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18. CONCLUSIONS

18.1 Introduction

18.1.1.1 This EIA report has provided an assessment of the potential environmental impacts associated with the construction and operation of the Project based on the preliminary engineering design information available at this stage. The assessment, conducted in accordance with the Study Brief No. ESB-360/2023 under the EIAO and the EIAO-TM, covers the following environmental issues:

(a) Air Quality Impact
(b) Noise Impact
(c) Water Quality Impact
(d) Sewerage and Sewage Treatment Implications
(e) Waste Management Implications
(f) Land Contamination
(g) Ecological Impact
(h) Fisheries Impact
(i) Landscape and Visual Impact
(j) Cultural Heritage Impact
(k) Hazard to Life
(l) Landfill Gas Hazard
(m) Electric and Magnetic Fields

18.1.1.2 The findings of the EIA Study have determined the likely nature and extent of environmental impacts predicted to arise from the construction and operation of the Project. During the EIA process, specific environmental control and mitigation measures have been identified and incorporated into the planning and design of the Project to ensure compliance with environmental legislation and standards during both the construction and operation phases. An environmental monitoring and audit (EM&A) programme has also been developed to check project compliance with environmental legislation and standards. These are presented in a separate, stand-alone EM&A Manual. The Implementation Schedule listing the recommended mitigation measures is presented in **Section 17**.

18.1.1.3 A summary of the environmental outcomes/benefits that have accrued from the environmental considerations and analysis during the EIA study and the implementation of environmental control measures of the Project are presented in the sections below. This has included specific assessment for the Schedule 2 Designated Projects (DP) subject to environmental permit application under this Study. The summary of key assessment assumptions and limitations of methodologies and summary of environmental impacts are presented in **Appendix 18.1** and **Appendix 18.2**, respectively.

18.2 Summary of Key Environmental Outcomes

18.2.1 Environmental Designs Recommended and Environmentally Friendly Options Incorporated in the Preferred Option

18.2.1.1 Environmental aspects considered in the selection of preferred option, design and construction method of the Project are detailed in **Section 2**. The following environmental designs and environmentally friendly options have been incorporated into the preferred option to avoid / minimise potential environmental impacts associated with the Project and to create an eco-friendly, low-carbon community and sustainable development.

Avoidance of Encroachment on Recognized Sites of Conservation Importance / Ecologically Sensitive Sites

18.2.1.2 The preferred option has avoided encroaching on any recognised sites of conservation importance and ecologically / environmentally sensitive areas, such as the Clear Water Bay Country Park, Coastal Protection Area and coral recipient sites.

Optimisation of Reclamation Extent and Preservation of Natural Shoreline

18.2.1.3 The reclamation extent of TKO 132 has been optimised and reduced to minimise the loss of natural shoreline. Reducing direct impact to natural shoreline in western Junk Bay from 790m to 512m. Approximately 1km of natural shoreline can be maintained in the preferred option.

Incorporation of Eco-shoreline Design

18.2.1.4 The seawall of the proposed reclamation at TKO 137 will be provided with eco-shoreline that integrates robust seawall and marine infrastructure with designs that create the ecological environments required by marine habitats. A variation of the shoreline that coheres three ecological strata—sub-tidal, inter-tidal, and terrestrial—is proposed for the Project.

Adoption of Stepped Building Heights Design

18.2.1.5 A building height strategy is applied to form a pleasant vertical image of the waterfront neighbourhood. A reduction in development height from the hinterland to the waterfront area has been adopted to enhance variety in building height and massing. A stepped building height profile descending from the northeast to the southwest and towards the waterfront is proposed with respect to the mountain backdrop. The stepped down building height not only reduces potential visual impact to the residents of Siu Sai Wan, but also avoids “wall effect” along the coastal area, thereby improving air ventilation in TKO 137 area.

Provision of Sustainable Transport Infrastructure to Promote Low-carbon Living

18.2.1.6 A pedestrian-friendly environment and a robust cycling network are proposed to promote walkability and cycling for low-carbon living. The Project will provide a robust cycling network which link effectively to the existing and planned cycling tracks within and outside the Project. The proposed cycling network will connect to the existing tracks from Wan Po Road to create a continuous cycling environment that extends to other destinations beyond the Project area. Routes within the Project will be provided parallel to the major roadways to serve commuting needs.

Appropriate Planning of Building Configuration and Setback

18.2.1.7 With appropriate planning on building configuration and setback from roads, potential road traffic noise impact on future noise sensitive uses within the development would be minimised. The potential noise impacts could be alleviated by the use of low-noise road surfacing, acoustic windows and / enhanced acoustic balcony, blank wall, fixed window, architectural fin, etc., thereby avoiding the use of roadside noise barriers or enclosures. Without roadside noise barriers or enclosures, the associated visual impacts and bird collisions would also be avoided / minimised.

