

12. CONCLUSION

12.1 Introduction

An assessment of the potential environmental impacts associated with the construction and operation activities of the Project has been conducted in accordance with the requirements of the *Environmental Impact Assessment (EIA) Study Brief* and the *Technical Memorandum on Environmental Impact Assessment Process (EIAO-TM)*. This section summarises the key environmental outcomes, environmental impacts and mitigation measures associated with the proposed Project. A summary of key assessment assumptions, limitation of assessment methodologies and related prior agreements as well as summary of alternative mitigation measures required under the *EIA Study Brief (No. ESB-328/2019)* is also presented.

12.2 Summary of Environmental Outcomes

The EIA study predicted that the Project would be environmentally acceptable with the implementation of the recommended mitigation measures. The key environmental outcomes, taking into account estimated population protected from various environmental impacts, environmentally sensitive areas protected, environmentally friendly options considered and incorporated in the preferred option, environmental designs recommended, key environmental problems avoided, compensation areas included and the environmental benefits of environmental protection measures recommended, are summarised in the following sections.

12.2.1 Estimated Population and Environmental Sensitive Areas Protected

Environmentally sensitive areas and populations in the vicinity of the Project include the potential South Lamma Marine Park, Sham Wan Site of Special Scientific Interest (SSSI) and Restricted Area, populations on western Lamma Island and eastern Cheung Chau, marine waters, marine ecological resources and fisheries resources in the Southern Water Control Zone (WCZ), Western Buffer WCZ and Victoria Harbour WCZ.

Environmentally friendly options and designs as well as various mitigation/ control measures were considered to avoid and/ or minimise environmental impacts due to the construction and operation activities of the Project. Accordingly, the following populations and environmentally sensitive areas have been protected:

- The residential, working and transient populations in western Lamma Island and eastern Cheung Chau are subject to less potential air quality and noise impacts by the selection of the currently proposed Project site.
- All sensitive uses of marine waters, marine ecological resources and fisheries resources in the Southern WCZ, Western Buffer WCZ and Victoria Harbour WCZ have been protected from the potential change in water quality during construction and operation activities of the Project.

12.2.2 Environmentally Friendly Options Considered and Incorporated in the Preferred Option

Alternative options were considered in the selection of the preferred development option and due consideration was given to the environmental benefits and dis-benefits of different options for disposal of contaminated sediments. The development of Contained Aquatic Disposal (CAD) facilities is the most practicable and feasible option given the followings:

- Hong Kong's experience in handling contaminated materials using CAD is among the most extensive and well documented in the world;
- CAD facilities allow more planning flexibility as they can be developed in phases according to the disposal demand; and

- CAD facilities will only result in temporary loss of marine habitats and fishing ground, and benthic recolonisation is expected to take place after completion of capping.

Viable sites for development of CAD facilities were considered within HKSAR waters, from the point of view of considering a variety of environmental, ecological and operational factors the location of the Project at West of Lamma Island was found to be preferred based on environmental, ecological and operational safety grounds. Potential impacts to sensitive receivers, in terms of air quality and noise, are further reduced by choosing a location further away from densely populated areas.

12.2.3 Environmental Designs Recommended, Key Environmental Problems Avoided and Compensation Areas Included

Potential impacts to air quality and noise have been minimized/avoided through selecting a relatively remote location for the Contaminated Mud Pits (CMPs), situating over 2 km from the nearby landmass. With the adoption of suitable environmental designs, such as the use of closed grab dredgers with cage-type silt curtain for dredging works and the control of work rates for dredging, backfilling and capping works, adverse water quality impacts at water sensitive receivers within the Assessment Area would be minimised.

The Project has also avoided encroaching to ecological sensitive receivers such as the potential South Lamma Marine Park and Sham Wan SSSI and Restricted Area. No environmentally sensitive areas would be directly affected by the Project, and mitigation measures have been recommended to minimise any potential indirect impacts. As the Project has avoided direct impact to any sites of ecological importance, no compensation areas are required.

12.2.4 Environmental Benefits of Environmental Protection Measures

Impacts to water quality, marine ecology and fisheries resources have been managed by the adoption of appropriate work rates for dredging, backfilling and capping works and the use of cage-type silt curtain for dredging works by grab dredgers. Standard measures and good site practices are recommended to avoid/ minimise potential impacts as far as practicable.

