Environmental Mitigation Implementation Schedule – Planning and Engineering Study for Housing Sites in Yuen Long South - Investigation

Note: Chapters 1 to 3 of the EIA report present the background information of the Project, identified concurrent projects, objectives and scope for various environmental aspects, and description on alternative options and construction description. Chapters 4 to 13 of the EIA report present the EIA findings and mitigation measures are described below with cross-reference to the EIA report. Chapters 14 to 16 describe the environmental monitoring requirements, summary of environmental outcomes and conclusion.

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
Common Mitigation Measures (Applicable to ALL Project Components, including DPs and Non-DPs)							
Construction Dust Impact							
S4.4.6	D1	Water spraying every hour on exposed worksites and haul road.	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and EIAO-TM criteria
S4.4.6	D2	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation.	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and EIAO-TM criteria
S4.4.6	D3	The following dust suppression measures should be incorporated to control the dust nuisance throughout the construction phase: • Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and EIAO-TM criteria

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		of roads; • A stockpile of dusty material should not be extended beyond the pedestrian barriers, fencing or traffic cones; • The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores; • When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period; • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the					

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		activities so as to maintain the entire surface wet; • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport should be totally enclosed by impervious sheeting; • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides; • Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed; • Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and • Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shortcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies.					
S4.4.6	D4	Implement regular dust monitoring under EM&A programme during the construction stage.	Monitoring of dust impact	Contractor	Selected dust	Construction stage	• EIAO-TM

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					monitoring stations		
Odour Impact							
S4.6.4	D5	The following at-source mitigation measures should be implemented to control odour emission from the proposed STW and SPS: • Potential odour sources should be enclosed; • Negative pressure should be maintained within the facilities; • Installation of deodouriser with an odour removal efficiency of at least 99.5% to control odour emission via ventilation exhaust; • Exhaust of the deodouriser should be oriented away from sensitive receivers and vertically upwards to avoid direct facing to any sensitive receivers; and • Maintenance of deodouriser should be regularly conducted to ensure good condition.	Minimise odour impact at the nearby sensitive receivers	Relevant government departments	Refer to Figure 4.13	Upon operation of the proposed STW and SPS	• EIAO-TM
S4.6.4	D6	For the planned District Open Space (DO3.1): • No sensitive uses should be introduced in the exceedance area within the planned DO3.1;.	Minimise odour impact on the nearby planned sensitive receivers	Relevant government departments	Refer to Figures 3.1d and 4.14a-b	Operational stage	• EIAO-TM

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Construction Noise							
S5.5.3	N1	Implement construction noise mitigation measures, including, but not limited to, good site management practices, use of quiet plant, installation of movable temporary noise barrier and setup up of liaison group to ensure construction noise impacts at the NSRs comply with the construction noise criteria. 1. Good site management practices • only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; • machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; • plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; • silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; • mobile plant should be sited as far away from NSRs as possible and practicable; and • material stockpiles, site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities. 2. Use of quiet plant • Use of quiet plant listed in the Quality Powered Mechanical Equipment (QPME) / other commonly used	Control construction noise impacts	Contractor	All construction sites	Construction stage	• EIAO-TM

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		PME listed in Environmental Protection Department (EPD) web pages. 3. Installation of movable temporary noise barrier • Install movable temporary noise barriers (typical design is wooden framed barrier with a small-cantilevered upper portion of superficial density no less than 7kg/m^2 on a skid footing with 25mm thick internal sound absorptive lining), and full enclosure, screen the noisy plants including air compressors, generators etc. 4. Setup of liaison group • Setup a liaison group among CEDD, relevant government departments, contractors of the work contracts, etc. during construction phase to ensure proper implementation of the proposed noise mitigation measures.					

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S5.5.3	N2	Carry out construction noise monitoring in accordance with the EM&A Manual.	Monitor the construction noise impacts	Contractor	Selected noise monitoring stations	Construction stage	• EIAO-TM
Operational Noise (Road Traffic Noise)							
S5.6.3	N3	The following noise mitigation measures are proposed to alleviate adverse traffic noise impact on the affected NSRs: • Absorptive vertical barriers and cantilevered noise barriers along some sections of the Project roads and Kung Um Road; • LNRS on some road sections; • Semi-enclosures and full enclosures at primary distributor roads at TYST Interchange and Kung Um Road; and • Nullah features / barriers along some sections of Yuen Long Nullah (Kiu Hing Road). Provision of LNRS are as follows: Stage 1 • Approx. 465m long LNRS along Lam Tai East Road (LNRS28) • Approx. 260 m long LNRS along Kiu Hing Road (North of YLH) (LNRS32) • Approx. 410m long LNRS along proposed Road L1 (LNRS35) • Approx. 410m long LNRS along proposed Road L1 (LNRS36) • Approx. 375m long LNRS along proposed Road L1 (LNRS37)	Control the road traffic noise impacts	CEDD / Private developers	Refer to Figure 6.3, Figure 6.3a-c.	Prior to operation of the Project for existing NSRs. While for mitigation measures to protect planned NSRs, it should be constructed before population intake of planned NSRs.	• EIAO-TM

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		• Approx. 375m long LNRS along proposed Road L1 (LNRS38) • Approx. 40m long LNRS along Kung Um Road (North of YLH) (LNRS45) Stage 2 • Approx. 290m long LNRS along proposed Road L12 (LNRS02) • Approx. 1050m long LNRS along proposed Road L20 (LNRS03) • Approx. 130m long LNRS along proposed Road L12 (LNRS05) • Approx. 120m long LNRS along TYST Interchange (LNRS06) • Approx. 265m long LNRS along TYST Interchange (LNRS07) • Approx. 625m long LNRS along TYST Interchange (Loop) (LNRS08) • Approx. 555m long LNRS along slip road near TYST Interchange (LNRS09) • Approx. 125m long LNRS along TYST Interchange (LNRS10) • Approx. 140m long LNRS along TYST Interchange (LNRS11) • Approx. 115m long LNRS along TYST Interchange (LNRS12) • Approx. 230m long LNRS along Long Tin Road (LNRS13) • Approx. 80m long LNRS along TYST Interchange (LNRS14) • Approx. 160m long LNRS along slip road near TYST Interchange (LNRS15) • Approx. 95m long LNRS along TYST Interchange (LNRS16) • Approx. 50m long LNRS along proposed Road L14					

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		(LNRS20) • Approx. 935m long LNRS along proposed Road D1 (LNRS21) • Approx. 930m long LNRS along proposed Road D1 (LNRS22) • Approx. 510m long LNRS along proposed Road D2 (LNRS23) • Approx. 510m long LNRS along proposed Road D2 (LNRS24) • Approx. 475m long LNRS along Lam Tai West Road (LNRS27) • Approx. 90m long LNRS along proposed Road L2 (LNRS29) • Approx. 385m long LNRS along Lam Tai West Road (LNRS30) • Approx. 385m long LNRS along Lam Tai East Road (LNRS31) • Approx. 2165m long LNRS along proposed Road L25 (LNRS33) • Approx. 310m long LNRS along Tai Kei Leng Road (LNRS39) • Approx. 320m long LNRS along Tai Kei Leng Road (LNRS40) • Approx. 430m long LNRS along Tai Kei Leng Road (LNRS41) • Approx. 215m long LNRS along Long Ho Road (LNRS43) • Approx. 210m long LNRS along TYST Interchange (LNRS47) • Approx. 140m long LNRS along proposed Road L5 (LNRS48) Stage 3 and 4 • Approx. 140m long LNRS along slip road near TSWW Interchange (LNRS01)					

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		• Approx. 90m long LNRS along proposed Road L13 (LNRS04) • Approx. 95m long LNRS along Shan Ha Road (LNRS17) • Approx. 100m long LNRS along proposed Road L15 (LNRS18) • Approx. 250m long LNRS along proposed Road L15 (LNRS19) • Approx. 795m long LNRS along proposed Road D1 (LNRS25) • Approx. 790m long LNRS along proposed Road D1 (LNRS26) • Approx. 640m long LNRS along proposed Road L6 (LNRS34) • Approx. 100m long LNRS along proposed Road L18 (LNRS42) • Approx. 115m long LNRS along proposed Road L15 (LNRS46) • Approx. 130m long LNRS along proposed Road L7 (LNRS49) • Approx. 315m long LNRS along TYST Road (LNRS50) Provision of enclosures, semi-enclosure, barriers and nullah features / barriers for existing NSRs are as follows: Stage 1 • Approx. 70m long 6m high semi-enclosure along Yuen Long Nullah - Kung Um Road (SE04) • Approx. 30m long 6m high semi-enclosure along Yuen Long Nullah - Kung Um Road (SE05) • Approx. 265m long 5m high absorptive vertical barrier with 3m cantilevered arm at 45 degree along proposed Road L1 (CB_E02) • Approx. 15m long 4m high absorptive vertical barrier with 3m cantilevered arm at 45 degree along proposed Road L25 (CB_E03)					

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		• Approx. 80m long 4m high absorptive vertical barrier with 3m cantilevered arm at 45 degree along proposed Road L25 (CB_E04) • Approx. 90m long 4m high absorptive vertical barrier with 3m cantilevered arm at 45 degree along proposed Road L25 (CB_E05) • Approx. 30m long 4m high absorptive vertical barrier with 3m cantilevered arm at 45 degree along proposed Road L25 (CB_E26) • Approx. 20m long 4m high absorptive vertical barrier with 3m cantilevered arm at 45 degree along proposed Road L25 (CB_E27) • Approx. 20m long 3m high absorptive vertical barrier along proposed Road L1 (VB_E14) • Approx. 11m long 2m high absorptive vertical barrier along proposed Road L25 (VB_E25) • Approx. 155m long 3m high absorptive vertical barrier along proposed Road L1 (VB_E42) • Approx. 25m long 3m high absorptive vertical barrier along proposed Road L1 (VB_E47) Stage 2 • Approx. 310m long 6m high semi-enclosure along slip road near TYST Interchange (SE01) • Approx. 160m long 6m high semi-enclosure along slip road near TYST Interchange (SE02) • Approx. 255m long 6m high semi-enclosure along slip road near TYST Interchange (SE03) • Approx. 180m long 6m high full enclosure along TYST Interchange (FE01) • Approx. 175m long 6m high full enclosure along TYST Interchange (FE02) • Approx. 195m long 6m high full enclosure along TYST Interchange (FE03) • Approx. 180m long 6m high full enclosure along TYST Interchange (FE04)					

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		• Approx. 75m long 5m high absorptive vertical barrier with 3m cantilevered arm at 45 degree along proposed Road L12 (CB_E01) • Approx. 95m long 5m high absorptive vertical barrier with 3m cantilevered arm at 45 degree along Tai Kei Leng Road (CB_E16) • Approx. 65m long 5m high absorptive vertical barrier with 3m cantilevered arm at 45 degree along Tai Kei Leng Road (CB_E18) • Approx. 50m long 5m high absorptive vertical barrier with 3m cantilevered arm at 45 degree along Kung Um Road (CB_E19) • Approx. 20m long 5m high absorptive vertical barrier with 3m cantilevered arm at 45 degree along Kung Um Road (CB_E20) • Approx. 65m long 5m high absorptive vertical barrier with 3m cantilevered arm at 45 degree along TYST Interchange (CB_E21) • Approx. 11m long 5m high absorptive vertical barrier with 3m cantilevered arm at 45 degree along Kung Um Road (CB_E22) • Approx. 25m long 5m high absorptive vertical barrier with 3m cantilevered arm at 45 degree along TYST Interchange (CB_E25) • Approx. 80m long 5m high nullah feature / barrier along Yuen Long Nullah (NF_E01) • Approx. 150m long 3m high nullah feature / barrier along Yuen Long Nullah (NF_E05) • Approx. 115m long 3m high nullah feature / barrier along Yuen Long Nullah (NF_E06) • Approx. 140m long 3m high absorptive vertical barrier along proposed Road L20 (VB_E03) • Approx. 70m long 5m high absorptive vertical barrier along proposed Road L11 (VB_E04) • Approx. 100m long 6m high absorptive vertical barrier					

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		along TYST Interchange (VB_E05) • Approx. 20m long 1m high absorptive vertical barrier along proposed Road L12 (VB_E06) • Approx. 40m long 3m high absorptive vertical barrier along proposed Road L12 (VB_E08) • Approx. 25m long 5m high absorptive vertical barrier along TYST Interchange (VB_E10) • Approx. 125m long 5m high absorptive vertical barrier along TYST Interchange (VB_E11) • Approx. 125m long 6m high absorptive vertical barrier along TYST Interchange (VB_E12) • Approx. 95m long 6m high absorptive vertical barrier along TYST Interchange (VB_E13) • Approx. 95m long 3m high absorptive vertical barrier along slip road near TYST Interchange (VB_E15) • Approx. 125m long 6m high absorptive vertical barrier along slip road near TYST Interchange (VB_E16) • Approx. 95m long 6m high absorptive vertical barrier along slip road near TYST Interchange (VB_E17) • Approx. 75m long 5m high absorptive vertical barrier along Shan Ha Road (VB_E18) • Approx. 125m long 6m high absorptive vertical barrier along TYST Interchange (VB_E19) • Approx. 110m long 3m high absorptive vertical barrier along proposed Road D1 (VB_E20) • Approx. 9m long 1m high absorptive vertical barrier along proposed Road L25 (VB_E23) • Approx. 20m long 5m high absorptive vertical barrier along proposed Road L25 (VB_E26) • Approx. 25m long 4m high absorptive vertical barrier along proposed Road L25 (VB_E27) • Approx. 9m long 5m high absorptive vertical barrier along proposed Road L25 (VB_E28) • Approx. 9m long 5m high absorptive vertical barrier along proposed Road L25 (VB_E29)					

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		• Approx. 8m long 5m high absorptive vertical barrier along proposed Road L25 (VB_E30) • Approx. 6m long 3m high absorptive vertical barrier along proposed Road L25 (VB_E31) • Approx. 25m long 3m high absorptive vertical barrier along proposed Road L25 (VB_E32) • Approx. 30m long 3m high absorptive vertical barrier along proposed Road L25 (VB_E33) • Approx. 16m long 1m high absorptive vertical barrier along proposed Road L25 (VB_E34) • Approx. 50m long 4m high absorptive vertical barrier along proposed Road L25 (VB_E35) • Approx. 7m long 5m high absorptive vertical barrier along proposed Road L25 (VB_E36) • Approx. 7m long 5m high absorptive vertical barrier along proposed Road L25 (VB_E37) • Approx. 13m long 5m high absorptive vertical barrier along proposed Road L25 (VB_E38) • Approx. 30m long 5m high absorptive vertical barrier along proposed Road L25 (VB_E39) • Approx. 12m long 3m high absorptive vertical barrier along proposed Road L25 (VB_E40) • Approx. 13m long 3m high absorptive vertical barrier along proposed Road L25 (VB_E41) • Approx. 20m long 3m high absorptive vertical barrier along proposed Road L1 (VB_E43) • Approx. 285m long 3m high absorptive vertical barrier along Tai Kei Leng Road (VB_E45) • Approx. 50m long 3m high absorptive vertical barrier along Tai Kei Leng Road (VB_E48) • Approx. 70m long 3m high absorptive vertical barrier along Tai Kei Leng Road (VB_E49) • Approx. 19m long 4m high absorptive vertical barrier along proposed Road L12 (VB_E53) • Approx. 25m long 4m high absorptive vertical barrier					

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		along proposed Road D1 (VB_E54) • Approx. 20m long 5m high absorptive vertical barrier along proposed Road D1 (VB_E55) • Approx. 8m long 1m high absorptive vertical barrier along Kung Um Road (VB_E56) Stage 3 and 4 • Approx. 145m long 5m high absorptive vertical barrier along TSWW Interchange (VB_E01) • Approx. 75m long 4m high absorptive vertical barrier along TSWW Interchange (VB_E02) • Approx. 40m long 4m high absorptive vertical barrier along proposed Road L13 (VB_E07) • Approx. 100m long 3m high absorptive vertical barrier along proposed Road D1 (VB_E09) • Approx. 35m long 3m high absorptive vertical barrier along proposed Road L15 (VB_E21) • Approx. 100m long 2m high absorptive vertical barrier along proposed Road L15 (VB_E22) • Approx. 25m long 4m high absorptive vertical barrier along proposed Road D1 (VB_E46) • Approx. 25m long 2m high absorptive vertical barrier along proposed Road L15 (VB_E51) • Approx. 80m long 3m high absorptive vertical barrier along TSWW Interchange (VB_E52) Provision of barriers for planned NSRs following ETWB TCW No. 13/2003A are as follows: Stage 1 • Approx. 50m long 6m high absorptive vertical barrier along Lam Tai East Road (VB_P17) Stage 2 • Approx. 40m long 5m high absorptive vertical barrier with 3m cantilevered arm at 45 degree along Lam Tai					

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		West Road (CB_P10) • Approx. 75m long 4m high absorptive vertical barrier along Lam Tai West Road (VB_P18) • Approx. 30m long 3m high absorptive vertical barrier along Lam Tai East Road (VB_P19) • Approx. 25m long 3m high absorptive vertical barrier along Lam Tai East Road (VB_P20) Stage 3 and 4 • Approx. 25m long 3m high absorptive vertical barrier along proposed Road L15 (VB_P01) • Approx. 220m long 5m high absorptive vertical barrier along proposed Road D1 (VB_P02) • Approx. 100m long 4m high absorptive vertical barrier along proposed Road D1 (VB_P05) • Approx. 40m long 4m high absorptive vertical barrier along proposed Road L15 (VB_P06) • Approx. 45m long 3m high absorptive vertical barrier along proposed Road D2 (VB_P07) • Approx. 45m long 3m high absorptive vertical barrier along proposed Road D2 (VB_P08) • Approx. 75m long 5m high absorptive vertical barrier along proposed Road D1 (VB_P09) • Approx. 195m long 5m high absorptive vertical barrier along proposed Road D1 (VB_P10) • Approx. 80m long 3m high absorptive vertical barrier along proposed Road D1 (VB_P11) • Approx. 25m long 3m high absorptive vertical barrier along proposed Road L6 (VB_P12) • Approx. 30m long 3m high absorptive vertical barrier along proposed Road L20 (VB_P23) • Approx. 35m long 2m high absorptive vertical barrier along proposed Road L20 (VB_P26) • Approx. 90m long 6m high absorptive vertical barrier along proposed Road D1 (VB_P29)					

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		• Approx. 40m long 5m high absorptive vertical barrier with 3m cantilevered arm at 45 degree along proposed Road L20 (CB_P05) • Approx. 95m long 5m high absorptive vertical barrier with 3m cantilevered arm at 45 degree along proposed Road D1 (CB_P06) • Approx. 55m long 5m high absorptive vertical barrier with 3m cantilevered arm at 45 degree along proposed Road D1 (CB_P07) • Approx. 90m long 5m high absorptive vertical barrier with 3m cantilevered arm at 45 degree along proposed Road D1 (CB_P08) • Approx. 50m long 5m high absorptive vertical barrier with 3m cantilevered arm at 45 degree along proposed Road D1 (CB_P09) • Approx. 40m long 5m high absorptive vertical barrier with 3m cantilevered arm at 45 degree along proposed Road L20 (CB_P11) • Approx. 45m long 5m high absorptive vertical barrier with 3m cantilevered arm at 45 degree along proposed Road L6 (CB_P18) • Approx. 40m long 5m high absorptive vertical barrier with 3m cantilevered arm at 45 degree along proposed Road L6 (CB_P19) • Approx. 50m long 5m high absorptive vertical barrier with 3m cantilevered arm at 45 degree along proposed Road L6 (CB_P20)					

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S5.6.3	N4	Carry out operational traffic noise monitoring in accordance with the EM&A Manual.	Monitor the road traffic noise impacts	CEDD	Selected noise monitoring stations	Within the first year upon the completion of proposed road works or occupation year of the proposed developments	• EIAO-TM
Operational Noise (Fixed Noise Sources)							
S5.7.3	N5	The maximum allowable sound power level for the planned fixed noise sources should be complied with during the selection of equipment and mitigation measures.	To comply with noise criteria of EIAO-TM	Relevant government departments / Future operators	All planned fixed noise sources at Electricity Substation, Refuse Collection Points, Sewage Pumping Stations, Sewage Treatment Works, Divisional Fire Station and Ambulance Depot, Public Transport Interchange, Sports	Detailed design and operational stages	• EIAO-TM

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					Centre and Market, District Police Station, Storage Use Sites, Open Storage Sites, Storage and Workshop Sites, Retention Tank and Government Depot.		
S5.7.3	N6	Carry out noise commissioning test for fixed noise sources.	To comply with noise criteria of EIAO-TM	Relevant government departments / Future operators	Selected noise monitoring stations	Before operation of fixed noise sources	• EIAO-TM
Operational Noise (Rail Noise)							
S5.8.3	N7	The proposed EFTS is a Schedule 2 DP under the EIA Ordinance. Carry out detailed EIA study under the EIA Ordinance and implement the required noise mitigation measures at the design, construction and operation of the proposed EFTS.	To comply with the noise criteria of NCO and EIAO-TM	Relevant government departments / Future operators	Sections of rail track (Possible connection between PDA and the West Rail Tin Shui Wai Station, location	Design, construction and operation of the proposed EFTS	• NCO and its TM • EIAO-TM

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					refers to **Figure 5.1** of the EIA Report)		
Operational Noise (Planned NSRs)							
S5.6.3	N8	Carry out Noise Impact Assessment for planned private residential developments.	To comply with noise criteria of EIAO-TM and HKPSG	Private developers	All noise sensitive uses within the planned private residential developments	Before population intake of planned NSRs	• EIAO-TM • HKPSG
S5.6.3	N9	Carry out Environmental Assessment Study (EAS) for planned public housings.	To comply with noise criteria of EIAO-TM and HKPSG	HKHA	All noise sensitive uses within the planned public housings	Before population intake of planned NSRs	• EIAO-TM • HKPSG
S5.6.3	N10	Carry out Class Assessment Document for planned educational institutions.	To comply with noise criteria of EIAO-TM and HKPSG	ArchSD or proponent of educational institutions	All noise sensitive uses within the planned educational institutions	Before operation of planned NSRs	• EIAO-TM • HKPSG

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Water Quality (Construction Phase)							
S6.8.1.2	W1	<u>*General Construction Activities*</u> In accordance with the Practice Note for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN1/94), best management practices should be implemented on site as far as practicable. The best practices are detailed below: • At the start of site establishment, perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities; • Diversion of natural stormwater should be provided as far as possible. The design of temporary on-site drainage should prevent runoff going through site surface, construction machinery and equipment in order to avoid or minimise polluted runoff. Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m^3 capacities, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity shall be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped; • The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a silt/sediment trap. The silt/sediment traps should be incorporated in the permanent drainage channels to	To minimise water quality impact from construction site runoff and general construction activities	Contractor	All construction sites where applicable	Construction stage	• Water Pollution Control Ordinance • ProPECC PN1/94 • EIAO-TM • TM-DSS

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		enhance deposition rates; • The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94. The detailed design of the sand/silt traps should be undertaken by the contractor prior to the commencement of construction; • Construction works should be programmed to minimise surface excavation works during the rainy seasons (April to September). All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means; • All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas; • If the excavation of trenches in wet periods is necessary, it should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities; • All open stockpiles of construction materials (for example, aggregates, sand and fill material) should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system;					

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		• Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers; • Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarized in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events; • All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities should be provided at every construction site exit where practicable. Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains; • Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain; • Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to					

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		avoid water quality impacts; • All fuel tanks and storage areas should be provided with locks and sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby;and • Regular environmental audit on the construction site should be carried out in order to prevent any malpractices. Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the water bodies, mangroves and open sea.					
S6.8.1.4	W2	*Prevention of Accidental Spillage of Chemicals* • The chemicals used during construction, such as fuel, oil, solvents and lubricants shall be properly stored and contained in designated area with secondary containment to prevent spillage and contamination of the nearby water environment. • Any maintenance activities and workshops with chemicals use shall be located away from watercourses on hard standings within a bunded area. Sumps and oil interceptors should be provided as appropriate. • The Contractor shall register as a chemical waste producer and employ licensed collector for collection of chemical waste from the construction site. Any chemical waste generated shall be managed in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	To prevent water quality impact due to chemical spillage	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • Waste Disposal (Chemical Waste) (General) Regulation
S6.8.1.7	W3	*Sewage from workforce* • Portable chemical toilets and sewage holding tanks are	To minimise water quality impact from sewage effluent in	Contractor	All construction sites where	Construction stage	• Water Pollution Control

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		recommended for handling the construction sewage generated by the workforce. A licensed contractor should be employed to provide appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance; • Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment during the construction phase of the Project; • Regular environmental audit on the construction site should be conducted in order to provide an effective control of any malpractices and achieve continual improvement of environmental performance on site.	construction phase		practicable		Ordinance • TM-DSS
S6.8.1.9	W4	*Contaminated Groundwater and Site Runoff* To prevent the water quality due to the contaminated water from the area with contamination, the following mitigation measures should be adopted. • Cover the contaminated soil and surface to prevent the generation of contaminated water. • No open stockpiling of contaminated soil should be allowed to prevent generation of contaminated water due to precipitation. • Contaminated water, either from groundwater or runoff, should be treated by wastewater treatment facility (WTF) to an acceptable level as indicated in TM-DSS before disposal if the deployment of such WTF is feasible. • Recharging the contaminated groundwater back to the aquifer should be sought if treatment of the contaminated groundwater by WTF is not feasible, subject to the	To minimise water quality impact from contaminated groundwater in construction phase	Contractor	All construction sites where practicable	Construction stage	• TM-DSS

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		agreement with EPD.					
S6.8.1.10	W5	*Construction Works of near/ within Watercourses* • Cofferdams and impermeable sheet piles should be installed as appropriate to isolate the flow of the nullah from the construction works area. The detailed design of the cofferdams will be conducted by the Contractor during the construction phase to fulfil the requirements in DSD Technical Circular No. 1/2017 "Temporary Flow Diversions and Temporary Works Affecting Capacity in Stormwater Drainage System" for DSD approval, in order to formulate feasible options of these temporary structure. • Stockpiling of construction materials and dusty materials should be located from any watercourses, contained in bunded areas and covered with tarpaulin. • Construction debris and spoil should be covered with tarpaulin during storage. Timely removal of materials away from the site for disposal should be arranged to avoid being washed into the nearby watercourses. • Water pumps should be used to collect any wastewater and construction site surface runoff within the cofferdam/ temporary works platform. The collected wastewater shall be properly treated before discharge. • Toe-board and bunds shall be provided along the edge of the works area/ temporary platform to prevent wastewater/ debris from falling into the watercourses. • Any temporary works site inside the watercourses should be temporarily isolated, such as by placing of sandbags or silt curtains with lead edge at bottom and properly supported props to prevent adverse impact on the water	To avoid any direct water quality impact to existing watercourses	Contractor	All construction sites where practicable	Construction stage	• ETWB TC (Works) No. 5/2005

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		quality. • Proper shoring may need to be erected in order to prevent soil / mud from slipping into the inland water bodies. • Construction effluent, site run-off and sewage should be properly collected and/or treated.					
S6.8.1.11	W6	*Removal/ Diversion of watercourses* • Cofferdams and impermeable sheet piles should be installed as appropriate to isolate the water flow from the construction works area. • Dewatering or flow diversion shall be conducted prior to the construction works to prevent water overflow to the surrounding area. • Watercourse removal and flow diversion should be conducted in dry season as far as practicable when the water flow is low. • Water drained from the watercourse shall be diverted to new/ temporary drainage for watercourse diversion. For watercourse removal, the water drained shall be collected and treated to meet the requirements of WPCO and TM-DSS before discharge. • Any excavated land-based sediment from the removal/ diversion of watercourse shall be properly stored at bunded areas away from any watercourse and covered with tarpaulin before transporting out of the site.	To avoid water quality impact on existing watercourses to be retained	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • TM-DSS • ETWB TC (Works) No. 5/2005 • ProPECC PN1/94
S6.8.1.12	W7	*Removal/ Filing of ponds* • Dewatering shall be conducted prior to the construction works to prevent water overflow to the surrounding area. • Water drained from the ponds shall be collected in	To avoid water quality impact on existing watercourses to be retained	Contractor	All construction sites where practicable	Construction stage	• ProPECC PN1/94

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		appropriate temporary storage tank and reuse on-site as far as practicable. Surplus drained water shall be properly disposal at STW. No direct discharge to stormwater drainage system or marine water should be allow. • Any excavated land-based sediment from the ponds shall be properly stored at bunded areas away from any watercourse and covered with tarpaulin before transporting out of the site.					
Water Quality (Operational Phase)							
S6.8.2.1	W8	*Emergency Discharge from Sewage Treatment Works and Sewage Pumping Stations* The following mitigation measures will be implemented to the design of SPSs and STW to prevent emergency discharge to Deep Bay: • Twin rising mains would be provided. Should one of the duty mains be taken out of operation, the remaining one would still be able to deliver flow; • Standby pumps and treatment facilities would be provided in case of unexpected breakdown of pumping and treatment facilities such that the standby pumps and treatment facilities could take over and function to replace the broken pumps; and • Dual electricity supply or backup power supply facilities such as diesel generator would be provided in case of power failure to sustain the function of pumping and treatment facilities.	To prevent the impact on Deep Bay due to the emergency discharge	DSD	Proposed SPSs and STW	Operational Stage	• DSD's Sewerage Manual

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S6.8.2.3	W9	*Change in Drainage System and Road Runoff* • Proper drainage systems with silt traps and oil interceptors should be installed. • Runoff will be intercepted by properly designed and managed silt traps at appropriate spacing so that common roadside debris, refuse and fallen leaves etc. can be captured before allowing the runoff to drain into watercourses such as Yuen Long Creek. • At the outlets to watercourses, the delegated operation parties should manage the road/open area cleaning prior to the occurrence of a storm to remove pollutants. The collected pollutants would be tankered away for off-site disposal at landfill sites.	To reduce impact on drainage system due to road/ surface runoff	DSD	Proposed drainage system and future site operators	Operational Stage	-
S6.8.2.6	W10	*Maintenance Flushing for Reclaimed Water Service Reservoir* In order to avoid the water quality impact caused by the maintenance flushing, all the effluent generated during the process would be avoided to discharge into the catchment by implementation of the following measures. • Before the flushing, the reclaimed water inside the reservoir would be discharged to the foul sewers and the sludge remained at the bottom will be collected and disposed by a licensed waste collector. • During the flushing, the cleansing water would be collected by a licensed waste collector via the washout pipes at a controlled manner to avoid the possible impact to the nearby watercourses of higher ecological importance.	To reduce water quality impacts during maintenance flushing	WSD	Proposed service reservoir and future site operators	Operational Stage	-
S6.8.2.7	W11	*Wastewater from Storage and Workshop Area*	To ensure wastewater	Future operator	Proposed	Operational Stage	• WPCO

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		• Discharge license under WPCO should be applied by the tenants in other specific uses (Storage and Workshop, and Open Storage) subject to their future operation needs. Compliance with WPCO for discharge of wastewater shall be ensured.	discharge from storage and workshop areas comply with WPCO		storage and workshop areas		

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Sewage and Sewerage Treatment Implications							
S7.6.5	SS1	*Emergency Discharge of Proposed SPSs* The following mitigation measures will be implemented: • Twin rising mains would be provided. Should one of the duty mains be taken out of operation, the remaining one would still be able to deliver flow; • Standby pumps and treatment facilities would be provided in case of unexpected breakdown of pumping and treatment facilities such that the standby pumps and treatment facilities could take over and function to replace the broken pumps; and • Dual electricity supply or backup power supply facilities such as diesel generator would be provided in case of power failure to sustain the function of pumping and treatment facilities.	To prevent the impact to Deep Bay due to the emergency discharge	DSD	Proposed Sewage Pumping Station at YLS	Operational stage	N/A
S7.6.5	SS2	*Emergency Discharge of Proposed STW* The following mitigation measures will be implemented: • Twin rising mains would be provided. Should one of the duty mains be taken out of operation, the remaining one would still be able to deliver flow; • Standby pumps and treatment facilities would be provided in case of unexpected breakdown of pumping and treatment facilities such that the standby pumps and treatment facilities could take over and function to replace the broken pumps; and • Dual electricity supply or backup power supply facilities such as diesel generator would be provided in case of power failure to sustain the function of pumping and	To prevent the impact to Deep Bay due to the emergency discharge	DSD	Proposed Sewage Treatment Work at YLS	Operational stage	N/A

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		treatment facilities.					

