

14 EIA FINDINGS AND RECOMMENDATIONS

14.1 Introduction

14.1.1 The Project is a designated project (DP) in accordance with Item 1 of Schedule 3 of the EIAO, which specifies an “engineering feasibility study of urban development projects with a study area covering more than 20 ha or involving a total population of more than 100,000”. The Project also includes various individual DPs defined in Schedule 2 of the EIAO including the following:

- DP1- Central-Wanchai Bypass including its road tunnel (Items A.1 and A.7 of Part I of Schedule 2 of the EIAO)
- DP2 - WDII major roads (including Road P2) (Item A.1 of Part I of Schedule 2 of the EIAO)
- DP3 - Reclamation works including associated dredging works (Item C.1 of Part I of Schedule 2 of the EIAO)
- DP4 - Temporary typhoon shelter (Item C.5 of Part I, Schedule 2 of the EIAO).
- DP5 - Wan Chai East Sewage Outfall (Items F.5 and F.6 of Part I of Schedule 2 of the EIAO)
- DP6 - Cross-harbour Water Mains from Wan Chai to Tsim Sha Tsui (Item C.12 of Part I of Schedule 2 of the EIAO); and

14.1.2 **Figure 1.2** shows the locations of the six Schedule 2 DPs. A summary of the key EIA findings and recommendations for each of the Schedule 2 DPs are presented in following sections.

14.2 DP1 –Central-Wanchai Bypass including its road tunnel

Summary of Key Environmental Impacts and Recommendations

14.2.1 With the benefits of the recommended mitigation measures, no unacceptable residual environmental impacts are expected. The details of the implementation schedule of the recommended mitigation measures are summarized in Chapter 13, Implementation Schedule. A summary of environmental impacts for this DP is presented in the table below:

Table 14.1 Summary of EIA Impacts and Recommendations for DP1

Issue	Environmental Issues	Mitigation Measures and Recommendation	Residual Impact
Air Quality Impact	Potential air quality impacts are: dust nuisance from wind erosion, construction of CWB and filling activities during reclamation and gaseous emissions from the construction plant and vehicles.	<p><u>CWB works inside WDII area</u></p> <p>Implement the <i>Air Pollution Control (Construction Dust) Regulation</i> and good site practices by Contractor</p> <p>Four times daily watering of the works site with active operations by Contractor.</p> <p><u>CWB works at outside WDII area</u></p> <p>The mitigation measures and recommendation stated in the approved CWB&IECL EIA Report remain valid and are restated in below.</p> <p>Strictly limit the truck speed on site to below 10 km per hour and water spraying to keep the haul roads in wet condition;</p> <p>Watering during excavation and material handling;</p>	Unacceptable impacts are not expected

Issue	Environmental Issues	Mitigation Measures and Recommendation	Residual Impact																										
	<p>Portal and Ventilation Emission from the CWB tunnel in the WDII area during operation phase:</p> <table border="1" data-bbox="619 1120 1042 1753"> <thead> <tr> <th rowspan="2">Type</th> <th colspan="2">Emission Rate (g/s)</th> </tr> <tr> <th>NOx</th> <th>RSP</th> </tr> </thead> <tbody> <tr> <td>Portal Emission</td> <td></td> <td></td> </tr> <tr> <td>Trunk Road Eastern Portal</td> <td>0</td> <td>0</td> </tr> <tr> <td>Slip Road 1</td> <td>0</td> <td>0</td> </tr> <tr> <td>Slip Road 3</td> <td>0</td> <td>0</td> </tr> <tr> <td>Ventilation Building</td> <td></td> <td></td> </tr> <tr> <td>East Ventilation Building</td> <td>2</td> <td>2.258E-02[#]</td> </tr> <tr> <td>Central Ventilation Building</td> <td>3.966</td> <td>3.003E-01</td> </tr> </tbody> </table> <p>Note: [#] Electrostatic precipitator will be installed, dust removal efficiency is 80%.</p> <p>The preliminary design of the East and Central Ventilation Buildings (including minimum mid-discharge heights, exhaust directions, exhaust area of ventilation buildings and exit velocity) is summarised in Table 3.11.</p>	Type	Emission Rate (g/s)		NOx	RSP	Portal Emission			Trunk Road Eastern Portal	0	0	Slip Road 1	0	0	Slip Road 3	0	0	Ventilation Building			East Ventilation Building	2	2.258E-02 [#]	Central Ventilation Building	3.966	3.003E-01	<p>Provision of vehicle wheel and body washing facilities at the exit points of the site, combined with cleaning of public roads where necessary; and</p> <p>Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations.</p> <p>No mitigation required.</p>	<p>Unacceptable impacts are not expected</p>
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Issue	Environmental Issues	Mitigation Measures and Recommendation	Residual Impact
	<p>Since there is no increase of portal emission at the Trunk Road western portal than that stated in the approved CWB&IECL EIA Report, the predicted impacts stated in the approved EIA report are still valid. Adverse impacts due to portal emission at Trunk Road Westbound are not anticipated.</p> <p>Overall, predicted results show that no operation air quality impact is expected.</p>		
<p>Noise Impact</p>	<p>With the implementation of the mitigation measures, the cumulative construction noise levels at the NSRs selected for construction noise impact assessment except N11, N17, N18 and N20 are predicted to comply with the noise standards stipulated in the EIAO-TM. The on-site survey has revealed that NSR N20 (Hong Kong Baptist Church Henrietta Secondary School) has already been noise insulated with air-conditioners. With the provision of air-conditioners, it is considered that the noise impact would be minimised by keeping the windows closed during the construction activities. Notwithstanding this, due to a limited buffer distance and a more stringent noise criterion of 65 dB(A), it is recommended that the particularly noisy construction activities should be scheduled to avoid examination periods as far as practicable.</p>	<p><u>CWB works inside WDII area</u></p> <p>Implement good site practice by Contractor.</p> <p>Use of quiet powered mechanical equipment (PME), movable noise barrier and/or temporary noise barrier for the following tasks:</p> <ul style="list-style-type: none"> • Slip road 8 tunnel • Diaphragm wall construction • Excavation • Construction of tunnel top and bottom slabs • Backfilling • Demolition of structure • Construction of IEC (substructure, superstructures and retaining structures) 	<p>Residual noise impact is predicted at N17, N18 and N20 due to demolition of structure, construction of superstructure and retaining structure</p> <p>Residual noise impact is predicted at N20 during examination periods due to demolition of structure and construction of substructure</p> <p>Residual noise impact is predicted at N11 due to at-grade road construction</p>