12.3 Summary of Environmental Impacts

The summaries of environmental impacts are structured as follows for each of the technical assessment completed under this EIA Study:

- Sensitive receivers/ assessment points;
- Assessment methodology and criteria;
- Key impacts for construction and operation activities;
- Key mitigation measures;
- Residual impacts; and
- Compliance with the guidelines and criteria of the *EIAO-TM*.

12.3.1 Water Quality

Table 12.1 presents a summary of the findings of the assessment of impacts to water quality as a result of the construction and operation activities of this Project. Full details of the assessment and mitigation measures are presented in **Section 3** of this EIA Report.

Table 12.1 Summary of Environmental Assessment – Water Quality

Item	Description
Sensitive Receivers	WSRs, including coral communities, gazetted and non-gazetted bathing

Item	Description
	<p>beaches, seawater intakes, fish culture zone (FCZ), SSSI, Green Turtle nesting ground, secondary contact recreation subzones, habitat for finless porpoise, nursery area and spawning ground for commercial fisheries resources and existing/ potential marine parks, in the Southern WCZ, Western Buffer WCZ and Victoria Harbour WCZ (refers to Table 3.8 and Figure 3.3)</p>
<p>Assessment Methodology and Criteria</p>	<ul style="list-style-type: none"> ■ The potential impacts due to the construction and operation activities of the Project were assessed following the <i>EIAO-TM Annex 6</i> guidelines and the impacts evaluated based on the criteria in <i>EIAO-TM Annex 14</i>. Water quality impacts on WSRs were evaluated according to the corresponding Water Quality Objective (WQO) criteria or other proposed assessment criteria. ■ Impacts due to the dispersion of suspended sediment and release of sediment-bounded nutrient during marine dredging, backfilling and capping works have been assessed using computational modelling Delft3D-WAQ models. Impacts due to the dispersion of suspended sediment, depletion of dissolved oxygen, release of sediment-bounded nutrient, release of sediment-bounded contaminants and changes in flow regime were assessed quantitatively by computational modelling. ■ Analysis of EPD routine water quality and sediment data from the years of 1986 to 2020 has been undertaken to determine the assessment criteria for increase in suspended solids, depletion of dissolved oxygen and release of sediment-bounded nutrients.
<p>Key Impacts</p>	<p>The key impacts include:</p> <ul style="list-style-type: none"> ■ Changes in water quality due to construction and operation activities (i.e. dredging, disposal and capping). ■ Marine vessel discharges from marine vessels. ■ Accidental spillage or leakage of fuel/ chemicals. ■ Changes in flow regime during CMP operation. <p>No unacceptable water quality impact was predicted from the proposed dredging, backfilling and capping of CMPs at the respective maximum work rates based on the findings of computational modelling.</p>
<p>Key Mitigation Measures</p>	<ul style="list-style-type: none"> ■ Installation of cage-type silt curtain around closed grab. ■ No overflow is permitted from trailing suction hopper dredger (TSHD). ■ The Lean Mixture Overboard (LMOB) system of TSHD will only be in operation at the beginning and end of the dredging cycle when the drag head is being lowered and raised. ■ Control of work rates for dredging, backfilling and capping works. ■ Standard measures and good site practices are recommended to avoid/minimise the potential impacts (see Section 3.8).
<p>Residual Impacts</p>	<p>With the adoption of the recommended mitigation measures, no adverse residual water quality impacts are expected during the construction and operation activities of the Project.</p>
<p>Compliance with <i>EIAO-TM</i></p>	<p>The assessment and the impacts are in compliance with the <i>EIAO-TM Annexes 6 and 14</i> and applicable assessment standards/ criteria.</p>

12.3.2 Marine Ecology

Table 12.2 presents a summary of the findings of the assessment of impacts to marine ecology as a result of the construction and operation activities of this Project. Full details of the assessment and mitigation measures are presented in **Section 4** of this EIA Report.