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Ecology (Design Phase)							
S8.6.2	EC1	To preserve all woodland patches of significant sizes in the PDA and avoid encroachment and fragmentation of the mature woodland behind Shan Ha Tsuen through adoption of separate road junctions located away from the preserved woodlands	To preserve all sites of conservation significance	PlanD/ Detailed Design Consultant	Sites of conservation significance	Design phase	• EIAO-TM
S8.6.2	EC2	To preserve three watercourses with records of the endemic crab species *Somanniathelphusa zanklon* in GB(1) zone with 15m buffers on each side	To preserve all sites of conservation significance	PlanD/ Detailed Design Consultant	Sites of conservation significance	Design phase	• EIAO-TM
S8.6.2	EC3	The largest and important portion of agricultural lands will be retained and preserved in AGR zone; the integrity of the mosaic of habitats within this area and linkages with more natural, less disturbed habitats with higher ecological value to the west and south will be retained.	To preserve all sites of conservation significance	PlanD/ Detailed Design Consultant	Sites of conservation significance	Design phase	• EIAO-TM
S8.6.6	EC4	To provide a new hillside river corridor with a retention lake to maximize ecological opportunities for aquatic flora and fauna and provide new linkages to several fragmented/isolated watercourses. A Hillside River Corridor Management Plan (HRCMP) will be prepared by a qualified ecologist with full details of the design, construction methodology, and hydrology; along with an implementation programme for creation, establishment, monitoring and maintenance programme.	To mitigate for cumulative loss of fragments of lowland watercourses in PDA	PlanD/ Detailed Design Consultant	At the western boundary of PDA	Design phase	• EIAO-TM • DSD Practice Note No. 1/2015
S8.6.2	EC5	To provide non-building area(s) (NBAs) to retain key flight corridors for Tai Tong (Pak Sha Tsuen) Egretry	To minimise off-site disturbance to Tai Tong	PlanD/ Detailed Design Consultant	Non-building Areas	Design phase	• EIAO-TM

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			(Pak Sha Tsuen) Egretry		(NBAs)		
S8.6.6	EC6	To avoid the use of highly reflective materials in the design, and implementing the use of opaque materials, fritting, breaking up external reflections with stickers or plastic wrap and/or any other bird-friendly design for noise barriers	To minimise risk of bird strike with noise barriers	PlanD/ Detailed Design Consultant	Locations to be installed with noise barriers	Design phase	• EIAO-TM
Ecology (Construction Phase)							
S8.6.6	EC7	Precautionary surveys to check for presence of any aquatic fauna species of conservation importance in the watercourses to be directly impacted before commencement of works; affected aquatic fauna of conservation importance shall be captured and translocated to suitable receptor site(s)	To minimise direct impacts on aquatic species of conservation importance	CEDD/ Contractor	All affected watercourses	Before commencement of construction works	• EIAO-TM
S8.6.5	EC8	To conduct a baseline plant survey within all proposed works areas to ascertain the presence and update the quantities and conditions of any flora species of conservation importance; to transplant all affected plant species of conservation importance to suitable receptor site(s) before commencement of construction works	To minimise direct impacts on plant species of conservation importance	CEDD/ Contractor	All potential works areas	Before commencement of construction works	• EIAO-TM
S8.6.2	EC9	To designate 15m wide buffer on both sides of the retained watercourses; the protected zones will be maintained and properly protected by solid barriers throughout the construction phase Aquatic faunal monitoring on monthly basis shall be conducted when there are construction activities within 100m of the three retained watercourses in Area 1 and Area 3 and the new watercourse along the hillside of the western boundary of Area 3.	To minimise direct construction phase impacts on retained watercourses	CEDD/ Contractor	Retained watercourses and their buffer zones, and the new hillside river	Construction phase	• EIAO-TM
S8.8	EC10	Egretry location shall be checked for any evidence of	To minimise disturbance	CEDD/	Existing	Before	• EIAO-TM

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		occupation during the ardeid breeding season by a qualified ecologist of the ET prior to the commencement of any works activity within 250m of the egretry; to monitor regularly the conditions of the egretry and potential impacts to egretry flight-lines.	impacts to egretry	Contractor	and all potential egretry location(s) within 250m from any works activity	commencement of the construction works and monitoring throughout the construction phase	
S8.6.6	EC11	Checking and clearance for nesting birds (buildings and vegetation) shall be conducted/ supervised by a qualitied ecologist with relevant experience	To minimise direct impacts on nesting birds	CEDD/ Contractor	All works areas	Before commencement of construction work	• EIAO-TM
S8.6.6	EC12	Checking and clearance of bat roosts shall be conducted/ supervised by a qualitied ecologist with relevant experienced	To minimise direct impacts on bat roost(s)	CEDD/ Contractor	All works areas	Before commencement of construction work	• EIAO-TM
S8.6.6	EC13	Good site practices to control construction phase water quality impacts	To minimise induced water quality impacts on nearby water bodies	CEDD/ Contractor	All works areas	Construction Phase	• EIAO-TM
S8.6.6	EC14	To provide woodland mix planting of at least 1:1 compensation area ratio for the cumulative loss of approximately 2.42ha hillside woodland; the proposed woodland planting will be conducted in the proposed hillside site (~12ha) to the west of PDA. Details of woodland planting and monitoring programme will be specified in a Woodland Compensation Plan.	To adequately compensate for cumulative loss of hillside woodlands in PDA	CEDD/ Contractor	The proposed planting site (~12ha) within CA zone at the hillside site to the west of PDA	Construction phase	• EIAO-TM
Ecology (Operational Phase)							

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S8.8	EC15	Aquatic faunal monitoring on monthly basis shall be conducted during the first 12 months of the operation phase at the three retained watercourses in Area 1 and Area 3 and the new watercourse along the hillside of the western boundary of Area 3.	To ensure indirect operation phase impacts are acceptable	CEDD/ Contractor	Three retained watercourses in Area 1 and Area 3 and the new watercourse along the hillside of the western boundary of Area 3.	Operation phase	• EIAO-TM
S8.8	EC16	To monitor the conditions of the existing egretry and potential impacts to egretry flight-lines during egretry breeding season for the first 12 months of Project operation	To ensure disturbance impacts to existing egretry are acceptable	CEDD/ Contractor	Tai Tong (Pak Sha Tsuen) Egretry	Operation phase	• EIAO-TM
S8.8	EC17	To monitor the conditions of compensatory woodland according to the Woodland Compensation Plan.	To allow on-going review of the effectiveness of the implemented plantings and to ensure long-term establishment of the planted species	CEDD/ Contractor	Compensatory woodland site	Operation phase	• EIAO-TM

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Fisheries							
S9.5.2	F1	To adopt the mitigation measures for the control of water quality impacts	To protect fisheries resources from potential direct impacts arising from deterioration of water quality	CEDD/ Contractor	All works areas	Construction phase	• EIAO-TM

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Landscape and Visual (Construction Phase)							
S10.12 – Table 10.12.1, CM1	LV1	<u>Optimisation of Construction Areas and Providing Temporary Landscape on Temporary Construction</u> Construction areas' control shall be enforced, where possible, to ensure that the landscape and visual impacts arising from the construction activities are minimised. It includes reduction of the extent of working areas and temporary works areas, management on storing and using the construction equipment and materials, and consideration of detailed schedules to shorten the construction period. Temporary landscape treatments are considered to be adopted such as applying hydro-seeding on temporary stockpiles and reclamation areas to alleviate the potential impacts.	Minimise impacts from construction activities on adjacent landscape and visual sensitive receivers	CEDD (via Contractor)	All construction areas and temporary works areas	Detailed design, prior to construction, construction stage	
S10.12 – Table 10.12.1, CM2	LV2	<u>Minimise Topographical Changes</u> To minimise landscape and visual impacts, the vertical and horizontal alignment of the at-grade road construction works should be optimised to reduce topographical/ landform changes, as well as reduce land take and interference with natural terrain and reduce overall earth movements. Where there is a need to significantly cut into the existing landform, retaining walls should be considered as well as cut slopes, to minimise landform changes and land resumption, whilst also considering visual amenity. Earthworks and engineered slopes should be designed to provide a structurally stable and visually interesting landform, which is compatible with surrounding landscape and mimics the natural contouring and terrain (e.g. introduction and continuation of natural features such as spurs and ridges where appropriate) to support landscape	Minimise landscape and visual impacts from topographical/ landform changes	CEDD (via Contractor)	All construction areas	Detailed design, construction stage	

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		and visual assimilation with the surrounding terrain.					
S10.12 – Table 10.12.1, CM3	LV3	<u>Tree Protection & Preservation</u> Existing trees to be retained within the Project Site should be carefully protected during construction. Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works areas. A detailed tree survey will be carried out for the Tree Removal Application (TRA) process which will be carried out at the later detailed design stage of the Project. The detailed tree survey will propose which trees should be retained, transplanted or felled and will include details of tree protection measures for those trees to be retained.	Protect and Preserve Trees	CEDD (via Contractor)	On site	Detailed design, construction stage	• DEVB TCW No.7/2015; • ETWB TCW No.29/2004
S10.12 – Table 10.12.1, CM4	LV4	<u>Transplanting of Existing Trees</u> Trees unavoidably affected by the Project works should be transplanted where practical. Trees should be transplanted straight to their final receptor site and not held in a temporary nursery as far as possible. A detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with DEVB TCW No.6/2015 and DEVB TCW 7/2015 and final locations of transplanted trees should be agreed prior to commencement of the work. For trees associated with highways e.g. roadside planting along highways, that are unavoidably affected and should be transplanted, following HyD Guidelines HQ/GN/13 'Interim Guidelines for Tree Transplanting Works under	Transplant Trees where suitable for transplantation	CEDD (via Contractor)	On site where possible	Prior to construction, construction stage	• DEVB TCW No.6/2015; • DEVB TCW 7/2015; • HyD Guidelines HQ/GN/13

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		Highways Department's Vegetation Maintenance Ambit'.					
S10.12 – Table 10.12.1, CM5	LV5	Screen Hoarding Screen hoarding shall be erected along areas of the construction boundary where the works site borders with publicly accessible routes and/or is close to visually sensitive receivers (VSRs), to screen undesirable views of the works site. It is proposed that the screening be compatible with the surrounding environment in terms of material choice and colour.	Screen undesirable views of the construction sites	CEDD (via Contractor)	All construction areas and temporary works areas	Construction stage	
S10.12 – Table 10.12.1, CM6	LV6	Watercourses of higher ecological value/ Channels Protection For all the watercourses of higher ecological value inside the development area, in accordance with ETWB TCW 5/2005, consideration of protection measures should be made to minimise any impacts from the construction works. Precast structures or other similar approaches will be used to prevent any construction works in river and thus to avoid any direct water quality impact. Good site management as stipulated in ProPECC PN1/94 will be fully implemented to avoid polluted liquid or solid wastes from falling into the river waters.	Avoid direct impacts to watercourses	CEDD (via Contractor)	All watercourses of higher ecological value inside the development area	Detailed design, construction stages	• ETWB TCW 5/2005; • ProPECC PN1/94
S10.12 – Table 10.12.1, CM7	LV7	Construction Light Control All security floodlights for construction sites should be carefully controlled to minimise light pollution and night-time glare to nearby users.	Minimise impact of night-time lighting and glare	CEDD (via Contractor)	All construction areas and temporary works areas	Construction stage	
S10.12 – Table	LV8	Woodland Conservation	Avoid the loss of natural	CEDD (via	On site	Detailed design,	• DEVB TCW

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10.12.1, CM8		Woodland conservation is proposed to avoid large scale of potential loss of the existing secondary woodland within the PDA.	woodland areas	Contractor)		construction stage	No.7/2015; • ETWB TCW No.29/2004
Landscape and Visual (Operational Phase)							
S10.12 – Table 10.12.1, OM1	LV9	<u>Compensatory Planting</u> Compensatory tree planting for felled trees shall be provided to the satisfaction of relevant Government departments. The required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Removal Application process under DEVB TCW No.7/2015. Compensatory planting is proposed at the potential open areas such as open spaces, amenity areas, open areas of the streetscapes, as well as the open areas within development lots. The provision of space for compensatory planting takes into accounts the subsequent schedules. The location of compensatory planting includes the roadside areas, street tree planting, central medians and any soft landscape areas affected by the works area.	Compensate for trees lost due to the Project	CEDD (via Contractor)	Onsite where possible. Otherwise consider offsite locations	Detailed design, construction stage and maintenance in operational stage	• DEVB TCW No.7/2015
S10.12 – Table 10.12.1, OM2	LV10	<u>Woodland Compensation</u> Specific Woodland compensatory planting is proposed for any areas of woodland that are unavoidably affected. The compensatory woodland planting will principally be within the LRs of lower value such as (LR3 Hillside Shrubland and Grassland), where integrity of the wider woodland resource is possible. Plant species should be selected to include a mix of species with pioneering characteristics (fast-growing/ light-tolerant/ drought-tolerant/ wind-tolerant, etc.), native species and complementary species to	Compensate for areas of woodland unavoidably affected by the Project	CEDD/ AFCD	Onsite where possible. Otherwise consider offsite locations	Construction stage and maintenance in operational stage	• DEVB TCW No.7/2015

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location	Implementation Stage	Requirements and / or standards to be achieved
		the local area.					
S10.12 – Table 10.12.1, OM3	LV11	Operation Light Control Night time lighting should be controlled during operation to minimise glare and light spill from the potential development/ infrastructure. Street and night time lighting shall also be controlled to minimise glare impact to adjacent VSRs during the operation phase.	Avoid glare and light pollution	ArchSD/ Housing Department/ Private Sector	Throughout the development area	Detailed design, construction stage	
S10.12 – Table 10.12.1, OM4	LV12	Screen Planting Tall screen/buffer trees and shrubs should be planted to assist in screening proposed road corridors and associated above ground structures such as elevated road sections and engineered embankments. This measure may additionally form part of the compensatory planting and will improve compatibility with the surrounding environment and create a pleasant pedestrian environment.	Provide adequate screening with trees to improve visual amenity	CEDD (via Contractor)	Along roadside, around suitable structures	Detailed design, construction stage and maintenance in operation phase	
S10.12 – Table 10.12.1, OM5	LV13	Road Side Planting For LRs that would require road upgrading or realignment should be provided to soften the hard, straight edges, such as (LR7), (LR8) and the new roads within PDA. Shade tolerant plants should be planted, where light is insufficient, to improve aesthetic value of areas under viaducts. The guideline of DEVB TC(W) No.2/2012 – Allocation of Space for Quality Greening on Roads should be followed.	Compensate for impacts on existing landscape, reinstating to equal or better quality	CEDD (via Contractor)	Along roadside amenity	Detailed design, construction stage and maintenance in operation phase	• DEVB TC(W) No.2/2012;
S10.12 – Table 10.12.1,	LV14	Aesthetic Design of Built Development Compatible design, construction materials and surface finishes of the proposed structure should match with the nearby existing external appearance of the proposed	Improve visual amenity of the new buildings and structures, integrate as best possible into the	ArchSD/ Housing Department/ Private Sector	Above ground buildings and utility structures	Detailed design, construction stage	

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location	Implementation Stage	Requirements and / or standards to be achieved
OM6		buildings for achieving visual uniformity. Finishing materials shall have due consideration to form, light earthy tone colours treatments, micro- and macro-texture, and reflectivity/ light absorbance to avoid glare.	surrounding landscape				
S10.12 – Table 10.12.1, OM7	LV15	<u>Maximise Greening on Engineering Structures and Surfaces</u> Where space and appropriate planting conditions allow (i.e. where suitable depth of planting medium is possible, maintenance access available and enough light penetration to ground level), climbing plants should be considered to grow up vertical surfaces such as greening facade of building blocks, viaduct piers or noise barriers. The planting once established will assist in breaking up the appearance of uniform engineered structures and surfaces. Tree planting and care that integrate with wider streetscape elements such as hardscape paving, outdoor furniture as well as lighting poles should be considered to create a pedestrian-friendly network. Streetscape design, including integrity with the building space at ground floor, keeping a suitable distance between trees and buildings should follow the Greening, Landscape and Tree Management Section (GLTM) of the Development Bureau's Guidelines on Greening of Noise Barriers (April 2012).	To soften the hard, straight edges and provide greening along viaducts and structures	Initiating Government Department (relevant user department)/ Private Sector	All structures as feasible, final location to be confirmed at detailed design stage	Detailed design, construction stage and maintenance in operation phase	• GLTM of the Development Bureau's Guidelines on Greening of Noise Barriers (April 2012) • DEVB (GLTM) No. 3/2012 – Site Coverage of Greenery for Government Building Projects
S10.12 – Table 10.12.1, OM8	LV16	<u>Noise Barrier Design</u> The visual impact of noise mitigation measures will be mitigated by appropriate detailed design to reduce visual bulkiness and incorporate aesthetically pleasing surface treatments to promote visual amenity, including suitable combination of transparent and sound absorbent materials, appropriate colour selection of panels and supporting structures, or provision of at-grade planting of trees, shrubs	Minimise potential adverse visual impacts	CEDD (via Contractor)	Noise barriers	Detailed design, construction stage	• GLTM of the Development Bureau's Guidelines on Greening of Noise Barriers (April 2012) DEVB

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location	Implementation Stage	Requirements and / or standards to be achieved
		and/or climbers camouflage to the barriers, as well as design of supporting structures to incorporate a high level of quality and aesthetics. A combination of transparent panels at top and solid panels at bottom would lighten the visual impact, and at the same time maintain the attractiveness by using colourful panels. The noise barriers would be implemented for District Distributor Roads and Local Distributor Roads. Relevant technical documents DEVB (GLTM) No. 2/2012 - Allocation of Space for Quality Greening on Roads, DEVB (GLTM) No. 3/2012 – Site Coverage of Greenery for Government Building Projects, and Guidelines on Design of Noise Barriers by HyD and EPD in 2003 shall be reference.					(GLTM) No. 3/2012 – Site Coverage of Greenery for Government Building Projects
S10.12 – Table 10.12.1, OM9	LV17	Man-made Channel Improvements Artificial and man-made watercourse channels within the site will be affected by the works; whilst these are considered to have a low current value there is an opportunity to better integrate these features in to the urban and landscape design. Proposals to integrate these features in to public areas can include creating more natural watercourse with soft banks and ornamental ponds would generate positive impacts.	Enhance channelised watercourse	DSD	Channelised watercourse	Detailed design, Construction and maintenance in operation phase	• DSD PN No.1/2005 – Guidelines on Environmental Considerations for River Channel Design
S10.12 – Table 10.12.1, OM10	LV18	Slope Landscaping Site formation has been reduced as far as possible to avoid substantial slope cutting. Hydroseeding of modified slopes should be done as soon as grading works are completed to prevent erosion and subsequent loss of landscape resources and character. Complementary woodland tree seedlings and/ or shrubs should be planted where the slope gradient and site conditions allow. In addition, landscape planting should be provided for the retaining structures associated	Compensate for impacts on existing slopes and reinstating to better quality	CEDD (via Contractor)	All slopes as feasible inside the development area	Construction and maintenance in operation phase	• GEO Publication No. 1/2011

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		with modified slopes, where conditions allow. All slope landscaping works should comply with GEO Publication No. 1/2011-Technical Guidelines on Landscape Treatment for Slopes.					

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
Waste Management (Construction Waste)							
S11.2.7	WM1	<u>Comments on C&DMMP given by PFC</u> • To ensure good quality rock is put to full use. Where necessary, the Project Proponent should consult the Mines Division, GEO for advice on the appropriate arrangement to put to full use the good quality rock. The Project Proponent should also maintain close liaison with the quarry operators for the necessary disposal arrangements; • To on-site reuse all surplus inert C&D hard material generated within the Project for balanced cut-and-fill designs. The Project Proponent is reminded that surplus fill might be generated by others in the subsequent building development works within the Project's area. The detailed site formation design should reserve sufficient capacity to absorb all such fill materials so that no disposal would be required outside the Project area; • To carry out on-site temporary storage in case of any programme mismatch between fill generation and demand, the Project Proponent should carry out on-site temporary storage. Where necessary, the Project Proponent shall ensure suitable environmental mitigation measures such as provision of covers ad water spraying system are duly implemented. The Project Proponent shall also carry out necessary measures to ensure the stability of the temporary stockpiles; • To adopt in-situ remedial measures for the contaminated soil in accordance with the EPD's Practice Guide for Investigation and Remediation of Contaminated Land. The remedial soil shall be completely reused within the	Enhance the management of C&D materials and to minimise their generation at source	Contractor	All construction sites	Detailed design and construction stage	• Section 4.1.3 of the Project Administrative Handbook for Civil Engineering Works (2014 Edition)

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		development site; • To set up effective control procedures to ensure the traceability of disposal and reuse of the C&D materials; and • To adopt re-usable non-timber formwork and precast concrete construction as far as practicable.					

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
S11.5.1	WM2	Good Site Practices The following good site practices are recommended throughout the construction activities: • nomination of an approved personnel, such as a site manager, to be responsible for the implementation of good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site; • training of site personnel in site cleanliness, appropriate waste management procedures and concepts of waste reduction, reuse and recycling; • provision of sufficient waste disposal points and regular collection for disposal; • appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; • regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; • a Waste Management Plan (WMP) should be prepared by the contractor and submitted to the Engineer for approval.	Minimise waste generation during construction	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance
S11.5.1	WM3	Waste Reduction Measures Waste reduction is best achieved at the planning and design phase, as well as by ensuring the implementation of good site practices. The following recommendations are proposed to achieve reduction: • segregate and store different types of waste in different containers, skip or stockpiles to enhance reuse or	Reduce waste generation	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		recycling of materials and their proper disposal; • proper storage and site practices to minimise the potential for damage and contamination of construction materials; • plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste; • sort out demolition debris and excavated materials from demolition works to recover reusable/recyclable portions (i.e. soil, broken concrete, metal etc.); and • provide training to workers on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling.					

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
S11.5.1	WM4	Storage, Collection and Transportation of Waste The following recommendation should be implemented to minimise the impacts: • waste such as soil should be handled and stored well to ensure secure containment; and • depends on actual site activities, certain locations within the site area would be used for storage of waste to enhance reuse. However, there would not be any designated location for storage of waste, and the storage locations would need to be adjusted to suite actual site conditions.	Good site practice to minimise the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	• Land (Miscellaneous Provisions) Ordinance • Waste Disposal Ordinance • ETWB TCW No. 19/2005
S11.5.1	WM5	Excavated Sediment The anticipated minor amount excavated sediment is proposed to be stabilised / solidified by mixing with cement so that the mixture is suitable to be reused on-site as backfill in construction of road base.	Handle excavated sediment	Contractor	All construction sites where applicable	Construction stage	• ETWB-TCW 34/2002
S11.5.1	WM6	Collection and Transportation of Waste The following recommendation should be implemented to minimise the impacts: • waste such as soil should be handled and stored well to ensure secure containment; • stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; and • different locations should be designated to stockpile each material to enhance reuse.	Minimise waste impacts from storage	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance
S11.5.1	WM7	Site Formation and C&D Materials Wherever practicable, C&D materials should be segregated from other wastes to avoid contamination and ensure	Minimise waste impacts from excavated and	Contractor	All construction	Construction Stage	• Land (Miscellaneous Provisions)

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		acceptability at public fill reception facilities or reclamation sites. The following mitigation measures should be implemented in handling the excavated and C&D materials: • maintain temporary stockpiles and reuse excavated fill material for backfilling; • carry out on-site sorting; • make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; and • implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified.	C&D materials		sites		Ordinance • Waste Disposal Ordinance • ETWB TCW No. 19/2005 • Project Administrative Handbook for Civil Engineering Works, 2012 Edition
S11.5.1	WM8	<u>Chemical Waste</u> If chemical wastes are produced at the construction site, the Contractors should register with EPD as chemical waste producer. Chemical wastes should be stored in appropriate containers and collected by a licensed chemical waste collector. Chemical wastes (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while the chemical waste that cannot be recycled should be disposed of at either the Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction stage	• Waste Disposal (Chemical Waste) General) Regulation • Code of Practice on the Packaging, Labelling and Storage of Chemical Waste
S11.5.1	WM9	<u>Asbestos Containing Materials</u> Some key precautionary measures related to the handling and disposal of asbestos are listed as below. • Adoption of protection, such as full containment, mini containment, or segregation of work area;	Precautionary measures to handle and disposal of asbestos	Contractor	All construction sites	Construction Stage	• Handling of Asbestos Containing Materials in Buildings (ProPECC PN

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		• Provision of decontamination facilities for cleaning of workings, equipment and bagged waste before leaving the work area; • Adoption of engineering control techniques to prevent fibre release from work area, such as use of negative pressure equipment with high efficiency particulate air (HEPA) filters to control air flow between the work area and the outside environment; • Wetting of asbestos containing materials before and during disturbance, minimizing the breakage and dropping of asbestos containing materials, and packing of debris and waste immediately after it is produced; • Cleaning of work area by wet wiping and vacuuming with HEPA filtered vacuum cleaner; • Coating on any surfaces previously in contact with or contained by asbestos with a sealant; • Proper bagging, safe storage and disposal of asbestos and asbestos contaminated waste; • Pre-treatment of all effluent from the work area before discharged; and • Air monitoring strategy to check the leakage and clearance of the work area during and after the asbestos work.					2/97)
S11.5.1	WM10	<u>General Refuse</u> • General refuse should be stored in enclosed bins separately from construction and chemical wastes. Recycling bins should also be placed to encourage recycling. • Preferably enclosed and covered areas should be	Minimise production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		provided for general refuse collection and routine cleaning for these areas should also be implemented to keep areas clean. • A reputable waste collector should be employed to remove general refuse on a daily basis.					
Waste Management (Operational Waste)							
S11.5.2	WM11	Municipal Solid Waste General refuse from residential and commercial buildings should be collected with lidded bins and delivered to a central collection point and stored in enclosed containers to prevent windblown, vermin, water pollution and visual impact. At least daily collection should be arranged by the waste collector.	Remove general refuse generated from the proposed development	FEHD/ Relevant Operators	All construction sites	Operational stage	• Waste Disposal Ordinance
S11.5.2	WM12	Chemical Waste • Localized chemical waste storage areas should be located close to the source of waste generation for temporary storage. Drum-type containers with proper labelling should be used to collect chemical wastes for storage at the designated areas. • A licensed collector should be employed for the chemical waste collection and the chemical wastes should be disposed at an appropriate facility, such as Chemical Waste Treatment Centre (CWTC) in Tsing Yi. • Collection receipts issued by the licensed collector showing the quantities and types of chemical waste taken off-site and details of the treatment facility should be kept for record.	Reduce chemical waste due to waste handling	Contractors/ Relevant Operators	All construction sites	Operational stage	

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
Land Contamination							
S12.6	LC1	Undertaking environmental Site Inspection (SI) for all potentially contaminated sites as listed in the Contamination Assessment Plan (CAP).	Verify the land contamination potential before the commencement of construction	Project Proponent / Detailed Design Consultant / Private developer	All potentially contaminated sites as listed in the CAP	Prior to the construction stage	• 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); • Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management; • Guidance Notes for Contaminated Land Assessment and Remediation; and • Practice Guide for Investigation and Remediation

