

Appendix 12.2 – Summary of Environmental Impacts

Sensitive Receivers / Assessment Points	Impact Prediction Results (Without Mitigation)	Key Relevant Standards/Criteria	Extents of Exceedance (Without Mitigation)	Impact Avoidance Measures / Mitigation Measures	Residual Impacts (After Implementation of Mitigation Measures)
Air Quality Impact					
Construction Impact					
Existing and Planned commercial developments and government uses in the vicinity of the Project.	<ul style="list-style-type: none"> No adverse dust impact from construction activities considering the small scale of the project, and works will be undertaken at multiple work fronts at different construction periods, and bridge deck section or segments will be prefabricated and installed on site. No adverse air quality impact from fuel combustion from use of Powered Mechanical Equipment (PME) in view of Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation. 	<ul style="list-style-type: none"> Annexes 4 and 12 of the EIAO-TM Air Pollution Control Ordinance (APCO) Air Pollution Control (Construction Dust) Regulation Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation 	N/A	<ul style="list-style-type: none"> Skip hoist for material transport should be totally enclosed by impervious sheeting. All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet. All stockpiles of aggregate or spoil should be covered and/or water applied. The height from which excavated materials are dropped should be controlled to a minimum practical height to limit fugitive dust generation from unloading. Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites. The load of dusty materials 	N/A

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				carried by a vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure dust materials do not leak from the vehicle.	
Operation Impact					
Existing and Planned commercial developments and government uses in the vicinity of the Project.	<ul style="list-style-type: none"> No air pollutant emission in view of the nature of the Project and only electric vehicles will be used. 	<ul style="list-style-type: none"> Annexes 4 and 12 of the EIAO-TM Air Pollution Control Ordinance (APCO) 	N/A	<ul style="list-style-type: none"> N/A 	N/A
Noise Impact					
Construction Impact					
No existing and planned NSRs which rely on opened windows for ventilation is identified within the assessment area	<ul style="list-style-type: none"> No adverse noise impact as no existing and planned NSRs which rely on opened windows for ventilation is identified within the assessment area. 	<ul style="list-style-type: none"> Annexes 5 and 13 of the EIAO-TM Noise Control Ordinance (NCO) 	N/A	<ul style="list-style-type: none"> Only well-maintained plant should be operated on-site and plant should be serviced regularly. Silencers or mufflers on construction plant should be utilised. Mobile plant should be sited as far away from sensitive uses as possible. Machines and plant that may be in intermittent use should be shut down between works periods or should be throttled down to 	N/A

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				a minimum. <ul style="list-style-type: none"> Plant known to emit noise strongly in one direction should, where possible, be orientated so that noise is directed away from the nearby sensitive uses. Material stockpiles and other structures such as site hoarding should be effectively utilised to screen noise from on-site construction activities. Noisy construction activities such as road breaking, should be scheduled to less sensitive hours during the day, e.g. midday. 	
Operation Impact					
No existing and planned NSRs which rely on opened windows for ventilation is identified within the assessment area	<ul style="list-style-type: none"> No adverse noise impact as no existing and planned NSRs which rely on opened windows for ventilation is identified within the assessment area 	<ul style="list-style-type: none"> Annexes 5 and 13 of the EIAO-TM 	N/A	N/A	N/A
Water Quality Impact					
Construction Impact					
<ul style="list-style-type: none"> Cooling Water Intakes; 	Major sources of water quality impacts would potentially include	<ul style="list-style-type: none"> Annexes 6 and 14 of the 	N/A	<ul style="list-style-type: none"> Installation of steel pile casing and watertight 	No unacceptable residual impact is predicted

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<ul style="list-style-type: none"> • Flushing Water Intakes; • Bathing Beaches (both gazetted and non-gazetted); • Typhoon Shelter; • Marine Park; • Corals; • Artificial Reefs; • Horseshoe Crab; • Seagrass; • Fish Spawning Ground; • Site of Special Scientific Interest (SSSI); • Proposed Marina at Tung Chung East Reclamation; • Mangrove Communities; and • Committed / Potential Marine Park. 	<p>the following:</p> <ul style="list-style-type: none"> • Construction of marine bridge piles for the Bonded Vehicular Bridge; • Wastewater discharges from general construction activities; • Drainage and construction site runoff from land-based construction; • Sewage effluent produced by construction workforce; and • Accidental spillage of chemicals 	<p>EIAO-TM</p> <ul style="list-style-type: none"> • Water Quality Objectives for the North Western Water Control Zone (WCZ) • Technical Memorandum on Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters (TM-DSS) • Practical Note for Professional Persons (ProPECC) PN 1/94 		<ul style="list-style-type: none"> • cofferdam at the pier site and Provision of dry working environment by pumping out the seawater trapped inside the casing and cofferdam prior to carrying out sediment excavation • Provision of appropriate desilting or sedimentation device on site for treatment before discharge during dewatering of the cofferdam • Deployment of silt curtains to enclose the cofferdam and steel pile casing • All vessels should be sized such that adequate clearance is maintained between vessels and the sea bed at all states of the tide • Mitigation measures and good site practices in ProPECCPN 1/94 "Construction Site Drainage" • Waste Disposal Regulation • Provision of interim 	