Adoption of Non-dredged Reclamation

18.2.1.8 Non-dredged reclamation with in-situ ground treatment methods (including marine-based deep cement mixing and land-based jet grouting) would be adopted to avoid and minimise the associated water quality impacts from dredging and additional filling, the waste

management implications from sediment disposal and the secondary environmental impacts from induced marine traffic.

Adoption of Environmentally Friendly Construction Method

18.2.1.1 The precast method would be adopted for the construction of the proposed marine viaduct to reduce the overall C&D materials to be generated on-site, shorten construction duration and minimise on-site environmental impacts (e.g. dust and noise) on nearby sensitive receivers.

18.2.2 Key Environmental Problem Avoided

18.2.2.1 With the consideration of various alternative options in Project design and construction methods, the preferred option of the Project has avoided or minimised the following environmental problems:

- Avoidance of direct impact on declared monuments, graded historic buildings and sites of archaeological interest;
- Avoidance of direct impact on recognized sites of conservation importance / ecological sensitive sites;
- Minimisation of loss of natural shoreline with optimised reclamation extent;
- Minimisation of potential visual impact and “wall effect” along the coastal area with the stepped down building height strategy;
- Minimisation of potential water quality and marine sediment generation with the adoption of non-dredged reclamation method; and
- Minimisation of C&D material generation and environmental impacts during marine viaduct construction with the adoption of precast segment method.

18.2.3 Environmental Benefits of Environmental Protection Measures Recommended

18.2.3.1 This section outlines the environmental benefits of key environmental protection measures recommended. A list of key mitigation measures for each of the Schedule 2 DP which would apply for Environmental Permit based on this EIA study is outlined in **Appendix 18.3**.

Air Quality

18.2.3.2 With the implementation of dust suppression measures stipulated in Air Pollution Control (Construction Dust) Regulation and good site practices, the requirements in DEVB TC(W) No. 13/2020 – Timely Application of Temporary Electricity and Water Supply for Public Works Contracts and Wider Use of Electric Vehicles in Public Works Contracts, and the measures to minimise the exhaust emission from non-road mobile machinery (NRMMs), no adverse air quality impact would be anticipated during the construction phase.

18.2.3.3 Cumulative air quality impact from the operation of the proposed effluent polishing plant (EPP), Construction Waste Handling Facility (CWHF), Public Fill Transfer Facility (PFTF), and Concrete Batching Plant (CBP) under the RODP, vehicular emissions from proposed roads and existing roads within 500 m assessment areas, existing portal, marine traffic and existing industrial pollutants emission sources within 500 m assessment area, and flares and LFG generator of SENTX has been predicted. Dust control measures for CWHF, PFTF and CBP would be implemented to abate the potential dust impacts during operation. The results indicated that no adverse air quality impacts on the existing and planned ASRs would be anticipated.

18.2.3.4 Cumulative odour impact arising from the operation of proposed EPP, refuse transfer station (RTS), and sewage pumping station (SPS), ASB Biodiesel (Hong Kong) Limited and SENTX (aftercare phase) have been evaluated. The results showed that with the

incorporation of the appropriate designs into proposed EPP, RTS and SPS (e.g. maintaining negative pressure to prevent foul air from escaping the building, covering treatment units/facilities with potential odour emission) and adoption of odour removal systems, no adverse odour impact would be anticipated.

Noise

18.2.3.5 Mitigation measures including good site practices, adoption of quieter construction methods, use of quality PME, use of movable noise barriers and full enclosures, grouping of PMEs and careful schedule of use of PME among nearby construction work site have been reviewed and are considered feasible and practicable. With the implementation of these mitigation measures, no adverse construction noise impact arising from the Project would be anticipated. Construction Noise Management Plan (CNMP) containing a quantitative construction noise impact assessment should be prepared and submitted to EPD based on the best available information before the tender invitation and commencement of the project construction works, subject to the contract arrangement of the Project and agreement with EPD, with details on the construction method, plant inventory, recommended noise mitigation measures and implementation details of the mitigation measures to ensure compliance with the EIAO-TM criteria