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
							of Contaminated Land • Recommendations in Health Risk Assessment
S12.7	LC2	Re-appraisal would be required for the 'potentially contaminated landuses', 'industrial site with no potential for land contamination' and 'Non-Industrial landuses' within the land contamination assessment area as the development of these sites/ areas would only commence a number of years later, which may allow changes in the land usage of these sites and may give rise to potential land contamination issues. The Project Proponent's appointed consultant would prepare a supplementary CAP presenting the findings of the re-appraisal and strategy of the recommended SI, if required, and submit to EPD for review and approval.	To assess the latest site situation and identify any potential additional hot spots and contaminated sites.	Project Proponent / Detailed Design Consultant / Private developer	All the surveyed sites as listed in the CAP, other remaining areas of the PDAs and works areas for the associated infrastructures	Prior to the construction stage	Ditto
S12.7	LC3	After approval of the supplementary CAP and upon completion of the SI works, the Project Proponent should prepare and submit a supplementary Contamination Assessment Report (CAR) for all potentially contaminated sites listed in the CAP to EPD for agreement.	Present the findings of SI and evaluate the level and extent of potential contamination	Project Proponent / Detailed Design Consultant / Private developer	All the surveyed sites as listed in the CAP, other remaining areas of the PDAs and works areas for the associated infrastructures	Prior to the construction stage	Ditto
S.12.8	LC4	Preparation and submission of Remediation Action Plan	Recommend appropriate	Project Proponent /	All the surveyed	Prior to the	Ditto

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		(RAP) to EPD for agreement if land contamination is confirmed.	mitigation measures for the contaminated soil and groundwater identified in the assessment if remediation is required	Detailed Design Consultant / Private developer	sites as listed in the CAP, other remaining areas of the PDAs and works areas for the associated infrastructures	construction stage	
S.12.8	LC5	Preparation and submission of Remediation Report (RR) to EPD for agreement.	Demonstrate that the decontamination work is adequate and is carried out in accordance with the endorsed CAR and RAP	Project Proponent / Detailed Design Consultant / Private developer	All the surveyed sites as listed in the CAP, other remaining areas of the PDAs and works areas for the associated infrastructures	Prior to the construction stage	Ditto

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
Cultural Heritage Impact (Construction and Operational Phase)							
S.13.7	CH1	• Further archaeological surveys will be conducted upon land resumption prior to the commencement of any construction works within areas of moderate archaeological potential at three locations: area near Tin Shui Wai West Interchange, area near Tong Yan San Tsuen and area near Shan Ha Tsuen. • The scope and programme of the proposed archaeological work shall be agreed with AMO. Subject to the findings of the archaeological work, appropriate mitigation measures would be proposed by the project proponent in prior agreement with AMO. • For the areas with low-moderate archaeological potential, AMO should be informed immediately in case of discovery of antiquities or supposed antiquities in the course of the construction works. Agreement from AMO would be sought on the follow-up actions if required	To assess further archaeological potential and development impacts on private land for the purpose of protecting and managing cultural heritage. Control EM&A Performance.	Project Proponent	Area near Tin Shui Wai West Interchange, area near Tong Yan San Tsuen and area near Shan Ha Tsuen to be surveyed upon land resumption and prior to construction	Upon land resumption and prior to construction	AMO Ordinance (Cap 53) Guidance notes on assessment of impact on sites of CH in EIA studies. EIAO (Cap 499). EIAO-TM Annexes 10 and 19. HKPSG. Guidelines for Cultural Heritage Impact Assessment
S.13.7	CH2	• The Grade 3 historic building of Yeung Hau temple at Tong Yan San Tsuen should be preserved via a 5m non-construction buffer with screening to prevent visitor and worker access and minimise dust during the construction phase. A site audit should be conducted at 6 month intervals during the construction phase to monitor potential direct impacts as well as indirect impacts from noise, dust, visual and vibration effects from adjacent construction works. • Built heritage in forms of temples, ancestral halls and buildings throughout the area also offers the opportunity for incorporation of historic buildings into heritage trails or visitor areas.	Protect and manage cultural heritage. To assess further heritage impacts for the purpose of protecting built heritage and mitigating development impacts. Control EM&A Performance.	Project Proponent	Yeung Hau Temple (Tong Yan San Tsuen), Tang Ancestral Hall (Ha Tsuen) and 33 graves located within 100m assessment	A 5m non-construction buffer and a 6-month-interval site audit to Yeung Hau Temple will be applied during construction. A further study to design heritage trails or visitor areas	

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		• The planned sewer works to the north-west of the PDA near Ha Tsuen Shi are expected to impact a narrow disturbed footprint along Tin Ha Road south of the village. The impact of these works on the declared monument, i.e. Tang Ancestral Hall locates 90m away, are expected to be nil. Thus no mitigation measures are needed. • A total of 33 graves, which none of these graves yielded dates older than 100 years (no earlier than 1930), were recorded within the 100m assessment area. The potential management measures on these graves are either retain or relocate within the development.			area.	incorporating heritage buildings in the area is recommended to be conducted during detailed design stage. Once the idea of heritage trails is pursued, the implementation and management agencies shall also be identified before operation. Some of the 33 graves within 100m buffer could potentially be negotiated to relocate before the construction stage.	

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
EM&A Project							
S14.2	EM1	An Independent Environmental Checker needs to be employed as per the EM&A Manual.	Control EM&A Performance	Project Proponent	All construction sites	Construction stage	• EIA Ordinance Guidance Note No.4/2010 • EIAO-TM
S14.2 – 14.4	EM2	1) An Environmental Team needs to be employed as per the EM&A Manual. 2) Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures. 3) An environmental impact monitoring needs to be implementing by the Environmental Team to ensure all the requirements given in the EM&A Manual are fully complied with.	Perform environmental monitoring & auditing	Project Proponent	All construction sites	Construction stage	• EIA Ordinance Guidance Note No.4/2010 • EIAO-TM

Environmental Mitigation Implementation Schedule – Planning and Engineering Study for Housing Sites in Yuen Long South - Investigation

Note: Chapters 1 to 3 of the EIA report present the background information of the Project, identified concurrent projects, objectives and scope for various environmental aspects, and description on alternative options and construction description. Chapters 4 to 13 of the EIA report present the EIA findings and mitigation measures are described below with cross-reference to the EIA report. Chapters 14 to 16 describe the environmental monitoring requirements, summary of environmental outcomes and conclusion.

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
Common Mitigation Measures (Applicable to DP 1)							
Construction Dust Impact							
S4.4.6	D1	Water spraying every hour on exposed worksites and haul road.	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and EIAO-TM criteria
S4.4.6	D2	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and EIAO-TM criteria
S4.4.6	D3	The following dust suppression measures should be incorporated to control the dust nuisance throughout the construction phase: • Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads;	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and EIAO-TM criteria

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		• A stockpile of dusty material should not be extended beyond the pedestrian barriers, fencing or traffic cones; • The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores; • When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period; • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens,					

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		sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport should be totally enclosed by impervious sheeting; • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides; • Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed; • Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and • Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shortcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies.					
S4.4.6	D4	Implement regular dust monitoring under EM&A programme during the construction stage.	Monitoring of dust impact	Contractor	Selected dust monitoring stations	Construction stage	• EIAO-TM

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	• Requirements and / or standards to be achieved
• ***Construction Noise***							
S5.5.3	N1	Implement construction noise mitigation measures, including, but not limited to, good site management practices, use of quiet plant, installation of movable temporary noise barrier and setup up of liaison group to ensure construction noise impacts at the NSRs comply with the construction noise criteria. 1. Good site management practices • only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; • machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; • plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; • silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; • mobile plant should be sited as far away from NSRs as possible and practicable; and • material stockpiles, site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.	Control construction noise impacts	Contractor	All construction	Construction stage	• EIAO-TM

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	• Requirements and / or standards to be achieved
		2. Use of quiet plant • Use of quiet plant listed in the Quality Powered Mechanical Equipment (QPME) / other commonly used PME listed in Environmental Protection Department (EPD) web pages. 3. Installation of movable temporary noise barrier • Install movable temporary noise barriers (typical design is wooden framed barrier with a small-cantilevered upper portion of superficial density no less than 7kg/m^2 on a skid footing with 25mm thick internal sound absorptive lining), and full enclosure, screen the noisy plants including air compressors, generators etc. 4. Setup of liaison group • Setup a liaison group among CEDD, relevant government departments, contractors of the work contracts, etc. during construction phase to ensure proper implementation of the proposed noise mitigation measures					•
S5.5.3	N2	Carry out construction noise monitoring in accordance with the EM&A Manual.	Monitor the construction noise impacts	Contractor	Selected noise monitoring stations	Construction stage	• EIAO-TM
Operational Noise (Road Traffic Noise)							
S5.6.3	N3	The following noise mitigation measures are proposed to alleviate adverse traffic noise impact on the affected NSRs: • Absorptive vertical barriers along some sections of the Project roads; and • LNRS on some road sections.	Control the road traffic noise impacts	CEDD / Private developers	Refer to Figure 6.3, Figure 6.3a-c.	Prior to operation of the Project for existing NSRs. While for mitigation measures to protect planned	• EIAO-TM

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	• Requirements and / or standards to be achieved
		Provision of LNRS are as follows: Stage 3 and 4 • Approx. 140m long LNRS along slip road near TSWW Interchange (LNRS01) Provision of barriers for existing NSRs are as follows: Stage 3 and 4 • Approx. 145m long 5m high absorptive vertical barrier along TSWW Interchange (VB_E01) • Approx. 75m long 4m high absorptive vertical barrier along TSWW Interchange (VB_E02) • Approx. 80m long 3m high absorptive vertical barrier along TSWW Interchange (VB_E52)				NSRs, it should be constructed before population intake of planned NSRs.	
S5.6.3	N4	Carry out operational traffic noise monitoring in accordance with the EM&A Manual.	Monitor the road traffic noise impacts	CEDD	Selected noise monitoring stations	Within the first year upon the completion of proposed road works or occupation year of the proposed developments	• EIAO-TM

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
Water Quality (Construction Phase)							
S6.8.1.2	W1	<u>*General Construction Activities*</u> In accordance with the Practice Note for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN1/94), best management practices should be implemented on site as far as practicable. The best practices are detailed below: • At the start of site establishment, perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities; • Diversion of natural stormwater should be provided as far as possible. The design of temporary on-site drainage should prevent runoff going through site surface, construction machinery and equipment in order to avoid or minimise polluted runoff. Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m^3 capacities, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity shall be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped; • The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a silt/sediment trap. The silt/sediment traps should be incorporated in the permanent drainage channels to	To minimise water quality impact from construction site runoff and general construction activities	Contractor	All construction sites where applicable	Construction stage	• Water Pollution Control Ordinance • ProPECC PN1/94 • EIAO-TM • TM-DSS

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		enhance deposition rates; • The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94. The detailed design of the sand/silt traps should be undertaken by the contractor prior to the commencement of construction; • Construction works should be programmed to minimise surface excavation works during the rainy seasons (April to September). All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means; • All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas; • If the excavation of trenches in wet periods is necessary, it should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities; • All open stockpiles of construction materials (for example, aggregates, sand and fill material) should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system; • Manholes (including newly constructed ones) should					

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers; • Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarized in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events; • All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities should be provided at every construction site exit where practicable. Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains; • Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain; • Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts; • All fuel tanks and storage areas should be provided with					

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		locks and sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby;and • Regular environmental audit on the construction site should be carried out in order to prevent any malpractices. Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the water bodies, mangroves and open sea.					
S6.8.1.4	W2	*Prevention of Accidental Spillage of Chemicals* • The chemicals used during construction, such as fuel, oil, solvents and lubricants shall be properly stored and contained in designated area with secondary containment to prevent spillage and contamination of the nearby water environment. • Any maintenance activities and workshops with chemicals use shall be located away from watercourses on hard standings within a bunded area. Sumps and oil interceptors should be provided as appropriate. • The Contractor shall register as a chemical waste producer and employ licensed collector for collection of chemical waste from the construction site. Any chemical waste generated shall be managed in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	To prevent water quality impact due to chemical spillage	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • Waste Disposal (Chemical Waste) (General) Regulation
S6.8.1.7	W3	*Sewage from workforce* • Portable chemical toilets and sewage holding tanks are recommended for handling the construction sewage generated by the workforce. A licensed contractor should be employed to provide appropriate and adequate portable	To minimise water quality impact from sewage effluent in construction phase	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • TM-DSS

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		toilets and be responsible for appropriate disposal and maintenance; • Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment during the construction phase of the Project; • Regular environmental audit on the construction site should be conducted in order to provide an effective control of any malpractices and achieve continual improvement of environmental performance on site.					
S6.8.1.9	W4	*Contaminated Groundwater and Site Runoff* To prevent the water quality due to the contaminated water from the area with contamination, the following mitigation measures should be adopted. • Cover the contaminated soil and surface to prevent the generation of contaminated water. • No open stockpiling of contaminated soil should be allowed to prevent generation of contaminated water due to precipitation. • Contaminated water, either from groundwater or runoff, should be treated by wastewater treatment facility (WTF) to an acceptable level as indicated in TM-DSS before disposal if the deployment of such WTF is feasible. • Recharging the contaminated groundwater back to the aquifer should be sought if treatment of the contaminated groundwater by WTF is not feasible, subject to the agreement with EPD.	To minimise water quality impact from contaminated groundwater in construction phase	Contractor	All construction sites where practicable	Construction stage	• TM-DSS
S6.8.1.10	W5	*Construction Works of near/ within Watercourses* • Cofferdams and impermeable sheet piles should be	To avoid any direct water quality impact to	Contractor	All construction sites where	Construction stage	• ETWB TC (Works) No.

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		installed as appropriate to isolate the flow of the nullah from the construction works area. The detailed design of the cofferdams will be conducted by the Contractor during the construction phase to fulfil the requirements in DSD Technical Circular No. 1/2017 "Temporary Flow Diversions and Temporary Works Affecting Capacity in Stormwater Drainage System" for DSD approval, in order to formulate feasible options of these temporary structure. • Stockpiling of construction materials and dusty materials should be located from any watercourses, contained in bunded areas and covered with tarpaulin. • Construction debris and spoil should be covered with tarpaulin during storage. Timely removal of materials away from the site for disposal should be arranged to avoid being washed into the nearby watercourses. • Water pumps should be used to collect any wastewater and construction site surface runoff within the cofferdam/ temporary works platform. The collected wastewater shall be properly treated before discharge. • Toe-board and bunds shall be provided along the edge of the works area/ temporary platform to prevent wastewater/ debris from falling into the watercourses. • Any temporary works site inside the watercourses should be temporarily isolated, such as by placing of sandbags or silt curtains with lead edge at bottom and properly supported props to prevent adverse impact on the water quality. • Proper shoring may need to be erected in order to prevent soil / mud from slipping into the inland water bodies. • Construction effluent, site run-off and sewage should be properly collected and/or treated.	existing watercourses		practicable		5/2005

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S6.8.1.11	W6	<u>*Removal/ Diversion of watercourses*</u> • Cofferdams and impermeable sheet piles should be installed as appropriate to isolate the water flow from the construction works area. • Dewatering or flow diversion shall be conducted prior to the construction works to prevent water overflow to the surrounding area. • Watercourse removal and flow diversion should be conducted in dry season as far as practicable when the water flow is low. • Water drained from the watercourse shall be diverted to new/ temporary drainage for watercourse diversion. For watercourse removal, the water drained shall be collected and treated to meet the requirements of WPCO and TM-DSS before discharge. • Any excavated land-based sediment from the removal/ diversion of watercourse shall be properly stored at bunded areas away from any watercourse and covered with tarpaulin before transporting out of the site.	To avoid water quality impact on existing watercourses to be retained	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • TM-DSS • ETWB TC (Works) No. 5/2005 • ProPECC PN1/94
Water Quality (Operational Phase)							
S6.8.2.3	W9	<u>*Change in Drainage System and Road Runoff*</u> • Proper drainage systems with silt traps and oil interceptors should be installed. • Runoff will be intercepted by properly designed and managed silt traps at appropriate spacing so that common roadside debris, refuse and fallen leaves etc. can be captured before allowing the runoff to drain into watercourses such as Yuen Long Creek. • At the outlets to watercourses, the delegated operation	To reduce impact on drainage system due to road/ surface runoff	DSD	Proposed drainage system and future site operators	Operational Stage	-

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		parties should manage the road/open area cleaning prior to the occurrence of a storm to remove pollutants. The collected pollutants would be tankered away for off-site disposal at landfill sites.					
S6.8.2.7	W11	*Wastewater from Storage and Workshop Area* • Discharge license under WPCO should be applied by the tenants in other specific uses (Storage and Workshop, and Open Storage) subject to their future operation needs. Compliance with WPCO for discharge of wastewater shall be ensured.	To ensure wastewater discharge from storage and workshop areas comply with WPCO	Future operator	Proposed storage and workshop areas	Operational Stage	• WPCO

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Ecology (Design Phase)							
S8.6.6	EC6	To avoid the use of highly reflective materials in the design, and implementing the use of opaque materials, fritting, breaking up external reflections with stickers or plastic wrap and/or any other bird-friendly design for noise barriers	To minimise risk of bird strike with noise barriers	PlanD/ Detailed Design Consultant	Locations to be installed with noise barriers	Design phase	• EIAO-TM
Ecology (Construction Phase)							
S8.6.6	EC7	Precautionary surveys to check for presence of any aquatic fauna species of conservation importance in the watercourses to be directly impacted before commencement of works; affected aquatic fauna of conservation importance shall be captured and translocated to suitable receptor site(s)	To minimise direct impacts on aquatic species of conservation importance	CEDD/ Contractor	All affected watercourses	Before commencement of construction works	• EIAO-TM
S8.6.5	EC8	To conduct a baseline plant survey within all proposed works areas to ascertain the presence and update the quantities and conditions of any flora species of conservation importance; to transplant all affected plant species of conservation importance to suitable receptor site(s) before commencement of construction works	To minimise direct impacts on plant species of conservation importance	CEDD/ Contractor	All potential works areas	Before commencement of construction works	• EIAO-TM
S8.6.6	EC11	Checking and clearance for nesting birds (buildings and vegetation) shall be conducted/ supervised by a qualitied ecologist with relevant experience	To minimise direct impacts on nesting birds	CEDD/ Contractor	All works areas	Before commencement of construction work	• EIAO-TM
S8.6.6	EC12	Checking and clearance of bat roosts shall be conducted/ supervised by a qualitied ecologist with relevant experienced	To minimise direct impacts on bat roost(s)	CEDD/ Contractor	All works areas	Before commencement of construction work	• EIAO-TM
S8.6.6	EC13	Good site practices to control construction phase water	To minimise induced water quality impacts on	CEDD/	All works	Construction	• EIAO-TM

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		quality impacts	nearby water bodies	Contractor	areas	Phase	

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Fisheries							
S9.5.2	F1	To adopt the mitigation measures for the control of water quality impacts	To protect fisheries resources from potential direct impacts arising from deterioration of water quality	CEDD/ Contractor	All works areas	Construction phase	• EIAO-TM

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Landscape and Visual (Construction Phase)							
S10.12 – Table 10.12.1, CM1	LV1	<u>Optimisation of Construction Areas and Providing Temporary Landscape on Temporary Construction</u> Construction areas' control shall be enforced, where possible, to ensure that the landscape and visual impacts arising from the construction activities are minimised. It includes reduction of the extent of working areas and temporary works areas, management on storing and using the construction equipment and materials, and consideration of detailed schedules to shorten the construction period. Temporary landscape treatments are considered to be adopted such as applying hydro-seeding on temporary stockpiles and reclamation areas to alleviate the potential impacts.	Minimise impacts from construction activities on adjacent landscape and visual sensitive receivers	CEDD (via Contractor)	All construction areas and temporary works areas	Detailed design, prior to construction, construction stage	
S10.12 – Table 10.12.1, CM2	LV2	<u>Minimise Topographical Changes</u> To minimise landscape and visual impacts, the vertical and horizontal alignment of the at-grade road construction works should be optimised to reduce topographical/ landform changes, as well as reduce land take and interference with natural terrain and reduce overall earth movements. Where there is a need to significantly cut into the existing landform, retaining walls should be considered as well as cut slopes, to minimise landform changes and land resumption, whilst also considering visual amenity. Earthworks and engineered slopes should be designed to provide a structurally stable and visually interesting landform, which is compatible with surrounding landscape and mimics the natural contouring and terrain (e.g. introduction and continuation of natural features such as spurs and ridges where appropriate) to support landscape	Minimise landscape and visual impacts from topographical/ landform changes	CEDD (via Contractor)	All construction areas	Detailed design, construction stage	

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		and visual assimilation with the surrounding terrain.					
S10.12 – Table 10.12.1, CM3	LV3	<u>Tree Protection & Preservation</u> Existing trees to be retained within the Project Site should be carefully protected during construction. Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works areas. A detailed tree survey will be carried out for the Tree Removal Application (TRA) process which will be carried out at the later detailed design stage of the Project. The detailed tree survey will propose which trees should be retained, transplanted or felled and will include details of tree protection measures for those trees to be retained.	Protect and Preserve Trees	CEDD (via Contractor)	On site	Detailed design, construction stage	• DEVB TCW No.7/2015; • ETWB TCW No.29/2004
S10.12 – Table 10.12.1, CM4	LV4	<u>Transplanting of Existing Trees</u> Trees unavoidably affected by the Project works should be transplanted where practical. Trees should be transplanted straight to their final receptor site and not held in a temporary nursery as far as possible. A detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with DEVB TCW No.6/2015 and DEVB TCW 7/2015 and final locations of transplanted trees should be agreed prior to commencement of the work. For trees associated with highways e.g. roadside planting along highways, that are unavoidably affected and should be transplanted, following HyD Guidelines HQ/GN/13 'Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit'.	Transplant Trees where suitable for transplantation	CEDD (via Contractor)	On site where possible	Prior to construction, construction stage	• DEVB TCW No.6/2015; • DEVB TCW 7/2015; • HyD Guidelines HQ/GN/13

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S10.12 – Table 10.12.1, CM5	LV5	Screen Hoarding Screen hoarding shall be erected along areas of the construction boundary where the works site borders with publicly accessible routes and/or is close to visually sensitive receivers (VSRs), to screen undesirable views of the works site. It is proposed that the screening be compatible with the surrounding environment in terms of material choice and colour.	Screen undesirable views of the construction sites	CEDD (via Contractor)	All construction areas and temporary works areas	Construction stage	
S10.12 – Table 10.12.1, CM7	LV7	Construction Light Control All security floodlights for construction sites should be carefully controlled to minimise light pollution and night-time glare to nearby users.	Minimise impact of night-time lighting and glare	CEDD (via Contractor)	All construction areas and temporary works areas	Construction stage	
Landscape and Visual (Operational Phase)							
S10.12 – Table 10.12.1, OM3	LV11	Operation Light Control Night time lighting should be controlled during operation to minimise glare and light spill from the potential development/ infrastructure. Street and night time lighting shall also be controlled to minimise glare impact to adjacent VSRs during the operation phase.	Avoid glare and light pollution	ArchSD/ Housing Department/ Private Sector	Throughout the development area	Detailed design, construction stage	
S10.12 – Table 10.12.1, OM4	LV12	Screen Planting Tall screen/buffer trees and shrubs should be planted to assist in screening proposed road corridors and associated above ground structures such as elevated road sections and engineered embankments. This measure may additionally form part of the compensatory planting and will improve compatibility with the surrounding environment and create a pleasant pedestrian environment.	Provide adequate screening with trees to improve visual amenity	CEDD (via Contractor)	Along roadside, around suitable structures	Detailed design, construction stage and maintenance in operation phase	

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S10.12 – Table 10.12.1, OM5	LV13	<u>Road Side Planting</u> For LRs that would require road upgrading or realignment should be provided to soften the hard, straight edges, such as (LR7), (LR8) and the new roads within PDA. Shade tolerant plants should be planted, where light is insufficient, to improve aesthetic value of areas under viaducts. The guideline of DEVB TC(W) No.2/2012 – Allocation of Space for Quality Greening on Roads should be followed.	Compensate for impacts on existing landscape, reinstating to equal or better quality	CEDD (via Contractor)	Along roadside amenity	Detailed design, construction stage and maintenance in operation phase	• DEVB TC(W) No.2/2012;
S10.12 – Table 10.12.1, OM7	LV15	<u>Maximise Greening on Engineering Structures and Surfaces</u> Where space and appropriate planting conditions allow (i.e. where suitable depth of planting medium is possible, maintenance access available and enough light penetration to ground level), climbing plants should be considered to grow up vertical surfaces such as greening facade of building blocks, viaduct piers or noise barriers. The planting once established will assist in breaking up the appearance of uniform engineered structures and surfaces. Tree planting and care that integrate with wider streetscape elements such as hardscape paving, outdoor furniture as well as lighting poles should be considered to create a pedestrian-friendly network. Streetscape design, including integrity with the building space at ground floor, keeping a suitable distance between trees and buildings should follow the Greening, Landscape and Tree Management Section (GLTM) of the Development Bureau's Guidelines on Greening of Noise Barriers (April 2012).	To soften the hard, straight edges and provide greening along viaducts and structures	Initiating Government Department (relevant user department)/ Private Sector	All structures as feasible, final location to be confirmed at detailed design stage	Detailed design, construction stage and maintenance in operation phase	• GLTM of the Development Bureau's Guidelines on Greening of Noise Barriers (April 2012) • DEVB (GLTM) No. 3/2012 – Site Coverage of Greenery for Government Building Projects
S10.12 – Table 10.12.1,	LV16	<u>Noise Barrier Design</u> The visual impact of noise mitigation measures will be mitigated by appropriate detailed design to reduce visual	Minimise potential adverse visual impacts	CEDD (via Contractor)	Noise barriers	Detailed design, construction stage	• GLTM of the Development Bureau's

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OM8		bulkiness and incorporate aesthetically pleasing surface treatments to promote visual amenity, including suitable combination of transparent and sound absorbent materials, appropriate colour selection of panels and supporting structures, or provision of at-grade planting of trees, shrubs and/or climbers camouflage to the barriers, as well as design of supporting structures to incorporate a high level of quality and aesthetics. A combination of transparent panels at top and solid panels at bottom would lighten the visual impact, and at the same time maintain the attractiveness by using colourful panels. The noise barriers would be implemented for District Distributor Roads and Local Distributor Roads. Relevant technical documents DEVB (GLTM) No. 2/2012 - Allocation of Space for Quality Greening on Roads, DEVB (GLTM) No. 3/2012 – Site Coverage of Greenery for Government Building Projects, and Guidelines on Design of Noise Barriers by HyD and EPD in 2003 shall be reference.					Guidelines on Greening of Noise Barriers (April 2012) DEVB (GLTM) No. 3/2012 – Site Coverage of Greenery for Government Building Projects

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
Waste Management (Construction Waste)							
S11.2.7	WM1	<u>Comments on C&DMMP given by PFC</u> • To ensure good quality rock is put to full use. Where necessary, the Project Proponent should consult the Mines Division, GEO for advice on the appropriate arrangement to put to full use the good quality rock. The Project Proponent should also maintain close liaison with the quarry operators for the necessary disposal arrangements; • To on-site reuse all surplus inert C&D hard material generated within the Project for balanced cut-and-fill designs. The Project Proponent is reminded that surplus fill might be generated by others in the subsequent building development works within the Project's area. The detailed site formation design should reserve sufficient capacity to absorb all such fill materials so that no disposal would be required outside the Project area; • To carry out on-site temporary storage in case of any programme mismatch between fill generation and demand, the Project Proponent should carry out on-site temporary storage. Where necessary, the Project Proponent shall ensure suitable environmental mitigation measures such as provision of covers ad water spraying system are duly implemented. The Project Proponent shall also carry out necessary measures to ensure the stability of the temporary stockpiles; • To adopt in-situ remedial measures for the contaminated soil in accordance with the EPD's Practice Guide for Investigation and Remediation of Contaminated Land. The remedial soil shall be completely reused within the development site; • To set up effective control procedures to ensure the	Enhance the management of C&D materials and to minimise their generation at source	Contractor	All construction sites	Detailed design and construction stage	• Section 4.1.3 of the Project Administrative Handbook for Civil Engineering Works (2014 Edition)

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		traceability of disposal and reuse of the C&D materials; and • To adopt re-usable non-timber formwork and precast concrete construction as far as practicable.					

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
S11.5.1	WM2	<u>Good Site Practices</u> The following good site practices are recommended throughout the construction activities: • nomination of an approved personnel, such as a site manager, to be responsible for the implementation of good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site; • training of site personnel in site cleanliness, appropriate waste management procedures and concepts of waste reduction, reuse and recycling; • provision of sufficient waste disposal points and regular collection for disposal; • appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; • regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; • a Waste Management Plan (WMP) should be prepared by the contractor and submitted to the Engineer for approval.	Minimise waste generation during construction	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance
S11.5.1	WM3	<u>Waste Reduction Measures</u> Waste reduction is best achieved at the planning and design phase, as well as by ensuring the implementation of good site practices. The following recommendations are proposed to achieve reduction: • segregate and store different types of waste in different containers, skip or stockpiles to enhance reuse or recycling of materials and their proper disposal; • proper storage and site practices to minimise the potential	Reduce waste generation	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		for damage and contamination of construction materials; • plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste; • sort out demolition debris and excavated materials from demolition works to recover reusable/recyclable portions (i.e. soil, broken concrete, metal etc.); and • provide training to workers on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling.					