Issue	Environmental Issues	Mitigation Measures and Recommendation	Residual Impact
	<p>Unmitigated traffic noise levels are in the range of 60 to 87 dB(A). With implementation of mitigation measures, road traffic noise impact due to new roads is not expected.</p>	<ul style="list-style-type: none"> • Construction of ventilation buildings (foundation and superstructures) <p>Use of quiet PME grouping for the following tasks:</p> <ul style="list-style-type: none"> • At-grade road construction • Substructure for IECL connection <p><u>CWB works outside WDII area</u></p> <p>The following mitigation measures and recommendations as stated in the approved CWB&IECL EIA Report would still be valid:</p> <ul style="list-style-type: none"> • Adoption of quiet PME • Use of movable noise barriers • Reduction in number of PME and PME percentage on-time. <p>Noise mitigation measures for traffic noise include:</p> <ul style="list-style-type: none"> • about 500m length of noise semi-enclosure covering the westbound slip road from the IEC • about 230m length of noise semi-enclosure covering the main carriageways (eastbound and westbound) of the CWB and IEC 	<p>Not expected</p>

Issue	Environmental Issues	Mitigation Measures and Recommendation	Residual Impact
	<p>Operation of the proposed ventilation buildings will not impose adverse noise impacts on the existing and planned NSRs.</p>	<ul style="list-style-type: none"> • about 135m length of 5.5m high cantilevered noise barrier with 3m cantilever inclined at 45° on the eastbound slip road to the IEC • about 95m length of 5.5m high cantilevered noise barrier with 1m cantilever inclined at 45° on the eastbound slip road to the IEC • about 350m length of 3.5m high vertical noise barrier on the eastbound slip road to the IEC • low noise road surfacing for the trunk road (except tunnel section and beneath the landscaped deck at the eastern portal area) with speed limit of 70 km/hour • the openable windows of the re-provisioned Tin Hau Temple, if any, should be orientated so as to avoid direct line of sight to the existing Victoria Park Road as far as practicable. <p>No specific noise mitigation measures other than silencers would be required.</p>	<p>Not expected</p>

Issue	Environmental Issues	Mitigation Measures and Recommendation	Residual Impact
<p>Water Quality Impact</p>	<p>General construction activities associated with the land-based construction works could lead to site runoff containing elevated concentrations of SS and associated contaminants that may enter into the marine water. However, it is anticipated that the water quality impacts will generally be temporary and localised during construction. Therefore, no unacceptable residual water quality impacts are expected during the construction of the proposed infrastructure, provided all of the recommended mitigation measures are implemented and all construction site / works area discharges comply with the TM-DSS standards.</p> <p>It is considered that impacts resulting from the operation of CWB, in terms of water quality, will be minimal and similar for both the elevated and tunnel sections of the route. Surface runoff from slip-roads and elevated structures may be contaminated by oils leaked from passing vehicles, and tunnel seepage would potentially be contaminated to the same extent. It is considered that impacts upon water quality will be minimal provided that the tunnel and elevated sections of the CWB are designed with adequate drainage systems and appropriate oil interceptors, as required.</p> <p>Adverse water quality impacts associated with the operation of CWB are not expected. Thus, there will be no residual impact associated with the operation of the CWB.</p>	<p>Mitigation measures outlined in EPD's Practice Note for Professional Persons, Construction Site Drainage (ProPECC PN 1/94) should be followed.</p> <p>The mitigation measures during operation phase stated in the Approved CWB&IECL EIA Report are still valid. Mitigation measures for this DP are summarized below.</p> <p>A surface water drainage system would be provided to collect road runoff. The following operation stage mitigation measures are recommended to ensure road runoff would comply with the TM under the WPCO:</p> <ul style="list-style-type: none"> • The drainage from tunnel sections shall be directed through petrol interceptors to remove oil and grease before being discharged to the nearby foul water manholes. • Petrol interceptors shall be regularly cleaned and maintained in good working condition. • Oily contents of the petrol interceptors shall be properly handled and disposed of, in compliance with the requirements of the Waste Disposal Ordinance. 	<p>Not expected</p> <p>Not expected</p>