18.2.3.6 A review on fixed noise impacts associated with the proposed facilities including EFs, CWHF, PFTF, RTS, CBP and SPS at TKO 132, and Fire Station cum Ambulance Depot, advance sewage pumping station, EPP, government office/complex, PTIs, temporary PTFs and green filling station at TKO 137 under the Project was conducted. With the implementation of the good design and mitigation measures such as quieter plant, locating the plant inside acoustic plant room / concrete building / enclosure with openings directed away from noise sensitive uses, installation of silencer and/or acoustic louvre, and erecting noise barriers and enclosures, etc., no adverse operational phase fixed noise from the proposed facilities would be anticipated. There are several existing fixed noise sources within 300m assessment area of TKO 137 including Tseung Kwan O InnoPark, fixed plants at SENTX, SNG Plant and Desalination Plant. Except fixed noise from SNG Plant affecting NSRs at Site PU1&2, no adverse fixed noise impact from these existing facilities would be anticipated. With the implementation of proposed mitigation measures such as noise screening and acoustic mat for noisy equipment of SNG Plant, no adverse fixed noise impact would be expected. Potential cumulative fixed noise impact from concurrent existing/planned projects, such as TKO DP, CD TKO and TKLSE were also considered. No adverse cumulative noise impact from proposed fixed noise sources and existing fixed noise source within 300 m assessment area with the implementation of proposed mitigation measures. Fixed Noise Sources Management Plan (FNMP) for DPs and the fixed noise impact assessment for non-DPs should be prepared to assess quantitatively the potential fixed noise sources impacts and to assess the effectiveness and practicality of all proposed noise mitigation measures. The FNMPs should also contain fixed noise sources commissioning test plans and monitoring and audit programme.

18.2.3.7 No airborne railway noise impact would be anticipated as the planned Tseung Kwan O Line Southern Extension (TKLSE) would be located underground. Given insufficient design and operational information of TKLSE at the time of this EIA, ground-borne rail noise impact assessment was conducted qualitatively, having regard to other existing railway systems with similarities based on best available information. As TKLSE would be extension of existing TKL, assessment was conducted with reference to operational information of TKL. The assessment results indicated that no adverse ground-borne railway noise impact would be anticipated due to TKLSE. Nevertheless, the design of the TKLSE would be subject to further review by the proponent of the TKLSE. The proponent of the TKLSE would conduct an EIA and apply for an EP separately, following the EIAO mechanism for assessment of the construction and operation of the TKLSE to ensure no adverse ground-borne noise impact from TKLSE.

18.2.3.8 The predicted road traffic noise levels at representative NSRs at TKO 132 would comply with the relevant noise criteria without mitigation measures. For TKO 137, direct noise mitigation at-source measures, low noise road surfacing (LNRS) has been considered to alleviate the potential road traffic noise impact. At-receiver noise mitigation measures such as blank wall / acoustic window are recommended for those planned NSRs at TKO 137 with noise exceedances under the scenario with the proposed direct noise mitigation at-source measures. With the proposed noise mitigation measures in place, no adverse road traffic noise impact would be anticipated at TKO 137.

18.2.3.9 Marine traffic noise impact assessment has been conducted. The predicted cumulative marine traffic noise levels at all existing and proposed NSRs would comply with the noise criteria. No adverse marine traffic noise impact would be anticipated.

Water Quality

Land-based Construction

18.2.3.10 The key sources of water quality impact arising during the land-based construction of the Project include the construction site runoff, wastewater generated from general construction activities, accidental chemical spillage, general refuse and sewage from the workforce. Mitigation measures such as the relevant practices outlined in ProPECC PN 2/23 'Construction Site Drainage' will be implemented to protect the water sensitive receivers (WSRs). No adverse water quality impact is expected from the land-based construction works with proper implementation of the recommended mitigation measures.

Marine-based Construction

18.2.3.11 Marine-based water quality impact may arise from the proposed marine construction works at TKO 137 and TKO 132. Non-dredged DCM treatment method is proposed for construction of the foundation of the reclamation to minimize the potential water quality impact.

18.2.3.12 Water quality impacts due to marine construction activities (such as the underwater filling works for reclamation and dredging works for new berthing facility) have been quantitatively assessed by mathematical modelling. Suspended solid (SS) and sediment depositions are identified as the key parameters of concern. Mitigation measures including the deployment of silt curtains and undertaking the underwater filling works behind the leading seawall are recommended to mitigate the water quality impact. With the recommended mitigation measures in place, full compliances with assessment criteria were predicted at all representative WSRs during the marine construction works.

Operation Phase

18.2.3.13 Key sources of operational phase water quality impact would be the sewage and wastewater generated from the Project development. All sewage and wastewater generated from the Project development would be either diverted to the existing public sewerage system in Tseung Kwan O or to the proposed EPP for proper treatment and disposal, which will prevent waterborne pollution during operation phase.

18.2.3.14 Preventive design measures and an Emergency Contingency Plan would be implemented to avoid emergency discharge from the EPP and sewage pumping stations of the Project and to prevent accidental marine spillage from operation of the TKO 132 development. Storm pollution control measures and best management practices for storm water management will also be implemented to minimize the water quality impact due to non-point source surface runoff. With proper implementation of all the recommended water

quality mitigation measures, no adverse water quality impact would arise from the Project operation.