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
S11.5.1	WM4	Storage, Collection and Transportation of Waste The following recommendation should be implemented to minimise the impacts: • waste such as soil should be handled and stored well to ensure secure containment; and • depends on actual site activities, certain locations within the site area would be used for storage of waste to enhance reuse. However, there would not be any designated location for storage of waste, and the storage locations would need to be adjusted to suite actual site conditions.	Good site practice to minimise the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	• Land (Miscellaneous Provisions) Ordinance • Waste Disposal Ordinance • ETWB TCW No. 19/2005
S11.5.1	WM5	Excavated Sediment The anticipated minor amount excavated sediment is proposed to be stabilised / solidified by mixing with cement so that the mixture is suitable to be reused on-site as backfill in construction of road base.	Handle excavated sediment	Contractor	All construction sites where applicable	Construction stage	• ETWB-TCW 34/2002
S11.5.1	WM6	Collection and Transportation of Waste The following recommendation should be implemented to minimise the impacts: • waste such as soil should be handled and stored well to ensure secure containment; • stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; and • different locations should be designated to stockpile each material to enhance reuse.	Minimise waste impacts from storage	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance
S11.5.1	WM7	Site Formation and C&D Materials Wherever practicable, C&D materials should be segregated from other wastes to avoid contamination and ensure acceptability at public fill reception facilities or reclamation sites. The following mitigation measures should be	Minimise waste impacts from excavated and C&D materials	Contractor	All construction sites	Construction Stage	• Land (Miscellaneous Provisions) Ordinance

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		implemented in handling the excavated and C&D materials: • maintain temporary stockpiles and reuse excavated fill material for backfilling; • carry out on-site sorting; • make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; and • implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified.					• Waste Disposal Ordinance • ETWB TCW No. 19/2005 • Project Administrative Handbook for Civil Engineering Works, 2012 Edition
S11.5.1	WM8	Chemical Waste If chemical wastes are produced at the construction site, the Contractors should register with EPD as chemical waste producer. Chemical wastes should be stored in appropriate containers and collected by a licensed chemical waste collector. Chemical wastes (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while the chemical waste that cannot be recycled should be disposed of at either the Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction stage	• Waste Disposal (Chemical Waste) General) Regulation • Code of Practice on the Packaging, Labelling and Storage of Chemical Waste
S11.5.1	WM9	Asbestos Containing Materials Some key precautionary measures related to the handling and disposal of asbestos are listed as below. • Adoption of protection, such as full containment, mini containment, or segregation of work area; • Provision of decontamination facilities for cleaning of workings, equipment and bagged waste before leaving the work area;	Precautionary measures to handle and disposal of asbestos	Contractor	All construction sites	Construction Stage	• Handling of Asbestos Containing Materials in Buildings (ProPECC PN 2/97)

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		• Adoption of engineering control techniques to prevent fibre release from work area, such as use of negative pressure equipment with high efficiency particulate air (HEPA) filters to control air flow between the work area and the outside environment; • Wetting of asbestos containing materials before and during disturbance, minimizing the breakage and dropping of asbestos containing materials, and packing of debris and waste immediately after it is produced; • Cleaning of work area by wet wiping and vacuuming with HEPA filtered vacuum cleaner; • Coating on any surfaces previously in contact with or contained by asbestos with a sealant; • Proper bagging, safe storage and disposal of asbestos and asbestos contaminated waste; • Pre-treatment of all effluent from the work area before discharged; and • Air monitoring strategy to check the leakage and clearance of the work area during and after the asbestos work.					
S11.5.1	WM10	<u>General Refuse</u> • General refuse should be stored in enclosed bins separately from construction and chemical wastes. Recycling bins should also be placed to encourage recycling. • Preferably enclosed and covered areas should be provided for general refuse collection and routine cleaning for these areas should also be implemented to keep areas clean. • A reputable waste collector should be employed to	Minimise production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		remove general refuse on a daily basis.					
Waste Management (Operational Waste)							
S11.5.2	WM11	Municipal Solid Waste General refuse from residential and commercial buildings should be collected with lidded bins and delivered to a central collection point and stored in enclosed containers to prevent windblown, vermin, water pollution and visual impact. At least daily collection should be arranged by the waste collector.	Remove general refuse generated from the proposed development	FEHD/ Relevant Operators	All construction sites	Operational stage	• Waste Disposal Ordinance
S11.5.2	WM12	Chemical Waste • Localized chemical waste storage areas should be located close to the source of waste generation for temporary storage. Drum-type containers with proper labelling should be used to collect chemical wastes for storage at the designated areas. • A licensed collector should be employed for the chemical waste collection and the chemical wastes should be disposed at an appropriate facility, such as Chemical Waste Treatment Centre (CWTC) in Tsing Yi. • Collection receipts issued by the licensed collector showing the quantities and types of chemical waste taken off-site and details of the treatment facility should be kept for record.	Reduce chemical waste due to waste handling	Contractors/ Relevant Operators	All construction sites	Operational stage	

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
Land Contamination							
S12.7	LC2	Re-appraisal would be required for the 'potentially contaminated landuses', 'industrial site with no potential for land contamination' and 'Non-Industrial landuses' within the land contamination assessment area as the development of these sites/ areas would only commence a number of years later, which may allow changes in the land usage of these sites and may give rise to potential land contamination issues. The Project Proponent's appointed consultant would prepare a supplementary CAP presenting the findings of the re-appraisal and strategy of the recommended SI, if required, and submit to EPD for review and approval.	To assess the latest site situation and identify any potential additional hot spots and contaminated sites.	Project Proponent / Detailed Design Consultant / Private developer	All the surveyed sites as listed in the CAP, other remaining areas of the PDAs and works areas for the associated infrastructures	Prior to the construction stage	Ditto
S12.7	LC3	After approval of the supplementary CAP and upon completion of the SI works, the Project Proponent should prepare and submit a supplementary Contamination Assessment Report (CAR) for all potentially contaminated sites listed in the CAP to EPD for agreement.	Present the findings of SI and evaluate the level and extent of potential contamination	Project Proponent / Detailed Design Consultant / Private developer	All the surveyed sites as listed in the CAP, other remaining areas of the PDAs and works areas for the associated infrastructures	Prior to the construction stage	Ditto
S.12.8	LC4	Preparation and submission of Remediation Action Plan (RAP) to EPD for agreement if land contamination is confirmed.	Recommend appropriate mitigation measures for the contaminated soil and groundwater identified in the assessment if	Project Proponent / Detailed Design Consultant / Private developer	All the surveyed sites as listed in the CAP, other remaining areas of the	Prior to the construction stage	Ditto

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
			remediation is required		PDAs and works areas for the associated infrastructures		
S.12.8	LC5	Preparation and submission of Remediation Report (RR) to EPD for agreement.	Demonstrate that the decontamination work is adequate and is carried out in accordance with the endorsed CAR and RAP	Project Proponent / Detailed Design Consultant / Private developer	All the surveyed sites as listed in the CAP, other remaining areas of the PDAs and works areas for the associated infrastructures	Prior to the construction stage	Ditto

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
EM&A Project							
S14.2	EM1	An Independent Environmental Checker needs to be employed as per the EM&A Manual.	Control EM&A Performance	Project Proponent	All construction sites	Construction stage	• EIA Ordinance Guidance Note No.4/2010 • EIAO-TM
S14.2 – 14.4	EM2	1) An Environmental Team needs to be employed as per the EM&A Manual. 2) Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures. 3) An environmental impact monitoring needs to be implementing by the Environmental Team to ensure all the requirements given in the EM&A Manual are fully complied with.	Perform environmental monitoring & auditing	Project Proponent	All construction sites	Construction stage	• EIA Ordinance Guidance Note No.4/2010 • EIAO-TM

Environmental Mitigation Implementation Schedule – Planning and Engineering Study for Housing Sites in Yuen Long South - Investigation

Note: Chapters 1 to 3 of the EIA report present the background information of the Project, identified concurrent projects, objectives and scope for various environmental aspects, and description on alternative options and construction description. Chapters 4 to 13 of the EIA report present the EIA findings and mitigation measures are described below with cross-reference to the EIA report. Chapters 14 to 16 describe the environmental monitoring requirements, summary of environmental outcomes and conclusion.

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
Common Mitigation Measures (Applicable to DP2)							
Construction Dust Impact							
S4.4.6	D1	Water spraying every hour on exposed worksites and haul road.	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and EIAO-TM criteria
S4.4.6	D2	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and EIAO-TM criteria
S4.4.6	D3	The following dust suppression measures should be incorporated to control the dust nuisance throughout the construction phase: • Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads;	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and EIAO-TM criteria

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		• A stockpile of dusty material should not be extended beyond the pedestrian barriers, fencing or traffic cones; • The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores; • When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period; • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens,					

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport should be totally enclosed by impervious sheeting; • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides; • Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed; • Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and • Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shortcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies.					
S4.4.6	D4	Implement regular dust monitoring under EM&A programme during the construction stage.	Monitoring of dust impact	Contractor	Selected dust monitoring stations	Construction stage	• EIAO-TM

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
Construction Noise							
S5.5.3	N1	Implement construction noise mitigation measures, including, but not limited to, good site management practices, use of quiet plant, installation of movable temporary noise barrier and setup up of liaison group to ensure construction noise impacts at the NSRs comply with the construction noise criteria. 1. Good site management practices • only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; • machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; • plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; • silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; • mobile plant should be sited as far away from NSRs as possible and practicable; and • material stockpiles, site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities. 2. Use of quiet plant • Use of quiet plant listed in the Quality Powered Mechanical Equipment (QPME) / other commonly used PME listed in Environmental Protection Department	Control construction noise impacts	Contractor	All construction sites	Construction stage	• EIAO-TM

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		(EPD) web pages. 3. Installation of movable temporary noise barrier • Install movable temporary noise barriers (typical design is wooden framed barrier with a small-cantilevered upper portion of superficial density no less than 7kg/m^2 on a skid footing with 25mm thick internal sound absorptive lining), and full enclosure, screen the noisy plants including air compressors, generators etc. 4. Setup of liaison group • Setup a liaison group among CEDD, relevant government departments, contractors of the work contracts, etc. during construction phase to ensure proper implementation of the proposed noise mitigation measures.					

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
S5.5.3	N2	Carry out construction noise monitoring in accordance with the EM&A Manual.	Monitor the construction noise impacts	Contractor	Selected noise monitoring stations	Construction stage	EIAO-TM
Operational Noise (Road Traffic Noise)							
S5.6.3	N3	The following noise mitigation measures are proposed to alleviate adverse traffic noise impact on the affected NSRs: • Absorptive vertical barriers and cantilevered noise barriers along some sections of the Project roads; • LNRS on some road sections; and • Semi-enclosures at primary distributor roads at TYST Interchange. Provision of LNRS are as follows: Stage 2 • Approx. 120m long LNRS along TYST Interchange (LNRS06) • Approx. 265m long LNRS along TYST Interchange (LNRS07) • Approx. 555m long LNRS along slip road near TYST Interchange (LNRS09) • Approx. 115m long LNRS along TYST Interchange (LNRS12) • Approx. 230m long LNRS along Long Tin Road (LNRS13) • Approx. 80m long LNRS along TYST Interchange (LNRS14) • Approx. 95m long LNRS along TYST Interchange (LNRS16) • Approx. 210m long LNRS along TYST Interchange	Control the road traffic noise impacts	CEDD / Private developers	Refer to Figure 6.3, Figure 6.3a-c.	Prior to operation of the Project for existing NSRs. While for mitigation measures to protect planned NSRs, it should be constructed before population intake of planned NSRs.	• EIAO-TM

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		(LNRS47) Provision of semi-enclosure and barriers for existing NSRs are as follows: Stage 2 • Approx. 310m long 6m high semi-enclosure along slip road near TYST Interchange (SE01) • Approx. 255m long 6m high semi-enclosure along slip road near TYST Interchange (SE03) • Approx. 65m long 5m high absorptive vertical barrier with 3m cantilevered arm at 45 degree along TYST Interchange (CB_E21) • Approx. 100m long 6m high absorptive vertical barrier along TYST Interchange (VB_E05) • Approx. 25m long 5m high absorptive vertical barrier along TYST Interchange (VB_E10) • Approx. 125m long 6m high absorptive vertical barrier along slip road near TYST Interchange (VB_E16) • Approx. 95m long 6m high absorptive vertical barrier along slip road near TYST Interchange (VB_E17) • Approx. 125m long 6m high absorptive vertical barrier along TYST Interchange (VB_E19)					
S5.6.3	N4	Carry out operational traffic noise monitoring in accordance with the EM&A Manual.	Monitor the road traffic noise impacts	CEDD	Selected noise monitoring stations	Within the first year upon the completion of proposed road works or occupation year of the proposed developments	• EIAO-TM

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
Water Quality (Construction Phase)							
S6.8.1.2	W1	<u>*General Construction Activities*</u> In accordance with the Practice Note for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN1/94), best management practices should be implemented on site as far as practicable. The best practices are detailed below: • At the start of site establishment, perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities; • Diversion of natural stormwater should be provided as far as possible. The design of temporary on-site drainage should prevent runoff going through site surface, construction machinery and equipment in order to avoid or minimise polluted runoff. Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m^3 capacities, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity shall be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped; • The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a silt/sediment trap. The silt/sediment traps should be incorporated in the permanent drainage channels to	To minimise water quality impact from construction site runoff and general construction activities	Contractor	All construction sites where applicable	Construction stage	• Water Pollution Control Ordinance • ProPECC PN1/94 • EIAO-TM • TM-DSS

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		enhance deposition rates; • The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94. The detailed design of the sand/silt traps should be undertaken by the contractor prior to the commencement of construction; • Construction works should be programmed to minimise surface excavation works during the rainy seasons (April to September). All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means; • All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas; • If the excavation of trenches in wet periods is necessary, it should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities; • All open stockpiles of construction materials (for example, aggregates, sand and fill material) should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system; • Manholes (including newly constructed ones) should					

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		always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers; • Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarized in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events; • All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities should be provided at every construction site exit where practicable. Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains; • Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain; • Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts; • All fuel tanks and storage areas should be provided with					

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		locks and sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby;and • Regular environmental audit on the construction site should be carried out in order to prevent any malpractices. Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the water bodies, mangroves and open sea.					
S6.8.1.4	W2	*Prevention of Accidental Spillage of Chemicals* • The chemicals used during construction, such as fuel, oil, solvents and lubricants shall be properly stored and contained in designated area with secondary containment to prevent spillage and contamination of the nearby water environment. • Any maintenance activities and workshops with chemicals use shall be located away from watercourses on hard standings within a bunded area. Sumps and oil interceptors should be provided as appropriate. • The Contractor shall register as a chemical waste producer and employ licensed collector for collection of chemical waste from the construction site. Any chemical waste generated shall be managed in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	To prevent water quality impact due to chemical spillage	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • Waste Disposal (Chemical Waste) (General) Regulation
S6.8.1.7	W3	*Sewage from workforce* • Portable chemical toilets and sewage holding tanks are recommended for handling the construction sewage generated by the workforce. A licensed contractor should be employed to provide appropriate and adequate portable	To minimise water quality impact from sewage effluent in construction phase	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • TM-DSS

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		toilets and be responsible for appropriate disposal and maintenance; • Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment during the construction phase of the Project; • Regular environmental audit on the construction site should be conducted in order to provide an effective control of any malpractices and achieve continual improvement of environmental performance on site.					
S6.8.1.9	W4	*Contaminated Groundwater and Site Runoff* To prevent the water quality due to the contaminated water from the area with contamination, the following mitigation measures should be adopted. • Cover the contaminated soil and surface to prevent the generation of contaminated water. • No open stockpiling of contaminated soil should be allowed to prevent generation of contaminated water due to precipitation. • Contaminated water, either from groundwater or runoff, should be treated by wastewater treatment facility (WTF) to an acceptable level as indicated in TM-DSS before disposal if the deployment of such WTF is feasible. • Recharging the contaminated groundwater back to the aquifer should be sought if treatment of the contaminated groundwater by WTF is not feasible, subject to the agreement with EPD.	To minimise water quality impact from contaminated groundwater in construction phase	Contractor	All construction sites where practicable	Construction stage	• TM-DSS
S6.8.1.10	W5	*Construction Works of near/ within Watercourses* • Cofferdams and impermeable sheet piles should be	To avoid any direct water quality impact to	Contractor	All construction sites where	Construction stage	• ETWB TC (Works) No.

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		installed as appropriate to isolate the flow of the nullah from the construction works area. The detailed design of the cofferdams will be conducted by the Contractor during the construction phase to fulfil the requirements in DSD Technical Circular No. 1/2017 "Temporary Flow Diversions and Temporary Works Affecting Capacity in Stormwater Drainage System" for DSD approval, in order to formulate feasible options of these temporary structure. • Stockpiling of construction materials and dusty materials should be located from any watercourses, contained in bunded areas and covered with tarpaulin. • Construction debris and spoil should be covered with tarpaulin during storage. Timely removal of materials away from the site for disposal should be arranged to avoid being washed into the nearby watercourses. • Water pumps should be used to collect any wastewater and construction site surface runoff within the cofferdam/ temporary works platform. The collected wastewater shall be properly treated before discharge. • Toe-board and bunds shall be provided along the edge of the works area/ temporary platform to prevent wastewater/ debris from falling into the watercourses. • Any temporary works site inside the watercourses should be temporarily isolated, such as by placing of sandbags or silt curtains with lead edge at bottom and properly supported props to prevent adverse impact on the water quality. • Proper shoring may need to be erected in order to prevent soil / mud from slipping into the inland water bodies. • Construction effluent, site run-off and sewage should be properly collected and/or treated.	existing watercourses		practicable		5/2005

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S6.8.1.11	W6	*Removal/ Diversion of watercourses* • Cofferdams and impermeable sheet piles should be installed as appropriate to isolate the water flow from the construction works area. • Dewatering or flow diversion shall be conducted prior to the construction works to prevent water overflow to the surrounding area. • Watercourse removal and flow diversion should be conducted in dry season as far as practicable when the water flow is low. • Water drained from the watercourse shall be diverted to new/ temporary drainage for watercourse diversion. For watercourse removal, the water drained shall be collected and treated to meet the requirements of WPCO and TM-DSS before discharge. • Any excavated land-based sediment from the removal/ diversion of watercourse shall be properly stored at bunded areas away from any watercourse and covered with tarpaulin before transporting out of the site.	To avoid water quality impact on existing watercourses to be retained	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • TM-DSS • ETWB TC (Works) No. 5/2005 • ProPECC PN1/94
Water Quality (Operational Phase)							
S6.8.2.3	W9	*Change in Drainage System and Road Runoff* • Proper drainage systems with silt traps and oil interceptors should be installed. • Runoff will be intercepted by properly designed and managed silt traps at appropriate spacing so that common roadside debris, refuse and fallen leaves etc. can be captured before allowing the runoff to drain into watercourses such as Yuen Long Creek. • At the outlets to watercourses, the delegated operation	To reduce impact on drainage system due to road/ surface runoff	DSD	Proposed drainage system and future site operators	Operational Stage	-

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		parties should manage the road/open area cleaning prior to the occurrence of a storm to remove pollutants. The collected pollutants would be tankered away for off-site disposal at landfill sites.					
S6.8.2.7	W11	*Wastewater from Storage and Workshop Area* • Discharge license under WPCO should be applied by the tenants in other specific uses (Storage and Workshop, and Open Storage) subject to their future operation needs. Compliance with WPCO for discharge of wastewater shall be ensured.	To ensure wastewater discharge from storage and workshop areas comply with WPCO	Future operator	Proposed storage and workshop areas	Operational Stage	• WPCO

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Ecology (Design Phase)							
S8.6.6	EC6	To avoid the use of highly reflective materials in the design, and implementing the use of opaque materials, fritting, breaking up external reflections with stickers or plastic wrap and/or any other bird-friendly design for noise barriers	To minimise risk of bird strike with noise barriers	PlanD/ Detailed Design Consultant	Locations to be installed with noise barriers	Design phase	• EIAO-TM
Ecology (Construction Phase)							
S8.6.6	EC7	Precautionary surveys to check for presence of any aquatic fauna species of conservation importance in the watercourses to be directly impacted before commencement of works; affected aquatic fauna of conservation importance shall be captured and translocated to suitable receptor site(s)	To minimise direct impacts on aquatic species of conservation importance	CEDD/ Contractor	All affected watercourses	Before commencement of construction works	• EIAO-TM
S8.6.5	EC8	To conduct a baseline plant survey within all proposed works areas to ascertain the presence and update the quantities and conditions of any flora species of conservation importance; to transplant all affected plant species of conservation importance to suitable receptor site(s) before commencement of construction works	To minimise direct impacts on plant species of conservation importance	CEDD/ Contractor	All potential works areas	Before commencement of construction works	• EIAO-TM
S8.6.6	EC11	Checking and clearance for nesting birds (buildings and vegetation) shall be conducted/ supervised by a qualitied ecologist with relevant experience	To minimise direct impacts on nesting birds	CEDD/ Contractor	All works areas	Before commencement of construction work	• EIAO-TM
S8.6.6	EC12	Checking and clearance of bat roosts shall be conducted/ supervised by a qualitied ecologist with relevant experienced	To minimise direct impacts on bat roost(s)	CEDD/ Contractor	All works areas	Before commencement of construction work	• EIAO-TM
S8.6.6	EC13	Good site practices to control construction phase water quality impacts	To minimise induced water quality impacts on	CEDD/ Contractor	All works areas	Construction Phase	• EIAO-TM

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			nearby water bodies				

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Fisheries							
S9.5.2	F1	To adopt the mitigation measures for the control of water quality impacts	To protect fisheries resources from potential direct impacts arising from deterioration of water quality	CEDD/ Contractor	All works areas	Construction phase	• EIAO-TM

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Landscape and Visual (Construction Phase)							
S10.12 – Table 10.12.1, CM1	LV1	<u>Optimisation of Construction Areas and Providing Temporary Landscape on Temporary Construction</u> Construction areas' control shall be enforced, where possible, to ensure that the landscape and visual impacts arising from the construction activities are minimised. It includes reduction of the extent of working areas and temporary works areas, management on storing and using the construction equipment and materials, and consideration of detailed schedules to shorten the construction period. Temporary landscape treatments are considered to be adopted such as applying hydro-seeding on temporary stockpiles and reclamation areas to alleviate the potential impacts.	Minimise impacts from construction activities on adjacent landscape and visual sensitive receivers	CEDD (via Contractor)	All construction areas and temporary works areas	Detailed design, prior to construction, construction stage	
S10.12 – Table 10.12.1, CM2	LV2	<u>Minimise Topographical Changes</u> To minimise landscape and visual impacts, the vertical and horizontal alignment of the at-grade road construction works should be optimised to reduce topographical/ landform changes, as well as reduce land take and interference with natural terrain and reduce overall earth movements. Where there is a need to significantly cut into the existing landform, retaining walls should be considered as well as cut slopes, to minimise landform changes and land resumption, whilst also considering visual amenity. Earthworks and engineered slopes should be designed to provide a structurally stable and visually interesting landform, which is compatible with surrounding landscape and mimics the natural contouring and terrain (e.g. introduction and continuation of natural features such as spurs and ridges where appropriate) to support landscape	Minimise landscape and visual impacts from topographical/ landform changes	CEDD (via Contractor)	All construction areas	Detailed design, construction stage	

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		and visual assimilation with the surrounding terrain.					
S10.12 – Table 10.12.1, CM3	LV3	<u>Tree Protection & Preservation</u> Existing trees to be retained within the Project Site should be carefully protected during construction. Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works areas. A detailed tree survey will be carried out for the Tree Removal Application (TRA) process which will be carried out at the later detailed design stage of the Project. The detailed tree survey will propose which trees should be retained, transplanted or felled and will include details of tree protection measures for those trees to be retained.	Protect and Preserve Trees	CEDD (via Contractor)	On site	Detailed design, construction stage	• DEVB TCW No.7/2015; • ETWB TCW No.29/2004
S10.12 – Table 10.12.1, CM4	LV4	<u>Transplanting of Existing Trees</u> Trees unavoidably affected by the Project works should be transplanted where practical. Trees should be transplanted straight to their final receptor site and not held in a temporary nursery as far as possible. A detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with DEVB TCW No.6/2015 and DEVB TCW 7/2015 and final locations of transplanted trees should be agreed prior to commencement of the work. For trees associated with highways e.g. roadside planting along highways, that are unavoidably affected and should be transplanted, following HyD Guidelines HQ/GN/13 'Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit'.	Transplant Trees where suitable for transplantation	CEDD (via Contractor)	On site where possible	Prior to construction, construction stage	• DEVB TCW No.6/2015; • DEVB TCW 7/2015; • HyD Guidelines HQ/GN/13

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S10.12 – Table 10.12.1, CM5	LV5	Screen Hoarding Screen hoarding shall be erected along areas of the construction boundary where the works site borders with publicly accessible routes and/or is close to visually sensitive receivers (VSRs), to screen undesirable views of the works site. It is proposed that the screening be compatible with the surrounding environment in terms of material choice and colour.	Screen undesirable views of the construction sites	CEDD (via Contractor)	All construction areas and temporary works areas	Construction stage	
S10.12 – Table 10.12.1, CM7	LV7	Construction Light Control All security floodlights for construction sites should be carefully controlled to minimise light pollution and night-time glare to nearby users.	Minimise impact of night-time lighting and glare	CEDD (via Contractor)	All construction areas and temporary works areas	Construction stage	
Landscape and Visual (Operational Phase)							
S10.12 – Table 10.12.1, OM3	LV11	Operation Light Control Night time lighting should be controlled during operation to minimise glare and light spill from the potential development/ infrastructure. Street and night time lighting shall also be controlled to minimise glare impact to adjacent VSRs during the operation phase.	Avoid glare and light pollution	ArchSD/ Housing Department/ Private Sector	Throughout the development area	Detailed design, construction stage	
S10.12 – Table 10.12.1, OM4	LV12	Screen Planting Tall screen/buffer trees and shrubs should be planted to assist in screening proposed road corridors and associated above ground structures such as elevated road sections and engineered embankments. This measure may additionally form part of the compensatory planting and will improve compatibility with the surrounding environment and create a pleasant pedestrian environment.	Provide adequate screening with trees to improve visual amenity	CEDD (via Contractor)	Along roadside, around suitable structures	Detailed design, construction stage and maintenance in operation phase	

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S10.12 – Table 10.12.1, OM5	LV13	Road Side Planting For LRs that would require road upgrading or realignment should be provided to soften the hard, straight edges, such as (LR7), (LR8) and the new roads within PDA. Shade tolerant plants should be planted, where light is insufficient, to improve aesthetic value of areas under viaducts. The guideline of DEVB TC(W) No.2/2012 – Allocation of Space for Quality Greening on Roads should be followed.	Compensate for impacts on existing landscape, reinstating to equal or better quality	CEDD (via Contractor)	Along roadside amenity	Detailed design, construction stage and maintenance in operation phase	• DEVB TC(W) No.2/2012;
S10.12 – Table 10.12.1, OM7	LV15	Maximise Greening on Engineering Structures and Surfaces Where space and appropriate planting conditions allow (i.e. where suitable depth of planting medium is possible, maintenance access available and enough light penetration to ground level), climbing plants should be considered to grow up vertical surfaces such as greening facade of building blocks, viaduct piers or noise barriers. The planting once established will assist in breaking up the appearance of uniform engineered structures and surfaces. Tree planting and care that integrate with wider streetscape elements such as hardscape paving, outdoor furniture as well as lighting poles should be considered to create a pedestrian-friendly network. Streetscape design, including integrity with the building space at ground floor, keeping a suitable distance between trees and buildings should follow the Greening, Landscape and Tree Management Section (GLTM) of the Development Bureau's Guidelines on Greening of Noise Barriers (April 2012).	To soften the hard, straight edges and provide greening along viaducts and structures	Initiating Government Department (relevant user department)/ Private Sector	All structures as feasible, final location to be confirmed at detailed design stage	Detailed design, construction stage and maintenance in operation phase	• GLTM of the Development Bureau's Guidelines on Greening of Noise Barriers (April 2012) • DEVB (GLTM) No. 3/2012 – Site Coverage of Greenery for Government Building Projects
S10.12 – Table 10.12.1,	LV16	Noise Barrier Design The visual impact of noise mitigation measures will be mitigated by appropriate detailed design to reduce visual	Minimise potential adverse visual impacts	CEDD (via Contractor)	Noise barriers	Detailed design, construction stage	• GLTM of the Development Bureau's

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OM8		bulkiness and incorporate aesthetically pleasing surface treatments to promote visual amenity, including suitable combination of transparent and sound absorbent materials, appropriate colour selection of panels and supporting structures, or provision of at-grade planting of trees, shrubs and/or climbers camouflage to the barriers, as well as design of supporting structures to incorporate a high level of quality and aesthetics. A combination of transparent panels at top and solid panels at bottom would lighten the visual impact, and at the same time maintain the attractiveness by using colourful panels. The noise barriers would be implemented for District Distributor Roads and Local Distributor Roads. Relevant technical documents DEVB (GLTM) No. 2/2012 - Allocation of Space for Quality Greening on Roads, DEVB (GLTM) No. 3/2012 – Site Coverage of Greenery for Government Building Projects, and Guidelines on Design of Noise Barriers by HyD and EPD in 2003 shall be reference.					Guidelines on Greening of Noise Barriers (April 2012) DEVB (GLTM) No. 3/2012 – Site Coverage of Greenery for Government Building Projects
S10.12 – Table 10.12.1, OM10	LV17	<u>Slope Landscaping</u> Site formation has been reduced as far as possible to avoid substantial slope cutting. Hydro seeding of modified slopes should be done as soon as grading works are completed to prevent erosion and subsequent loss of landscape resources and character. Complementary woodland tree seedlings and/ or shrubs should be planted where the slope gradient and site conditions allow. In addition, landscape planting should be provided for the retaining structures associated with modified slopes, where conditions allow. All slope landscaping works should comply with GEO Publication No. 1/2011-Technical Guidelines on Landscape Treatment for Slopes.	Compensate for impacts on existing slopes and reinstating to better quality	CEDD (via Contractor)	All slopes as feasible inside the development area	Construction and maintenance in operation phase	• GEO Publication No. 1/2011

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Waste Management (Construction Waste)							
S11.2.7	WM1	<u>Comments on C&DMMP given by PFC</u> • To ensure good quality rock is put to full use. Where necessary, the Project Proponent should consult the Mines Division, GEO for advice on the appropriate arrangement to put to full use the good quality rock. The Project Proponent should also maintain close liaison with the quarry operators for the necessary disposal arrangements; • To on-site reuse all surplus inert C&D hard material generated within the Project for balanced cut-and-fill designs. The Project Proponent is reminded that surplus fill might be generated by others in the subsequent building development works within the Project's area. The detailed site formation design should reserve sufficient capacity to absorb all such fill materials so that no disposal would be required outside the Project area; • To carry out on-site temporary storage in case of any programme mismatch between fill generation and demand, the Project Proponent should carry out on-site temporary storage. Where necessary, the Project Proponent shall ensure suitable environmental mitigation measures such as provision of covers ad water spraying system are duly implemented. The Project Proponent shall also carry out necessary measures to ensure the stability of the temporary stockpiles; • To adopt in-situ remedial measures for the contaminated soil in accordance with the EPD's Practice Guide for Investigation and Remediation of Contaminated Land. The remedial soil shall be completely reused within the development site; • To set up effective control procedures to ensure the	Enhance the management of C&D materials and to minimise their generation at source	Contractor	All construction sites	Detailed design and construction stage	• Section 4.1.3 of the Project Administrative Handbook for Civil Engineering Works (2014 Edition)

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		traceability of disposal and reuse of the C&D materials; and • To adopt re-usable non-timber formwork and precast concrete construction as far as practicable.					