Issue	Environmental Issues	Mitigation Measures and Recommendation	Residual Impact
		<ul style="list-style-type: none"> • Sewage arising from ancillary facilities of CWB & IECL (for example, control room, ventilation and administration buildings) shall be connected to public sewerage system. Sufficient capacity in public sewerage shall be made available to the proposed facilities. • Road drainage should also be provided with adequately designed silt trap to minimize discharge of silty runoff. <p>The design of the operational stage mitigation measures shall take into account the guidelines published in ProPECC PN 5/93 “Drainage Plans subject to Comment by the EPD.” All operational discharges from the CWB into drainage or sewerage systems are required to be licensed by EPD under the WPCO.</p>	
Waste Management Implications	<p>Wastes generated by construction activities: general refuse from the workforce, chemical waste from plant and equipment maintenance, and C&D material from modification of IEC (approx 0.05 Mm³) and excavation for CWB tunnel box (approx 2.455 Mm³).</p>	<p>The Contractor should implement the following mitigation measures: good site practices and waste reduction measures, good practices to handle general refuse, chemical waste, C&D material and bentonite slurry.</p>	Not expected
Land Contamination Impact	<p>No land contamination impacts are expected.</p>	N/A	Not expected
Marine Ecological Impact	<p>As no proposed marine works would be included in DPI, no adverse ecological impact on marine habitats and associated wildlife is expected and therefore no necessary impact assessment on marine ecology is required.</p>	N/A	Not expected

Issue	Environmental Issues	Mitigation Measures and Recommendation	Residual Impact
<p>Landscape and Visual Impact</p>	<p>Approximately 300 trees will be affected. None of these are LCSD Champion Trees, Registered Old and Valuable Trees, rare or endangered species, but are common species. Trees will be planted along roadside amenity areas and new waterfront to compensate for the loss of existing trees.</p> <p>During construction, substantial negative impacts on the CBTS landscape character, and moderate residual impact on Victoria Harbour.</p> <p>With implementation of mitigation measures during construction, there will be some slight negative visual impact on the VSRs in the front row of high rise buildings along the waterfront from Central to North Point. Residual impacts on VSRs further away the Victoria Harbour will be insubstantial.</p> <p>During operation, there will be insubstantial to slight visual impact on VSRs along the new waterfront due to DP1.</p>	<p>The Contractor should implement the following mitigation measures during construction phase</p> <ul style="list-style-type: none"> • Topsoil, where identified, should be stripped and stored for re-use in the construction of the soft landscape works, where practical. • Existing trees to be retained on site should be carefully protected during construction • Trees unavoidably affected by the works should be transplanted where practical • Compensatory tree planting should be provided to compensate for felled trees. • Control of night-time lighting. • Erection of decorative screen hoarding compatible with the surrounding setting. <p>The following measures should be implemented during operational phase by HyD</p> <ul style="list-style-type: none"> • Aesthetic design of road-related structures, including viaducts, vent buildings, subways, footbridges and noise barriers and enclosure. • Buffer Tree and Shrub Planting to screen proposed roads and associated structures. • Aesthetic streetscape design. 	<p>Not expected</p>

Issue	Environmental Issues	Mitigation Measures and Recommendation	Residual Impact
Cultural Heritage Impact	There are no archaeological resources within the study area.	<ul style="list-style-type: none"> • Aesthetic design of roadside amenity areas <p style="text-align: center;">N/A</p>	Not Expected

14.3 DP2 –WDII major roads (including Road P2)

Summary of Key Environmental Impacts and Recommendations

14.3.1 With the benefits of the recommended mitigation measures, no unacceptable residual environmental impacts are expected. The details of the implementation schedule of the recommended mitigation measures are summarized in Chapter 13, Implementation Schedule. A summary of environmental impacts for this DP is presented in the table below:

Table 14.2 Summary of EIA Impacts and Recommendations for DP2

Issue	Environmental Issues	Mitigation Measures and Recommendation	Residual Impact
Air Quality Impact	<p>Potential air quality impacts are: dust nuisance from wind erosion, construction of road network and gaseous emissions from the construction plant and vehicles.</p> <p>No unacceptable operation air quality impact is expected.</p>	<p>Implement the <i>Air Pollution Control (Construction Dust) Regulation</i> and good site practices by Contractor</p> <p>Four times daily watering of the works site with active operations by Contractor.</p>	<p>Unacceptable impacts are not expected</p> <p>Not expected</p>
Noise Impact	<p>With the implementation of the mitigation measures, the cumulative construction noise levels at all representative NSRs are predicted to comply with the noise standards stipulated in the EIAO-TM.</p> <p>Traffic noise impact due to new roads is not expected.</p>	<p>Implement good site practice by Contractor</p> <p>Use of quiet powered mechanical equipment, movable noise barrier and temporary noise barrier for the following tasks:</p> <ul style="list-style-type: none"> • Temporary road diversion • Resurfacing • At-grade roadwork 	<p>Not expected</p> <p>Not expected</p>

