Appendix 15.2 – 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 residential premises, commercial premises, Comprehensive Development Area (CDA), government uses, educational institutions, place of worship, hospital/ clinic and park/ recreational use within the Project area and in the vicinity of the Project	<u>Year 2019– 2030</u> TSP • Max. 1-hour average TSP conc.: 173 – 25849 µg/m^3 RSP • 10th highest 24-hour average RSP conc.: 91 – 1005 µg/m^3 • Annual average RSP conc.: 40 – 77 µg/m^3 FSP • 10th highest 24-hour average FSP conc.: 68 – 176 µg/m^3 • Annual average FSP conc.: 29 – 34 µg/m^3 <u>Year 2031 – 2036</u> TSP • Max. 1-hour average TSP conc.: 198 –18540 µg/m^3 RSP • 10th highest 24-hour average RSP conc.: 86 – 616 µg/m^3	• TM-EIAO and AQO • 1-hr Average TSP Conc: 500 µg/m^3 • 24-hr Average RSP Conc: 100 µg/m^3 (Number of exceedance allowed : 9) • Annual Average RSP Conc: 50 µg/m^3 • 24-hr Average FSP Conc: 75 µg/m^3 (Number of exceedance allowed : 9) • Annual Average FSP Conc: 35 µg/m^3	<u>Year 2019 – 2030</u> TSP Exceedances of the criteria up to 25349 µg/m^3 RSP Daily average: Exceedances of the AQO up to 955 µg/m^3 Annual average: Exceedances of the AQO up to 27 µg/m^3 FSP Daily average: Exceedances of the AQO up to 101 µg/m^3 Annual average: No exceedance was predicted <u>Year 2031 – 2036</u>	• Watering once per hour on the active works areas, exposed area; and paved haul roads to reduce dust emission • Dust suppression measures stipulated in the Air Pollution Control (Construction Dust) Regulation and good site practices would be carried out to further minimise construction dust impact • When there are open excavation and spoil handling works, hoarding of 3m high should be provided along the construction site boundary adjacent to the non-construction areas such as residential, educational institutes or recreation area in use so as to minimize the dust impact. • Reduction in active works area to one-third of monthly average work of the Work Contract nearest to Site 3-6, Site 3-8, Site 3-14, Site 4-20, and existing	No adverse residual impacts anticipated

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)
	• Annual average RSP conc.: 38 – 63 µg/m^3 FSP • 10th highest 24-hour average FSP conc.: 69 – 149 µg/m^3 • Annual average FSP conc.: 29 – 33 µg/m^3		TSP Exceedances of the criteria up to 18040 µg/m^3 RSP Daily average: Exceedances of the AQO up to 516 µg/m^3 Annual average: Exceedances of the AQO up to 13 µg/m^3 FSP Daily average: Exceedances of the AQO up to 74 µg/m^3 Annual average: No exceedance was predicted	ASRs at Oaklands Court (A208), Ling Liang Church Primary School (A209), Tin Ha Road Playground (A310) and San Uk Tsuen (A702).	
Operation Impact					
Existing and planned residential premises, commercial premises, Comprehensive Development Area (CDA), government uses,	All existing and planned ASRs would comply with the AQO	• AQO • 1-hr Average NO_2 Conc: 200 µg/m^3 (Number of exceedance allowed : 18) • Annual Average NO2	N/A	No mitigation measure is required	No adverse residual impacts anticipated