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S11.5.1	WM2	<u>Good Site Practices</u> The following good site practices are recommended throughout the construction activities: • nomination of an approved personnel, such as a site manager, to be responsible for the implementation of good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site; • training of site personnel in site cleanliness, appropriate waste management procedures and concepts of waste reduction, reuse and recycling; • provision of sufficient waste disposal points and regular collection for disposal; • appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; • regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; • a Waste Management Plan (WMP) should be prepared by the contractor and submitted to the Engineer for approval.	Minimise waste generation during construction	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance
S11.5.1	WM3	<u>Waste Reduction Measures</u> Waste reduction is best achieved at the planning and design phase, as well as by ensuring the implementation of good site practices. The following recommendations are proposed to achieve reduction: • segregate and store different types of waste in different containers, skip or stockpiles to enhance reuse or recycling of materials and their proper disposal; • proper storage and site practices to minimise the potential for damage and contamination of construction materials;	Reduce waste generation	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance

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		• plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste; • sort out demolition debris and excavated materials from demolition works to recover reusable/recyclable portions (i.e. soil, broken concrete, metal etc.); and • provide training to workers on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling.					

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S11.5.1	WM4	<u>Storage, Collection and Transportation of Waste</u> The following recommendation should be implemented to minimise the impacts: • waste such as soil should be handled and stored well to ensure secure containment; and • depends on actual site activities, certain locations within the site area would be used for storage of waste to enhance reuse. However, there would not be any designated location for storage of waste, and the storage locations would need to be adjusted to suite actual site conditions.	Good site practice to minimise the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	• Land (Miscellaneous Provisions) Ordinance • Waste Disposal Ordinance • ETWB TCW No. 19/2005
S11.5.1	WM5	<u>Excavated Sediment</u> The anticipated minor amount excavated sediment is proposed to be stabilised / solidified by mixing with cement so that the mixture is suitable to be reused on-site as backfill in construction of road base.	Handle excavated sediment	Contractor	All construction sites where applicable	Construction stage	• ETWB-TCW 34/2002
S11.5.1	WM6	<u>Collection and Transportation of Waste</u> The following recommendation should be implemented to minimise the impacts: • waste such as soil should be handled and stored well to ensure secure containment; • stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; and • different locations should be designated to stockpile each material to enhance reuse.	Minimise waste impacts from storage	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance
S11.5.1	WM7	<u>Site Formation and C&D Materials</u> Wherever practicable, C&D materials should be segregated from other wastes to avoid contamination and ensure acceptability at public fill reception facilities or reclamation sites. The following mitigation measures should be	Minimise waste impacts from excavated and C&D materials	Contractor	All construction sites	Construction Stage	• Land (Miscellaneous Provisions) Ordinance

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		implemented in handling the excavated and C&D materials: • maintain temporary stockpiles and reuse excavated fill material for backfilling; • carry out on-site sorting; • make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; and • implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified.					• Waste Disposal Ordinance • ETWB TCW No. 19/2005 • Project Administrative Handbook for Civil Engineering Works, 2012 Edition
S11.5.1	WM8	Chemical Waste If chemical wastes are produced at the construction site, the Contractors should register with EPD as chemical waste producer. Chemical wastes should be stored in appropriate containers and collected by a licensed chemical waste collector. Chemical wastes (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while the chemical waste that cannot be recycled should be disposed of at either the Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction stage	• Waste Disposal (Chemical Waste) General) Regulation • Code of Practice on the Packaging, Labelling and Storage of Chemical Waste
S11.5.1	WM9	Asbestos Containing Materials Some key precautionary measures related to the handling and disposal of asbestos are listed as below. • Adoption of protection, such as full containment, mini containment, or segregation of work area; • Provision of decontamination facilities for cleaning of workings, equipment and bagged waste before leaving the work area;	Precautionary measures to handle and disposal of asbestos	Contractor	All construction sites	Construction Stage	• Handling of Asbestos Containing Materials in Buildings (ProPECC PN 2/97)

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		• Adoption of engineering control techniques to prevent fibre release from work area, such as use of negative pressure equipment with high efficiency particulate air (HEPA) filters to control air flow between the work area and the outside environment; • Wetting of asbestos containing materials before and during disturbance, minimizing the breakage and dropping of asbestos containing materials, and packing of debris and waste immediately after it is produced; • Cleaning of work area by wet wiping and vacuuming with HEPA filtered vacuum cleaner; • Coating on any surfaces previously in contact with or contained by asbestos with a sealant; • Proper bagging, safe storage and disposal of asbestos and asbestos contaminated waste; • Pre-treatment of all effluent from the work area before discharged; and • Air monitoring strategy to check the leakage and clearance of the work area during and after the asbestos work.					
S11.5.1	WM10	<u>General Refuse</u> • General refuse should be stored in enclosed bins separately from construction and chemical wastes. Recycling bins should also be placed to encourage recycling. • Preferably enclosed and covered areas should be provided for general refuse collection and routine cleaning for these areas should also be implemented to keep areas clean. • A reputable waste collector should be employed to	Minimise production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance

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		remove general refuse on a daily basis.					
Waste Management (Operational Waste)							
S11.5.2	WM11	Municipal Solid Waste General refuse from residential and commercial buildings should be collected with lidded bins and delivered to a central collection point and stored in enclosed containers to prevent windblown, vermin, water pollution and visual impact. At least daily collection should be arranged by the waste collector.	Remove general refuse generated from the proposed development	FEHD/ Relevant Operators	All construction sites	Operational stage	• Waste Disposal Ordinance
S11.5.2	WM12	Chemical Waste • Localized chemical waste storage areas should be located close to the source of waste generation for temporary storage. Drum-type containers with proper labelling should be used to collect chemical wastes for storage at the designated areas. • A licensed collector should be employed for the chemical waste collection and the chemical wastes should be disposed at an appropriate facility, such as Chemical Waste Treatment Centre (CWTC) in Tsing Yi. • Collection receipts issued by the licensed collector showing the quantities and types of chemical waste taken off-site and details of the treatment facility should be kept for record.	Reduce chemical waste due to waste handling	Contractors/ Relevant Operators	All construction sites	Operational stage	

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Land Contamination							
S12.6	LC1	Undertaking environmental Site Inspection (SI) for all potentially contaminated sites as listed in the Contamination Assessment Plan (CAP).	Verify the land contamination potential before the commencement of construction	Project Proponent / Detailed Design Consultant / Private developer	All potentially contaminated sites as listed in the CAP	Prior to the construction stage	• 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); • Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management; • Guidance Notes for Contaminated Land Assessment and Remediation; and • Practice Guide for Investigation and Remediation of Contaminated

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							Land • Recommendations in Health Risk Assessment
S12.7	LC2	Re-appraisal would be required for the 'potentially contaminated landuses', 'industrial site with no potential for land contamination' and 'Non-Industrial landuses' within the land contamination assessment area as the development of these sites/ areas would only commence a number of years later, which may allow changes in the land usage of these sites and may give rise to potential land contamination issues. The Project Proponent's appointed consultant would prepare a supplementary CAP presenting the findings of the re-appraisal and strategy of the recommended SI, if required, and submit to EPD for review and approval.	To assess the latest site situation and identify any potential additional hot spots and contaminated sites.	Project Proponent / Detailed Design Consultant / Private developer	All the surveyed sites as listed in the CAP, other remaining areas of the PDAs and works areas for the associated infrastructures	Prior to the construction stage	Ditto
S12.7	LC3	After approval of the supplementary CAP and upon completion of the SI works, the Project Proponent should prepare and submit a supplementary Contamination Assessment Report (CAR) for all potentially contaminated sites listed in the CAP to EPD for agreement.	Present the findings of SI and evaluate the level and extent of potential contamination	Project Proponent / Detailed Design Consultant / Private developer	All the surveyed sites as listed in the CAP, other remaining areas of the PDAs and works areas for the associated infrastructures	Prior to the construction stage	Ditto
S.12.8	LC4	Preparation and submission of Remediation Action Plan (RAP) to EPD for agreement if land contamination is confirmed.	Recommend appropriate mitigation measures for the contaminated soil and groundwater identified in the	Project Proponent / Detailed Design Consultant / Private developer	All the surveyed sites as listed in the CAP, other	Prior to the construction stage	Ditto

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
			assessment if remediation is required		remaining areas of the PDAs and works areas for the associated infrastructures		
S.12.8	LC5	Preparation and submission of Remediation Report (RR) to EPD for agreement.	Demonstrate that the decontamination work is adequate and is carried out in accordance with the endorsed CAR and RAP	Project Proponent / Detailed Design Consultant / Private developer	All the surveyed sites as listed in the CAP, other remaining areas of the PDAs and works areas for the associated infrastructures	Prior to the construction stage	Ditto

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
EM&A Project							
S14.2	EM1	An Independent Environmental Checker needs to be employed as per the EM&A Manual.	Control EM&A Performance	Project Proponent	All construction sites	Construction stage	• EIA Ordinance Guidance Note No.4/2010 • EIAO-TM
S14.2 – 14.4	EM2	1) An Environmental Team needs to be employed as per the EM&A Manual. 2) Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures. 3) An environmental impact monitoring needs to be implementing by the Environmental Team to ensure all the requirements given in the EM&A Manual are fully complied with.	Perform environmental monitoring & auditing	Project Proponent	All construction sites	Construction stage	• EIA Ordinance Guidance Note No.4/2010 • EIAO-TM

Environmental Mitigation Implementation Schedule – Planning and Engineering Study for Housing Sites in Yuen Long South - Investigation

Note: Chapters 1 to 3 of the EIA report present the background information of the Project, identified concurrent projects, objectives and scope for various environmental aspects, and description on alternative options and construction description. Chapters 4 to 13 of the EIA report present the EIA findings and mitigation measures are described below with cross-reference to the EIA report. Chapters 14 to 16 describe the environmental monitoring requirements, summary of environmental outcomes and conclusion.

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
Common Mitigation Measures (Applicable to DP3)							
Construction Dust Impact							
S4.4.6	D1	Water spraying every hour on exposed worksites and haul road.	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and EIAO-TM criteria
S4.4.6	D2	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and EIAO-TM criteria
S4.4.6	D3	The following dust suppression measures should be incorporated to control the dust nuisance throughout the construction phase: • Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads;	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and EIAO-TM criteria

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		• A stockpile of dusty material should not be extended beyond the pedestrian barriers, fencing or traffic cones; • The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores; • When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period; • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens,					

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport should be totally enclosed by impervious sheeting; • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides; • Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed; • Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and • Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shortcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies.					
S4.4.6	D4	Implement regular dust monitoring under EM&A programme during the construction stage.	Monitoring of dust impact	Contractor	Selected dust monitoring stations	Construction stage	• EIAO-TM

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
Construction Noise							
S5.5.3	N1	Implement construction noise mitigation measures, including, but not limited to, good site management practices, use of quiet plant, installation of movable temporary noise barrier and setup up of liaison group to ensure construction noise impacts at the NSRs comply with the construction noise criteria. 1. Good site management practices • only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; • machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; • plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; • silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; • mobile plant should be sited as far away from NSRs as possible and practicable; and • material stockpiles, site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities. 2. Use of quiet plant • Use of quiet plant listed in the Quality Powered Mechanical Equipment (QPME) / other commonly used PME listed in Environmental Protection Department		Contractor	All construction sites	Construction stage	• EIAO-TM

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		(EPD) web pages. 3. Installation of movable temporary noise barrier • Install movable temporary noise barriers (typical design is wooden framed barrier with a small-cantilevered upper portion of superficial density no less than 7kg/m^2 on a skid footing with 25mm thick internal sound absorptive lining), and full enclosure, screen the noisy plants including air compressors, generators etc. 4. Setup of liaison group • Setup a liaison group among CEDD, relevant government departments, contractors of the work contracts, etc. during construction phase to ensure proper implementation of the proposed noise mitigation measures.					

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
S5.5.3	N2	Carry out construction noise monitoring in accordance with the EM&A Manual.	Monitor the construction noise impacts	Contractor	Selected noise monitoring stations	Construction stage	EIAO-TM
Operational Noise (Road Traffic Noise)							
S5.6.3	N3	The following noise mitigation measures are proposed to alleviate adverse traffic noise impact on the affected NSRs: • Absorptive vertical barriers and cantilevered noise barriers along some sections of the Project roads; and • LNRS on some road sections. Provision of LNRS are as follows: Stage 1 • Approx. 50m long LNRS along proposed Road L14 (LNRS20) • Approx. 935m long LNRS along proposed Road D1 (LNRS21) • Approx. 930m long LNRS along proposed Road D1 (LNRS22) • Approx. 510m long LNRS along proposed Road D2 (LNRS23) • Approx. 510m long LNRS along proposed Road D2 (LNRS24) Stage 3 and 4 • Approx. 795m long LNRS along proposed Road D1 (LNRS25) • Approx. 790m long LNRS along proposed Road D1 (LNRS26) Provision of barriers for existing NSRs are as follows:	Control the road traffic noise impacts	CEDD / Private developers	Refer to Figure 6.3, Figure 6.3a-c.	Prior to operation of the Project for existing NSRs. While for mitigation measures to protect planned NSRs, it should be constructed before population intake of planned NSRs.	• EIAO-TM

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		Stage 2 • Approx. 110m long 3m high absorptive vertical barrier along proposed Road D1 (VB_E20) • Approx. 25m long 4m high absorptive vertical barrier along proposed Road D1 (VB_E54) • Approx. 20m long 5m high absorptive vertical barrier along proposed Road D1 (VB_E55) • Approx. 100m long 3m high absorptive vertical barrier along proposed Road D1 (VB_E09) • Approx. 25m long 4m high absorptive vertical barrier along proposed Road D1 (VB_E46) Provision of barriers for planned NSRs following ETWB TCW No. 13/2003A are as follows: Stage 3 and 4 • Approx. 220m long 5m high absorptive vertical barrier along proposed Road D1 (VB_P02) • Approx. 100m long 4m high absorptive vertical barrier along proposed Road D1 (VB_P05) • Approx. 45m long 3m high absorptive vertical barrier along proposed Road D2 (VB_P07) • Approx. 45m long 3m high absorptive vertical barrier along proposed Road D2 (VB_P08) • Approx. 75m long 5m high absorptive vertical barrier along proposed Road D1 (VB_P09) • Approx. 195m long 5m high absorptive vertical barrier along proposed Road D1 (VB_P10) • Approx. 80m long 3m high absorptive vertical barrier along proposed Road D1 (VB_P11) • Approx. 90m long 6m high absorptive vertical barrier along proposed Road D1 (VB_P29) • Approx. 95m long 5m high absorptive vertical barrier with 3m cantilevered arm at 45 degree along proposed Road D1 (CB_P06) • Approx. 55m long 5m high absorptive vertical barrier					

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		with 3m cantilevered arm at 45 degree along proposed Road D1 (CB_P07) • Approx. 90m long 5m high absorptive vertical barrier with 3m cantilevered arm at 45 degree along proposed Road D1 (CB_P08) • Approx. 50m long 5m high absorptive vertical barrier with 3m cantilevered arm at 45 degree along proposed Road D1 (CB_P09)					
S5.6.3	N4	Carry out operational traffic noise monitoring in accordance with the EM&A Manual.	Monitor the road traffic noise impacts	CEDD	Selected noise monitoring stations	Within the first year upon the completion of proposed road works or occupation year of the proposed developments	• EIAO-TM

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
Water Quality (Construction Phase)							
S6.8.1.2	W1	<u>*General Construction Activities*</u> In accordance with the Practice Note for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN1/94), best management practices should be implemented on site as far as practicable. The best practices are detailed below: • At the start of site establishment, perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities; • Diversion of natural stormwater should be provided as far as possible. The design of temporary on-site drainage should prevent runoff going through site surface, construction machinery and equipment in order to avoid or minimise polluted runoff. Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m^3 capacities, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity shall be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped; • The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a silt/sediment trap. The silt/sediment traps should be incorporated in the permanent drainage channels to	To minimise water quality impact from construction site runoff and general construction activities	Contractor	All construction sites where applicable	Construction stage	• Water Pollution Control Ordinance • ProPECC PN1/94 • EIAO-TM • TM-DSS

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		enhance deposition rates; • The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94. The detailed design of the sand/silt traps should be undertaken by the contractor prior to the commencement of construction; • Construction works should be programmed to minimise surface excavation works during the rainy seasons (April to September). All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means; • All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas; • If the excavation of trenches in wet periods is necessary, it should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities; • All open stockpiles of construction materials (for example, aggregates, sand and fill material) should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system; • Manholes (including newly constructed ones) should					

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers; • Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarized in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events; • All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities should be provided at every construction site exit where practicable. Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains; • Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain; • Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts; • All fuel tanks and storage areas should be provided with					

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		locks and sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby;and • Regular environmental audit on the construction site should be carried out in order to prevent any malpractices. Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the water bodies, mangroves and open sea.					
S6.8.1.4	W2	*Prevention of Accidental Spillage of Chemicals* • The chemicals used during construction, such as fuel, oil, solvents and lubricants shall be properly stored and contained in designated area with secondary containment to prevent spillage and contamination of the nearby water environment. • Any maintenance activities and workshops with chemicals use shall be located away from watercourses on hard standings within a bunded area. Sumps and oil interceptors should be provided as appropriate. • The Contractor shall register as a chemical waste producer and employ licensed collector for collection of chemical waste from the construction site. Any chemical waste generated shall be managed in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	To prevent water quality impact due to chemical spillage	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • Waste Disposal (Chemical Waste) (General) Regulation
S6.8.1.7	W3	*Sewage from workforce* • Portable chemical toilets and sewage holding tanks are recommended for handling the construction sewage generated by the workforce. A licensed contractor should be employed to provide appropriate and adequate portable	To minimise water quality impact from sewage effluent in construction phase	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • TM-DSS

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		toilets and be responsible for appropriate disposal and maintenance; • Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment during the construction phase of the Project; • Regular environmental audit on the construction site should be conducted in order to provide an effective control of any malpractices and achieve continual improvement of environmental performance on site.					
S6.8.1.9	W4	*Contaminated Groundwater and Site Runoff* To prevent the water quality due to the contaminated water from the area with contamination, the following mitigation measures should be adopted. • Cover the contaminated soil and surface to prevent the generation of contaminated water. • No open stockpiling of contaminated soil should be allowed to prevent generation of contaminated water due to precipitation. • Contaminated water, either from groundwater or runoff, should be treated by wastewater treatment facility (WTF) to an acceptable level as indicated in TM-DSS before disposal if the deployment of such WTF is feasible. • Recharging the contaminated groundwater back to the aquifer should be sought if treatment of the contaminated groundwater by WTF is not feasible, subject to the agreement with EPD.	To minimise water quality impact from contaminated groundwater in construction phase	Contractor	All construction sites where practicable	Construction stage	• TM-DSS
S6.8.1.10	W5	*Construction Works of near/ within Watercourses* • Cofferdams and impermeable sheet piles should be	To avoid any direct water quality impact to	Contractor	All construction sites where	Construction stage	• ETWB TC (Works) No.

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		installed as appropriate to isolate the flow of the nullah from the construction works area. The detailed design of the cofferdams will be conducted by the Contractor during the construction phase to fulfil the requirements in DSD Technical Circular No. 1/2017 "Temporary Flow Diversions and Temporary Works Affecting Capacity in Stormwater Drainage System" for DSD approval, in order to formulate feasible options of these temporary structure. • Stockpiling of construction materials and dusty materials should be located from any watercourses, contained in bunded areas and covered with tarpaulin. • Construction debris and spoil should be covered with tarpaulin during storage. Timely removal of materials away from the site for disposal should be arranged to avoid being washed into the nearby watercourses. • Water pumps should be used to collect any wastewater and construction site surface runoff within the cofferdam/ temporary works platform. The collected wastewater shall be properly treated before discharge. • Toe-board and bunds shall be provided along the edge of the works area/ temporary platform to prevent wastewater/ debris from falling into the watercourses. • Any temporary works site inside the watercourses should be temporarily isolated, such as by placing of sandbags or silt curtains with lead edge at bottom and properly supported props to prevent adverse impact on the water quality. • Proper shoring may need to be erected in order to prevent soil / mud from slipping into the inland water bodies. • Construction effluent, site run-off and sewage should be properly collected and/or treated.	existing watercourses		practicable		5/2005

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
S6.8.1.11	W6	<u>*Removal/ Diversion of watercourses*</u> • Cofferdams and impermeable sheet piles should be installed as appropriate to isolate the water flow from the construction works area. • Dewatering or flow diversion shall be conducted prior to the construction works to prevent water overflow to the surrounding area. • Watercourse removal and flow diversion should be conducted in dry season as far as practicable when the water flow is low. • Water drained from the watercourse shall be diverted to new/ temporary drainage for watercourse diversion. For watercourse removal, the water drained shall be collected and treated to meet the requirements of WPCO and TM-DSS before discharge. • Any excavated land-based sediment from the removal/ diversion of watercourse shall be properly stored at bunded areas away from any watercourse and covered with tarpaulin before transporting out of the site.	To avoid water quality impact on existing watercourses to be retained	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • TM-DSS • ETWB TC (Works) No. 5/2005 • ProPECC PN1/94
Water Quality (Operational Phase)							
S6.8.2.3	W9	<u>*Change in Drainage System and Road Runoff*</u> • Proper drainage systems with silt traps and oil interceptors should be installed. • Runoff will be intercepted by properly designed and managed silt traps at appropriate spacing so that common roadside debris, refuse and fallen leaves etc. can be captured before allowing the runoff to drain into watercourses such as Yuen Long Creek. • At the outlets to watercourses, the delegated operation	To reduce impact on drainage system due to road/ surface runoff	DSD	Proposed drainage system and future site operators	Operational Stage	-

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		parties should manage the road/open area cleaning prior to the occurrence of a storm to remove pollutants. The collected pollutants would be tankered away for off-site disposal at landfill sites.					
S6.8.2.7	W11	*Wastewater from Storage and Workshop Area* • Discharge license under WPCO should be applied by the tenants in other specific uses (Storage and Workshop, and Open Storage) subject to their future operation needs. Compliance with WPCO for discharge of wastewater shall be ensured.	To ensure wastewater discharge from storage and workshop areas comply with WPCO	Future operator	Proposed storage and workshop areas	Operational Stage	• WPCO

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
Ecology (Design Phase)							
S8.6.6	EC6	To avoid the use of highly reflective materials in the design, and implementing the use of opaque materials, fritting, breaking up external reflections with stickers or plastic wrap and/or any other bird-friendly design for noise barriers	To minimise risk of bird strike with noise barriers	PlanD/ Detailed Design Consultant	Locations to be installed with noise barriers	Design phase	• EIAO-TM
Ecology (Construction Phase)							
S8.6.6	EC7	Precautionary surveys to check for presence of any aquatic fauna species of conservation importance in the watercourses to be directly impacted before commencement of works; affected aquatic fauna of conservation importance shall be captured and translocated to suitable receptor site(s)	To minimise direct impacts on aquatic species of conservation importance	CEDD/ Contractor	All affected watercourses	Before commencement of construction works	• EIAO-TM
S8.6.5	EC8	To conduct a baseline plant survey within all proposed works areas to ascertain the presence and update the quantities and conditions of any flora species of conservation importance; to transplant all affected plant species of conservation importance to suitable receptor site(s) before commencement of construction works	To minimise direct impacts on plant species of conservation importance	CEDD/ Contractor	All potential works areas	Before commencement of construction works	• EIAO-TM
S8.6.6	EC11	Checking and clearance for nesting birds (buildings and vegetation) shall be conducted/ supervised by a qualitied ecologist with relevant experience	To minimise direct impacts on nesting birds	CEDD/ Contractor	All works areas	Before commencement of construction work	• EIAO-TM
S8.6.6	EC12	Checking and clearance of bat roosts shall be conducted/ supervised by a qualitied ecologist with relevant experienced	To minimise direct impacts on bat roost(s)	CEDD/ Contractor	All works areas	Before commencement of construction work	• EIAO-TM
S8.6.6	EC13	Good site practices to control construction phase water quality impacts	To minimise induced water quality impacts on nearby water bodies	CEDD/ Contractor	All works areas	Construction Phase	• EIAO-TM

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location	Implementation Stage	Requirements and / or standards to be achieved
Fisheries							
S9.5.2	F1	To adopt the mitigation measures for the control of water quality impacts	To protect fisheries resources from potential direct impacts arising from deterioration of water quality	CEDD/ Contractor	All works areas	Construction phase	• EIAO-TM

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location	Implementation Stage	Requirements and / or standards to be achieved
Landscape and Visual (Construction Phase)							
S10.12 – Table 10.12.1, CM1	LV1	<u>Optimisation of Construction Areas and Providing Temporary Landscape on Temporary Construction</u> Construction areas' control shall be enforced, where possible, to ensure that the landscape and visual impacts arising from the construction activities are minimised. It includes reduction of the extent of working areas and temporary works areas, management on storing and using the construction equipment and materials, and consideration of detailed schedules to shorten the construction period. Temporary landscape treatments are considered to be adopted such as applying hydro-seeding on temporary stockpiles and reclamation areas to alleviate the potential impacts.	Minimise impacts from construction activities on adjacent landscape and visual sensitive receivers	CEDD (via Contractor)	All construction areas and temporary works areas	Detailed design, prior to construction, construction stage	
S10.12 – Table 10.12.1, CM2	LV2	<u>Minimise Topographical Changes</u> To minimise landscape and visual impacts, the vertical and horizontal alignment of the at-grade road construction works should be optimised to reduce topographical/ landform changes, as well as reduce land take and interference with natural terrain and reduce overall earth movements. Where there is a need to significantly cut into the existing landform, retaining walls should be considered as well as cut slopes, to minimise landform changes and land resumption, whilst also considering visual amenity. Earthworks and engineered slopes should be designed to provide a structurally stable and visually interesting landform, which is compatible with surrounding landscape and mimics the natural contouring and terrain (e.g. introduction and continuation of natural features such as spurs and ridges where appropriate) to support landscape	Minimise landscape and visual impacts from topographical/ landform changes	CEDD (via Contractor)	All construction areas	Detailed design, construction stage	

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location	Implementation Stage	Requirements and / or standards to be achieved
		and visual assimilation with the surrounding terrain.					
S10.12 – Table 10.12.1, CM3	LV3	<u>Tree Protection & Preservation</u> Existing trees to be retained within the Project Site should be carefully protected during construction. Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works areas. A detailed tree survey will be carried out for the Tree Removal Application (TRA) process which will be carried out at the later detailed design stage of the Project. The detailed tree survey will propose which trees should be retained, transplanted or felled and will include details of tree protection measures for those trees to be retained.	Protect and Preserve Trees	CEDD (via Contractor)	On site	Detailed design, construction stage	• DEVB TCW No.7/2015; • ETWB TCW No.29/2004
S10.12 – Table 10.12.1, CM4	LV4	<u>Transplanting of Existing Trees</u> Trees unavoidably affected by the Project works should be transplanted where practical. Trees should be transplanted straight to their final receptor site and not held in a temporary nursery as far as possible. A detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with DEVB TCW No.6/2015 and DEVB TCW 7/2015 and final locations of transplanted trees should be agreed prior to commencement of the work. For trees associated with highways e.g. roadside planting along highways, that are unavoidably affected and should be transplanted, following HyD Guidelines HQ/GN/13 'Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit'.	Transplant Trees where suitable for transplantation	CEDD (via Contractor)	On site where possible	Prior to construction, construction stage	• DEVB TCW No.6/2015; • DEVB TCW 7/2015; • HyD Guidelines HQ/GN/13