Table 12.2 Summary of Environmental Assessment – Marine Ecology

Item	Description
Sensitive Receivers	Known ecological important habitats and species in the vicinity of the Project within the Assessment Area include potential South Lamma Marine Park, Sham Wan SSSI and Restricted Area, coral and benthic communities, Finless Porpoises and Green Turtles.
Assessment Methodology and Criteria	<ul style="list-style-type: none"> ■ A literature review, supplemented by focussed field surveys that covered subtidal (benthic and coral) and marine mammals was conducted to establish the ecological profiles within the Assessment Area. ■ The potential impacts due to the construction and operation activities of the proposed Project were assessed following the <i>EIAO-TM Annex 16</i> guidelines and the impacts evaluated based on criteria in <i>EIAO-TM Annex 8</i> and <i>Guidance Notes</i>.
Key Impacts	<p>The key impacts to marine ecological resources include:</p> <ul style="list-style-type: none"> ■ Temporary habitat loss and disturbance. ■ Underwater sound from construction and operation activities. ■ Changes in water quality from construction and operation activities. ■ Increased marine traffic from construction and operation activities. ■ Effects of glare from light sources of construction and operation activities. ■ Accidental spillage/leakage of fuels/ chemicals. <p>No unacceptable impact to marine ecological resources was predicted from the construction and operation activities of the proposed Project.</p>
Key Mitigation and Precautionary Measures	<ul style="list-style-type: none"> ■ Water quality mitigation measures (e.g. deployment of cage-type silt curtain during dredging works by grab dredgers, control of work rates, good site practices) will be implemented. ■ Vessel operators will be required to control and manage all effluent from vessels. ■ A policy of no dumping of rubbish, food, oil, or chemicals will be strictly enforced. ■ Only well-maintained and inspected vessels would be used. ■ Safe storage, handling and disposal of chemicals and oils to prevent the release into the marine environment. ■ Bunding of machinery areas and availability of spill clean-up kits would be in place. ■ The vessel operators for the construction activities of this Project will be required to use predefined and regular routes, make use of designated fairways to access the active CMPs, and will avoid traversing sensitive habitats such as existing and proposed marine parks. ■ The vessel operators working on the construction activities of the Project will be given a briefing, alerting them to the possible presence of Finless

Item	Description
	Porpoise (FP) in the active CMP areas, and the guidelines for safe vessel operation in the presence of these animals. The vessels will avoid using high speed as far as possible.
Residual Impacts	Recolonisation of benthos is expected after capping of the CMPs and the habitats are expected to return to pre-dredged conditions. With the implementation of the recommended mitigation and precautionary measures, no adverse residual impacts on marine ecological resources are expected during the construction and operation activities of the Project.
Compliance with <i>EIAO-TM</i>	The assessment and the impacts are in compliance with the <i>EIAO-TM Annexes 8 and 16</i> and applicable assessment standards/ criteria.

12.3.3 Fisheries

Table 12.3 presents a summary of the findings of the assessment of impacts to fisheries as a result of the construction and operation activities of this Project. Full details of the assessment and mitigation measures are presented in **Section 5** of this EIA Report.

Table 12.3 Summary of Environmental Assessment – Fisheries

Item	Description
Sensitive Receivers	The identified fisheries sensitive receivers are: <ul style="list-style-type: none"> ■ Recognised spawning ground and nursery area of commercial fisheries resources in southern waters; ■ FCZs at Cheung Sha Wan, Lo Tik Wan, Sok Kwu Wan and Ma Wan; and ■ Artificial reefs within Lo Tik Wan FCZ.
Assessment Methodology and Criteria	<ul style="list-style-type: none"> ■ A literature review, supplemented by focussed field surveys, was conducted to establish the fisheries importance of the area surrounding the Project. ■ The potential impacts due to the construction and operation activities of the Project were assessed following the <i>EIAO-TM Annex 17</i> guidelines and the impacts evaluated based on the criteria in <i>EIAO-TM Annex 9</i>.
Key Impacts	<p>The key impacts to fisheries resources and fishing operations include:</p> <ul style="list-style-type: none"> ■ Direct disturbances of fisheries habitat and fishing ground; ■ Perturbations to key water quality parameters from marine construction and operation activities; and ■ Underwater sound generated from marine construction activities. <p>No unacceptable impact to fisheries resources and fishing operations was predicted from the construction and operation activities of the proposed Project.</p>
Key Mitigation and Precautionary Measures	<ul style="list-style-type: none"> ■ Water quality mitigation measures (e.g. deployment of cage-type silt curtain during dredging works by grab dredgers, control of work rates, good site practices) will be implemented. ■ Issuance of Marine Department Notice or other notifications is expected to reduce the risk of collision of increased marine traffic and fishing