Sewerage and Sewage Treatment Implications

18.2.3.15 As the spare capacity of the existing sewerage system is unable to cater for the full intake for TKO 137 development, a new sewerage network and an EPP are proposed to handle the sewage generated from the new development at TKO 137.

18.2.3.16 For the development at TKO 132, the existing sewerage system in Tiu Keng Leng has been assessed to have sufficient capacity to cater for the sewage generated from the new public facilities at TKO 132, and thus a sewage pumping station with twin rising mains is proposed to convey the sewage from the public facilities at TKO 132 to the existing sewerage system in Tiu Keng Leng.

18.2.3.17 Based on the sewerage impact assessment, it can be concluded that the proposed Project is sustainable from sewage collection, treatment and disposal perspective. No insurmountable sewerage and sewage treatment implications would be anticipated.

Waste Management Implications

18.2.3.18 During the construction phase, waste generated from the Project would include C&D materials, chemical waste, general refuse, sediment and floating refuse. Reduction measures have been recommended to minimise the amount of C&D materials generated by the Project by reusing C&D materials before off-site disposal. Provided that the waste is handled, transported and disposed of according to the recommended mitigation measures, no adverse waste management implications, including potential hazards, air and odour emissions, noise, wastewater discharge, ecology and public transport, associated with handling, storage and disposal of wastes during the construction phase of the Project would be anticipated.

18.2.3.19 The main waste types to be generated during the operation phase of the Project will include municipal solid waste, chemical waste, concrete waste, floating refuse, screenings, grits and sewage sludge. A new RTS will be included in preparation for the increased quantity of waste in the district. The proposed waste infrastructure will provide convenient collection of recyclables from the local community, and to provide synergy to achieve better operational efficiency and environmental sustainability. Provided that the waste is handled, transported and disposed of using according to the recommended mitigation measures, adverse waste management implications, including potential hazards, air and odour emissions, noise, wastewater discharge, ecology and public transport, associated with handling, storage and disposal of wastes during the operation phase of the Project are not expected.

Land Contamination

18.2.3.20 Based on the findings of site appraisal, a total of 2 areas with potential land contamination concerns (i.e. an oil stain at the skips storage and skip lorries parking area (Site S1) and the future concrete batching plant and transformer room (Site S2)) were identified within the Project area at TKO 137. No potentially contaminating land uses / activities were identified in TKO 132.

18.2.3.21 As Site S1 is still in operation and Site S2 is still under construction, and that site clearance at these two sites will not commence until 2029 based on the tentative construction programme, there could be changes in the operation or changes in land use within these areas which may cause further contamination issues. Further site appraisal is recommended to be carried out for these two sites when site operation has ceased / after site handover in order to assess the latest site conditions / to identify the presence of any potential land contamination sources, and to address any new contamination issues

caused by any changes in site operation and/or land use within these two sites. Any necessary site investigation (SI) works and remediation action are recommended to be carried out after the site operation has ceased / decommissioning of the facility but prior to the commencement of construction works at the concerned sites / areas. By implementing the recommended further assessment and remediation works under the Project, the potentially contaminated site(s) within the Project boundary would be located and any contaminated soil would be identified and treated.

18.2.3.22 The recommended further assessment and remediation works, including the submission of Contamination Assessment Plan (s) (CAP(s)), Contamination Assessment Report(s) (CAR(s)) / Remediation Action Plan(s) (RAP(s)) and Remediation Report(s) (RR(s)) would follow relevant Guidance Manual, Guidance Note and Practice Guide.

Ecology (Terrestrial and Marine)

18.2.3.23 The design of the Project has avoided direct encroachment onto any sites of conservation importance and ecologically sensitive sites (e.g. Clear Water Bay Country Park, coral recipient sites at Fat Tong Chau and western Junk Bay). Furthermore, several adjustments and engineering options have also been made to avoid and further minimise the significance of direct and indirect ecological impacts arising from the Project, including minimising the extent of land-based (e.g. site formation, NTHMMs) and marine works (e.g. reclamation) to avoid and/or minimise the loss of habitats with higher ecological value and the potential of habitat fragmentation.

18.2.3.24 In order to avoid / minimise any unavoidable ecological impacts rated with an impact severity of low to moderate and above, appropriate mitigation measures have been recommended, including translocation of affected coral colonies with high ecological value, in-situ preservation and transplantation for floral species of conservation importance, incorporation of ecologically friendly design features into planning design of the development subject to its feasibility. In addition, enhancement opportunities including eco-shoreline / ecological enhanced seawall and greening opportunities to promote the overall habitat quality and ecological connection have been recommended to enhance the ecological function of the marine habitats adjacent to the TKO 137 and TKO 132. With the implementation of the recommended mitigation measures, no unacceptable adverse residual ecological impacts would be anticipated.