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location	Implementation Stage	Requirements and / or standards to be achieved
S10.12 – Table 10.12.1, CM5	LV5	Screen Hoarding Screen hoarding shall be erected along areas of the construction boundary where the works site borders with publicly accessible routes and/or is close to visually sensitive receivers (VSRs), to screen undesirable views of the works site. It is proposed that the screening be compatible with the surrounding environment in terms of material choice and colour.	Screen undesirable views of the construction sites	CEDD (via Contractor)	All construction areas and temporary works areas	Construction stage	
S10.12 – Table 10.12.1, CM7	LV7	Construction Light Control All security floodlights for construction sites should be carefully controlled to minimise light pollution and night-time glare to nearby users.	Minimise impact of night-time lighting and glare	CEDD (via Contractor)	All construction areas and temporary works areas	Construction stage	
S10.12 – Table 10.12.1, CM8	LV8	Woodland Conservation Woodland conservation is proposed to avoid large scale of potential loss of the existing secondary woodland within the PDA.	Avoid the loss of natural woodland areas	CEDD (via Contractor)	On site	Detailed design, construction stage	• DEVB TCW No.7/2015; • ETWB TCW No.29/2004
Landscape and Visual (Operational Phase)							
S10.12 – Table 10.12.1, OM3	LV11	Operation Light Control Night time lighting should be controlled during operation to minimise glare and light spill from the potential development/ infrastructure. Street and night time lighting shall also be controlled to minimise glare impact to adjacent VSRs during the operation phase.	Avoid glare and light pollution	ArchSD/ Housing Department/ Private Sector	Throughout the development area	Detailed design, construction stage	
S10.12 – Table	LV12	Screen Planting Tall screen/buffer trees and shrubs should be planted to	Provide adequate screening with trees to	CEDD (via Contractor)	Along roadside, around	Detailed design, construction stage and maintenance in	

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10.12.1, OM4		assist in screening proposed road corridors and associated above ground structures such as elevated road sections and engineered embankments. This measure may additionally form part of the compensatory planting and will improve compatibility with the surrounding environment and create a pleasant pedestrian environment.	improve visual amenity		suitable structures	operation phase	
S10.12 – Table 10.12.1, OM5	LV13	Road Side Planting For LRs that would require road upgrading or realignment should be provided to soften the hard, straight edges, such as (LR7), (LR8) and the new roads within PDA. Shade tolerant plants should be planted, where light is insufficient, to improve aesthetic value of areas under viaducts. The guideline of DEVB TC(W) No.2/2012 – Allocation of Space for Quality Greening on Roads should be followed.	Compensate for impacts on existing landscape, reinstating to equal or better quality	CEDD (via Contractor)	Along roadside amenity	Detailed design, construction stage and maintenance in operation phase	• DEVB TC(W) No.2/2012;
S10.12 – Table 10.12.1, OM7	LV15	Maximise Greening on Engineering Structures and Surfaces Where space and appropriate planting conditions allow (i.e. where suitable depth of planting medium is possible, maintenance access available and enough light penetration to ground level), climbing plants should be considered to grow up vertical surfaces such as greening facade of building blocks, viaduct piers or noise barriers. The planting once established will assist in breaking up the appearance of uniform engineered structures and surfaces. Tree planting and care that integrate with wider streetscape elements such as hardscape paving, outdoor furniture as well as lighting poles should be considered to create a pedestrian-friendly network. Streetscape design, including integrity with the building space at ground floor, keeping a suitable distance between trees and buildings should follow the Greening, Landscape and Tree Management	To soften the hard, straight edges and provide greening along viaducts and structures	Initiating Government Department (relevant user department)/ Private Sector	All structures as feasible, final location to be confirmed at detailed design stage	Detailed design, construction stage and maintenance in operation phase	• GLTM of the Development Bureau's Guidelines on Greening of Noise Barriers (April 2012) • DEVB (GLTM) No. 3/2012 – Site Coverage of Greenery for Government Building Projects

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location	Implementation Stage	Requirements and / or standards to be achieved
		Section (GLTM) of the Development Bureau's Guidelines on Greening of Noise Barriers (April 2012).					
S10.12 – Table 10.12.1, OM8	LV16	<u>Noise Barrier Design</u> The visual impact of noise mitigation measures will be mitigated by appropriate detailed design to reduce visual bulkiness and incorporate aesthetically pleasing surface treatments to promote visual amenity, including suitable combination of transparent and sound absorbent materials, appropriate colour selection of panels and supporting structures, or provision of at-grade planting of trees, shrubs and/or climbers camouflage to the barriers, as well as design of supporting structures to incorporate a high level of quality and aesthetics. A combination of transparent panels at top and solid panels at bottom would lighten the visual impact, and at the same time maintain the attractiveness by using colourful panels. The noise barriers would be implemented for District Distributor Roads and Local Distributor Roads. Relevant technical documents DEVB (GLTM) No. 2/2012 - Allocation of Space for Quality Greening on Roads, DEVB (GLTM) No. 3/2012 – Site Coverage of Greenery for Government Building Projects, and Guidelines on Design of Noise Barriers by HyD and EPD in 2003 shall be reference.	Minimise potential adverse visual impacts	CEDD (via Contractor)	Noise barriers	Detailed design, construction stage	• GLTM of the Development Bureau's Guidelines on Greening of Noise Barriers (April 2012) DEVB (GLTM) No. 3/2012 – Site Coverage of Greenery for Government Building Projects

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
Waste Management (Construction Waste)							
S11.2.7	WM1	<u>Comments on C&DMMP given by PFC</u> • To ensure good quality rock is put to full use. Where necessary, the Project Proponent should consult the Mines Division, GEO for advice on the appropriate arrangement to put to full use the good quality rock. The Project Proponent should also maintain close liaison with the quarry operators for the necessary disposal arrangements; • To on-site reuse all surplus inert C&D hard material generated within the Project for balanced cut-and-fill designs. The Project Proponent is reminded that surplus fill might be generated by others in the subsequent building development works within the Project's area. The detailed site formation design should reserve sufficient capacity to absorb all such fill materials so that no disposal would be required outside the Project area; • To carry out on-site temporary storage in case of any programme mismatch between fill generation and demand, the Project Proponent should carry out on-site temporary storage. Where necessary, the Project Proponent shall ensure suitable environmental mitigation measures such as provision of covers ad water spraying system are duly implemented. The Project Proponent shall also carry out necessary measures to ensure the stability of the temporary stockpiles; • To adopt in-situ remedial measures for the contaminated soil in accordance with the EPD's Practice Guide for Investigation and Remediation of Contaminated Land. The remedial soil shall be completely reused within the development site; • To set up effective control procedures to ensure the	Enhance the management of C&D materials and to minimise their generation at source	Contractor	All construction sites	Detailed design and construction stage	• Section 4.1.3 of the Project Administrative Handbook for Civil Engineering Works (2014 Edition)

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		traceability of disposal and reuse of the C&D materials; and • To adopt re-usable non-timber formwork and precast concrete construction as far as practicable.					

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
S11.5.1	WM2	<u>Good Site Practices</u> The following good site practices are recommended throughout the construction activities: • nomination of an approved personnel, such as a site manager, to be responsible for the implementation of good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site; • training of site personnel in site cleanliness, appropriate waste management procedures and concepts of waste reduction, reuse and recycling; • provision of sufficient waste disposal points and regular collection for disposal; • appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; • regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; • a Waste Management Plan (WMP) should be prepared by the contractor and submitted to the Engineer for approval.	Minimise waste generation during construction	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance
S11.5.1	WM3	<u>Waste Reduction Measures</u> Waste reduction is best achieved at the planning and design phase, as well as by ensuring the implementation of good site practices. The following recommendations are proposed to achieve reduction: • segregate and store different types of waste in different containers, skip or stockpiles to enhance reuse or recycling of materials and their proper disposal; • proper storage and site practices to minimise the potential	Reduce waste generation	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		for damage and contamination of construction materials; • plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste; • sort out demolition debris and excavated materials from demolition works to recover reusable/recyclable portions (i.e. soil, broken concrete, metal etc.); and • provide training to workers on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling.					

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
S11.5.1	WM4	Storage, Collection and Transportation of Waste The following recommendation should be implemented to minimise the impacts: • waste such as soil should be handled and stored well to ensure secure containment; and • depends on actual site activities, certain locations within the site area would be used for storage of waste to enhance reuse. However, there would not be any designated location for storage of waste, and the storage locations would need to be adjusted to suite actual site conditions.	Good site practice to minimise the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	• Land (Miscellaneous Provisions) Ordinance • Waste Disposal Ordinance • ETWB TCW No. 19/2005
S11.5.1	WM5	Excavated Sediment The anticipated minor amount excavated sediment is proposed to be stabilised / solidified by mixing with cement so that the mixture is suitable to be reused on-site as backfill in construction of road base.	Handle excavated sediment	Contractor	All construction sites where applicable	Construction stage	• ETWB-TCW 34/2002
S11.5.1	WM6	Collection and Transportation of Waste The following recommendation should be implemented to minimise the impacts: • waste such as soil should be handled and stored well to ensure secure containment; • stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; and • different locations should be designated to stockpile each material to enhance reuse.	Minimise waste impacts from storage	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance
S11.5.1	WM7	Site Formation and C&D Materials Wherever practicable, C&D materials should be segregated from other wastes to avoid contamination and ensure acceptability at public fill reception facilities or reclamation sites. The following mitigation measures should be	Minimise waste impacts from excavated and C&D materials	Contractor	All construction sites	Construction Stage	• Land (Miscellaneous Provisions) Ordinance

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		implemented in handling the excavated and C&D materials: • maintain temporary stockpiles and reuse excavated fill material for backfilling; • carry out on-site sorting; • make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; and • implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified.					• Waste Disposal Ordinance • ETWB TCW No. 19/2005 • Project Administrative Handbook for Civil Engineering Works, 2012 Edition
S11.5.1	WM8	Chemical Waste If chemical wastes are produced at the construction site, the Contractors should register with EPD as chemical waste producer. Chemical wastes should be stored in appropriate containers and collected by a licensed chemical waste collector. Chemical wastes (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while the chemical waste that cannot be recycled should be disposed of at either the Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction stage	• Waste Disposal (Chemical Waste) General) Regulation • Code of Practice on the Packaging, Labelling and Storage of Chemical Waste
S11.5.1	WM9	Asbestos Containing Materials Some key precautionary measures related to the handling and disposal of asbestos are listed as below. • Adoption of protection, such as full containment, mini containment, or segregation of work area; • Provision of decontamination facilities for cleaning of workings, equipment and bagged waste before leaving the work area;	Precautionary measures to handle and disposal of asbestos	Contractor	All construction sites	Construction Stage	• Handling of Asbestos Containing Materials in Buildings (ProPECC PN 2/97)

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		• Adoption of engineering control techniques to prevent fibre release from work area, such as use of negative pressure equipment with high efficiency particulate air (HEPA) filters to control air flow between the work area and the outside environment; • Wetting of asbestos containing materials before and during disturbance, minimizing the breakage and dropping of asbestos containing materials, and packing of debris and waste immediately after it is produced; • Cleaning of work area by wet wiping and vacuuming with HEPA filtered vacuum cleaner; • Coating on any surfaces previously in contact with or contained by asbestos with a sealant; • Proper bagging, safe storage and disposal of asbestos and asbestos contaminated waste; • Pre-treatment of all effluent from the work area before discharged; and • Air monitoring strategy to check the leakage and clearance of the work area during and after the asbestos work.					
S11.5.1	WM10	<u>General Refuse</u> • General refuse should be stored in enclosed bins separately from construction and chemical wastes. Recycling bins should also be placed to encourage recycling. • Preferably enclosed and covered areas should be provided for general refuse collection and routine cleaning for these areas should also be implemented to keep areas clean. • A reputable waste collector should be employed to	Minimise production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		remove general refuse on a daily basis.					
Waste Management (Operational Waste)							
S11.5.2	WM11	Municipal Solid Waste General refuse from residential and commercial buildings should be collected with lidded bins and delivered to a central collection point and stored in enclosed containers to prevent windblown, vermin, water pollution and visual impact. At least daily collection should be arranged by the waste collector.	Remove general refuse generated from the proposed development	FEHD/ Relevant Operators	All construction sites	Operational stage	• Waste Disposal Ordinance
S11.5.2	WM12	Chemical Waste • Localized chemical waste storage areas should be located close to the source of waste generation for temporary storage. Drum-type containers with proper labelling should be used to collect chemical wastes for storage at the designated areas. • A licensed collector should be employed for the chemical waste collection and the chemical wastes should be disposed at an appropriate facility, such as Chemical Waste Treatment Centre (CWTC) in Tsing Yi. • Collection receipts issued by the licensed collector showing the quantities and types of chemical waste taken off-site and details of the treatment facility should be kept for record.	Reduce chemical waste due to waste handling	Contractors/ Relevant Operators	All construction sites	Operational stage	

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
Land Contamination							
S12.6	LC1	Undertaking environmental Site Inspection (SI) for all potentially contaminated sites as listed in the Contamination Assessment Plan (CAP).	Verify the land contamination potential before the commencement of construction	Project Proponent / Detailed Design Consultant / Private developer	All potentially contaminated sites as listed in the CAP	Prior to the construction stage	• 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); • Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management; • Guidance Notes for Contaminated Land Assessment and Remediation; and • Practice Guide for Investigation and Remediation of Contaminated

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
							Land • Recommendations in Health Risk Assessment
S12.7	LC2	Re-appraisal would be required for the 'potentially contaminated landuses', 'industrial site with no potential for land contamination' and 'Non-Industrial landuses' within the land contamination assessment area as the development of these sites/ areas would only commence a number of years later, which may allow changes in the land usage of these sites and may give rise to potential land contamination issues. The Project Proponent's appointed consultant would prepare a supplementary CAP presenting the findings of the re-appraisal and strategy of the recommended SI, if required, and submit to EPD for review and approval.	To assess the latest site situation and identify any potential additional hot spots and contaminated sites.	Project Proponent / Detailed Design Consultant / Private developer	All the surveyed sites as listed in the CAP, other remaining areas of the PDAs and works areas for the associated infrastructures	Prior to the construction stage	Ditto
S12.7	LC3	After approval of the supplementary CAP and upon completion of the SI works, the Project Proponent should prepare and submit a supplementary Contamination Assessment Report (CAR) for all potentially contaminated sites listed in the CAP to EPD for agreement.	Present the findings of SI and evaluate the level and extent of potential contamination	Project Proponent / Detailed Design Consultant / Private developer	All the surveyed sites as listed in the CAP, other remaining areas of the PDAs and works areas for the associated infrastructures	Prior to the construction stage	Ditto
S.12.8	LC4	Preparation and submission of Remediation Action Plan (RAP) to EPD for agreement if land contamination is confirmed.	Recommend appropriate mitigation measures for the contaminated soil and groundwater identified in the	Project Proponent / Detailed Design Consultant / Private developer	All the surveyed sites as listed in the CAP, other	Prior to the construction stage	Ditto

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			assessment if remediation is required		remaining areas of the PDAs and works areas for the associated infrastructures		
S.12.8	LC5	Preparation and submission of Remediation Report (RR) to EPD for agreement.	Demonstrate that the decontamination work is adequate and is carried out in accordance with the endorsed CAR and RAP	Project Proponent / Detailed Design Consultant / Private developer	All the surveyed sites as listed in the CAP, other remaining areas of the PDAs and works areas for the associated infrastructures	Prior to the construction stage	Ditto

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EM&A Project							
S14.2	EM1	An Independent Environmental Checker needs to be employed as per the EM&A Manual.	Control EM&A Performance	Project Proponent	All construction sites	Construction stage	• EIA Ordinance Guidance Note No.4/2010 • EIAO-TM
S14.2 – 14.4	EM2	1) An Environmental Team needs to be employed as per the EM&A Manual. 2) Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures. 3) An environmental impact monitoring needs to be implementing by the Environmental Team to ensure all the requirements given in the EM&A Manual are fully complied with.	Perform environmental monitoring & auditing	Project Proponent	All construction sites	Construction stage	• EIA Ordinance Guidance Note No.4/2010 • EIAO-TM

Note: Chapters 1 to 3 of the EIA report present the background information of the Project, identified concurrent projects, objectives and scope for various environmental aspects, and description on alternative options and construction description. Chapters 4 to 13 of the EIA report present the EIA findings and mitigation measures are described below with cross-reference to the EIA report. Chapters 14 to 16 describe the environmental monitoring requirements, summary of environmental outcomes and conclusion.

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
Common Mitigation Measures (Applicable to DP4)							
Construction Dust Impact							
S4.4.6	D1	Water spraying every hour on exposed worksites and haul road.	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and EIAO-TM criteria
S4.4.6	D2	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and EIAO-TM criteria
S4.4.6	D3	The following dust suppression measures should be incorporated to control the dust nuisance throughout the construction phase: • Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads;	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and EIAO-TM criteria

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		• A stockpile of dusty material should not be extended beyond the pedestrian barriers, fencing or traffic cones; • The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores; • When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period; • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens,					

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport should be totally enclosed by impervious sheeting; • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides; • Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed; • Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and • Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shortcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies.					
S4.4.6	D4	Implement regular dust monitoring under EM&A programme during the construction stage.	Monitoring of dust impact	Contractor	Selected dust monitoring stations	Construction stage	• EIAO-TM

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Construction Noise							
S5.5.3	N1	Implement construction noise mitigation measures, including, but not limited to, good site management practices, use of quiet plant, installation of movable temporary noise barrier and setup up of liaison group to ensure construction noise impacts at the NSRs comply with the construction noise criteria. 1. Good site management practices • only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; • machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; • plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; • silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; • mobile plant should be sited as far away from NSRs as possible and practicable; and • material stockpiles, site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities. 2. Use of quiet plant • Use of quiet plant listed in the Quality Powered Mechanical Equipment (QPME) / other commonly used PME listed in Environmental Protection Department	Control construction noise impacts	Contractor	All construction sites	Construction stage	• EIAO-TM

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		(EPD) web pages. 3. Installation of movable temporary noise barrier • Install movable temporary noise barriers (typical design is wooden framed barrier with a small-cantilevered upper portion of superficial density no less than 7kg/m^2 on a skid footing with 25mm thick internal sound absorptive lining), and full enclosure, screen the noisy plants including air compressors, generators etc. 4. Setup of liaison group Setup a liaison group among CEDD, relevant government departments, contractors of the work contracts, etc. during construction phase to ensure proper implementation of the proposed noise mitigation measures.					

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S5.5.3	N2	Carry out construction noise monitoring in accordance with the EM&A Manual.	Monitor the construction noise impacts	Contractor	Selected noise monitoring stations	Construction stage	EIAO-TM
Operational Noise (Rail Noise)							
S5.8.3	N7	The proposed EFTS is a Schedule 2 DP under the EIA Ordinance. Carry out detailed EIA study under the EIA Ordinance and implement the required noise mitigation measures at the design, construction and operation of the proposed EFTS.	To comply with the noise criteria of NCO and EIAO-TM	Relevant government departments / Future operators	Sections of rail track (Possible connection between PDA and the West Rail Tin Shui Wai Station, location refers to **Figure 5.1** of the EIA Report)	Design, construction and operation of the proposed EFTS	• NCO and its TM • EIAO-TM

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Water Quality (Construction Phase)							
S6.8.1.2	W1	<u>*General Construction Activities*</u> In accordance with the Practice Note for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN1/94), best management practices should be implemented on site as far as practicable. The best practices are detailed below: • At the start of site establishment, perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities; • Diversion of natural stormwater should be provided as far as possible. The design of temporary on-site drainage should prevent runoff going through site surface, construction machinery and equipment in order to avoid or minimise polluted runoff. Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m^3 capacities, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity shall be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped; • The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a silt/sediment trap. The silt/sediment traps should be incorporated in the permanent drainage channels to	To minimise water quality impact from construction site runoff and general construction activities	Contractor	All construction sites where applicable	Construction stage	• Water Pollution Control Ordinance • ProPECC PN1/94 • EIAO-TM • TM-DSS

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		enhance deposition rates; • The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94. The detailed design of the sand/silt traps should be undertaken by the contractor prior to the commencement of construction; • Construction works should be programmed to minimise surface excavation works during the rainy seasons (April to September). All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means; • All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas; • If the excavation of trenches in wet periods is necessary, it should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities; • All open stockpiles of construction materials (for example, aggregates, sand and fill material) should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system; • Manholes (including newly constructed ones) should					

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		always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers; • Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarized in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events; • All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities should be provided at every construction site exit where practicable. Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains; • Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain; • Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts; • All fuel tanks and storage areas should be provided with					

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		locks and sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby;and • Regular environmental audit on the construction site should be carried out in order to prevent any malpractices. Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the water bodies, mangroves and open sea.					
S6.8.1.4	W2	*Prevention of Accidental Spillage of Chemicals* • The chemicals used during construction, such as fuel, oil, solvents and lubricants shall be properly stored and contained in designated area with secondary containment to prevent spillage and contamination of the nearby water environment. • Any maintenance activities and workshops with chemicals use shall be located away from watercourses on hard standings within a bunded area. Sumps and oil interceptors should be provided as appropriate. • The Contractor shall register as a chemical waste producer and employ licensed collector for collection of chemical waste from the construction site. Any chemical waste generated shall be managed in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	To prevent water quality impact due to chemical spillage	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • Waste Disposal (Chemical Waste) (General) Regulation
S6.8.1.7	W3	*Sewage from workforce* • Portable chemical toilets and sewage holding tanks are recommended for handling the construction sewage generated by the workforce. A licensed contractor should be employed to provide appropriate and adequate portable	To minimise water quality impact from sewage effluent in construction phase	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • TM-DSS

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		toilets and be responsible for appropriate disposal and maintenance; • Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment during the construction phase of the Project; • Regular environmental audit on the construction site should be conducted in order to provide an effective control of any malpractices and achieve continual improvement of environmental performance on site.					
S6.8.1.9	W4	*Contaminated Groundwater and Site Runoff* To prevent the water quality due to the contaminated water from the area with contamination, the following mitigation measures should be adopted. • Cover the contaminated soil and surface to prevent the generation of contaminated water. • No open stockpiling of contaminated soil should be allowed to prevent generation of contaminated water due to precipitation. • Contaminated water, either from groundwater or runoff, should be treated by wastewater treatment facility (WTF) to an acceptable level as indicated in TM-DSS before disposal if the deployment of such WTF is feasible. • Recharging the contaminated groundwater back to the aquifer should be sought if treatment of the contaminated groundwater by WTF is not feasible, subject to the agreement with EPD.	To minimise water quality impact from contaminated groundwater in construction phase	Contractor	All construction sites where practicable	Construction stage	• TM-DSS
S6.8.1.10	W5	*Construction Works of near/ within Watercourses* • Cofferdams and impermeable sheet piles should be	To avoid any direct water quality impact to	Contractor	All construction sites where	Construction stage	• ETWB TC (Works) No.

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		installed as appropriate to isolate the flow of the nullah from the construction works area. The detailed design of the cofferdams will be conducted by the Contractor during the construction phase to fulfil the requirements in DSD Technical Circular No. 1/2017 "Temporary Flow Diversions and Temporary Works Affecting Capacity in Stormwater Drainage System" for DSD approval, in order to formulate feasible options of these temporary structure. • Stockpiling of construction materials and dusty materials should be located from any watercourses, contained in bunded areas and covered with tarpaulin. • Construction debris and spoil should be covered with tarpaulin during storage. Timely removal of materials away from the site for disposal should be arranged to avoid being washed into the nearby watercourses. • Water pumps should be used to collect any wastewater and construction site surface runoff within the cofferdam/ temporary works platform. The collected wastewater shall be properly treated before discharge. • Toe-board and bunds shall be provided along the edge of the works area/ temporary platform to prevent wastewater/ debris from falling into the watercourses. • Any temporary works site inside the watercourses should be temporarily isolated, such as by placing of sandbags or silt curtains with lead edge at bottom and properly supported props to prevent adverse impact on the water quality. • Proper shoring may need to be erected in order to prevent soil / mud from slipping into the inland water bodies. • Construction effluent, site run-off and sewage should be properly collected and/or treated.	existing watercourses		practicable		5/2005

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S6.8.1.11	W6	*Removal/ Diversion of watercourses* • Cofferdams and impermeable sheet piles should be installed as appropriate to isolate the water flow from the construction works area. • Dewatering or flow diversion shall be conducted prior to the construction works to prevent water overflow to the surrounding area. • Watercourse removal and flow diversion should be conducted in dry season as far as practicable when the water flow is low. • Water drained from the watercourse shall be diverted to new/ temporary drainage for watercourse diversion. For watercourse removal, the water drained shall be collected and treated to meet the requirements of WPCO and TM-DSS before discharge. • Any excavated land-based sediment from the removal/ diversion of watercourse shall be properly stored at bunded areas away from any watercourse and covered with tarpaulin before transporting out of the site.	To avoid water quality impact on existing watercourses to be retained	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • TM-DSS • ETWB TC (Works) No. 5/2005 • ProPECC PN1/94
Water Quality (Operational Phase)							
S6.8.2.3	W9	*Change in Drainage System and Road Runoff* • Proper drainage systems with silt traps and oil interceptors should be installed. • Runoff will be intercepted by properly designed and managed silt traps at appropriate spacing so that common roadside debris, refuse and fallen leaves etc. can be captured before allowing the runoff to drain into watercourses such as Yuen Long Creek. • At the outlets to watercourses, the delegated operation	To reduce impact on drainage system due to road/ surface runoff	DSD	Proposed drainage system and future site operators	Operational Stage	-

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		parties should manage the road/open area cleaning prior to the occurrence of a storm to remove pollutants. The collected pollutants would be tankered away for off-site disposal at landfill sites.					
S6.8.2.7	W11	*Wastewater from Storage and Workshop Area* • Discharge license under WPCO should be applied by the tenants in other specific uses (Storage and Workshop, and Open Storage) subject to their future operation needs. Compliance with WPCO for discharge of wastewater shall be ensured.	To ensure wastewater discharge from storage and workshop areas comply with WPCO	Future operator	Proposed storage and workshop areas	Operational Stage	• WPCO

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Ecology (Construction Phase)							
S8.6.6	EC7	Precautionary surveys to check for presence of any aquatic fauna species of conservation importance in the watercourses to be directly impacted before commencement of works; affected aquatic fauna of conservation importance shall be captured and translocated to suitable receptor site(s)	To minimise direct impacts on aquatic species of conservation importance	CEDD/ Contractor	All affected watercourses	Before commencement of construction works	• EIAO-TM
S8.6.5	EC8	To conduct a baseline plant survey within all proposed works areas to ascertain the presence and update the quantities and conditions of any flora species of conservation importance; to transplant all affected plant species of conservation importance to suitable receptor site(s) before commencement of construction works	To minimise direct impacts on plant species of conservation importance	CEDD/ Contractor	All potential works areas	Before commencement of construction works	• EIAO-TM
S8.6.6	EC11	Checking and clearance for nesting birds (buildings and vegetation) shall be conducted/ supervised by a qualitied ecologist with relevant experience	To minimise direct impacts on nesting birds	CEDD/ Contractor	All works areas	Before commencement of construction work	• EIAO-TM
S8.6.6	EC12	Checking and clearance of bat roosts shall be conducted/ supervised by a qualitied ecologist with relevant experienced	To minimise direct impacts on bat roost(s)	CEDD/ Contractor	All works areas	Before commencement of construction work	• EIAO-TM
S8.6.6	EC13	Good site practices to control construction phase water quality impacts	To minimise induced water quality impacts on nearby water bodies	CEDD/ Contractor	All works areas	Construction Phase	• EIAO-TM

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Fisheries							
S9.5.2	F1	To adopt the mitigation measures for the control of water quality impacts	To protect fisheries resources from potential direct impacts arising from deterioration of water quality	CEDD/ Contractor	All works areas	Construction phase	• EIAO-TM

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Landscape and Visual (Construction Phase)							
S10.12 – Table 10.12.1, CM1	LV1	<u>Optimisation of Construction Areas and Providing Temporary Landscape on Temporary Construction</u> Construction areas' control shall be enforced, where possible, to ensure that the landscape and visual impacts arising from the construction activities are minimised. It includes reduction of the extent of working areas and temporary works areas, management on storing and using the construction equipment and materials, and consideration of detailed schedules to shorten the construction period. Temporary landscape treatments are considered to be adopted such as applying hydro-seeding on temporary stockpiles and reclamation areas to alleviate the potential impacts.	Minimise impacts from construction activities on adjacent landscape and visual sensitive receivers	CEDD (via Contractor)	All construction areas and temporary works areas	Detailed design, prior to construction, construction stage	
S10.12 – Table 10.12.1, CM2	LV2	<u>Minimise Topographical Changes</u> To minimise landscape and visual impacts, the vertical and horizontal alignment of the at-grade road construction works should be optimised to reduce topographical/ landform changes, as well as reduce land take and interference with natural terrain and reduce overall earth movements. Where there is a need to significantly cut into the existing landform, retaining walls should be considered as well as cut slopes, to minimise landform changes and land resumption, whilst also considering visual amenity. Earthworks and engineered slopes should be designed to provide a structurally stable and visually interesting landform, which is compatible with surrounding landscape and mimics the natural contouring and terrain (e.g. introduction and continuation of natural features such as spurs and ridges where appropriate) to support landscape	Minimise landscape and visual impacts from topographical/ landform changes	CEDD (via Contractor)	All construction areas	Detailed design, construction stage	