Item	Description
	<p>vessels to within acceptable levels.</p> <ul style="list-style-type: none"> ■ During construction and operation of the CMPs, works area will be established within and in the vicinity of the active CMP(s) within Key Area only to minimize the actual extent of fisheries habitats and fishing ground affected at any one time. ■ Appropriate notification, communications, site protection and marking would be adopted to reduce navigation risks with fishing vessels.
Residual Impacts	<p>Recolonisation of benthos is expected after capping of the CMPs and the habitats are expected to return to pre-dredged conditions. With the implementation of the recommended mitigation measures, no adverse residual impacts on fisheries are expected during the construction and operation activities of the Project.</p>
Compliance with <i>EIAO-TM</i>	<p>The assessment and the impacts are in compliance with the <i>EIAO-TM Annexes 9 and 17</i> and applicable assessment standards/ criteria.</p>

12.3.4 Waste Management

Table 12.4 presents a summary of the findings of the assessment of impacts to waste management as a result of the construction and operation activities of this Project. Full details of the assessment and mitigation measures are presented in **Section 6** of this EIA Report.

Table 12.4 Summary of Environmental Assessment – Waste Management

Item	Description
Assessment Methodology and Criteria	<p>The potential environmental impacts associated with the handling and disposal of waste arising from the construction and operation activities of the proposed Project are assessed in accordance with the criteria presented in <i>Annexes 7 and 15 of the EIAO-TM</i>.</p>
Key Impacts	<ul style="list-style-type: none"> ■ The key potential impacts are related mainly to dredged marine sediment from the formation of CMPs of the Project that will require off-site disposal. The project proponent will liaise with the Marine Fill Committee (MFC) and the Environmental Protection Department (EPD) at an early stage of the Project, as to the allocation arrangement for sediment disposal. Marine sediment sampling, testing and reporting in accordance with the requirement stated in <i>ETWB TC(W) No. 34/2002</i> for EPD approval will be required under the <i>Dumping at Sea Ordinance</i> prior to dredging and disposal. ■ Other waste quantities, including chemical waste and general refuse are anticipated to be small, and will be disposed of accordingly to their nature and relevant regulations, avoiding any potential adverse impact.
Key Mitigation Measures	<p>Standard measures and good site practices are recommended to avoid/minimise the adverse environmental impacts associated with the management and disposal of the waste arisings during the construction and operation activities of the Project (see Section 6.4).</p>
Residual Impacts	<p>With the implementation of the recommended mitigation measures, no adverse residual impacts are anticipated from the construction and operation activities of this Project.</p>

Item	Description
Compliance with <i>EIAO-TM</i>	The assessment and the impacts are in compliance with the <i>EIAO-TM Annexes 7 and 15</i> and applicable assessment standards/ criteria.

12.3.5 Cultural Heritage

Table 12.5 presents a summary of the findings of the assessment of impacts to cultural heritage as a result of the construction and operation activities of this Project. Full details of the assessment and mitigation measures are presented in **Section 7** of this EIA Report.

Table 12.5 Summary of Environmental Assessment – Cultural Heritage

Item	Description
Sensitive Receivers	<ul style="list-style-type: none"> ■ No sites of archaeological interest, declared monuments, proposed monuments, graded historic sites / buildings, and government historic sites identified by the Antiquities and Monuments Office (AMO) fall within the Project area. ■ Review of the historic admiralty charts, previous marine archaeological investigations (MAIs) and wreck database supplemented by a geophysical survey identified no evidence of any marine archaeological sites / shipwrecks sites within the Key Area for potential CMP development. The proposed CMPs of the Project are concluded to have no archaeological potential.
Assessment Methodology and Criteria	The study methodology follows the criteria and guidelines as stated in <i>Annexes 10 and 19 of the EIAO-TM</i> and the Guidelines for Marine Archaeological Investigation as stated in the EIA Study Brief.
Key Impacts	Findings of the MAI conclude that there is no marine archaeological potential within the Key Area for potential CMP development. No marine archaeological impact is expected to occur during the construction and operation activities of the Project.
Key Mitigation Measures	As no impacts to cultural heritage resources are expected, no mitigation measure is required.
Residual Impacts	As no impacts to cultural heritage resources are expected, no adverse residual impacts are expected.
Compliance with <i>EIAO-TM</i>	The assessment and the impacts are in compliance with the <i>EIAO-TM Annexes 10 and 19</i> and applicable assessment standards/ criteria.