Issue	Environmental Issues	Mitigation Measures and Recommendation	Residual Impact
Water Quality Impact	<p>Fixed plant noise impact is not expected.</p> <p>General construction activities associated with the land-based construction could lead to site runoff containing elevated concentrations of SS and associated contaminants that may enter into the marine water. However, it is anticipated that the water quality impacts will generally be temporary and localised during construction. Therefore, no unacceptable residual water quality impacts are expected during the construction of the proposed infrastructure, provided all of the recommended mitigation measures are implemented and all construction site / works area discharges comply with the TM-DSS standards.</p> <p>Surface runoff from major roads may be contaminated by oils leaked from passing vehicles, and road runoff would potentially be contaminated to the same extent. It is considered that impacts upon water quality will be minimal provided that the roads are designed with adequate drainage systems.</p>	<p>All mitigation measures should control the following items:</p> <ul style="list-style-type: none"> • Construction Runoff and Drainage • Sewage from Construction Work Force • Floating Debris and Refuse • Storm Water Discharges 	<p>Not expected</p> <p>Not expected</p>
Waste Management Implications	<p>Wastes generated by construction activities: general refuse from the workforce and chemical waste from plant and equipment maintenance.</p>	<p>The Contractor should implement the following mitigation measures: good site practices and waste reduction measures, good practices to handle general refuse, chemical waste and C&D material.</p>	<p>Not expected</p>
Land Contamination Impact	<p>No land contamination impacts are expected.</p>	<p>N/A</p>	<p>Not expected</p>

Issue	Environmental Issues	Mitigation Measures and Recommendation	Residual Impact
Marine Ecological Impact	As no proposed marine works would be included in DP2, no adverse impact on marine habitats and associated wildlife is expected and therefore no necessary impact assessment on marine ecology is required.	N/A	Not expected
Landscape and Visual Impact	<p>Approximately 110 trees will be affected. None of these are LCSD Champion Trees, Registered Old and Valuable Trees, rare or endangered species, but are common species. Trees will be planted along roadside amenity areas and new waterfront to compensate for the loss of existing trees.</p> <p>During operation, with mitigation measures, there will be slight residual negative impacts on Victoria Park due to the slight reduction in park area.</p> <p>With implementation of mitigation measures during construction, there will still be some moderate negative visual impact on the VSRs in the front row of high rise buildings along the waterfront from Central to North Point. Residual impacts on VSRs further away the Victoria Harbour will become slight.</p> <p>During operation, there will be insubstantial to slight visual impact on VSRs due to DP2.</p>	<p>The Contractor should implement the following mitigation measures during construction phase</p> <ul style="list-style-type: none"> • Topsoil, where identified, should be stripped and stored for re-use in the construction of the soft landscape works, where practical. • Existing trees to be retained on site should be carefully protected during construction • Trees unavoidably affected by the works should be transplanted where practical • Compensatory tree planting should be provided to compensate for felled trees. • Control of night-time lighting. • Erection of decorative screen hoarding compatible with the surrounding setting. <p>The following measures should be implemented during operational phase by CEDD/HyD</p> <ul style="list-style-type: none"> • Aesthetic design of road-related structures, including viaducts, vent buildings, subways, footbridges and noise barriers and enclosure. 	Not expected

Issue	Environmental Issues	Mitigation Measures and Recommendation	Residual Impact
		<ul style="list-style-type: none"> • Buffer Tree and Shrub Planting to screen proposed roads and associated structures. • Aesthetic streetscape design. • Aesthetic design of roadside amenity areas. 	
Cultural Heritage Impact	No cultural heritage impacts are expected	N/A	Not expected

14.4 DP3 – Reclamation works including associated dredging works

Summary of Key Environmental Impacts and Recommendations

14.4.1 With the benefits of the recommended mitigation measures, no unacceptable residual environmental impacts are expected. The details of the implementation schedule of the recommended mitigation measures are summarized in Chapter 13, Implementation Schedule. A summary of environmental impacts for this DP is presented in the table below:

Table 14.3 Summary of EIA Impacts and Recommendations for DP3

Issue	Environmental Issues	Mitigation Measures and Recommendations	Residual Impacts
<p>Air Quality Impact</p>	<p>Potential air quality impacts are: dust nuisance from wind erosion, construction of seawall and filling activities during reclamation, gaseous emissions from the construction plant and vehicles, and potential odour impact from dredging activities carrying out in the vicinity of Police Officers' Club.</p>	<p>Implement the Air Pollution Control (Construction Dust) Regulation and good site practices by Contractor. Four times daily watering of the works site with active operations by Contractor.</p> <p>The dredging operation in the vicinity of Police Officers' Club will be restricted to only 1 small close grab dredger to minimise the odour impact during the dredging activity. The dredging rate should be reduced as much as practicable for area in close proximity to the Police Officers' Club. As there is no programme constraint for the removal of the sediments at the south-west corner of the typhoon shelter in the vicinity of Police Officers' Club for mitigating the existing odour problem, the dredging rate can be slowed down or restricted to specific non-popular hours in weekdays when it is necessary during construction.</p>	<p>Unacceptable impacts are not expected</p>