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		and visual assimilation with the surrounding terrain.					
S10.12 – Table 10.12.1, CM3	LV3	<u>Tree Protection & Preservation</u> Existing trees to be retained within the Project Site should be carefully protected during construction. Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works areas. A detailed tree survey will be carried out for the Tree Removal Application (TRA) process which will be carried out at the later detailed design stage of the Project. The detailed tree survey will propose which trees should be retained, transplanted or felled and will include details of tree protection measures for those trees to be retained.	Protect and Preserve Trees	CEDD (via Contractor)	On site	Detailed design, construction stage	• DEVB TCW No.7/2015; • ETWB TCW No.29/2004
S10.12 – Table 10.12.1, CM4	LV4	<u>Transplanting of Existing Trees</u> Trees unavoidably affected by the Project works should be transplanted where practical. Trees should be transplanted straight to their final receptor site and not held in a temporary nursery as far as possible. A detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with DEVB TCW No.6/2015 and DEVB TCW 7/2015 and final locations of transplanted trees should be agreed prior to commencement of the work. For trees associated with highways e.g. roadside planting along highways, that are unavoidably affected and should be transplanted, following HyD Guidelines HQ/GN/13 'Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit'.	Transplant Trees where suitable for transplantation	CEDD (via Contractor)	On site where possible	Prior to construction, construction stage	• DEVB TCW No.6/2015; • DEVB TCW 7/2015; • HyD Guidelines HQ/GN/13

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S10.12 – Table 10.12.1, CM5	LV5	Screen Hoarding Screen hoarding shall be erected along areas of the construction boundary where the works site borders with publicly accessible routes and/or is close to visually sensitive receivers (VSRs), to screen undesirable views of the works site. It is proposed that the screening be compatible with the surrounding environment in terms of material choice and colour.	Screen undesirable views of the construction sites	CEDD (via Contractor)	All construction areas and temporary works areas	Construction stage	
S10.12 – Table 10.12.1, CM7	LV7	Construction Light Control All security floodlights for construction sites should be carefully controlled to minimise light pollution and night-time glare to nearby users.	Minimise impact of night-time lighting and glare	CEDD (via Contractor)	All construction areas and temporary works areas	Construction stage	
Landscape and Visual (Operational Phase)							
S10.12 – Table 10.12.1, OM3	LV11	Operation Light Control Night time lighting should be controlled during operation to minimise glare and light spill from the potential development/ infrastructure. Street and night time lighting shall also be controlled to minimise glare impact to adjacent VSRs during the operation phase.	Avoid glare and light pollution	ArchSD/ Housing Department/ Private Sector	Throughout the development area	Detailed design, construction stage	
S10.12 – Table 10.12.1, OM4	LV12	Screen Planting Tall screen/buffer trees and shrubs should be planted to assist in screening proposed road corridors and associated above ground structures such as elevated road sections and engineered embankments. This measure may additionally form part of the compensatory planting and will improve compatibility with the surrounding environment and create a pleasant pedestrian environment.	Provide adequate screening with trees to improve visual amenity	CEDD (via Contractor)	Along roadside, around suitable structures	Detailed design, construction stage and maintenance in operation phase	

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S10.12 – Table 10.12.1, OM7	LV15	<u>Maximise Greening on Engineering Structures and Surfaces</u> Where space and appropriate planting conditions allow (i.e. where suitable depth of planting medium is possible, maintenance access available and enough light penetration to ground level), climbing plants should be considered to grow up vertical surfaces such as greening facade of building blocks, viaduct piers or noise barriers. The planting once established will assist in breaking up the appearance of uniform engineered structures and surfaces. Tree planting and care that integrate with wider streetscape elements such as hardscape paving, outdoor furniture as well as lighting poles should be considered to create a pedestrian-friendly network. Streetscape design, including integrity with the building space at ground floor, keeping a suitable distance between trees and buildings should follow the Greening, Landscape and Tree Management Section (GLTM) of the Development Bureau's Guidelines on Greening of Noise Barriers (April 2012).	To soften the hard, straight edges and provide greening along viaducts and structures	Initiating Government Department (relevant user department)/ Private Sector	All structures as feasible, final location to be confirmed at detailed design stage	Detailed design, construction stage and maintenance in operation phase	• GLTM of the Development Bureau's Guidelines on Greening of Noise Barriers (April 2012) • DEVB (GLTM) No. 3/2012 – Site Coverage of Greenery for Government Building Projects

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Waste Management (Construction Waste)							
S11.2.7	WM1	<u>Comments on C&DMMP given by PFC</u> • To ensure good quality rock is put to full use. Where necessary, the Project Proponent should consult the Mines Division, GEO for advice on the appropriate arrangement to put to full use the good quality rock. The Project Proponent should also maintain close liaison with the quarry operators for the necessary disposal arrangements; • To on-site reuse all surplus inert C&D hard material generated within the Project for balanced cut-and-fill designs. The Project Proponent is reminded that surplus fill might be generated by others in the subsequent building development works within the Project's area. The detailed site formation design should reserve sufficient capacity to absorb all such fill materials so that no disposal would be required outside the Project area; • To carry out on-site temporary storage in case of any programme mismatch between fill generation and demand, the Project Proponent should carry out on-site temporary storage. Where necessary, the Project Proponent shall ensure suitable environmental mitigation measures such as provision of covers ad water spraying system are duly implemented. The Project Proponent shall also carry out necessary measures to ensure the stability of the temporary stockpiles; • To adopt in-situ remedial measures for the contaminated soil in accordance with the EPD's Practice Guide for Investigation and Remediation of Contaminated Land. The remedial soil shall be completely reused within the development site;	Enhance the management of C&D materials and to minimise their generation at source	Contractor	All construction sites	Detailed design and construction stage	• Section 4.1.3 of the Project Administrative Handbook for Civil Engineering Works (2014 Edition)

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		• To set up effective control procedures to ensure the traceability of disposal and reuse of the C&D materials; and To adopt re-usable non-timber formwork and precast concrete construction as far as practicable.					

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S11.5.1	WM2	<u>Good Site Practices</u> The following good site practices are recommended throughout the construction activities: • nomination of an approved personnel, such as a site manager, to be responsible for the implementation of good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site; • training of site personnel in site cleanliness, appropriate waste management procedures and concepts of waste reduction, reuse and recycling; • provision of sufficient waste disposal points and regular collection for disposal; • appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; • regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; • a Waste Management Plan (WMP) should be prepared by the contractor and submitted to the Engineer for approval.	Minimise waste generation during construction	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance
S11.5.1	WM3	<u>Waste Reduction Measures</u> Waste reduction is best achieved at the planning and design phase, as well as by ensuring the implementation of good site practices. The following recommendations are proposed to achieve reduction: • segregate and store different types of waste in different containers, skip or stockpiles to enhance reuse or recycling of materials and their proper disposal;	Reduce waste generation	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance

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		• proper storage and site practices to minimise the potential for damage and contamination of construction materials; • plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste; • sort out demolition debris and excavated materials from demolition works to recover reusable/recyclable portions (i.e. soil, broken concrete, metal etc.); and provide training to workers on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling.					

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S11.5.1	WM4	Storage, Collection and Transportation of Waste The following recommendation should be implemented to minimise the impacts: • waste such as soil should be handled and stored well to ensure secure containment; and • depends on actual site activities, certain locations within the site area would be used for storage of waste to enhance reuse. However, there would not be any designated location for storage of waste, and the storage locations would need to be adjusted to suite actual site conditions.	Good site practice to minimise the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	• Land (Miscellaneous Provisions) Ordinance • Waste Disposal Ordinance • ETWB TCW No. 19/2005
S11.5.1	WM5	Excavated Sediment The anticipated minor amount excavated sediment is proposed to be stabilised / solidified by mixing with cement so that the mixture is suitable to be reused on-site as backfill in construction of road base.	Handle excavated sediment	Contractor	All construction sites where applicable	Construction stage	• ETWB-TCW 34/2002
S11.5.1	WM6	Collection and Transportation of Waste The following recommendation should be implemented to minimise the impacts: • waste such as soil should be handled and stored well to ensure secure containment; • stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; and • different locations should be designated to stockpile each material to enhance reuse.	Minimise waste impacts from storage	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance
S11.5.1	WM7	Site Formation and C&D Materials Wherever practicable, C&D materials should be segregated from other wastes to avoid contamination and ensure	Minimise waste impacts from excavated and C&D materials	Contractor	All construction sites	Construction Stage	• Land (Miscellaneous Provisions)

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		acceptability at public fill reception facilities or reclamation sites. The following mitigation measures should be implemented in handling the excavated and C&D materials: • maintain temporary stockpiles and reuse excavated fill material for backfilling; • carry out on-site sorting; • make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; and • implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified.					Ordinance • Waste Disposal Ordinance • ETWB TCW No. 19/2005 • Project Administrative Handbook for Civil Engineering Works, 2012 Edition
S11.5.1	WM8	<u>Chemical Waste</u> If chemical wastes are produced at the construction site, the Contractors should register with EPD as chemical waste producer. Chemical wastes should be stored in appropriate containers and collected by a licensed chemical waste collector. Chemical wastes (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while the chemical waste that cannot be recycled should be disposed of at either the Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction stage	• Waste Disposal (Chemical Waste) General) Regulation • Code of Practice on the Packaging, Labelling and Storage of Chemical Waste
S11.5.1	WM9	<u>Asbestos Containing Materials</u> Some key precautionary measures related to the handling and disposal of asbestos are listed as below. • Adoption of protection, such as full containment, mini containment, or segregation of work area;	Precautionary measures to handle and disposal of asbestos	Contractor	All construction sites	Construction Stage	• Handling of Asbestos Containing Materials in Buildings (ProPECC PN

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		• Provision of decontamination facilities for cleaning of workings, equipment and bagged waste before leaving the work area; • Adoption of engineering control techniques to prevent fibre release from work area, such as use of negative pressure equipment with high efficiency particulate air (HEPA) filters to control air flow between the work area and the outside environment; • Wetting of asbestos containing materials before and during disturbance, minimizing the breakage and dropping of asbestos containing materials, and packing of debris and waste immediately after it is produced; • Cleaning of work area by wet wiping and vacuuming with HEPA filtered vacuum cleaner; • Coating on any surfaces previously in contact with or contained by asbestos with a sealant; • Proper bagging, safe storage and disposal of asbestos and asbestos contaminated waste; • Pre-treatment of all effluent from the work area before discharged; and • Air monitoring strategy to check the leakage and clearance of the work area during and after the asbestos work.					2/97)
S11.5.1	WM10	<u>General Refuse</u> • General refuse should be stored in enclosed bins separately from construction and chemical wastes. Recycling bins should also be placed to encourage recycling. • Preferably enclosed and covered areas should be provided for general refuse collection and routine	Minimise production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance

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		cleaning for these areas should also be implemented to keep areas clean. • A reputable waste collector should be employed to remove general refuse on a daily basis.					
Waste Management (Operational Waste)							
S11.5.2	WM11	Municipal Solid Waste General refuse from residential and commercial buildings should be collected with lidded bins and delivered to a central collection point and stored in enclosed containers to prevent windblown, vermin, water pollution and visual impact. At least daily collection should be arranged by the waste collector.	Remove general refuse generated from the proposed development	FEHD/ Relevant Operators	All construction sites	Operational stage	• Waste Disposal Ordinance
S11.5.2	WM12	Chemical Waste • Localized chemical waste storage areas should be located close to the source of waste generation for temporary storage. Drum-type containers with proper labelling should be used to collect chemical wastes for storage at the designated areas. • A licensed collector should be employed for the chemical waste collection and the chemical wastes should be disposed at an appropriate facility, such as Chemical Waste Treatment Centre (CWTC) in Tsing Yi. • Collection receipts issued by the licensed collector showing the quantities and types of chemical waste taken off-site and details of the treatment facility should be kept for record.	Reduce chemical waste due to waste handling	Contractors/ Relevant Operators	All construction sites	Operational stage	

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
Land Contamination							
S12.6	LC1	Undertaking environmental Site Inspection (SI) for all potentially contaminated sites as listed in the Contamination Assessment Plan (CAP).	Verify the land contamination potential before the commencement of construction	Project Proponent / Detailed Design Consultant / Private developer	All potentially contaminated sites as listed in the CAP	Prior to the construction stage	• 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); • Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management; • Guidance Notes for Contaminated Land Assessment and Remediation; and • Practice Guide for Investigation and Remediation of Contaminated

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
							Land • Recommendations in Health Risk Assessment
S12.7	LC2	Re-appraisal would be required for the 'potentially contaminated landuses', 'industrial site with no potential for land contamination' and 'Non-Industrial landuses' within the land contamination assessment area as the development of these sites/ areas would only commence a number of years later, which may allow changes in the land usage of these sites and may give rise to potential land contamination issues. The Project Proponent's appointed consultant would prepare a supplementary CAP presenting the findings of the re-appraisal and strategy of the recommended SI, if required, and submit to EPD for review and approval.	To assess the latest site situation and identify any potential additional hot spots and contaminated sites.	Project Proponent / Detailed Design Consultant / Private developer	All the surveyed sites as listed in the CAP, other remaining areas of the PDAs and works areas for the associated infrastructures	Prior to the construction stage	Ditto
S12.7	LC3	After approval of the supplementary CAP and upon completion of the SI works, the Project Proponent should prepare and submit a supplementary Contamination Assessment Report (CAR) for all potentially contaminated sites listed in the CAP to EPD for agreement.	Present the findings of SI and evaluate the level and extent of potential contamination	Project Proponent / Detailed Design Consultant / Private developer	All the surveyed sites as listed in the CAP, other remaining areas of the PDAs and works areas for the associated infrastructures	Prior to the construction stage	Ditto
S.12.8	LC4	Preparation and submission of Remediation Action Plan (RAP) to EPD for agreement if land contamination is confirmed.	Recommend appropriate mitigation measures for the contaminated soil	Project Proponent / Detailed Design Consultant /	All the surveyed sites as listed in the	Prior to the construction stage	Ditto

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
			and groundwater identified in the assessment if remediation is required	Private developer	CAP, other remaining areas of the PDAs and works areas for the associated infrastructures		
S.12.8	LC5	Preparation and submission of Remediation Report (RR) to EPD for agreement.	Demonstrate that the decontamination work is adequate and is carried out in accordance with the endorsed CAR and RAP	Project Proponent / Detailed Design Consultant / Private developer	All the surveyed sites as listed in the CAP, other remaining areas of the PDAs and works areas for the associated infrastructures	Prior to the construction stage	Ditto

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
EM&A Project							
S14.2	EM1	An Independent Environmental Checker needs to be employed as per the EM&A Manual.	Control EM&A Performance	Project Proponent	All construction sites	Construction stage	• EIA Ordinance Guidance Note No.4/2010 • EIAO-TM
S14.2 – 14.4	EM2	1) An Environmental Team needs to be employed as per the EM&A Manual. 2) Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures. 3) An environmental impact monitoring needs to be implementing by the Environmental Team to ensure all the requirements given in the EM&A Manual are fully complied with.	Perform environmental monitoring & auditing	Project Proponent	All construction sites	Construction stage	• EIA Ordinance Guidance Note No.4/2010 • EIAO-TM

Note: Chapters 1 to 3 of the EIA report present the background information of the Project, identified concurrent projects, objectives and scope for various environmental aspects, and description on alternative options and construction description. Chapters 4 to 13 of the EIA report present the EIA findings and mitigation measures are described below with cross-reference to the EIA report. Chapters 14 to 16 describe the environmental monitoring requirements, summary of environmental outcomes and conclusion.

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
Common Mitigation Measures (Applicable to DP5)							
Construction Dust Impact							
S4.4.6	D1	Water spraying every hour on exposed worksites and haul road.	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and EIAO-TM criteria
S4.4.6	D2	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and EIAO-TM criteria
S4.4.6	D3	The following dust suppression measures should be incorporated to control the dust nuisance throughout the construction phase: • Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads;	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and EIAO-TM criteria

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		• A stockpile of dusty material should not be extended beyond the pedestrian barriers, fencing or traffic cones; • The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores; • When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period; • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens,					

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		sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport should be totally enclosed by impervious sheeting; • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides; • Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed; • Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and • Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shortcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies.					
S4.4.6	D4	Implement regular dust monitoring under EM&A programme during the construction stage.	Monitoring of dust impact	Contractor	Selected dust monitoring stations	Construction stage	• EIAO-TM

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
Construction Noise							
S5.5.3	N1	Implement construction noise mitigation measures, including, but not limited to, good site management practices, use of quiet plant, installation of movable temporary noise barrier and setup up of liaison group to ensure construction noise impacts at the NSRs comply with the construction noise criteria. 1. Good site management practices • only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; • machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; • plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; • silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; • mobile plant should be sited as far away from NSRs as possible and practicable; and • material stockpiles, site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities. 2. Use of quiet plant • Use of quiet plant listed in the Quality Powered Mechanical Equipment (QPME) / other commonly used PME listed in Environmental Protection Department	Control construction noise impacts	Contractor	All construction sites	Construction stage	• EIAO-TM

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		(EPD) web pages. 3. Installation of movable temporary noise barrier • Install movable temporary noise barriers (typical design is wooden framed barrier with a small-cantilevered upper portion of superficial density no less than 7kg/m^2 on a skid footing with 25mm thick internal sound absorptive lining), and full enclosure, screen the noisy plants including air compressors, generators etc. 4. Setup of liaison group • Setup a liaison group among CEDD, relevant government departments, contractors of the work contracts, etc. during construction phase to ensure proper implementation of the proposed noise mitigation measures.					

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
S5.5.3	N2	Carry out construction noise monitoring in accordance with the EM&A Manual.	Monitor the construction noise impacts	Contractor	Selected noise monitoring stations	Construction stage	EIAO-TM
Operational Noise (Road Traffic Noise)							
S5.6.3	N3	The following noise mitigation measures are proposed to alleviate adverse traffic noise impact on the affected NSRs: • Absorptive vertical barriers along some sections of the Project roads; • LNRS on some road sections; and • Semi-enclosures at primary distributor roads at TYST Interchange. Provision of LNRS are as follows: Stage 1 • Approx. 625m long LNRS along TYST Interchange (Loop) (LNRS08) • Approx. 125m long LNRS along TYST Interchange (LNRS10) • Approx. 140m long LNRS along TYST Interchange (LNRS11) • Approx. 160m long LNRS along slip road near TYST Interchange (LNRS15) Stage 2 • Approx. 160m long 6m high semi-enclosure along slip road near TYST Interchange (SE02) • Approx. 125m long 5m high absorptive vertical barrier along TYST Interchange (VB_E11) • Approx. 125m long 6m high absorptive vertical barrier along TYST Interchange (VB_E12)	Control the road traffic noise impacts	CEDD / Private developers	Refer to Figure 6.3, Figure 6.3a-c.	Prior to operation of the Project for existing NSRs. While for mitigation measures to protect planned NSRs, it should be constructed before population intake of planned NSRs.	• EIAO-TM

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		• Approx. 95m long 6m high absorptive vertical barrier along TYST Interchange (VB_E13) • Approx. 95m long 3m high absorptive vertical barrier along slip road near TYST Interchange (VB_E15)					
S5.6.3	N4	Carry out operational traffic noise monitoring in accordance with the EM&A Manual.	Monitor the road traffic noise impacts	CEDD	Selected noise monitoring stations	Within the first year upon the completion of proposed road works or occupation year of the proposed developments	• EIAO-TM

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Water Quality (Construction Phase)							
S6.8.1.2	W1	<u>*General Construction Activities*</u> In accordance with the Practice Note for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN1/94), best management practices should be implemented on site as far as practicable. The best practices are detailed below: • At the start of site establishment, perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities; • Diversion of natural stormwater should be provided as far as possible. The design of temporary on-site drainage should prevent runoff going through site surface, construction machinery and equipment in order to avoid or minimise polluted runoff. Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m^3 capacities, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity shall be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped; • The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a silt/sediment trap. The silt/sediment traps should be incorporated in the permanent drainage channels to	To minimise water quality impact from construction site runoff and general construction activities	Contractor	All construction sites where applicable	Construction stage	• Water Pollution Control Ordinance • ProPECC PN1/94 • EIAO-TM • TM-DSS

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		enhance deposition rates; • The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94. The detailed design of the sand/silt traps should be undertaken by the contractor prior to the commencement of construction; • Construction works should be programmed to minimise surface excavation works during the rainy seasons (April to September). All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means; • All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas; • If the excavation of trenches in wet periods is necessary, it should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities; • All open stockpiles of construction materials (for example, aggregates, sand and fill material) should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system; • Manholes (including newly constructed ones) should					

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		always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers; • Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarized in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events; • All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities should be provided at every construction site exit where practicable. Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains; • Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain; • Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts; • All fuel tanks and storage areas should be provided with					

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		locks and sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby;and • Regular environmental audit on the construction site should be carried out in order to prevent any malpractices. Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the water bodies, mangroves and open sea.					
S6.8.1.4	W2	*Prevention of Accidental Spillage of Chemicals* • The chemicals used during construction, such as fuel, oil, solvents and lubricants shall be properly stored and contained in designated area with secondary containment to prevent spillage and contamination of the nearby water environment. • Any maintenance activities and workshops with chemicals use shall be located away from watercourses on hard standings within a bunded area. Sumps and oil interceptors should be provided as appropriate. • The Contractor shall register as a chemical waste producer and employ licensed collector for collection of chemical waste from the construction site. Any chemical waste generated shall be managed in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	To prevent water quality impact due to chemical spillage	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • Waste Disposal (Chemical Waste) (General) Regulation
S6.8.1.7	W3	*Sewage from workforce* • Portable chemical toilets and sewage holding tanks are recommended for handling the construction sewage generated by the workforce. A licensed contractor should be employed to provide appropriate and adequate portable	To minimise water quality impact from sewage effluent in construction phase	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • TM-DSS

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		toilets and be responsible for appropriate disposal and maintenance; • Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment during the construction phase of the Project; • Regular environmental audit on the construction site should be conducted in order to provide an effective control of any malpractices and achieve continual improvement of environmental performance on site.					
S6.8.1.9	W4	*Contaminated Groundwater and Site Runoff* To prevent the water quality due to the contaminated water from the area with contamination, the following mitigation measures should be adopted. • Cover the contaminated soil and surface to prevent the generation of contaminated water. • No open stockpiling of contaminated soil should be allowed to prevent generation of contaminated water due to precipitation. • Contaminated water, either from groundwater or runoff, should be treated by wastewater treatment facility (WTF) to an acceptable level as indicated in TM-DSS before disposal if the deployment of such WTF is feasible. • Recharging the contaminated groundwater back to the aquifer should be sought if treatment of the contaminated groundwater by WTF is not feasible, subject to the agreement with EPD.	To minimise water quality impact from contaminated groundwater in construction phase	Contractor	All construction sites where practicable	Construction stage	• TM-DSS
S6.8.1.10	W5	*Construction Works of near/ within Watercourses* • Cofferdams and impermeable sheet piles should be	To avoid any direct water quality impact to	Contractor	All construction sites where	Construction stage	• ETWB TC (Works) No.

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		installed as appropriate to isolate the flow of the nullah from the construction works area. The detailed design of the cofferdams will be conducted by the Contractor during the construction phase to fulfil the requirements in DSD Technical Circular No. 1/2017 "Temporary Flow Diversions and Temporary Works Affecting Capacity in Stormwater Drainage System" for DSD approval, in order to formulate feasible options of these temporary structure. • Stockpiling of construction materials and dusty materials should be located from any watercourses, contained in bunded areas and covered with tarpaulin. • Construction debris and spoil should be covered with tarpaulin during storage. Timely removal of materials away from the site for disposal should be arranged to avoid being washed into the nearby watercourses. • Water pumps should be used to collect any wastewater and construction site surface runoff within the cofferdam/ temporary works platform. The collected wastewater shall be properly treated before discharge. • Toe-board and bunds shall be provided along the edge of the works area/ temporary platform to prevent wastewater/ debris from falling into the watercourses. • Any temporary works site inside the watercourses should be temporarily isolated, such as by placing of sandbags or silt curtains with lead edge at bottom and properly supported props to prevent adverse impact on the water quality. • Proper shoring may need to be erected in order to prevent soil / mud from slipping into the inland water bodies. • Construction effluent, site run-off and sewage should be properly collected and/or treated.	existing watercourses		practicable		5/2005

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S6.8.1.11	W6	<u>*Removal/ Diversion of watercourses*</u> • Cofferdams and impermeable sheet piles should be installed as appropriate to isolate the water flow from the construction works area. • Dewatering or flow diversion shall be conducted prior to the construction works to prevent water overflow to the surrounding area. • Watercourse removal and flow diversion should be conducted in dry season as far as practicable when the water flow is low. • Water drained from the watercourse shall be diverted to new/ temporary drainage for watercourse diversion. For watercourse removal, the water drained shall be collected and treated to meet the requirements of WPCO and TM-DSS before discharge. • Any excavated land-based sediment from the removal/ diversion of watercourse shall be properly stored at bunded areas away from any watercourse and covered with tarpaulin before transporting out of the site.	To avoid water quality impact on existing watercourses to be retained	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • TM-DSS • ETWB TC (Works) No. 5/2005 • ProPECC PN1/94
Water Quality (Operational Phase)							
S6.8.2.3	W9	<u>*Change in Drainage System and Road Runoff*</u> • Proper drainage systems with silt traps and oil interceptors should be installed. • Runoff will be intercepted by properly designed and managed silt traps at appropriate spacing so that common roadside debris, refuse and fallen leaves etc. can be captured before allowing the runoff to drain into watercourses such as Yuen Long Creek. • At the outlets to watercourses, the delegated operation	To reduce impact on drainage system due to road/ surface runoff	DSD	Proposed drainage system and future site operators	Operational Stage	-

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		parties should manage the road/open area cleaning prior to the occurrence of a storm to remove pollutants. The collected pollutants would be tankered away for off-site disposal at landfill sites.					
S6.8.2.7	W11	*Wastewater from Storage and Workshop Area* • Discharge license under WPCO should be applied by the tenants in other specific uses (Storage and Workshop, and Open Storage) subject to their future operation needs. Compliance with WPCO for discharge of wastewater shall be ensured.	To ensure wastewater discharge from storage and workshop areas comply with WPCO	Future operator	Proposed storage and workshop areas	Operational Stage	• WPCO

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Ecology (Design Phase)							
S8.6.6	EC6	To avoid the use of highly reflective materials in the design, and implementing the use of opaque materials, fritting, breaking up external reflections with stickers or plastic wrap and/or any other bird-friendly design for noise barriers	To minimise risk of bird strike with noise barriers	PlanD/ Detailed Design Consultant	Locations to be installed with noise barriers	Design phase	• EIAO-TM
Ecology (Construction Phase)							
S8.6.6	EC7	Precautionary surveys to check for presence of any aquatic fauna species of conservation importance in the watercourses to be directly impacted before commencement of works; affected aquatic fauna of conservation importance shall be captured and translocated to suitable receptor site(s)	To minimise direct impacts on aquatic species of conservation importance	CEDD/ Contractor	All affected watercourses	Before commencement of construction works	• EIAO-TM
S8.6.5	EC8	To conduct a baseline plant survey within all proposed works areas to ascertain the presence and update the quantities and conditions of any flora species of conservation importance; to transplant all affected plant species of conservation importance to suitable receptor site(s) before commencement of construction works	To minimise direct impacts on plant species of conservation importance	CEDD/ Contractor	All potential works areas	Before commencement of construction works	• EIAO-TM
S8.6.6	EC11	Checking and clearance for nesting birds (buildings and vegetation) shall be conducted/ supervised by a qualitied ecologist with relevant experience	To minimise direct impacts on nesting birds	CEDD/ Contractor	All works areas	Before commencement of construction work	• EIAO-TM
S8.6.6	EC12	Checking and clearance of bat roosts shall be conducted/ supervised by a qualitied ecologist with relevant experienced	To minimise direct impacts on bat roost(s)	CEDD/ Contractor	All works areas	Before commencement of construction work	• EIAO-TM
S8.6.6	EC13	Good site practices to control construction phase water quality impacts	To minimise induced water quality impacts on nearby water bodies	CEDD/ Contractor	All works areas	Construction Phase	• EIAO-TM

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Fisheries							
S9.5.2	F1	To adopt the mitigation measures for the control of water quality impacts	To protect fisheries resources from potential direct impacts arising from deterioration of water quality	CEDD/ Contractor	All works areas	Construction phase	• EIAO-TM

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Landscape and Visual (Construction Phase)							
S10.12 – Table 10.12.1, CM1	LV1	<u>Optimisation of Construction Areas and Providing Temporary Landscape on Temporary Construction</u> Construction areas' control shall be enforced, where possible, to ensure that the landscape and visual impacts arising from the construction activities are minimised. It includes reduction of the extent of working areas and temporary works areas, management on storing and using the construction equipment and materials, and consideration of detailed schedules to shorten the construction period. Temporary landscape treatments are considered to be adopted such as applying hydro-seeding on temporary stockpiles and reclamation areas to alleviate the potential impacts.	Minimise impacts from construction activities on adjacent landscape and visual sensitive receivers	CEDD (via Contractor)	All construction areas and temporary works areas	Detailed design, prior to construction, construction stage	
S10.12 – Table	LV2	<u>Minimise Topographical Changes</u> To minimise landscape and visual impacts, the vertical and	Minimise landscape and visual impacts from	CEDD (via Contractor)	All construction	Detailed design, construction stage	

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10.12.1, CM2		horizontal alignment of the at-grade road construction works should be optimised to reduce topographical/ landform changes, as well as reduce land take and interference with natural terrain and reduce overall earth movements. Where there is a need to significantly cut into the existing landform, retaining walls should be considered as well as cut slopes, to minimise landform changes and land resumption, whilst also considering visual amenity. Earthworks and engineered slopes should be designed to provide a structurally stable and visually interesting landform, which is compatible with surrounding landscape and mimics the natural contouring and terrain (e.g. introduction and continuation of natural features such as spurs and ridges where appropriate) to support landscape and visual assimilation with the surrounding terrain.	topographical/ landform changes		areas		
S10.12 – Table 10.12.1, CM3	LV3	<u>Tree Protection & Preservation</u> Existing trees to be retained within the Project Site should be carefully protected during construction. Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works areas. A detailed tree survey will be carried out for the Tree Removal Application (TRA) process which will be carried out at the later detailed design stage of the Project. The detailed tree survey will propose which trees should be retained, transplanted or felled and will include details of tree protection measures for those trees to be retained.	Protect and Preserve Trees	CEDD (via Contractor)	On site	Detailed design, construction stage	• DEVB TCW No.7/2015; • ETWB TCW No.29/2004
S10.12 – Table	LV4	<u>Transplanting of Existing Trees</u> Trees unavoidably affected by the Project works should be	Transplant Trees where suitable for transplantation	CEDD (via Contractor)	On site where possible	Prior to construction,	• DEVB TCW No.6/2015;