12.3.6 Hazard to Health

Table 12.6 presents a summary of the findings of the assessment of impacts to hazard to health as a result of the construction and operation activities of this Project. Full details of the assessment and mitigation measures are presented in **Section 8** of this EIA Report.

Table 12.6 Summary of Environmental Assessment – Hazard to Health

Item	Description
Assessment Methodology	<ul style="list-style-type: none"> ■ A bioaccumulation assessment has been conducted to study the effects

Item	Description
and Criteria	<p>of the consumption of seafood by humans from the Study Area due to increase of concentration and accumulation of heavy metals, PAHs, PCBs and TBT.</p> <ul style="list-style-type: none"> ■ A risk assessment to human health has been conducted to predict the effects on human health of consuming seafood due to sediment disposal at the proposed WL Facility.
Key Impacts	Potential increase of concentration and accumulation of heavy metals, Polycyclic aromatic hydrocarbons (PAHs), Polychlorinated biphenyls (PCBs) and Tributyltin (TBT) due to the construction and operation activities of the Project, and hence the risk of potential hazard to human health.
Key Mitigation Measures	No specific mitigation measure is required. Water quality mitigation measures (e.g. deployment of cage-type silt curtain during dredging works by grab dredgers, control of work rates, good site practices) will be implemented.
Residual Impacts	No adverse residual impacts are anticipated.
Compliance with <i>EIAO-TM</i>	The assessment and the impacts are in compliance with the <i>EIAO-TM Annex 4</i> and applicable assessment standards/ criteria.

12.3.7 Air Quality

Table 12.7 presents a summary of the findings of the assessment of impacts to air quality as a result of the construction and operation activities of this Project. Full details of the assessment and mitigation measures are presented in **Section 9** of this EIA Report.

Table 12.7 Summary of Environmental Assessment – Air Quality

Item	Description
Sensitive Receivers	In accordance with the EIA Study Brief of the Project, the Assessment Area for the air quality impact assessment covers a distance of 500 m from the boundary of the Project (i.e. the Key Area identified for potential CMP development). No existing/ planned air sensitive receiver (ASR) was found within the Assessment Area. Beyond the Assessment Area, seven existing ASRs were identified and are illustrated in Figure 9.1 . The nearest ASR is at 2.5 km from the Project boundary.
Assessment Methodology and Criteria	The principal legislation for the management of air quality in Hong Kong is Air Pollution Control Ordinance (APCO). Evaluation criteria followed the prevailing Air Quality Objectives (AQOs) which stipulate the statutory limits of typical air pollutants in the ambient air and the maximum allowable number of exceedances over the specified periods under APCO.
Key Impacts	In view of the insignificant air quality impact arising from the construction and operation activities of the Project and the large separation distance to the ASRs, no adverse air quality impact associated with the construction and operation activities of the Project is anticipated.
Key Mitigation Measures	<ul style="list-style-type: none"> ■ Implement dust control measures stipulated in the <i>Air Pollution Control (Construction Dust) Regulation (Cap. 311R)</i> during the construction phase where appropriate. ■ Requirements stipulated in the <i>Air Pollution Control (Fuel Restriction)</i>

Item	Description
	<p><i>Regulations, Air Pollution Control (Marine Light Diesel) Regulation, Air Pollution Control (Fuel for Vessels) Regulation and Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation</i> will be followed.</p> <ul style="list-style-type: none"> ■ Use of Ultra-low sulphur diesel (ULSD) for all Powered Mechanical Equipment (PME) stipulated in <i>ETWB TC(W) No. 19/2005</i>. ■ Number of trips would be monitored and vessel travelling routes would be kept away from the ASRs as far as possible. ■ Other measures and good site practices as stated in Section 9.8.
Residual Impacts	No adverse residual impacts are anticipated.
Compliance with <i>EIAO-TM</i>	The assessment and the impacts are in compliance with the <i>EIAO-TM Annexes 4 and 12</i> and applicable assessment standards/ criteria.

