded within the Project site. Only several individuals of amphioxus were recorded at about 250m away from Project site.

17. Before commencement of works, all 90 affected hard corals will be translocated by experienced marine ecologist to suitable coral recipient sites. The exact recipient site(s) will be determined and agreed with the Agriculture, Fisheries and Conservation Department in the future coral translocation plan. The EIA has reviewed some previous successful cases for hard coral translocation in Hong Kong

which are found to have high survival rate and with good health condition. In particular, the 41 translocated coral colonies in the 2006 Improvement Works at Tung Ping Chau were recorded with 100% survival rate in the post translocation monitoring results.

18. In addition to the measures to avoid and mitigate the water quality impact as mentioned in paras 13 and 14 above, the following protective measures will also be adopted to avoid direct/indirect impact to coral colonies:

- ♦ Diver survey when placing legs of jack-up barge or concrete mooring sinkers;
- ♦ No prolonged berthing of construction vessels at any fixed location to allow more light penetration for corals; and
- ♦ Set up of marker buoys to restrict all construction vessels from entering the marked areas of shallow waters.

19. With adoption of the above measures, adverse marine ecological impact is not anticipated. The works are marine based, and no terrestrial ecology impact is anticipated.

Fisheries

20. The proposed pier is located in waters of low fisheries production and is not within the spawning and nursery grounds for commercial fisheries resources. The nearest Fish Culture Zone (FCZ) is Tap Mun FCZ which is over 10km from Tung Ping Chau. Marine footprint taken up by the New Pier and Temporary Pier has been minimized by adopting piled foundation. The permanent and temporary loss of fishing ground caused by the construction of the pier is considered insignificant. With the implementation of the mitigation measures for water quality during construction, adverse fisheries impact is not anticipated.

Other Environmental Impacts

21. Other environmental impacts including air quality, noise, waste management, land contamination, landscape & visual are relatively minor and have also been addressed in the EIA report. With the implementation of the recommended mitigation measures, the Project will comply with the relevant requirements of the EIA Study Brief and TM.

ENVIRONMENTAL MONITORING AND AUDIT

22. The EIA report has included an Environmental Monitoring and Audit (EM&A) Manual, which recommends an EM&A programme during the construction and operation phases of the Project. Key recommended EM&A requirements cover ecology, water quality and coral translocation issues.

PUBLIC CONSULTATION

23. The applicant has made the EIA report, EM&A Manual and Executive Summary available for public inspection under the EIAO from 8 October 2020 to 6 November 2020. A summary of all public comments received by the Environmental Protection Department during the public inspection period and a gist of the main concerns raised in the public comments will be provided separately.

November 2020

Environmental Assessment Division

Environmental Protection Department