Fisheries

18.2.3.25 The proposed works for the Project would result in permanent loss (about 47 ha) and temporary loss (about 82 ha) of fishing ground and fisheries habitats, respectively. Given that the affected area constitutes only a small proportion of the fishing ground and fisheries habitats in Hong Kong, where the fisheries operations primarily consist of small, flexible sampans, and the low to moderate fisheries production consisting mainly of non-commercial or low-valued species, the direct impacts on fisheries are considered to be minor. No direct impacts to the sites of fisheries importance are anticipated since the works areas will be far away from them. Changes in water quality associated with construction activities are not expected to result in unacceptable impacts on fisheries resources and habitats. Potential impacts of elevated level of underwater sound as a result of construction activities are also not expected to be unacceptable.

18.2.3.26 During the operational phase, there would be around 47 ha loss of fishing ground and fisheries habitats due to reclamation and the marine viaduct piles. However, the loss only constitutes an insignificant proportion of fishing ground and fisheries habitats in Hong Kong, and the direct impacts to capture fisheries due to loss of fishing ground and disruption of fisheries operation are expected to be minor. Indirect impacts related to changes in water quality from sewage / wastewater generation, effluent discharge, surface runoff, accidental marine spillage from barges, and maintenance sediment removal are expected to be of minor significance. The Project would not significantly alter the local hydrodynamics regime

and hence the impact of change in hydrodynamics on fisheries is considered minor. Potential impacts of underwater sound due to vessel operation are not expected to be unacceptable.

18.2.3.27 With the adoption of non-dredged reclamation method such as DCM as far as practicable, as well as the implementation of adequate water quality mitigation measures such as installation of silt curtains, good site practices and best management practices, alongside ecological enhancement measures such as eco-shoreline / ecological enhanced seawall, no adverse fisheries impacts are expected.

Landscape and Visual

18.2.3.28 A broad-brush tree survey was carried out to identify the existing trees located within the Project boundary, which approximate 5,497 trees has been surveyed. None of these are Registered Old and Valuable Trees (OVTs), rare or endangered tree species and no trees with DBH over 1m which are considered as Tree of Particular Interest were identified. Within the proposed works area, approximately 1,250 existing trees would be directly affected by the proposed works will be proposed to be removed or transplanted as far as practicable. Compensatory planting would be implemented following the prevailing mechanism (e.g. DEVB TC(W) No. 4/2020), with due regard to the planting guidelines promulgated by the Greening, Landscape and Tree Management Section of DEVB and other relevant greenery and tree planting guidelines. No off-site compensatory tree planting is proposed.

18.2.3.29 The Project will inevitably result in some landscape and visual impacts during construction and operational phases.

18.2.3.30 Among the identified landscape resources (LRs), vegetation within TKO 137 (LR1), hillside vegetation at Devil's Peak (LR2), shrubland at Tit Cham Chau and Fat Tong Chau (LR3), coastal water (LR6), rocky shore along western coastline of Junk Bay (LR9), hillside vegetation at Chiu Keng Wan Shan (LR11) and sandy shore along western coastline of Junk Bay (LR13) would have moderate impact significance. With appropriate mitigation measures, it is considered that the residual impacts on most of these LRs would be reduced to moderate to sight in Day 1, and slight to negligible in Year 10 of operation. However, the loss of water body of coastal water (LR6) is irreversible and the residual impacts would maintain as moderate in Year 10 of the operation. Meanwhile, vegetation along drainage channel (LR4), roadside planting (LR8) and orchard/ vegetation near rural settlement (LR12) would have slight impact significance due to the proposed development. Considered that impacts caused by the proposed development to these LRs would be considered as slight, hence it is assumed that residual impacts on these LRs would be slight in Day 1 and reduced to negligible in Year 10 of operation after the implementation of mitigation measures.