Issue	Environmental Issues	Mitigation Measures and Recommendations	Residual Impacts
	<p>During operational phase, this Project will not create any new odour source. However, odour nuisance associated with the Causeway Bay Typhoon Shelter is an existing environmental problem. In order to improve the environment, this Project will take the opportunities to mitigate the potential sources of odour nuisance within the Project area so as to alleviate this existing environmental problem as well as to provide an acceptable environment for the future land uses within the project area.</p>	<p>Carry out dredging at the southwest corner of CBTS to remove the polluted sediment and clean the slime attached on the CBTS shoreline seawall. Implementation of Enhancement Package for Existing Odour Sources Identified at CBTS</p>	<p>Based on the modelling results, residual odour impact is expected at the sensitive use at CBTS Northern Breakwater and Water Sports Centre (ex-PCWA area) during occasional worst case (extreme meteorological and tidal) conditions. However, no nuisance odour is detected during odour survey at these areas. A 5-year odour monitoring programme is proposed to monitor residual impact on the ASRs.</p>
<p>Noise Impact</p>	<p>With the implementation of the mitigation measures, the cumulative construction noise levels at the NSRs selected for construction noise impact assessment except N20 are predicted to comply with the noise standards stipulated in the EIAO-TM. The on-site survey has revealed that NSR N20 (Hong Kong Baptist Church Henrietta Secondary School) has already been noise insulated with air-conditioners. With the provision of air-conditioners, it is considered that the noise impact would be minimised by keeping the windows closed during the construction activities. Notwithstanding this, due to a limited buffer distance and a more stringent noise criterion of 65 dB(A), it is recommended that the dredging work be scheduled to avoid examination periods as far as practicable.</p> <p>No road traffic and fixed plant noise impact is expected.</p>	<p>Implement good site practice by Contractor and use of quiet powered mechanical equipment, moveable / temporary noise barriers and PME grouping</p>	<p>Residual noise impact is predicted at N20.</p> <p>However, this is due to cumulative effects, with the particularly noisy construction activities of the IEC structure demolition being the major contributor.</p> <p>Not expected</p>

Issue	Environmental Issues	Mitigation Measures and Recommendations	Residual Impacts
<p>Water Quality Impact</p>	<p>The major water quality impact associated with the reclamation works is the elevation of SS within the marine water column due to dredging and filling activities. Provided the recommended mitigation measures are implemented, including reduction of dredging rates, the deployment of silt curtains at the dredging and filling areas, and installation of silt screens at selected seawater intakes, there will be no unacceptable residual water quality impact due to the proposed reclamation works.</p> <p>Adverse water quality impacts associated with the operation of WDII reclamation are not expected. Thus, there will be no residual impact associated with the operation of the WDII.</p>	<p>Mitigation measures should be implemented to control the following items:</p> <ul style="list-style-type: none"> • Construction runoff and drainage • Sewage from construction work force • Floating debris and refuse • Storm water discharges 	<p>Not expected</p> <p>Not expected</p>
<p>Waste Management Implications</p>	<p>Main waste: dredged marine sediment with a total volume of approx. 1.15 Mm³. Of this, 0.7 Mm³ is classified as contaminated (Category M and H) and 0.05 Mm³ is classified as highly contaminated (Category H >10xLCEL).</p> <p>Other wastes generated by construction activities: general refuse from the workforce, chemical waste from plant and equipment maintenance, and C&D material from demolition of waterfront structures.</p>	<p>In accordance with the ETWB TCW No. 34/2002, the contaminated material must be dredged and transported with great care. The mitigation measures recommended in Section 5 of the EIA Report shall be incorporated. The dredged contaminated sediment must be effectively isolated from the environment upon final disposal and shall be disposed of at the Type 2 confined marine disposal contaminated mud pit.</p>	<p>Not expected</p>

Issue	Environmental Issues	Mitigation Measures and Recommendations	Residual Impacts
		<p>Based on the biological screening results, the Category H (>10xLCEL) sediment which failed the biological testing would require Type 3 special disposal. The volume of Category H sediment from the Causeway Bay typhoon shelter which would require special disposal arrangements is estimated to be approximately 0.05 Mm³. A feasible containment method is proposed whereby the dredged sediments are sealed in geosynthetic containers and, at the disposal site, the containers would be dropped into the designated contaminated mud pit where they would be covered by further mud disposal and later by the mud pit capping, thereby meeting the requirements for fully confined mud disposal.</p> <p>It will be the responsibility of the Contractor to satisfy the appropriate authorities that the contamination levels of the marine sediment to be dredged have been analysed and recorded. According to the ETWB TCW No. 34/2002, this will involve the submission of a formal Sediment Quality Report to the DEP, at least 3 months prior to the dredging contract being tendered.</p> <p>During transportation and disposal of the dredged marine sediments requiring Type 1 and Type 2 disposal, the following measures shall be taken to minimise potential impacts on water quality:</p> <ul style="list-style-type: none"> • Bottom opening of barges shall be fitted with tight fitting seals to prevent leakage of material. Excess material shall be cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved. 	

Issue	Environmental Issues	Mitigation Measures and Recommendations	Residual Impacts
		<ul style="list-style-type: none"> Monitoring of the barge loading shall be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels shall be equipped with automatic self-monitoring devices as specified by the DEP. Barges or hopper barges shall not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation. <p>The Contractor should implement the following mitigation measures: good site practices and waste reduction measures, good practices to handle general refuse, chemical waste, C&D material and bentonite slurry.</p>	
Land Contamination Impact	No land contamination impacts are expected.	N/A	Not expected
Marine Ecological Impact	<p>Permanent loss of approximately 12.7 ha of soft bottom benthic and subtidal habitats and about 1 km length of artificial intertidal habitat.</p> <p>Temporary loss of approximately 7.9 ha soft bottom and subtidal habitats and 850 m long artificial intertidal habitat would occur at the areas of ex-PCWA basin and CBTS. Temporary loss of approximately 0.4 ha of soft bottom seabed and subtidal habitat at the eastern end of Wan Chai shoreline for temporary reclamation.</p>	<p>Translocation of all potentially affected coral colonies to nearby suitable habitats such as Junk Bay is recommended. A detailed transplantation plan (including translocation methodology, monitoring of transplanted corals, etc.) should be drafted and approved by AFCD during the detailed design stage of the Project.</p>	No adverse residual impact is expected as the loss of 12.7 hectares soft bottom benthic and subtidal habitats due to permanent reclamation works are of very low ecological significance