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)
educational institutions, place of worship, hospital/ clinic and park/ recreational use within the Project area and in the vicinity of the Project		Conc: 40 µg/m^3 • 24-hr Average RSP Conc: 100 µg/m^3 (Number of exceedance allowed : 9) • Annual Average RSP Conc: 50 µg/m^3 • 24-hr Average FSP Conc: 75 µg/m^3 (Number of exceedance allowed : 9) • Annual Average FSP Conc: 35 µg/m^3			
Existing and planned residential premises, commercial premises, Comprehensive Development Area (CDA), government uses, educational institutions, place of worship, hospital/ clinic and park/ recreational use within the Project area	Exceedance of 5 odour units would be predicted at portion of Area 3-1 (OU, PBU + SWU)	• TM-EIAO • 5 odour units based on an averaging time of 5 seconds	In the range of 5 – 10 odour units	Portion of Area 3-1 (OU, PBU + SWU), it is proposed that air sensitive uses at Site 3-1 should not be located at these exceedance zone or the fresh air intake of the building located at least 6mAG	No adverse residual impacts anticipated
Noise Impact					
Construction Impact					
Existing NSRs outside the project	60 – 85 dB(A)	Annex 5 and 13 of EIAO-TM $Leq_{(30\ min)}$ 75dB(A) at 1m the façade of residential	Residential NSRs: exceed the noise criteria by up to 21	• Good site practices to limit noise emissions at the sources • Use of quiet powered	With the implementation of the proposed noise
Existing NSRs within the	61 – 94 dB(A)				

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)
Project		dwellings $Leq_{(30\ min)}$ 70dB(A) at 1m from the façade of schools during normal teaching hour $Leq_{(30\ min)}$ 65dB(A) at 1m from the façade of schools during examination period	dB(A) Educational NSRs: exceed the noise criteria by up to 15 dB(A)	mechanical equipment (PME) • Use of construction noise barriers or enclosures to screen noise from construction plant • Workfront management • Proper grouping of PME during construction activities operated at the critical work areas. • Maintain the recommended minimum separation between the schools and the critical works areas during examination periods • Liaison with the school representative(s) to obtain the examination schedule so as to avoid noisy construction activities during school examination period • Set up a liaison group among CEDD, relevant government departments, contractors of the Works contracts, etc. during construction phase of the Project to ensure proper implementation of mitigation measures	mitigation measures, no residual impact is anticipated
Planned NSRs within the Project	61 – 96 dB(A)				
Operation Impact (Road Traffic Noise)					

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)
Existing NSRs outside the Project	56 - 79 dB(A)	Annex 5 and 13 of EIAO-TM $L_{10(1\ hour)}$ 70dB(A) at 1m the façade of residential dwellings, hotels, offices $L_{10(1\ hour)}$ 65dB(A) at 1m from the façade of schools or church	Residential NSRs: exceed the noise criteria by up to 9 dB(A) Educational NSRs: exceed the noise criteria by up to 9 dB(A)	• Low-Noise Road Surfacing • Vertical and Cantilever noise barriers • alternative building layout • special building design such as provision of blank façade/acoustic windows/acoustic balcony • provision of boundary wall, air conditioning and noise insulated windows for affected planned educational institutes	With the implementation of the proposed noise mitigation measures, no residual impact is anticipated
Existing NSRs within the Project	54 – 77 dB(A)		Residential NSRs: exceed the noise criteria by up to 7 dB(A) Church: exceed the noise criteria by up to 9 dB(A)		
Planned NSRs within the Project	43 -80 dB(A)		Residential NSRs: exceed the noise criteria by up to 10 dB(A) Educational NSRs: exceed the noise criteria by up to 14 dB(A)		
Operation Impact (Fixed Plant Noise)					

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)
Planned NSRs within the Project Existing NSRs at 3 existing villages include: Fung Kong Tsuen, Tseung Kong Wai and Shek Po Tsuen	Maximum sound power level was predicted to meet the relevant noise criteria	ANL-5dB(A)	No exceedance was predicted	• All the pumps and noisy plants should be enclosed inside the building structure • Proper selection of quiet plant aiming to reduce the tonality at NSRs • Installation of silencer/acoustic enclosure/acoustic louvre for the exhaust of ventilation system • Openings of ventilation systems should be located away from NSRs as far as practicable	No adverse residual impacts would be anticipated
Operation Impact (Railway Noise)					
Planned NSRs within the Project	Exceedance of day time criteria and $Leq_{(24\text{-hour})}$ would be predicted at representative NSR WR-P10 and exceedance of night time criteria at NSRs WR P5d, P5e, P5f, P7b and P7c due to West Rail operation Exceedance of night time criteria would be predicted at the low level of NSRs LR-P5a & P6	Daytime criteria: $Leq_{(30\ min)}$65 dB(A) Nighttime criteria : $Leq_{(30\ min)}$55 dB(A) Lmax: 85 dB(A) $Leq_{(24\text{-hour})}$: 65 dB(A)	Exceedances of the criteria up to 3 dB(A)	• Provision of acoustic fins, non-sensitive use or fixed glazing and layout set back at affected NSRs	No unacceptable residual impact is predicted
Operation Impact (Helicopter Noise)					