18.2.3.31 For the landscape character area (LCA), the most permanent works such as reclamation and building of the Public Facilities and roadworks would be located within Fat Tong O Reclamation (LCA1), Fat Tong Chau and Tin Ha Au upland and hillside landscape (LCA2), Chiu Keng Wan upland and hillside landscape (LCA3), water body of Tathong Channel and Joss House Bay (LCA4) and Junk Bay (LCA5). Hence, it is anticipated that the impact significance before mitigation would be moderate. With the implementation of mitigation measures, the residual impact of most of these LCAs would be reduced from moderate to slight in Day 1 and negligible in Year 10 of operational phase. However, the loss of water body of Tathong Channel and Joss House Bay (LCA4) and Junk Bay (LCA5) are irreversible and the residual impacts would maintain as moderate in Year 10 of the operation. Some proposed works such as constructing EPP within Fat Tong O industrial urban landscape (LCA8) and provision of marine viaduct connecting to the existing TKO transportation corridor (LCA9) would slightly alter the existing landscape character. It is assumed that there would be slight impact significance to these LCAs. With the

implementation of mitigation measures, the residual impact would be slight in Day 1 and reduced to negligible in Year 10 of operational phase. The present barren reclamation landscape character in Fat Tong O (LCA1) would be substantially changed and replaced by a new residential urban landscape character of TKO 137, while a portion of western coastline of Junk Bay bay landscape character (LCA5) would be altered to TKO transportation corridor landscape character (LCA9) and a new reclamation landscape character of TKO 132 to accommodate Public Facilities away from existing and planned residential developments. The resultant new landscape character would provide a community incorporating environmental and biodiversity initiatives which enhancing the overall quality of life for residents.

18.2.3.32 In terms of the visual impact, considered that the proposed development of TKO 132 and TKO 137 are relatively extensive in terms of development scale. It is anticipated that the existing visual context of the selected VPs would be affected inevitably in various level.

18.2.3.33 For VPs that viewing to TKO 137, the impact significance would be substantial to VP8 (view from Tin Ha Shan) and VP10 (view from traveller along the ferry route of Tathong Channel) due to the close proximity to the proposed development while alternating the existing visual context in a substantial degree. The impact significance would be moderate to slight to VP1, VP3 and VP9 due to far viewing distance and slight degree of change in the existing visual context and character. With implementation of the mitigation measures, the residual impact of VP1, VP3 and VP9 would be reduced from sight to moderate in Day 1 and negligible to slight in Year 10 of operational phase, while VP8 and VP10 would be substantial in Day 1 and still be moderate residual impact in Year 10 of operational phase.

18.2.3.34 For VPs that viewing proposed development of TKO 132, the impact significance would generally be slight to moderate for VP4, VP5, VP6 and VP12 due to its relatively small in scale development and low in building profile. Existing visual context such as ridgeline of Devil hill or Chiu Keng Wan Shan could still be maintained. Hence, the residual impact would reduce from slight in Day 1 to negligible in Year 10 of operational phase after the implementation of mitigation measures.

18.2.3.35 For VPs that viewing both the proposed development of TKO 132 and TKO 137, the impact significance would be ranging from moderate to substantial to VP2, VP7 and VP11 due to its extensive development scale and visual blockage to existing natural elements such as foothill of Chiu Keng Wan Shan and ridgeline of Tin Ha Shan. Since the nature of development is similar to existing urbanised area of Tiu Keng Leng, Tseung Kwan O and LOHAS Park, the proposed developments of both TKO 132 and TKO 137 would consider as an extension of existing urbanised area. With implementation of the mitigation measures, it is anticipated that the residual impact of VP2 and VP11 would be moderate in Day 1 and reduced to slight in Year 10 of operational phase, while VP7 (View from Lookout of the Devil's Peak) would be substantial in Day 1 and still be moderate residual impact in Year 10 of operational phase.

18.2.3.36 With the aims to improve the overall quality of development within the Project, mitigation against adverse impacts would be adopted as far as practicable. Number of key planning, urban design and landscape design framework would be developed and proposed in RODP, Master Urban Design Plan and Landscape Master plan. With this guiding principle set out in early stage, these mitigation measures during construction stage could optimise their effect by avoidance of significant change in the existing landscape and visual context, creating visual outlook and landscape characters of the proposed development, ensuring ample green space and initiative are considered during the design stage and together with the preservation, protection and compensatory planting of trees / vegetation.

18.2.3.37 Considering the scale and nature of the Project, it would inevitably result in certain levels of residual landscape and visual impacts in relation to the loss of water body, loss of natural

shorelines and the views from hilltop and from sea level. Nevertheless, the residual landscape impacts are localized and limited to the reclamation extent only without affecting existing community, while the residual visual impacts are confined within the visual envelope either involving few numbers of public viewers along hiking trail and ferry route, or relatively large numbers of public viewers along promenade but viewing at long distance. With the implementation of the proposed landscape and visual mitigation measures, the overall landscape residual impacts would be from negligible to moderate in Day 1 and Year 10 of operational phase, and the overall visual residual impacts would be from slight to substantial in Day 1 and from negligible to moderate in Year 10 of operational phase. With full implementation of the recommended mitigation measures, unacceptable adverse residual landscape and visual impacts are not expected.

Cultural Heritage

18.2.3.38 No declared monument, proposed monument, graded historic building or government historic sites and site of archaeological interest (SAI) were identified within the Project boundary of TKO 137 and TKO 132. Direct impact on built heritage would not be anticipated.