12.3.8 Noise

Table 12.8 presents a summary of the findings of the assessment of impacts to noise as a result of the construction and operation activities of this Project. Full details of the assessment and mitigation measures are presented in **Section 10** of this EIA Report.

Table 12.8 Summary of Environmental Assessment – Noise

Item	Description
Sensitive Receivers	In accordance with the EIA Study Brief of the Project, the Assessment Area for the noise impact assessment covers a distance of 300 m from the boundary of the Project (i.e. the Key Area identified for potential CMP development). No existing / planned noise sensitive receiver (NSR) was found within the Assessment Area. Beyond the Assessment Area, two existing NSRs were identified and are illustrated in Figure 10.1 . The nearest NSR is at 2.8 km from the Project boundary.
Assessment Methodology and Criteria	The methodology for the noise impact assessment is in accordance with the procedures outlined in the <i>Technical Memorandum on Noise from Construction Work Other Than Percussive Piling (GW-TM)</i> , which is issued under the <i>Noise Control Ordinance (NCO)</i> .
Key Impacts	In view of the large separation distance to the NSRs, no adverse noise impact associated with the construction and operation activities of the Project is anticipated.
Key Mitigation Measures	In view of the large separation distance to the NSRs, noise mitigation measures are therefore not required for both construction and operation phases of the Project.
Residual Impacts	No adverse residual impacts are anticipated.
Compliance with <i>EIAO-TM</i>	The assessment and the impacts are in compliance with the <i>EIAO-TM Annexes 5 and 13</i> and applicable assessment standards/ criteria.

12.4 Documentation of Key Assessment Assumptions, Limitation of Assessment Methodology and Related Prior Agreement(s)

Based on the latest findings of the investigation study of the Project, the Study Area is capable of handling more contaminated sediment in total and the service life of the facility is thus expected to extend beyond 2034. Pursuant to Clause 6.2 of the EIA Study Brief, CEDD submitted a letter to EPD to seek confirmation whether the proposed key change of extended service life of the facility beyond 2034 could be covered by the EIA Study Brief. EPD confirmed that the proposed key change could still be covered by the EIA Study Brief that the EIA study must address and would not fundamentally alter the key scope of the EIA Study Brief.

A summary of key assessment assumptions, limitation of assessment methodologies and related prior agreements with relevant Government Departments is presented in **Table 12.9**.

Table 12.9 Key Assessment Assumptions, Limitation of Assessment Methodologies and related Prior Agreement(s) with the Relevant Authorities

Environmental Aspect	Key Assessment Assumptions	Limitation of Assessment Methodologies	Prior Agreement(s) with the Director of Environmental Protection or other Authorities
Water Quality	<ul style="list-style-type: none"> ■ Water quality baseline developed based on available EPD water quality monitoring data within Assessment Area in 1986-2020 ■ Sediment release at peak rates of concurrent dredging, backfilling and capping works are assumed for conservative assessment. ■ Consideration of future coastline and concurrent projects as stated in Annex 3A. 	<ul style="list-style-type: none"> ■ Modelling exercise simulates only typical conditions of dry season and wet season, which is generally considered acceptable. ■ Maximum rates of sediment release from concurrent dredging, backfilling and capping works assumed to ensure conservative assessment. ■ Other uncertainties in assessment methodologies are stated in Annex 3A. 	In accordance with <i>Clause 3.4.3</i> and <i>Appendix B</i> of the EIA Study Brief, a Method Statement for Water Quality Modelling Assessment was submitted for agreement by the Director of EPD.
Marine Ecology	Assessment was conducted based with literature review supplemented with focussed field surveys within the Assessment Area, including subtidal (benthic and coral) and marine mammal surveys.	N/A	Method Statement for Marine Ecological Survey was submitted to AFCD for agreement prior to the survey.
Fisheries	Assessment was conducted based on literature review of past fisheries studies, AFCD's Port Survey, recent fisheries surveys of the approved EIA studies, supplemented by focussed fisheries surveys.	N/A	Method Statement for Fisheries Impact Assessment was submitted to AFCD for agreement prior to the survey.
Waste Management	Volume of dredged material and general construction and operational waste were estimated based on the latest design information available from CEDD at the time of reporting.	N/A	In accordance with <i>Clause 3.4.6</i> and <i>Appendix E</i> of the EIA Study Brief, a Proposal for Field Investigation for Assessment of Waste Management Implications was submitted for agreement by the Director of EPD.
Cultural	The Marine Archaeological Investigation was conducted	N/A	N/A