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)
NSRs within the Project	Predicted noise levels meet the relevant noise criteria	Daytime criteria: L_{max} 85 dB(A)	No exceedance was predicted	No mitigation measure is required	No unacceptable residual impact is predicted
Water Quality Impact					
Construction Impact					
Tin Shui Wai Main Channel and its tributaries; Hang Hau Tsuen Channel and its tributaries; small watercourses along the coastline of Deep Bay; upstream tributaries of Shan Pui River and Tuen Mun River as well as the downstream receiving marine water in Deep Bay and North Western Water Control Zones	Potential water quality impacts would arise from the following: • Construction site run-off and general construction activities • Construction works at or near watercourses / drainage channel / concrete flood storage pond • Removal / diversion of watercourse • Removal / filling of ponds and wet areas • Accidental spillage • Sewage from construction workforce • Contaminated site runoff and wastewater from land decontamination; • Groundwater from contaminated areas	• Annexes 6 and 14 of the EIAO-TM • Water Quality Objectives for the Deep Bay and North Western Water Control Zones • Technical Memorandum on Effluent Discharge Standards (TM-DSS)	N/A	• Mitigation measures and good site practices in ProPECCPN 1/94 "Construction Site Drainage" • Mitigation measures and good site practices in ETWB TC (Works) No. 5/2005 "Protection of natural streams / rivers from adverse impacts arising from construction works" • Emergency Response Plan (ERP) to minimize the potential water quality impact from construction site discharges under failure of treatment facilities during emergency situations or inclement weather • Waste Disposal Regulation • Provision of interim treatment facilities, such as chemical toilets, for construction workforce • Provision of a dry zone for	No unacceptable residual impact is predicted

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)
	• Sewerage diversion works			construction works at or near watercourses / concrete flood storage pond • Mitigation measures for handling effluent from dewatering of ponds and wet areas to be removed • Proper interception and treatment of contaminated site runoff and wastewater from land decontamination in compliance with the TM-DSS • Proper treatment or recharge of contaminated groundwater in compliance with the TM-DSS	
Operation Impact					
Tin Shui Wai Main Channel and its tributaries; Hang Hau Tsuen Channel and its tributaries; small watercourses along the coastline of Deep Bay; upstream tributaries of Shan Pui River and Tuen Mun River as well as the downstream receiving marine water in Deep Bay and North Western Water	Potential water quality impacts would arise from: • Sewage generated from new developments • Emergency bypass from new Sewage Pumping Stations (SPS) • Leakage from sewerage pipelines and rising mains • Surface runoff from road surfaces and new development	• Annexes 6 and 14 of the EIAO-TM • Water Quality Objectives for the Deep Bay and North Western Water Control Zones (WCZ) • Technical Memorandum on Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters (TM-DSS)	N/A	• Proper collection and treatment of sewage from new developments • Diversion of treated sewage effluent from being discharged to Deep Bay WCZ • Precautionary design measures to avoid emergency bypass from SPS • Contingency plan to deal with the remote case of emergency bypass from SPS • Precautionary design measures	No unacceptable residual impact is predicted

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)
Control Zones	areas • Contaminated wash-off in open areas of industrial (I) zone and port back-up, storage and workshop use (PBU & WSU) • Release of fines and sediment-bound contaminants from desilting or maintenance works in watercourses			and management practices to avoid leakage of sewerage pipelines and rising mains • Storm water control measures and Best Management Practices to reduce non-point source pollution • Provision of perimeter drainage with suitable interceptors or stop-logs and appropriate treatment facilities at the open areas of I zone and PBU & WSU to prevent contaminated wash-off and accidental spillage from entering the nearby water environment and implementation of ERP to deal with accidental spillage • Maintenance works should be carried out during low flow periods in the dry season to isolate the temporary work area from the channel water by barrier to prevent sediment suspension from entering the surrounding water	
Sewage and Sewerage Implication					
Construction Impact					
Refer to the relevant sections of the Water Quality - Construction Phase					
Operation Impact					