Issue	Environmental Issues	Mitigation Measures and Recommendations	Residual Impacts
	<p>Potential direct impacts to some small and isolated coral colonies at ex-PCWA basin and along seawall at North Point will require translocation of these corals to a nearby suitable habitat.</p> <p>Potential indirect impacts to subtidal and intertidal habitats and associated marine fauna due to change of water quality during dredging and filling works. Mobile subtidal fauna would temporarily avoid the dredged area and recolonise after marine works.</p> <p>Potential impact to waterbirds and other avifaunal species of conservation interest including Little Egret, Great Egret, Black-crowned Night Heron, Black Kite and White-throated Kingfisher, which may suffer from lack of food source during construction phase of the Project. The affected birds would temporarily displace to nearby alternative feeding grounds during construction phase of the project.</p> <p>Waterbirds and other avifaunal species of conservation interest including Little Egret, Great Egret, Black-crowned Night Heron, Black Kite and White-throated Kingfisher may be temporarily disturbed by increased background noise and human activities during construction phase of the project.</p>	<p>During dredging and filling operations, a number of mitigation measures to control water quality should be adopted to confine sediment plume within reclamation area and protect marine fauna in proximity to the reclamation. The mitigation measures to be implemented by the Contractor include the following:</p> <ul style="list-style-type: none"> • Installation of silt curtains during dredging activities • Use of tightly-closed grab dredger • Limiting maximum dredging rates • Control of grab descending speed • Construction of leading edges of seawall in the early stages of the reclamation works • Adoption of multiple-phase construction schedule <p>To minimize potential disturbance impacts on the foraging avifaunal population in the CBTS, particularly in the area near the A King Shipyard, appropriate mitigation measures should be adopted particularly during the construction phase. The following measures are recommended:</p> <ul style="list-style-type: none"> • Use of quiet mechanical plant during the construction phase should be adopted wherever possible. 	

Issue	Environmental Issues	Mitigation Measures and Recommendations	Residual Impacts
	<p>No ecological impact due to changes of tidal discharges and current patterns during operation phase.</p>	<ul style="list-style-type: none"> General measures to reduce noise generated during the construction phase (see noise control) should be effectively implemented. <p>Loss of artificial seawall habitats should be reinstated by the construction of about 1 km vertical wave absorbing seawall along the coastlines of the newly reclamation land around the HKCEC and at North Point. The new seawalls are expected to provide large area of hard substrata for settlement and recruitment of intertidal fauna similar to those previously recorded from existing intertidal habitats.</p>	
<p>Landscape and Visual Impact</p>	<p>Under the proposed development, approximately 13.8 ha of new waterfront open space and nine new pedestrian links to the new harbour-front will be provided. This will strengthen the existing waterfront character from Wan Chai to North Point and enhance the connectivity between the waterfront the hinterland and east-west linkages along northshore. The overall urban landscape framework will be strengthened and enhanced by the proposed project.</p> <p>Approximately 12.7 ha (1.8% of total 700ha harbour area) of Victoria Harbour will be permanently lost.</p> <p>During construction, there will be moderate residual impact on Victoria Harbour.</p> <p>During operation, slight negative impacts on Victoria Harbour due to the loss of harbour area.</p>	<p>The Contractor should implement the following mitigation measures during construction phase:</p> <ul style="list-style-type: none"> Control of night-time lighting. Erection of decorative screen hoarding compatible with the surrounding setting. <p>The following measures should be implemented during operational phase by CEDD*</p> <ul style="list-style-type: none"> Aesthetic design of proposed waterfront promenade.* <p>* CEDD will identify an implementation agent.</p>	<p>Not expected</p>

Issue	Environmental Issues	Mitigation Measures and Recommendations	Residual Impacts
	<p>With implementation of mitigation measures during construction, there will still be some moderate negative visual impact on the VSRs in the front row of high rise buildings along the waterfront from Central to North Point. Residual impacts on VSRs further away the Victoria Harbour and from the hinterland will become slight or insubstantial.</p> <p>During operation, there will be substantial to moderate positive visual impact on VSRs along the new waterfront as the landscape and visual amenity are generally enhanced and strengthened by the Project. Visual impacts from the hinterland and harbour will be insubstantial.</p>		Not expected
Cultural Heritage Impact	There are no archaeological resources within the Wan Chai study area	N/A	Not expected

14.5 DP4 –Temporary typhoon shelter

Summary of Key Environmental Impacts and Recommendations

14.5.1 With the benefits of the recommended mitigation measures, no unacceptable residual environmental impacts are expected. The details of the implementation schedule of the recommended mitigation measures are summarized in Chapter 13, Implementation Schedule. A summary of environmental impacts for this DP is presented in the table below:

Table 14.4 Summary of EIA Impacts and Recommendations for DP4

Issue	Environmental Issues	Mitigation Measures and Recommendation	Residual Impact
Air Quality Impact	<p>Potential air quality impacts are: dust nuisance from wind erosion, construction of seawall and gaseous emissions from the construction plant.</p> <p>No unacceptable operation air quality impact is expected.</p>	<p>Implement the <i>Air Pollution Control (Construction Dust) Regulation</i> and good site practices by Contractor</p>	<p>Unacceptable impacts are not expected</p> <p>Not expected</p>
Noise Impact	<p>With the implementation of the mitigation measures, the cumulative construction noise levels at all representative NSRs are predicted to comply with the noise standards stipulated in the EIAO-TM.</p> <p>No road traffic and fixed plant noise impact is expected.</p>	<p>Implement good site practice by Contractor</p> <p>Use of quiet powered mechanical equipment for the following tasks:</p> <ul style="list-style-type: none"> • Temporary relocation of typhoon shelter - Dredging temporary breakwater - Rock filling, armour placing and bored pile walls - Removal of the temporary breakwater 	<p>Not expected</p> <p>Not expected</p>

Issue	Environmental Issues	Mitigation Measures and Recommendation	Residual Impact
Water Quality Impact	The major water quality impact associated with dredging activities for construction of the temporary typhoon shelter is the elevation of SS within the marine water column. Provided the recommended mitigation measures are implemented, including limiting maximum dredging rates, and installation of silt screens at selected seawater intakes, there will be no unacceptable residual water quality impact due to the proposed works.	All mitigation measures should control the following items: <ul style="list-style-type: none"> • Sewage from Construction Work Force • Floating Debris and Refuse 	Not expected
Waste Management Implications	Wastes generated by construction activities: general refuse from the workforce, chemical waste from plant and equipment maintenance, dredged marine sediment and C&D material from removal of the temporary typhoon shelter breakwater (approx 0.156Mm ³).	The Contractor should implement the following mitigation measures: good site practices and waste reduction measures, good practices to handle general refuse, chemical waste and C&D material	Not expected
Land Contamination Impact	No land contamination impacts are expected.	N/A	Not expected
Marine Ecological Impact	Temporary loss of approximately 2.4 ha of soft bottom seabed and subtidal habitat for the temporary typhoon shelter would occur at the immediate vicinity outside the CBTS. Potential indirect impacts to subtidal habitats and associated marine fauna due to change of water quality during dredging and filling works. Mobile subtidal fauna would temporarily avoid the dredged area and recolonise after marine works.	As no adverse ecological impact on marine habitats and associated wildlife is predicted, no necessary mitigation measure is required.	Not expected

Issue	Environmental Issues	Mitigation Measures and Recommendation	Residual Impact
<p>Landscape and Visual Impact</p>	<p>Causeway Bay Typhoon Shelter will be temporarily alienated. A temporary typhoon shelter with mooring area of approximately 4 ha will be constructed outside existing typhoon shelter.</p> <p>During construction, there will be moderate residual impact on Victoria Harbour.</p> <p>With implementation of mitigation measures during construction, there will still be some moderate negative visual impact on the VSRs in the front row of high rise buildings along the waterfront from Central to North Point. Residual impacts on VSRs further away the Victoria Harbour will become slight.</p> <p>During operation, there will be no visual impact on VSRs due to DP4.</p>	<p>The Contractor should implement the following mitigation measures during construction phase.</p> <ul style="list-style-type: none"> Control of night-time lighting. 	<p>Not expected</p>
<p>Cultural Heritage Impact</p>	<p>There are no archaeological resources within the study area.</p>	<p>N/A</p>	<p>Not expected</p>

14.6 DP5 –Wan Chai East Sewage Outfall

Summary of Key Environmental Impacts and Recommendations

14.6.1 With the benefits of the recommended mitigation measures, no unacceptable residual environmental impacts are expected. The details of the implementation schedule of the recommended mitigation measures are summarized in Chapter 13, Implementation Schedule. A summary of environmental impacts for this DP is presented in the table below:

Table 14.5 Summary of EIA Impacts and Recommendations for DP5

Issue	Environmental Issues	Mitigation Measures and Recommendation	Residual Impact
Air Quality Impact	<p>Potential air quality impacts are: dust nuisance from wind erosion, construction of sewage outfall activities and gaseous emissions from the construction plant and vehicles.</p> <p>No unacceptable operation air quality impact is expected.</p>	<p>Implement the <i>Air Pollution Control (Construction Dust) Regulation</i> and good site practices by Contractor</p> <p>Four times daily watering of the works site with active operations by Contractor.</p>	<p>Unacceptable impacts are not expected</p> <p>Not expected</p>
Noise Impact	<p>With the implementation of the mitigation measures, the cumulative construction noise levels at all representative NSRs are predicted to comply with the noise standards stipulated in the EIAO-TM.</p>	<p>Implement good site practice by Contractor</p> <p>Use of quiet powered mechanical equipment for the following tasks:</p> <ul style="list-style-type: none"> • Submarine pipelines (marine section) <p>Use of quiet powered mechanical equipment and movable noise barrier for the following tasks:</p> <ul style="list-style-type: none"> • Installation of a new pipeline (land section) 	<p>Not expected</p>