18.2.3.39 Two graded historic buildings and four other identified items are located within the 300 m assessment area but outside of the Project boundary of TKO 132. No adverse direct and indirect impact would be anticipated for the built heritage and other identified items in concern. Therefore, no mitigation measure would be required.

18.2.3.40 One declared monument and three SAIs are located within the 300 m assessment area but outside of the Project boundary of TKO 137. However, Fat Tau Chau House Ruin SAI (SAI185) is located near the Project boundary of TKO 137. While no direct impact is anticipated to the site, adverse indirect impact of ground-borne vibration, tilting and ground settlement arising from the construction activities of the Project is anticipated on this archaeological heritage.

18.2.3.41 To mitigate such adverse indirect impact on Fat Tau Chau House Ruin SAI (SAI185), condition and structural surveys, as well as a baseline vibration review are recommended. The condition and structural surveys should be conducted before and after all construction works to inspect the physical condition and structural integrity of the structure. Based on the pre-construction condition and structural survey results and construction details, the baseline vibration review before the construction phase shall evaluate if monitoring of ground-borne vibration, tilting and ground settlement is required during the construction phase. The baseline vibration review should be submitted to AMO for comment and agreement before implementation. If affirmative, monitoring of ground-borne vibration, tilting and ground settlement should be conducted during the construction phase. Any vibration and building movement induced from the construction works should be strictly monitored to ensure no disturbance and physical damage made to the heritage sites during the course of works.

18.2.3.42 Additionally, a buffer zone is recommended for Fat Tau Chau House Ruin SAI (SAI185) during the construction phase to ensure no construction workers or equipment will be in contact with the archaeological heritage directly. Also, Air Pollution Control (Construction Dust) Regulation shall be followed. Dust suppression measures and good site practice should be observed by the project proponent during the construction phase in order to avoid dust accumulation on Fat Tau Chau House Ruin SAI (SAI185).

18.2.3.43 In terms of archaeology, for areas of Fat Tau Chau within the Project boundary of TKO 137, this AIA reviewed the area to have low archaeological potential (Sections **12.6.3.6** to **12.6.3.9** refer) based on desktop review (Sections **12.3.1.6** to **12.3.1.9** refer) while site visits dated 25th January and 24th July 2024 were hindered by lack of safe access and thick

vegetation coverage over the steep slopes. While it is unlikely to have any prominent and noticeable remains related to the custom station at grade located within the Project boundary of TKO 137, it is not possible to confirm whether archaeological remains or features of the Fat Tau Chau Customs Station and other facilities below ground would exist within the Project boundary of TKO 137.

18.2.3.44 To ensure that no archaeological resources related to the Customs Station on Fat Tau Chau would be affected by the Project, an Archaeological Impact Assessment should be undertaken during the detailed design phase when the details of the proposed works on Fat Tau Chau are available. This Archaeological Impact Assessment at the detailed design phase shall assess the archaeological potential concerning the existence of remains or features in relation to the Customs Stations or other facilities within the Project boundary of TKO 137 on Fat Tau Chau, particularly in areas that would be affected by the proposed works. Based on the details and extent of proposed works to be carried out on Fat Tau Chau, the Archaeological Impact Assessment at the detailed design phase would propose appropriate measures, if any impact on archaeological heritage is identified, for consideration and agreement by AMO. The Archaeological Impact Assessment at the detailed design phase shall be conducted by an archaeologist. It shall incorporate desktop information, site inspection results and recommendation of appropriate mitigation measures, namely change of work design, preservation of archaeological heritage *in-situ*, preservation by relocation, archaeological survey cum excavation or rescue excavation, archaeological watching brief or preservation by record subject to the level of potential impacts to be confirmed in the Archaeological Impact Assessment at detailed design phase upon availability of the details and extent of the proposed works to be carried out on Fat Tau Chau, as necessary for consideration and agreement by AMO. This Archaeological Impact Assessment at the detailed design phase should be conducted by the project proponent. In the light of the above considerations, no adverse impact would be anticipated with mitigation measures agreed by AMO and implemented to the satisfaction of AMO to ensure preservation of the archaeological heritage within the Project boundary of TKO 137 on Fat Tau Chau.

18.2.3.45 Furthermore, if antiquities or supposed antiquities under the Antiquities and Monuments Ordinance (Cap. 53) are discovered during the construction works within the Project boundary of TKO 137 and TKO 132, the project proponent is required to inform AMO immediately for discussion of appropriate mitigation measures to be agreed by AMO before implementation by the project proponent to the satisfaction of AMO.