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)
Water quality and ecological sensitive receivers at or near the Project	• Emergency discharge from proposed sewage pumping stations and sewer bursting discharge	• EPD Report No. EPD/TP 1/05 Guidelines for Estimating Sewage Flows (GESF) for Sewerage Infrastructure Planning Version 1.0 • DSD Sewerage Manual Part 1 (Key Planning Issues and Gravity Collection System) and Part 2 (Pumping Stations and Rising Mains)	N/A	Provision of mitigation measures including: 1) Standby pumps should be provided at all SPSs 2) Dual power supply or emergency generator 3) Emergency storage facilities 4) Emergency communication mechanism amongst relevant government departments on proposed SPS to avoid emergency sewage overflow to Tin Shui Wai Nullah	No adverse residual impact anticipated
Existing and planned sewerage system, sewage treatment and disposal facilities.	• The planned San Wai sewage treatment works under Phase 1 upgrading before the Project will temporarily be capable of catering sewage flow in early stage of the Project • San Wai sewage treatment works Phase 1 does not have adequate capacity for HSK NDA and can only cater sewage in interim stage	• EIAO Technical Memorandum on EIA Process (EIAO-TM) Annex 14	N/A	• A new STW (Phase 1 and 2) and sewer system will be constructed in 2031 to cater all additional sewage arising from HSK NDA	None
Waste Management Implications					
Construction Impact					
C&D waste, chemical waste, general refuse, excavated sediment and contaminated	• Around 0.42 Mm^3 of non-inert C&D materials and 5.55 Mm^3 of inert C&D materials will be	• Annex 7 and 15 of the EIAO-TM • Waste Disposal Ordinance	N/A	Implementation of good site practices and waste reduction measures	No unacceptable residual impact is predicted

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)
soil will be generated.	generated from site clearance and site formation works, construction of new buildings and infrastructure • A few cubic metres per month of chemical waste will be generated from building demolition, plant operation and maintenance • Around 1,950 kg per day of general refuse will be generated from construction works and site-based staff and workers • Excavated sediment generated from the inland water removal / diversion works • Contaminated soil from existing land uses, e.g. vehicle maintenance workshop, open area storage, container storage and recycling facility, etc.	(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) • Dumping at Sea Ordinance (Cap. 466)			
Operation Impact					
MSW, chemical waste and sewage sludge will be generated.	• Around 700 tonnes per day of MSW will be generated from future residences of public and private housing, enterprise and technology parks, offices and	• Annex 7 and 15 of the EIAO-TM • Waste Disposal Ordinance (Cap. 354)	N/A	Implementation of good site practices and waste reduction measures	No unacceptable residual impact is predicted

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)
	recreation sites, etc. • A few cubic metres per month of chemical waste will be generated from public facilities operation and on-site maintenance activities • Around 16 m^3 per day of screenings and grits and around 50 m^3 per day of dewatered sludge will be generated from HSK STW	• Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354C)			
Land Contamination					
Construction Impact					
Onsite construction workers	Potential health risk to the onsite workers would arise from direct contact of the potentially contaminated materials	• Annex 19 of the EIAO-TM • Guidelines for Assessment of Impact On Sites of Cultural Heritage and Other Impacts (Section 3: Potential Contaminated Land Issues) (EPD, 1997) • Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management (EPD, 2007) • Guidance Notes for Contaminated Land	N/A	Any soil/groundwater contamination would be identified and properly treated prior to the commencement of development	No unacceptable residual impact is predicted

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)
		Assessment and Remediation (EPD, 2007) • Practice Guide for Investigation and Remediation of Contaminated Land (EPD, 2011)			
Operation Impact					
Future occupants	Potential health risk to the future occupants would arise from direct contact of the potentially contaminated materials	• Annex 19 of the EIAO-TM • Guidelines for Assessment of Impact On Sites of Cultural Heritage and Other Impacts (Section 3: Potential Contaminated Land Issues) (EPD, 1997) • Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management (EPD, 2007) • Guidance Notes for Contaminated Land Assessment and Remediation (EPD, 2007) • Practice Guide for Investigation and Remediation of Contaminated Land (EPD,	N/A	Any soil/groundwater contamination would be identified and properly treated prior to the commencement of development	No unacceptable residual impact is predicted