Environmental Aspect	Key Assessment Assumptions	Limitation of Assessment Methodologies	Prior Agreement(s) with the Director of Environmental Protection or other Authorities
Heritage	based on the literature review of past projects and MAIs supplemented by geophysical surveys within the Study Area to fill in information gaps.		
Hazard to Health	The key assessment assumptions are summarised in Annexes 8A and 8B .	Ambient concentrations of contaminants of concerns in marine biota were referenced from the biota data collected in reference areas between January 2016 and February 2021 as part of the biomonitoring programme under the EM&A of ESC CMP.	N/A
Air Quality	Evaluation criteria followed the prevailing AQOs which stipulate the statutory limits of typical air pollutants in the ambient air and the maximum allowable number of exceedances over the specified periods under APCO. The new AQOs, came into effect since 1 January 2022, have been adopted.	N/A	N/A
Noise	The methodology for the noise impact assessment is in accordance with the procedures outlined in the <i>GW-TM</i> , which is issued under the <i>NCO</i> .	N/A	N/A

12.5 Summary of Alternative Mitigation Measures and Environmental Benefits of the Project

Different development options and viable sites of the Project have been considered based on the environmental benefits and dis-benefits for disposal of contaminated sediments. The Project is sited to avoid encroaching sensitive receivers (e.g. ecologically important habitats, areas of high fisheries importance). To further minimise potential impacts, the proposed CMPs will be constructed and operated in a smaller footprint within the Key Area and the CMPs will be constructed and operated sequentially and no more than three pits will be active (dredging / backfilling / capping) at any one time. Appropriate mitigation measures (e.g. control of work rates for dredging, backfilling and capping works, use of cage-type silt curtain for close grab dredging, good site practices) will also be implemented to further avoid/reduce potential impacts. The Project is thus considered to be environmentally acceptable.

It should also be highlighted that dedicated marine contaminated mud disposal facilities adopting the CAD design has been implemented in Hong Kong at East of Sha Chau (ESC) and South of The Brothers (SB) since 1990s, and the associated environmental monitoring and audit programme at ESC and SB has demonstrated that the operation of the facilities did not cause adverse environmental impacts to the surroundings. The current Project would adopt a similar CAD design and continue to serve as a centralised facility in Hong Kong, providing an overall control for the disposal of contaminated sediment in an environmentally acceptable manner. Based on the previous experience from the ESC and SB facilities, benthic recolonisation occurs after the completion of the final capping layer with uncontaminated sediments and/or natural uncontaminated soil and the site is expected to return to the pre-dredged state within a relatively short period of time. The employment of such environmental protection methods in the design of WL Facility will, therefore, act as an environmental benefit.

12.6 Environmental Monitoring and Audit

The construction and operation activities of the proposed Project has been demonstrated in this EIA Report to comply with the *EIAO-TM* requirements. Actual impacts during the construction and operation activities will be monitored through a detailed Environmental Monitoring and Audit (EM&A) programme. Full details of the EM&A programme are presented in the ***EM&A Manual*** attached to this EIA Report. This programme will provide management actions and mitigation measures to be employed should impacts arise, thereby ensuring the environmental acceptability of the construction and operation activities of this Project.

12.7 Environmental Outcomes

No adverse residual impacts have been predicted for the construction and operation activities of this Project. It must be noted that for each of the components assessed in the EIA Report, the assessments and the residual impacts have all been shown to be acceptable and in compliance with the relevant assessment standards/criteria of the *EIAO-TM* and the associated *Annexes*.