18.2.3.46 Based on the Marine Archaeological Investigation (MAI), no impact on marine archaeology from the Project is expected. Following the geophysical and diver surveys, adjustments to the Project boundary have resulted in minor data gaps and one uninvestigated anomaly. Given that the areas with data gaps and the uninvestigated anomaly are located at least approximately 225 m outside the marine works boundary of the Project, no marine archaeological impact is anticipated. Therefore, no mitigation measures are considered necessary. Nevertheless, as a precautionary measure, it is recommended to designate these areas with data gaps and the uninvestigated anomaly as AEZs during the marine works of the Project to ensure no impact on the seabed from anchoring of work vessels during the marine works of the Project in these locations.

Hazard to Life

18.2.3.47 Hazard assessments were conducted to assess the risks associated with the planned desalination plant, existing SNG production plant, proposed EPP, existing explosives off-loading pier and proposed green fuel station (GFS) during both construction and operational phases of the Project. The results showed that both the individual risks and societal risks, taking into account the population induced by the Project, would be in

compliance with the risk criteria stipulated. Risk mitigation measures are therefore not required.

18.2.3.48 Regarding the transport of explosives during construction phase of the Project, buffer distances (i.e. 90 m for indoor population and 35 m for outdoor population) from the delivery route should be maintained during the delivery of explosives.

Landfill Gas Hazard

18.2.3.49 Landfill gas hazard assessment for TKO 132 is not required as the development resides beyond 250 m Consultation Zone of any landfill. The northeastern quadrant of TKO 137 lies within the 250 m Consultation Zone for the SENT and SENTX, therefore landfill gas hazard assessment has been conducted for those development areas of TKO 137 situated within the 250 m Consultation Zone.

18.2.3.50 The overall risk for the construction phase for the Development ranges from Low to Medium. Safety requirements stated in Chapter 8 of the Landfill Gas Hazard Assessment Guidance Note are recommended to be implemented properly during construction phase.

18.2.3.51 For the operational phase, dependent upon the actual design and usage of buildings, the overall risk levels for the operational phase in Open Spaces ranges from Very Low to Low. For developments where landfill gas risk is categorised as “Low”, some precautionary measures may be required to ensure that the planned development is safe, however the measures which depend on the actual design of indoor facilities if any (such as toilets).

18.2.3.52 The overall risk levels for the operational phase for Government, Institution or Community, Public Housing Sites, Education and Other Specified Uses ranges such as the EPP from Low to High. “Passive” or “Active” control measures should be considered for development areas categorised as “Medium” or “High” Risk respectively.

18.2.3.53 Detailed Landfill Gas Hazard Assessment, shall be conducted in accordance with the Landfill Gas Hazard Assessment Guidance Note, during the detailed design stage of the Development with appropriate control measures recommended based on the type of buildings/structures proposed, however potential hazard(s) posed by landfill gas are considered to be surmountable and numerous feasible engineering options exists to mitigate any unacceptable risk identified to acceptable levels.

18.2.3.54 Provided that the construction and operational phase protection controls are appropriately designed and properly implemented, safety will be safeguarded and risk associated with landfill gas migration and potential hazard will be adequately controlled.

Electric and Magnetic Fields

18.2.3.55 Electric and Magnetic Field impact assessment has been conducted. The proposed EFs and the proposed ESSs are of the similar nature and design of existing ESS. With reference to the measurement results in previous separate approved EIA, approved direct application of EPs and literature which was measured with negligible electric and magnetic field impact compared to the ICNIRP limits. Therefore, no adverse electric and magnetic field impact would be anticipated from the proposed ESSs and the proposed EFs.

18.3 Population Protected from Environmental Impacts

18.3.1.1 The Project has avoided encroachment on the existing On Luen Village at Devil’s Peak.

18.4 Environmentally Sensitive Areas Protected

18.4.1.1 The Project has avoided encroachment into existing Clear Water Bay Country Park and coral recipient sites at Devil's Peak and Junk Bay. The reclamation extent of TKO 132 has been optimised to minimise impact to the natural shoreline. In terms of cultural heritage, no Declared Monuments and Graded Historic Buildings would be located within the Project boundary, and the Declared Monuments and Graded Historic Buildings in the vicinity of the Project would be preserved.

18.5 Overall Conclusion

18.5.1.1 The findings of this EIA have provided information on the nature and extent of environmental impacts arising from the construction and operation of the Project. The EIA has, where appropriate, identified mitigation measures to ensure compliance with environmental legislation and standards.

18.5.1.2 Overall, the EIA Report has predicted that the Project would be environmentally acceptable with the implementation of the proposed mitigation measures for construction and operation phases. An environmental monitoring and audit programme has been recommended to ensure the effectiveness of recommended mitigation measures.