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)
		2011)			
Ecological Impact					
Construction Impact					
Sites of Conservation Importance	*Habitat loss* • Approximately 0.1 ha of developed area of "Conservation Area" at northwest of San Sang San Tsuen, but no impact to surrounding semi-natural / natural habitats *Disturbance impact (e.g. noise and vibration, air/dust, visual impacts)* • "Conservation Area" at west of San Sang San Tsuen and southeast of the Yuen Long Highway • San Sang San Tsuen egretry and associated flight paths	• Environmental Impact Assessment Ordinance (EIAO) (Cap. 499) and EIAO-TM Annexes 8 and16 • Forests and Countryside Ordinance (Cap. 96) • Wild Animals Protection Ordinance (Cap. 170) • Protection of Endangered Species of Animals and Plants Ordinance (Cap. 586) • Hong Kong Planning Standards and Guidelines (HKPSG) Chapter 10, "Conservation" • ETWB TCW No. 5/2005 Protection of Natural Streams / Rivers from Adverse Impacts arising from Construction Works	N/A	• No mitigation measure is required for the negligible-minor impact to "Conservation Area" at northwest and west of San Sang San Tsuen, and southeast of the Yuen Long Highway, <u>but provision of screening (e.g. hoarding) during construction phase is recommended</u> *For San Sang San Tsuen egretry:* • The construction works at Sites 3-32, 3-33, 3-37, 3-39 and 3-40 should be scheduled outside the breeding season of the ardeids (i.e. between March and August) • Provision of hoarding to reduce disturbance impacts to the egretry and associated flight paths during the construction phase	Negligible / Minor
Other Habitats	*Habitat loss*			• No mitigation measure is required	Negligible / Minor

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)
	• Two small areas of woodland located at Ngau Hom Shek (0.1 ha of moderate ecological value), at west of Fung Kong Tsuen (0.1 ha of low to moderate ecological value) • As Tung Tau Tsuen woodland (1.1 ha of low to moderate ecological value) would be preserved and no habitat loss would be occurred • Approximately 8 m of the lower sections of Watercourse 5. Due to high disturbance at the affected natural watercourses, the ecological value is low • Approximately 500 m of Tin Sam Channel at the west of San Lee Uk Tsuen would be impacted temporarily. The ecological value of the affected Tin Sam Channel is low	• DSD Practice Note No. 1/2015 Guidelines on Environmental and Ecological Considerations for River Channel Design • The IUCN Red List of Threatened Species • The PRC National Protection Lists of Important Wild Animals and Plants • The Convention on Biological Diversity (CBD)		but enhancement planting with native species at suitable area of the proposed Funk Kong Tsuen flushing water service reservoir site and incorporation of ecological enhancement into the realigned Tin Sam Channel design would be considered	
Species of Conservation Importance	*Plant - Incense Tree* • Direct impact to the mature individual Incense Tree at Tung Tau Tsuen woodland; but this woodland would be preserved		N/A	*For Incense Tree:* • Preservation of Tung Tau Tsuen woodland *in situ* with the Incense Tree	Negligible / Minor

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)
	as avoidance measure *Avifauna - Crested Serpent Eagle* • Direct loss of a small area of its territory at the west of Fung Kong Tsuen *Avifauna – overwintering waterbirds and nesting ardeids (e.g. Chinese Pond Heron, Little Egret)* • Loss of or disturbance to foraging habitats *Mammal - Short-nosed Fruit Bat, Japanese Pipistrelle and Chinese Noctule* • Demolition of buildings or removal of trees may impact roosting bats			*For Crested Serpent Eagle:* • Provision of screening (e.g. hoarding) at the boundary of "OU" sites adjacent to "GB" (i.e. Site 3-2) and good site practice should be implemented *For overwintering waterbirds and nesting ardeids:* • Proper mitigation measures for control of dust, noise, glare and water quality are recommended *For Short-nosed Fruit Bat, Japanese Pipistrelle and Chinese Noctule:* • An appropriate precaution approach of mitigation strategy should be developed by an ecologist with relevant experience, if any evidence of roosting bats is found in any buildings or trees to be cleared	
Other Fauna	• Injury/mortality to wildlife • Disturbance impacts - noise,		N/A	• Proper mitigation measures for control of dust, noise, glare and	Negligible / Minor