Issue	Environmental Issues	Mitigation Measures and Recommendation	Residual Impact
Water Quality Impact	<p>No road traffic and fixed noise impact is expected.</p> <p>The major water quality impact associated with dredging activities for construction of the sewage outfall is the elevation of SS within the marine water column. Provided the recommended mitigation measures are implemented, including limiting maximum dredging rates and installation of silt screens at selected seawater intakes, there will be no unacceptable residual water quality impact due to the proposed works.</p> <p>Adverse water quality impacts associated with the operation of new sewage submarine outfall are not expected. Thus, there will be no residual impact associated with the operation of the sewage outfall.</p>	<p>All mitigation measures should control the following items:</p> <ul style="list-style-type: none"> • Construction runoff and drainage • Sewage from construction work force • Floating debris and refuse • Storm water discharges 	<p>Not expected</p> <p>Not expected</p> <p>Not expected</p>
Waste Management Implications	<p>Wastes generated by construction activities: general refuse from the workforce, chemical waste from plant and equipment maintenance, and dredged marine sediment.</p>	<p>The Contractor should implement the following mitigation measures: good site practices and waste reduction measures, good practices to handle general refuse, chemical waste, and C&D material.</p>	<p>Not expected</p>
Land Contamination Impact	<p>No land contamination impacts are expected.</p>	<p>N/A</p>	<p>Not expected</p>
Marine Ecological Impact	<p>No adverse ecological impact would be expected</p>	<p>N/A</p>	<p>Not expected</p>

Issue	Environmental Issues	Mitigation Measures and Recommendation	Residual Impact
Landscape and Visual Impact	Since DP5 is under sea/underground, landscape and visual impact is not expected.	<p>The Contractor should implement the following mitigation measures during construction phase</p> <ul style="list-style-type: none"> • Minimisation of works areas • Erection of decorative hoardings. • Control night-time lighting. • Minimisation of disruption to public by effective programming of the works. 	Not expected
Cultural Heritage Impact	There are no archaeological resources within the study area.	N/A	Not expected

**14.7 DP6 –Cross harbour Water Mains from Wan Chai To Tsim Sha Tsui
Summary of Key Environmental Impacts and Recommendations**

14.7.1 With the benefits of the recommended mitigation measures, no unacceptable residual environmental impacts are expected. The details of the implementation schedule of the recommended mitigation measures are summarized in Chapter 13, Implementation Schedule. A summary of environmental impacts for this DP is presented in the table below:

Table 14.6 Summary of EIA Impacts and Recommendations for DP6

Issue	Environmental Issues	Mitigation Measures and Recommendation	Residual Impact
Air Quality Impact	<p>Potential air quality impacts are: dust nuisance from wind erosion, construction of seawall and filling activities during reclamation and gaseous emissions from the construction plant and vehicles.</p> <p>No unacceptable operation air quality impact is expected.</p>	<p>Implement the <i>Air Pollution Control (Construction Dust) Regulation</i> and good site practices by Contractor</p> <p>Four times daily watering of the works site with active operations by Contractor.</p>	<p>Unacceptable impacts are not expected</p> <p>Not expected</p>
Noise Impact	<p>With the implementation of the mitigation measures, the cumulative construction noise levels at all representative NSRs are predicted to comply with the noise standards stipulated in the EIAO-TM.</p>	<ul style="list-style-type: none"> • Implement good site practice by Contractor • Use of quiet powered mechanical equipment for the following tasks: <ul style="list-style-type: none"> - Submarine pipelines (marine section) 	<p>Not expected</p>

Issue	Environmental Issues	Mitigation Measures and Recommendation	Residual Impact
		<ul style="list-style-type: none"> • Use of quiet powered mechanical equipment and movable noise barrier for the following tasks: <ul style="list-style-type: none"> - Lay new submarine pipeline - Connection to TST watermains - Connection to Wan Chai watermains - Installation of a new pipeline (land section) 	Not expected
Water Quality Impact	<p>No road traffic and fixed noise impact is expected.</p> <p>The major water quality impact associated with dredging activities for construction of the water mains is the elevation of SS within the marine water column. Provided the recommended mitigation measures are implemented, including limiting maximum dredging rates, and installation of silt screens at selected seawater intakes, there will be no unacceptable residual water quality impact due to the proposed works.</p> <p>Adverse water quality impacts associated with the operation of water mains are not expected. Thus, there will be no residual impact associated with the operation of the water mains.</p>	<p>All mitigation measures should control the following items:</p> <ul style="list-style-type: none"> • Construction runoff and drainage • Sewage from construction work force • Floating debris and refuse • Storm water discharges 	Not expected
Waste Management Implications	<p>Wastes generated by construction activities: general refuse from the workforce, chemical waste from plant and equipment maintenance, and dredged marine sediment.</p>	<p>The Contractor should implement the following mitigation measures: good site practices and waste reduction measures, good practices to handle general refuse, chemical waste and C&D material.</p>	Not expected

Issue	Environmental Issues	Mitigation Measures and Recommendation	Residual Impact
Land Contamination Impact	No land contamination impacts are expected.	N/A	Not expected
Marine Ecological Impact	No adverse ecological impact would be expected	N/A	Not expected
Landscape and Visual Impact	Since DP6 is under sea/underground, landscape and visual impact is not expected.	<p>The Contractor should implement the following mitigation measures during construction phase</p> <ul style="list-style-type: none"> • Minimisation of works areas • Erection of decorative hoardings. • Control night-time lighting. • Minimisation of disruption to public by effective programming of the works. 	Not expected
Cultural Heritage Impact	There are no archaeological resources within the study area .	N/A	Not expected