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				treatment facilities, such as chemical toilets, for construction workforce	
Operation Impact					
<ul style="list-style-type: none"> • Cooling Water Intakes; • Flushing Water Intakes; • Bathing Beaches(both gazette and non-gazetted); • Typhoon Shelter; • Marine Park; • Corals; • Artificial Reefs; • Horseshoe Crab; • Seagrass; • Fish Spawning Ground; • Site of Special Scientific Interest (SSI); • Proposed Marina at Tung Chung East Reclamation; • Mangrove Communities; and • Committed / Potential Marine Park. 	<p>Potential water quality impacts would arise from:</p> <ul style="list-style-type: none"> • Change in flow regime in the sea channel between HKIA & HKBCF and its adjacent waters in North Western WCZ due to formation of bridge piles of the Project; • Surface and road runoff from the Project; and • Sewage generated from the proposed toilets. 	<ul style="list-style-type: none"> • Annexes 6 and 14 of the EIAO-TM • Water Quality Objectives for the North Western WCZ • Technical Memorandum on Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters (TM-DSS) • ProPECC PN 5/93 	N/A	<ul style="list-style-type: none"> • Adequate design in silt trap for the new road drainage which take into account the guidelines in ProPECC PN 5/93. • Best Storm Water Management Practices and Storm Water Pollution Control Plan to reduce non-point source pollution. 	No unacceptable residual impact is predicted

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Waste Management Implications					
Construction Impact					
<p>C&D waste, general refuse, chemical waste, potential floating refuse and excavated sediments will be generated and cause impact to surroundings.</p>	<ul style="list-style-type: none"> • Around 1,000 m³ of non-inert C&D materials and 12,160 m³ of inert C&D materials will be generated from excavation, demolition works, site formation, construction of facilities and station • Around 20 to 26 kg per day of general refuse will be generated from construction works and site-based staff and workers • Small to a few hundred litres per month of chemical waste will be generated from plant maintenance and operation of equipment and machineries • Around 1050 m³ of excavated sediment generated from sea portion of the bridge foundation construction and land-based piers and abutment construction. • A few kg per month of floating refuse will be potentially generated from construction workforce 	<ul style="list-style-type: none"> • Annexes 7 and 15 of the EIAO-TM • Waste Disposal Ordinance (Cap. 354) • Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354C) • Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 354N) • Land (Miscellaneous Provisions) Ordinance (Cap. 28) • Public Health and Municipal Services Ordinance (Cap. 132BK) – Public Cleansing and Prevention of Nuisances Regulation • Dumping at Sea Ordinance (Cap. 466) 	<p>N/A</p>	<ul style="list-style-type: none"> • Implementation of good site practices, waste reduction measures and in accordance with the basic requirements and procedures specified under PNAP No.252 (ADV-21) for the off-site disposal of excavated marine sediment. 	<p>No unacceptable residual impact is predicted</p>