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)
	traffic and human activities • Disturbance impacts - air pollution / dust • Surface runoff, accidental spills of chemicals into stream courses • Artificial lighting / glare			water quality are recommended	
Operation Impact					
Sites of Conservation Importance	*Disturbance impacts (e.g. noise, air/dust, visual impact)* • The "Conservation Area" at west of San Sang San Tsuen near the new "Industry" zone and slip road between Road P1 and the KSWH • San Sang San Tsuen egretry and associated flight paths	• Same as the above standards / criteria listed in construction impact	N/A	*For The "Conservation Area" at west of San Sang San Tsuen:* • Provision of buffer planting at the "Industry" zone and slip road / "Conservation Area" interface *For San Sang San Tsuen egretry:* • Provide buffer planting at the boundaries of Sites 3-32, 3-33, 3-37, 3-39 and 3-40 with the "Local Open Space" to provide screening and reduce disturbance impact • A wide "Local Open Space" corridor is provided in the RODP (Site 3-37) to maintain the egretry	Negligible / Minor

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)
				flight paths	
Species of Conservation Importance	*Avifauna - Crested Serpent Eagle* • Disturbance impacts (e.g. noise, glare and visual impacts) to its territory at west of Fung Kong Tsuen *Avifauna - foraging waterbirds, including overwintering waterbirds and ardeids (e.g. Chinese Pond Heron, Little Egret)* • Disturbance impacts from the newly developed areas (e.g. pedestrian pathway along riverside channel and the footbridges)		N/A	*For Crested Serpent Eagle:* • Provision of screening planting at the boundary of the "Other Use" sites adjacent to the "GB" (i.e. Site 3-2) should be provided • Proper mitigation measures for control of dust, noise, glare and water quality are recommended *For foraging ardeids:* • The revitalisation of the riverside channels should seek to find a balance between design for human requirements and provision of ecological enhancements	Negligible / Minor
Other Fauna	• Noise, traffic and human activities • Disturbance impacts - air pollution • Sewage generated from the new commercial, domestic zones • Artificial lighting / glare		N/A	• Retain the existing tree belt on the eastern side of the larger mitigation pond • Provide amenity strip and additional tree planting along the new Road P1 to provide screening for the existing mitigation ponds • Provide other screening	Negligible / Minor

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)
	• Risk of bird collision with the newly installed roadside noise barrier and transparent / reflective windows			measures (e.g. vertical greening walls, green roof, noise barriers) to the existing mitigation ponds • Provide buffer planting, minimise all lighting along the river channel / vegetated areas, or incorporate wildlife-friendly lighting to avoid light spill • Implement adequate storm drainage system, green infrastructure and best storm water management practices to minimise water quality impact • Use of tinted materials and superimposing dark patterns or strips on the barrier, to minimise bird mortality from collision	
Fisheries Impact					
Construction Impact					
Inactive fishponds	Direct loss of three inactive fishponds within the Project boundary	• Environmental Impact Assessment Ordinance (EIAO) (Cap. 499) and EIAO-TM Annexes 9 and 17	N/A	None required as these ponds do not yield economic value	No unacceptable residual impact is predicted
Water Quality	Construction surface runoff potentially affecting the water	• Water Quality Objectives for Deep Bay Control	N/A	• Implementation mitigation measures proposed under the	No unacceptable residual impact is

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)
	quality in the Deep Bay WCZ	Zones		Water Quality Impact Assessment (i.e. good site practice, works within rivers/streams/channel/culverts to be undertaken only in the dry season, etc.)	predicted
Operation Impact					
None identified	-	-	-	-	-
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:** **LR2** Hillside Woodland: Loss of 17.2 ha **LR3** Hillside Shrub & Grassland: Loss of 2.1 ha **LR4** Low-lying Woodland/Plantation: Loss of 44.2 ha **LR5** Low-lying Shrub & Grassland: Loss of 2.5 ha **LR6** Vegetation on Agricultural Land: Loss of 29.4 ha **LR8** Vegetation within Rural Village: Loss of 17.3 ha **LR9** Vegetation within Industrial Land/Open Storage: Loss of 47.2	• Environmental Impact Assessment Ordinance (Cap.499) and the Technical Memorandum on Environmental Impact Assessment Process (TM), particularly Annexes 10 and 18 • EIAO Guidance Note No. 8/2010 on Preparation of Landscape and Visual Impact Assessment under the EIAO • DEVB (GLTM) – Guidelines on Tree Preservation during	Not applicable	CM1 – Minimised construction area and contractor's temporary works areas CM2 – Stripping and storing of top soil CM3 – Protection of existing trees CM4 – Transplantation of existing trees where practical CM5 – Control of night time lighting CM6 - Construction of decorative hoarding around construction works CM7 – Reduction of construction period to practical minimum CM8 – Prevention of run-off CM9 – Phasing of construction	• Slight to Substantial impact on LRs • Slight to Moderate impact on LCAs • Slight to Substantial impact on VSRs

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)
	ha **LR10** Watercourse: Loss of 2.1 ha **LR12** Vegetation on Modified Slopes: Loss of 2.4 ha **LR14** Roadside Vegetation: Loss of 16 ha **LR15** Waterbodies: Loss of 0.2 ha **Key Affected LCAs:** **LCA1** Miscellaneous Rural Fringe Landscape: Loss of 367.5 ha **LCA2** Miscellaneous Urban Fringe Landscape: Loss of 130.0 ha **LCA4** Upland & Hillside Landscape: Loss of 20.1 ha **LCA6** Rural Coastal Plane Landscape: Loss of 0.6 ha Broad Brush Tree Survey is within the comprehensive development areas of the project, approximately 80% of the trees within the boundary of RODP would be affected **Key Affected VSRs:** **Slight**: RES26, RES27, RES28,	Development, April 2015 • DEVB (GLTM) – Guidelines on Tree Transplanting, September 2014 • ETWB TCW No. 5/2005 – Protection of streams/rivers from adverse impacts arising from construction works • HyD Guidelines HQ/GN/13 - Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit • Development Bureau Technical Circular (Works) (DEVB TCW) No. 10/2013 – Tree Preservation		stage CM10 – Advance screen planting CM11 – Minimise disturbance footprints CM12 – Protection of existing water courses CM13 – Hydroseeding on modified slopes CM14 – Integrate Open Space Framework with existing nullah conditions OM1 – Compensatory tree planting where practical OM2 – Sensitive design of above-ground structures OM3 – Sensitive design of hardscape elements along roadsides OM4 – Reinstatement of streetscape elements OM5 – Visual softening via soft landscape elements OM6 – Quality greening along roadside amenity strips OM7 – Design of street lighting OM8 – Sensitive and chromatic	

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)
	RES29, RES34, RES35, RES37, RES51, RES52; REC3, REC9, REC20, REC21, REC28, REC31; T14, T24, T25, T26, T27, T35; O3, O4, O7, O13 **Moderate:** RES7, RES15, RES16, RES17, RES18, RES19, RES24, RES25, RES36, RES38, RES48, RES49, RES50; REC2, REC4, REC14, REC16, REC24; T1, T2, T3, T4, T5, T6, T7, T8, T9, T10, T11, T12, T13, T15, T16, T29, T31, T32; O1, O2, O6, O9, O10, O11, O20, O22 **Substantial:** RES1, RES2, RES3, RES4, RES5, RES6, RES8, RES9, RES10, RES11, RES12, RES13, RES14, RES20, RES21, RES22, RES32, RES46, RES47; REC1, REC4, REC5, REC7, REC8, REC10, REC11, REC12, REC13, REC15, REC17, REC19; T1, T2, T3, T4, T5, T6, T7, T8, T9, T10, T11, T12, T13, T16, T17, T18, T19, T20, T21, T22, T23, T30, T36			treatment of architectural facades OM9 – Sensitive design of landscape areas OM10 – Sensitive design of noise barriers and enclosures OM11 – Tree planting to site boundaries OM12 – Night time lighting OM13 – Green roofs and vertical greening OM14 – Greening of viaduct structures and noise barriers	
Operation Impact					