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Operation Impact					
Municipal Solid Waste and chemical waste will be generated.	<ul style="list-style-type: none"> • Around 13 kg per day of MSW will be generated from on site staff during operation • A few cubic metres per month of chemical waste will be generated from maintenance activities during the operation. 	<ul style="list-style-type: none"> • Annexes 7 and 15 of the EIAO-TM • Waste Disposal Ordinance (Cap. 354) • Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354C) 	N/A	<ul style="list-style-type: none"> • Implementation of good site practices and waste reduction measures. 	No unacceptable residual impact is predicted
Marine Ecology					
Construction Impact					
The Brothers Marine Park (BMP), Sha Chau and Lung Kwu Chau Marine Park (SCLKCMP), Chinese White Dolphins, Coral colonies of hard coral <i>Oulastrea crispata</i> and gorgonian coral <i>Guaigorgia</i> sp. at the recipient site	<ul style="list-style-type: none"> • Temporary loss of about 0.0087 ha of subtidal soft and hard bottom habitats/ marine waters arising from the installation of pile casing • Potential vessel collision to Chinese White Dolphins • Indirect disturbance to 57 coral colonies found along REA transects 1 and 3 • Potential water quality and underwater noise impacts on BMP, SCLKCMP and marine wildlife arising from general construction activities 	<ul style="list-style-type: none"> • Study Area (500m from the boundary of Project site) • Annexes 8 and 16 of the EIAO-TM • EIAO Guidance Note No. 3/2010 • EIAO Guidance Note No. 6/2010 • EIAO Guidance Note No. 7/2010 • EIAO Guidance Note No. 11/2010 • The Wild Animals Protection Ordinance (Cap. 170) 	No exceedances are predicted	<ul style="list-style-type: none"> • Preparation of a detailed Coral Translocation Proposal subject to agreement with the authority before precautionary coral translocation works • Translocation of directly impacted coral colonies as a precautionary measure prior to the commencement of any construction works • Establishment of speed limit control (i.e. 10 knots) on all construction-related 	No residual impact is anticipated

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		<ul style="list-style-type: none"> • Town Planning Ordinance (Cap. 131) • Chapter 10 of the Hong Kong Planning Standards and Guidelines (HKPSG) • Marine Park Ordinance (Cap. 476) and Subsidiary Legislation • Water Pollution Control Ordinance (Cap. 358) • The Protection of Endangered Species of Animals and Plants Ordinance (Cap. 586) • The International Union for Conservation of Nature and Natural Resources (IUCN) Red List of Threatened Species • The Potential Regional Concern (PRC) National Protection Lists of Important Wild Animals and Plants detailing Category I and Category II key protected animals and plant species under 		<p>vessels based upon a precautionary approach</p> <ul style="list-style-type: none"> • Implementation of good site practices, guidelines and mitigation measures detailed in the Water Quality Section above 	

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		the mainland China legislation. • The Convention on Biological Diversity (CBD)			
Operation Impact					
Same as construction phase	<ul style="list-style-type: none"> Direct permanent loss of approximately 0.009ha of subtidal soft and hard bottom habitats/ marine waters, with affecting 23 gorgonian coral colonies recorded in REA2 Indirect disturbance to aquatic and marine habitats and wildlife due to potential road surface runoff and chemical spillage 	Same as construction phase	<ul style="list-style-type: none"> No exceedances are predicted 	<ul style="list-style-type: none"> Implementation of post-translocation coral monitoring on existing and translocated corals at recipient site Implementation of water quality monitoring program 	Permanent loss of about 0.009 ha of subtidal soft and hard bottom habitats/ marine waters, while the residual impact is considered to be minor after coral translocation
Landscape and Visual Impact					
Construction Impact					
Existing Landscape Resources (LRs) and Landscape Character Areas (LCAs) and Visually Sensitive Receivers (VSRs) within the assessment area	Key Affected LRs: <u>Insubstantial</u> <ul style="list-style-type: none"> LR2 Roadside landscaped area within the HKIA <u>Slight</u> <ul style="list-style-type: none"> LR1 Coastal Waters of North Lantau Island 	<ul style="list-style-type: none"> EIAO (Cap.499.S.16) and the Annexes 10 and 18 of EIAO-TM EIAO Guidance Note No. 8/2010 on Preparation of Landscape and Visual Impact Assessment under the EIAO 	N/A	<ul style="list-style-type: none"> CM1 – Preservation of New Tree Planting CM2 – Transplanting of Affected Trees CM3 – Compensatory Tree Planting CM4 – Control of night-time lighting glare 	Landscape Impact: Level of impact for all LRs and LCAs would remain the same during construction phase under mitigated condition. Except for LCA1 Inshore Water Landscape to be reduced to slight.