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)
Existing Landscape Resources (LRs) and Landscape Character Areas (LCAs) and Visually Sensitive Receivers (VSRs) within the assessment area	• Same as those for construction phase • The overall visual character in the Hung Shui Kiu area would be completely changed by the proposed development after the construction	• Environmental Impact Assessment Ordinance (Cap.499.S.16) and the Technical Memorandum on Environmental Impact Assessment Process (TM), particularly Annexes 10 and 18 • EIAO Guidance Note No. 8/2010 on Preparation of Landscape and Visual Impact Assessment under the EIAO • Development Bureau Technical Circular (Works) (DEVB TCW) No. 10/2013 – Tree Preservation • DEVB (GLTM) – Management Guidelines for Mature Trees, December 2014 • ETWB TCW No. 2/2004 - Maintenance of Vegetation and Hard Landscape Features • ETWB TCW No. 29/2004 - Registration of Old and	Not applicable	• Same as those for construction phase • Tree compensation within or outside the RODP would be required	• Slight to Substantial impacts on LRs for Day 1 and Year 10 scenarios respectively • Slight to Moderate impacts on LCAs for Day 1 and Year 10 scenarios respectively • Slight to Substantial impacts on VSRs for Day 1 and Year 10 scenarios respectively

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)
		Valuable Trees, and Guidelines for their Preservation			
Impact on Cultural Heritage					
Construction Impact					
Site of Archaeological Interest : Tseung Kong Wai SAI (F1) and Tung Tau Tsuen SAI (F2)	Might be partially impacted by construction works, but no insurmountable impact is anticipated	• Environmental Impact Assessment Ordinance (EIAO) (Cap. 499) and EIAO-TM Annexes 10 and 19; • Guidance Note on Assessment of Impact on Sites of Culture Heritage in Environmental Impact Assessment Studies; • Antiquities and Monuments Ordinance (Cap. 53); • Hong Kong Planning Standards and Guidelines Chapter 10; • Guidelines for Cultural Heritage Impact Assessment		The archaeological impact arising from the construction works should be assessed when the detailed design of the works is available. Preservation in situ is the top priority to safeguard the archaeological remains in the impacted area by amending the layout plans of the construction works. However, if the works cannot avoid disturbance to the archaeological deposit, depending on degree of direct impact, the following mitigation measures should be considered, such as archaeological surveys, archaeological watching brief, preservation by records and relocation of archaeological remains. The scope and programme of the archaeological fieldwork would be agreed with AMO.	No
Archaeological Potential Area: APA1, APA2 and	Archaeological remains to be destroyed during construction	• Environmental Impact Assessment Ordinance		Further archaeological survey is required to be conducted at APA1	No

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)
APA3	works	(EIAO) (Cap. 499) and EIAO-TM Annexes 10 and 19; • Guidance Note on Assessment of Impact on Sites of Culture Heritage in Environmental Impact Assessment Studies; • Antiquities and Monuments Ordinance (Cap. 53); • Hong Kong Planning Standards and Guidelines Chapter 10; • Guidelines for Cultural Heritage Impact Assessment		and APA2 to ascertain the extent of any archaeological remains within the APAs if any construction works will be carried out. Based on the findings of the survey, mitigation measures could be proposed and not limited to preservation in situ, preservation by records, or relocation of archaeological remains. Direct impact arising from the proposed development within APA3 should be avoided as far as possible.	
3 nil graded built heritages in Yick Yuen Tsuen 5 nil graded built heritages in Tin Sam San Tsuen 4 nil graded built heritages in south of Tin Sam	To be directly impacted during the construction phase by landfill	• Guidelines for Cultural Heritage Impact Assessment		These 12 affected nil graded built heritage contain no historical significance. Preservation by photographic and cartographic record (prior to construction works would be required.	

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