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	<ul style="list-style-type: none"> • LR3 Planned Amenity / Compensatory Planting on HKBCF <p>Key Affected LCAs:</p> <p><u>Slight</u></p> <ul style="list-style-type: none"> • LCA2 Reclaimed HKIA and HKBCF <p><u>Moderate</u></p> <ul style="list-style-type: none"> • LCA1 Inshore Water Landscape <ul style="list-style-type: none"> • In the Tree Survey Report, approx. 145 no. of trees would be affected with assumption that the planned trees on HKBCF were planted prior to the Project construction. <p>Key Affected VSRs:</p> <p><u>N/A*</u>: R2, RE3, RE4</p> <p><u>Slight</u>: R1, O4, O5, T3, RE5</p> <p><u>Moderate</u>: RE1 to RE2, O1 to O3, O6, T1, T2</p> <p>*These VSRs are from concurrent projects which no individuals</p>	<ul style="list-style-type: none"> • Town Planning Ordinance (Cap.131) • Protection of Endangered Species of Animals and Plants Ordinance (Cap.586) • Hong Kong Planning Standards and Guidelines Chapters 4, 10 and 11 • ETWB TCW No. 29/2004 - Registration of Old and Valuable Trees, and Guidelines for their Preservation • DevB TCW No. 2/2012 - Allocation of Space for Quality Greening on Roads • DevB TCW No. 7/2015 - Tree Preservation • LAO PN 7/2007 - Tree Preservation and Tree Removal Application for Building Development in Private Projects • DevB (GLTM Section) Guidelines on Tree Transplanting (Sept 2014) • DevB (GLTM Section) 		<ul style="list-style-type: none"> • CM5 – Erection of Decorative Screen Hoarding • CM6 – Management of Construction Activities and Facilities • CM7 – Reinstatement of Temporarily Disturbed Landscape Areas 	<p>Visual Impact:</p> <p>Level of impact for all VRs would remain the same during construction phase under mitigated condition</p>

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	would expect to be affected during ITT bridge construction.	Guidelines on Tree Preservation during Development (Apr 2015)			
Operation Impact					
Existing Landscape Resources (LRs) and Landscape Character Areas (LCAs) and Visually Sensitive Receivers (VSRs) within the assessment area	<p>Key Affected LR: <u>Insubstantial</u></p> <ul style="list-style-type: none"> LR2 Roadside landscaped area within the HKIA <p><u>Slight</u></p> <ul style="list-style-type: none"> LR1 Coastal Waters of North Lantau Island LR3 Planned Amenity / Compensatory Planting on HKBCF <p>Key Affected LCAs: <u>Slight</u></p> <ul style="list-style-type: none"> LCA1 Inshore Water Landscape LCA2 Reclaimed HKIA and HKBCF <p>Key Affected VSRs: <u>Insubstantial</u>: RE4, O4, T3 <u>Slight</u>: R1, R2, RE1, O1, O5, RE5 <u>Moderate</u>: RE2, RE3, O2, O3, O6, T1, T2</p>	<ul style="list-style-type: none"> EIAO (Cap.499.S.16) and the Annexes 10 and 18 of EIAO-TM EIAO Guidance Note No. 8/2010 on Preparation of Landscape and Visual Impact Assessment under the EIAO Town Planning Ordinance (Cap.131) Protection of Endangered Species of Animals and Plants Ordinance (Cap.586) Hong Kong Planning Standards and Guidelines Chapter 4, 10 and 11 DevB TCW No. 2/2012 - Allocation of Space for Quality Greening on Roads DevB TCW No. 6/2015 - Maintenance of Vegetation and Hard 	N/A	<ul style="list-style-type: none"> OM1 – Aesthetically Pleasing Design of Aboveground / Above-sea Structures OM2 Provision of Amenity Planting 	<p>Landscape Impact: All LR and LCAs - Level of impact would remain the same during operation after mitigation.</p> <p>Visual Impact: All VSRs - Level of impact for all VRs would remain the same as insubstantial and slight, except for the followings:</p> <p>RE2, RE3, O2, O3, O6, T1, T2 – Level of impact would be reduced from moderate to slight on both day 1 and at year 10 of the operation.</p> <p>RE5 – Level of impact shall be reduced to insubstantial during operation after mitigation.</p>

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		Landscape Features <ul style="list-style-type: none"> • DevB TCW No. 7/2015 - Tree Preservation • LAO PN 7/2007 - Tree Preservation and Tree Removal Application for Building Development in Private Projects • DevB (GLTM Section) Guidelines on Tree Preservation during Development (Apr 2015) • ETWB TCW No. 29/2004 - Registration of Old and Valuable Trees, and Guidelines for their Preservation 			
Cultural Heritage					
No terrestrial archaeological material is identified on the reclamation lands of HKIA and HKBCF Island, and no marine archaeological potential at the seabed of the Project area	No impact on cultural heritage is anticipated as no archaeological potential is identified.	<ul style="list-style-type: none"> • Annexes 10 and 19 of the EIAO-TM • Antiquities and Monuments Ordinance (A&MO) (Cap.53) • Guidelines for Cultural Heritage Impact Assessment (GCHIA) • Guidelines for Marine Archaeological Investigation (GMAI) 	N/A	N/A	N/A

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		<ul style="list-style-type: none"> <li>• Hong Kong Planning Standards and Guidelines (HKPSG) 			