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location	Implementation Stage	Requirements and / or standards to be achieved
10.12.1, CM4		transplanted where practical. Trees should be transplanted straight to their final receptor site and not held in a temporary nursery as far as possible. A detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with DEVB TCW No.6/2015 and DEVB TCW 7/2015 and final locations of transplanted trees should be agreed prior to commencement of the work. For trees associated with highways e.g. roadside planting along highways, that are unavoidably affected and should be transplanted, following HyD Guidelines HQ/GN/13 'Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit'.				construction stage	• DEVB TCW 7/2015; • HyD Guidelines HQ/GN/13
S10.12 – Table 10.12.1, CM5	LV5	Screen Hoarding Screen hoarding shall be erected along areas of the construction boundary where the works site borders with publicly accessible routes and/or is close to visually sensitive receivers (VSRs), to screen undesirable views of the works site. It is proposed that the screening be compatible with the surrounding environment in terms of material choice and colour.	Screen undesirable views of the construction sites	CEDD (via Contractor)	All construction areas and temporary works areas	Construction stage	
S10.12 – Table 10.12.1, CM7	LV7	Construction Light Control All security floodlights for construction sites should be carefully controlled to minimise light pollution and night-time glare to nearby users.	Minimise impact of night-time lighting and glare	CEDD (via Contractor)	All construction areas and temporary works areas	Construction stage	
S10.12 – Table 10.12.1,	LV8	Woodland Conservation Woodland conservation is proposed to avoid large scale of potential loss of the existing secondary woodland within	Avoid the loss of natural woodland areas	CEDD (via Contractor)	On site	Detailed design, construction stage	• DEVB TCW No.7/2015; • ETWB TCW

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location	Implementation Stage	Requirements and / or standards to be achieved
CM8		the PDA.					No.29/2004
S10.12 – Table 10.12.1, OM3	LV11	Operation Light Control Night time lighting should be controlled during operation to minimise glare and light spill from the potential development/ infrastructure. Street and night time lighting shall also be controlled to minimise glare impact to adjacent VSRs during the operation phase.	Avoid glare and light pollution	ArchSD/ Housing Department/ Private Sector	Throughout the development area	Detailed design, construction stage	
S10.12 – Table 10.12.1, OM4	LV12	Screen Planting Tall screen/buffer trees and shrubs should be planted to assist in screening proposed road corridors and associated above ground structures such as elevated road sections and engineered embankments. This measure may additionally form part of the compensatory planting and will improve compatibility with the surrounding environment and create a pleasant pedestrian environment.	Provide adequate screening with trees to improve visual amenity	CEDD (via Contractor)	Along roadside, around suitable structures	Detailed design, construction stage and maintenance in operation phase	
S10.12 – Table 10.12.1, OM5	LV13	Road Side Planting For LRs that would require road upgrading or realignment should be provided to soften the hard, straight edges, such as (LR7), (LR8) and the new roads within PDA. Shade tolerant plants should be planted, where light is insufficient, to improve aesthetic value of areas under viaducts. The guideline of DEVB TC(W) No.2/2012 – Allocation of Space for Quality Greening on Roads should be followed.	Compensate for impacts on existing landscape, reinstating to equal or better quality	CEDD (via Contractor)	Along roadside amenity	Detailed design, construction stage and maintenance in operation phase	• DEVB TC(W) No.2/2012;
S10.12 – Table 10.12.1, OM7	LV15	Maximise Greening on Engineering Structures and Surfaces Where space and appropriate planting conditions allow (i.e. where suitable depth of planting medium is possible, maintenance access available and enough light penetration	To soften the hard, straight edges and provide greening along viaducts and structures	Initiating Government Department (relevant user department)/	All structures as feasible, final location to be confirmed at	Detailed design, construction stage and maintenance in operation phase	• GLTM of the Development Bureau's Guidelines on Greening of

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location	Implementation Stage	Requirements and / or standards to be achieved
		to ground level), climbing plants should be considered to grow up vertical surfaces such as greening facade of building blocks, viaduct piers or noise barriers. The planting once established will assist in breaking up the appearance of uniform engineered structures and surfaces. Tree planting and care that integrate with wider streetscape elements such as hardscape paving, outdoor furniture as well as lighting poles should be considered to create a pedestrian-friendly network. Streetscape design, including integrity with the building space at ground floor, keeping a suitable distance between trees and buildings should follow the Greening, Landscape and Tree Management Section (GLTM) of the Development Bureau's Guidelines on Greening of Noise Barriers (April 2012).		Private Sector	detailed design stage		Noise Barriers (April 2012) • DEVB (GLTM) No. 3/2012 – Site Coverage of Greenery for Government Building Projects
S10.12 – Table 10.12.1, OM8	LV16	<u>Noise Barrier Design</u> The visual impact of noise mitigation measures will be mitigated by appropriate detailed design to reduce visual bulkiness and incorporate aesthetically pleasing surface treatments to promote visual amenity, including suitable combination of transparent and sound absorbent materials, appropriate colour selection of panels and supporting structures, or provision of at-grade planting of trees, shrubs and/or climbers camouflage to the barriers, as well as design of supporting structures to incorporate a high level of quality and aesthetics. A combination of transparent panels at top and solid panels at bottom would lighten the visual impact, and at the same time maintain the attractiveness by using colourful panels. The noise barriers would be implemented for District Distributor Roads and Local Distributor Roads. Relevant technical documents DEVB (GLTM) No. 2/2012 - Allocation of Space for Quality Greening on Roads, DEVB (GLTM) No. 3/2012 – Site Coverage of Greenery for Government Building	Minimise potential adverse visual impacts	CEDD (via Contractor)	Noise barriers	Detailed design, construction stage	• GLTM of the Development Bureau's Guidelines on Greening of Noise Barriers (April 2012) DEVB (GLTM) No. 3/2012 – Site Coverage of Greenery for Government Building Projects

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location	Implementation Stage	Requirements and / or standards to be achieved
		Projects, and Guidelines on Design of Noise Barriers by HyD and EPD in 2003 shall be reference.					

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
Waste Management (Construction Waste)							
S11.2.7	WM1	<u>Comments on C&DMMP given by PFC</u> • To ensure good quality rock is put to full use. Where necessary, the Project Proponent should consult the Mines Division, GEO for advice on the appropriate arrangement to put to full use the good quality rock. The Project Proponent should also maintain close liaison with the quarry operators for the necessary disposal arrangements; • To on-site reuse all surplus inert C&D hard material generated within the Project for balanced cut-and-fill designs. The Project Proponent is reminded that surplus fill might be generated by others in the subsequent building development works within the Project's area. The detailed site formation design should reserve sufficient capacity to absorb all such fill materials so that no disposal would be required outside the Project area; • To carry out on-site temporary storage in case of any programme mismatch between fill generation and demand, the Project Proponent should carry out on-site temporary storage. Where necessary, the Project Proponent shall ensure suitable environmental mitigation measures such as provision of covers ad water spraying system are duly implemented. The Project Proponent shall also carry out necessary measures to ensure the stability of the temporary stockpiles; • To adopt in-situ remedial measures for the contaminated soil in accordance with the EPD's Practice Guide for Investigation and Remediation of Contaminated Land. The remedial soil shall be completely reused within the development site;	Enhance the management of C&D materials and to minimise their generation at source	Contractor	All construction sites	Detailed design and construction stage	• Section 4.1.3 of the Project Administrative Handbook for Civil Engineering Works (2014 Edition)

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		• To set up effective control procedures to ensure the traceability of disposal and reuse of the C&D materials; and • To adopt re-usable non-timber formwork and precast concrete construction as far as practicable.					

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
S11.5.1	WM2	<u>Good Site Practices</u> The following good site practices are recommended throughout the construction activities: • nomination of an approved personnel, such as a site manager, to be responsible for the implementation of good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site; • training of site personnel in site cleanliness, appropriate waste management procedures and concepts of waste reduction, reuse and recycling; • provision of sufficient waste disposal points and regular collection for disposal; • appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; • regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; • a Waste Management Plan (WMP) should be prepared by the contractor and submitted to the Engineer for approval.	Minimise waste generation during construction	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance
S11.5.1	WM3	<u>Waste Reduction Measures</u> Waste reduction is best achieved at the planning and design phase, as well as by ensuring the implementation of good site practices. The following recommendations are proposed to achieve reduction: • segregate and store different types of waste in different containers, skip or stockpiles to enhance reuse or recycling of materials and their proper disposal;	Reduce waste generation	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		• proper storage and site practices to minimise the potential for damage and contamination of construction materials; • plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste; • sort out demolition debris and excavated materials from demolition works to recover reusable/recyclable portions (i.e. soil, broken concrete, metal etc.); and • provide training to workers on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling.					

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
S11.5.1	WM4	Storage, Collection and Transportation of Waste The following recommendation should be implemented to minimise the impacts: • waste such as soil should be handled and stored well to ensure secure containment; and • depends on actual site activities, certain locations within the site area would be used for storage of waste to enhance reuse. However, there would not be any designated location for storage of waste, and the storage locations would need to be adjusted to suite actual site conditions.	Good site practice to minimise the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	• Land (Miscellaneous Provisions) Ordinance • Waste Disposal Ordinance • ETWB TCW No. 19/2005
S11.5.1	WM5	Excavated Sediment The anticipated minor amount excavated sediment is proposed to be stabilised / solidified by mixing with cement so that the mixture is suitable to be reused on-site as backfill in construction of road base.	Handle excavated sediment	Contractor	All construction sites where applicable	Construction stage	• ETWB-TCW 34/2002
S11.5.1	WM6	Collection and Transportation of Waste The following recommendation should be implemented to minimise the impacts: • waste such as soil should be handled and stored well to ensure secure containment; • stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; and • different locations should be designated to stockpile each material to enhance reuse.	Minimise waste impacts from storage	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance
S11.5.1	WM7	Site Formation and C&D Materials Wherever practicable, C&D materials should be segregated from other wastes to avoid contamination and ensure	Minimise waste impacts from excavated and C&D materials	Contractor	All construction sites	Construction Stage	• Land (Miscellaneous Provisions)

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		acceptability at public fill reception facilities or reclamation sites. The following mitigation measures should be implemented in handling the excavated and C&D materials: • maintain temporary stockpiles and reuse excavated fill material for backfilling; • carry out on-site sorting; • make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; and • implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified.					Ordinance • Waste Disposal Ordinance • ETWB TCW No. 19/2005 • Project Administrative Handbook for Civil Engineering Works, 2012 Edition
S11.5.1	WM8	Chemical Waste If chemical wastes are produced at the construction site, the Contractors should register with EPD as chemical waste producer. Chemical wastes should be stored in appropriate containers and collected by a licensed chemical waste collector. Chemical wastes (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while the chemical waste that cannot be recycled should be disposed of at either the Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction stage	• Waste Disposal (Chemical Waste) General) Regulation • Code of Practice on the Packaging, Labelling and Storage of Chemical Waste
S11.5.1	WM9	Asbestos Containing Materials Some key precautionary measures related to the handling and disposal of asbestos are listed as below. • Adoption of protection, such as full containment, mini containment, or segregation of work area;	Precautionary measures to handle and disposal of asbestos	Contractor	All construction sites	Construction Stage	• Handling of Asbestos Containing Materials in Buildings (ProPECC PN

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		• Provision of decontamination facilities for cleaning of workings, equipment and bagged waste before leaving the work area; • Adoption of engineering control techniques to prevent fibre release from work area, such as use of negative pressure equipment with high efficiency particulate air (HEPA) filters to control air flow between the work area and the outside environment; • Wetting of asbestos containing materials before and during disturbance, minimizing the breakage and dropping of asbestos containing materials, and packing of debris and waste immediately after it is produced; • Cleaning of work area by wet wiping and vacuuming with HEPA filtered vacuum cleaner; • Coating on any surfaces previously in contact with or contained by asbestos with a sealant; • Proper bagging, safe storage and disposal of asbestos and asbestos contaminated waste; • Pre-treatment of all effluent from the work area before discharged; and • Air monitoring strategy to check the leakage and clearance of the work area during and after the asbestos work.					2/97)
S11.5.1	WM10	<u>General Refuse</u> • General refuse should be stored in enclosed bins separately from construction and chemical wastes. Recycling bins should also be placed to encourage recycling. • Preferably enclosed and covered areas should be provided for general refuse collection and routine	Minimise production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		cleaning for these areas should also be implemented to keep areas clean. • A reputable waste collector should be employed to remove general refuse on a daily basis.					
Waste Management (Operational Waste)							
S11.5.2	WM11	Municipal Solid Waste General refuse from residential and commercial buildings should be collected with lidded bins and delivered to a central collection point and stored in enclosed containers to prevent windblown, vermin, water pollution and visual impact. At least daily collection should be arranged by the waste collector.	Remove general refuse generated from the proposed development	FEHD/ Relevant Operators	All construction sites	Operational stage	• Waste Disposal Ordinance
S11.5.2	WM12	Chemical Waste • Localized chemical waste storage areas should be located close to the source of waste generation for temporary storage. Drum-type containers with proper labelling should be used to collect chemical wastes for storage at the designated areas. • A licensed collector should be employed for the chemical waste collection and the chemical wastes should be disposed at an appropriate facility, such as Chemical Waste Treatment Centre (CWTC) in Tsing Yi. • Collection receipts issued by the licensed collector showing the quantities and types of chemical waste taken off-site and details of the treatment facility should be kept for record.	Reduce chemical waste due to waste handling	Contractors/ Relevant Operators	All construction sites	Operational stage	

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
Land Contamination							
S12.7	LC2	Re-appraisal would be required for the 'potentially contaminated landuses', 'industrial site with no potential for land contamination' and 'Non-Industrial landuses' within the land contamination assessment area as the development of these sites/ areas would only commence a number of years later, which may allow changes in the land usage of these sites and may give rise to potential land contamination issues. The Project Proponent's appointed consultant would prepare a supplementary CAP presenting the findings of the re-appraisal and strategy of the recommended SI, if required, and submit to EPD for review and approval.	To assess the latest site situation and identify any potential additional hot spots and contaminated sites.	Project Proponent / Detailed Design Consultant / Private developer	All the surveyed sites as listed in the CAP, other remaining areas of the PDAs and works areas for the associated infrastructures	Prior to the construction stage	Ditto
S12.7	LC3	After approval of the supplementary CAP and upon completion of the SI works, the Project Proponent should prepare and submit a supplementary Contamination Assessment Report (CAR) for all potentially contaminated sites listed in the CAP to EPD for agreement.	Present the findings of SI and evaluate the level and extent of potential contamination	Project Proponent / Detailed Design Consultant / Private developer	All the surveyed sites as listed in the CAP, other remaining areas of the PDAs and works areas for the associated infrastructures	Prior to the construction stage	Ditto
S.12.8	LC4	Preparation and submission of Remediation Action Plan (RAP) to EPD for agreement if land contamination is confirmed.	Recommend appropriate mitigation measures for the contaminated soil and groundwater	Project Proponent / Detailed Design Consultant / Private developer	All the surveyed sites as listed in the CAP, other	Prior to the construction stage	Ditto

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
			identified in the assessment if remediation is required		remaining areas of the PDAs and works areas for the associated infrastructures		
S.12.8	LC5	Preparation and submission of Remediation Report (RR) to EPD for agreement.	Demonstrate that the decontamination work is adequate and is carried out in accordance with the endorsed CAR and RAP	Project Proponent / Detailed Design Consultant / Private developer	All the surveyed sites as listed in the CAP, other remaining areas of the PDAs and works areas for the associated infrastructures	Prior to the construction stage	Ditto

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
EM&A Project							
S14.2	EM1	An Independent Environmental Checker needs to be employed as per the EM&A Manual.	Control EM&A Performance	Project Proponent	All construction sites	Construction stage	• EIA Ordinance Guidance Note No.4/2010 • EIAO-TM
S14.2 – 14.4	EM2	1) An Environmental Team needs to be employed as per the EM&A Manual. 2) Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures. 3) An environmental impact monitoring needs to be implementing by the Environmental Team to ensure all the requirements given in the EM&A Manual are fully complied with.	Perform environmental monitoring & auditing	Project Proponent	All construction sites	Construction stage	• EIA Ordinance Guidance Note No.4/2010 • EIAO-TM

Note: Chapters 1 to 3 of the EIA report present the background information of the Project, identified concurrent projects, objectives and scope for various environmental aspects, and description on alternative options and construction description. Chapters 4 to 13 of the EIA report present the EIA findings and mitigation measures are described below with cross-reference to the EIA report. Chapters 14 to 16 describe the environmental monitoring requirements, summary of environmental outcomes and conclusion.

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
Common Mitigation Measures (Applicable to DP6)							
Construction Dust Impact							
S4.4.6	D1	Water spraying every hour on exposed worksites and haul road.	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and EIAO-TM criteria
S4.4.6	D2	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and EIAO-TM criteria
S4.4.6	D3	The following dust suppression measures should be incorporated to control the dust nuisance throughout the construction phase: • Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads;	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and EIAO-TM criteria

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		• A stockpile of dusty material should not be extended beyond the pedestrian barriers, fencing or traffic cones; • The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores; • When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period; • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens,					

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport should be totally enclosed by impervious sheeting; • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides; • Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed; • Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and • Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shortcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies.					
S4.4.6	D4	Implement regular dust monitoring under EM&A programme during the construction stage.	Monitoring of dust impact	Contractor	Selected dust monitoring stations	Construction stage	• EIAO-TM

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
Construction Noise							
S5.5.3	N1	Implement construction noise mitigation measures, including, but not limited to, good site management practices, use of quiet plant, installation of movable temporary noise barrier and setup up of liaison group to ensure construction noise impacts at the NSRs comply with the construction noise criteria. 1. Good site management practices • only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; • machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; • plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; • silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; • mobile plant should be sited as far away from NSRs as possible and practicable; and • material stockpiles, site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities. 2. Use of quiet plant • Use of quiet plant listed in the Quality Powered Mechanical Equipment (QPME) / other commonly used PME listed in Environmental Protection Department	Control construction noise impacts	Contractor	All construction sites	Construction stage	• EIAO-TM

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		(EPD) web pages. 3. Installation of movable temporary noise barrier • Install movable temporary noise barriers (typical design is wooden framed barrier with a small-cantilevered upper portion of superficial density no less than 7kg/m^2 on a skid footing with 25mm thick internal sound absorptive lining), and full enclosure, screen the noisy plants including air compressors, generators etc. 4. Setup of liaison group • Setup a liaison group among CEDD, relevant government departments, contractors of the work contracts, etc. during construction phase to ensure proper implementation of the proposed noise mitigation measures.					

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S5.5.3	N2	Carry out construction noise monitoring in accordance with the EM&A Manual.	Monitor the construction noise impacts	Contractor	Selected noise monitoring stations	Construction stage	EIAO-TM
Operational Noise (Road Traffic Noise)							
S5.6.3	N3	The following noise mitigation measures are proposed to alleviate adverse traffic noise impact on the affected NSRs: • Full enclosures at primary distributor roads at TYST Interchange. Provision of enclosures for existing NSRs are as follows: Stage 2 • Approx. 180m long 6m high full enclosure along TYST Interchange (FE01) • Approx. 175m long 6m high full enclosure along TYST Interchange (FE02) • Approx. 195m long 6m high full enclosure along TYST Interchange (FE03) • Approx. 180m long 6m high full enclosure along TYST Interchange (FE04)	Control the road traffic noise impacts	CEDD / Private developers	Refer to Figure 6.3, Figure 6.3a-c.	Prior to operation of the Project for existing NSRs. While for mitigation measures to protect planned NSRs, it should be constructed before population intake of planned NSRs.	• EIAO-TM
S5.6.3	N4	Carry out operational traffic noise monitoring in accordance with the EM&A Manual.	Monitor the road traffic noise impacts	CEDD	Selected noise monitoring stations	Within the first year upon the completion of proposed road works or occupation year of the proposed	• EIAO-TM

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						developments	

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Water Quality (Construction Phase)							
S6.8.1.2	W1	<u>*General Construction Activities*</u> In accordance with the Practice Note for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN1/94), best management practices should be implemented on site as far as practicable. The best practices are detailed below: • At the start of site establishment, perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities; • Diversion of natural stormwater should be provided as far as possible. The design of temporary on-site drainage should prevent runoff going through site surface, construction machinery and equipment in order to avoid or minimise polluted runoff. Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m^3 capacities, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity shall be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped; • The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a silt/sediment trap. The silt/sediment traps should be incorporated in the permanent drainage channels to	To minimise water quality impact from construction site runoff and general construction activities	Contractor	All construction sites where applicable	Construction stage	• Water Pollution Control Ordinance • ProPECC PN1/94 • EIAO-TM • TM-DSS

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		enhance deposition rates; • The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94. The detailed design of the sand/silt traps should be undertaken by the contractor prior to the commencement of construction; • Construction works should be programmed to minimise surface excavation works during the rainy seasons (April to September). All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means; • All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas; • If the excavation of trenches in wet periods is necessary, it should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities; • All open stockpiles of construction materials (for example, aggregates, sand and fill material) should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system; • Manholes (including newly constructed ones) should					

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		always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers; • Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarized in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events; • All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities should be provided at every construction site exit where practicable. Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains; • Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain; • Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts; • All fuel tanks and storage areas should be provided with					

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		locks and sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby;and • Regular environmental audit on the construction site should be carried out in order to prevent any malpractices. Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the water bodies, mangroves and open sea.					
S6.8.1.4	W2	*Prevention of Accidental Spillage of Chemicals* • The chemicals used during construction, such as fuel, oil, solvents and lubricants shall be properly stored and contained in designated area with secondary containment to prevent spillage and contamination of the nearby water environment. • Any maintenance activities and workshops with chemicals use shall be located away from watercourses on hard standings within a bunded area. Sumps and oil interceptors should be provided as appropriate. • The Contractor shall register as a chemical waste producer and employ licensed collector for collection of chemical waste from the construction site. Any chemical waste generated shall be managed in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	To prevent water quality impact due to chemical spillage	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • Waste Disposal (Chemical Waste) (General) Regulation
S6.8.1.7	W3	*Sewage from workforce* • Portable chemical toilets and sewage holding tanks are recommended for handling the construction sewage generated by the workforce. A licensed contractor should be employed to provide appropriate and adequate portable	To minimise water quality impact from sewage effluent in construction phase	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • TM-DSS

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		toilets and be responsible for appropriate disposal and maintenance; • Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment during the construction phase of the Project; • Regular environmental audit on the construction site should be conducted in order to provide an effective control of any malpractices and achieve continual improvement of environmental performance on site.					
S6.8.1.9	W4	*Contaminated Groundwater and Site Runoff* To prevent the water quality due to the contaminated water from the area with contamination, the following mitigation measures should be adopted. • Cover the contaminated soil and surface to prevent the generation of contaminated water. • No open stockpiling of contaminated soil should be allowed to prevent generation of contaminated water due to precipitation. • Contaminated water, either from groundwater or runoff, should be treated by wastewater treatment facility (WTF) to an acceptable level as indicated in TM-DSS before disposal if the deployment of such WTF is feasible. • Recharging the contaminated groundwater back to the aquifer should be sought if treatment of the contaminated groundwater by WTF is not feasible, subject to the agreement with EPD.	To minimise water quality impact from contaminated groundwater in construction phase	Contractor	All construction sites where practicable	Construction stage	• TM-DSS
Water Quality (Operational Phase)							

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S6.8.2.3	W9	*Change in Drainage System and Road Runoff* • Proper drainage systems with silt traps and oil interceptors should be installed. • Runoff will be intercepted by properly designed and managed silt traps at appropriate spacing so that common roadside debris, refuse and fallen leaves etc. can be captured before allowing the runoff to drain into watercourses such as Yuen Long Creek. • At the outlets to watercourses, the delegated operation parties should manage the road/open area cleaning prior to the occurrence of a storm to remove pollutants. The collected pollutants would be tankered away for off-site disposal at landfill sites.	To reduce impact on drainage system due to road/ surface runoff	DSD	Proposed drainage system and future site operators	Operational Stage	-
S6.8.2.7	W11	*Wastewater from Storage and Workshop Area* • Discharge license under WPCO should be applied by the tenants in other specific uses (Storage and Workshop, and Open Storage) subject to their future operation needs. Compliance with WPCO for discharge of wastewater shall be ensured.	To ensure wastewater discharge from storage and workshop areas comply with WPCO	Future operator	Proposed storage and workshop areas	Operational Stage	• WPCO

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Ecology (Design Phase)							
S8.6.6	EC6	To avoid the use of highly reflective materials in the design, and implementing the use of opaque materials, fritting, breaking up external reflections with stickers or plastic wrap and/or any other bird-friendly design for noise barriers	To minimise risk of bird strike with noise barriers	PlanD/ Detailed Design Consultant	Locations to be installed with noise barriers	Design phase	• EIAO-TM
Ecology (Construction Phase)							
S8.6.5	EC8	To conduct a baseline plant survey within all proposed works areas to ascertain the presence and update the quantities and conditions of any flora species of conservation importance; to transplant all affected plant species of conservation importance to suitable receptor site(s) before commencement of construction works	To minimise direct impacts on plant species of conservation importance	CEDD/ Contractor	All potential works areas	Before commencement of construction works	• EIAO-TM
S8.6.6	EC11	Checking and clearance for nesting birds (buildings and vegetation) shall be conducted/ supervised by a qualitied ecologist with relevant experience	To minimise direct impacts on nesting birds	CEDD/ Contractor	All works areas	Before commencement of construction work	• EIAO-TM
S8.6.6	EC12	Checking and clearance of bat roosts shall be conducted/ supervised by a qualitied ecologist with relevant experienced	To minimise direct impacts on bat roost(s)	CEDD/ Contractor	All works areas	Before commencement of construction work	• EIAO-TM
S8.6.6	EC13	Good site practices to control construction phase water quality impacts	To minimise induced water quality impacts on nearby water bodies	CEDD/ Contractor	All works areas	Construction Phase	• EIAO-TM

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Fisheries							
S9.5.2	F1	To adopt the mitigation measures for the control of water quality impacts	To protect fisheries resources from potential direct impacts arising from deterioration of water quality	CEDD/ Contractor	All works areas	Construction phase	• EIAO-TM

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Landscape and Visual (Construction Phase)							
S10.12 – Table 10.12.1, CM1	LV1	<u>Optimisation of Construction Areas and Providing Temporary Landscape on Temporary Construction</u> Construction areas' control shall be enforced, where possible, to ensure that the landscape and visual impacts arising from the construction activities are minimised. It includes reduction of the extent of working areas and temporary works areas, management on storing and using the construction equipment and materials, and consideration of detailed schedules to shorten the construction period. Temporary landscape treatments are considered to be adopted such as applying hydro-seeding on temporary stockpiles and reclamation areas to alleviate the potential impacts.	Minimise impacts from construction activities on adjacent landscape and visual sensitive receivers	CEDD (via Contractor)	All construction areas and temporary works areas	Detailed design, prior to construction, construction stage	
S10.12 – Table 10.12.1, CM2	LV2	<u>Minimise Topographical Changes</u> To minimise landscape and visual impacts, the vertical and horizontal alignment of the at-grade road construction works should be optimised to reduce topographical/ landform changes, as well as reduce land take and interference with natural terrain and reduce overall earth movements. Where there is a need to significantly cut into the existing landform, retaining walls should be considered as well as cut slopes, to minimise landform changes and land resumption, whilst also considering visual amenity. Earthworks and engineered slopes should be designed to provide a structurally stable and visually interesting landform, which is compatible with surrounding landscape and mimics the natural contouring and terrain (e.g. introduction and continuation of natural features such as spurs and ridges where appropriate) to support landscape	Minimise landscape and visual impacts from topographical/ landform changes	CEDD (via Contractor)	All construction areas	Detailed design, construction stage	

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location	Implementation Stage	Requirements and / or standards to be achieved
		and visual assimilation with the surrounding terrain.					
S10.12 – Table 10.12.1, CM3	LV3	<u>Tree Protection & Preservation</u> Existing trees to be retained within the Project Site should be carefully protected during construction. Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works areas. A detailed tree survey will be carried out for the Tree Removal Application (TRA) process which will be carried out at the later detailed design stage of the Project. The detailed tree survey will propose which trees should be retained, transplanted or felled and will include details of tree protection measures for those trees to be retained.	Protect and Preserve Trees	CEDD (via Contractor)	On site	Detailed design, construction stage	• DEVB TCW No.7/2015; • ETWB TCW No.29/2004
S10.12 – Table 10.12.1, CM4	LV4	<u>Transplanting of Existing Trees</u> Trees unavoidably affected by the Project works should be transplanted where practical. Trees should be transplanted straight to their final receptor site and not held in a temporary nursery as far as possible. A detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with DEVB TCW No.6/2015 and DEVB TCW 7/2015 and final locations of transplanted trees should be agreed prior to commencement of the work. For trees associated with highways e.g. roadside planting along highways, that are unavoidably affected and should be transplanted, following HyD Guidelines HQ/GN/13 'Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit'.	Transplant Trees where suitable for transplantation	CEDD (via Contractor)	On site where possible	Prior to construction, construction stage	• DEVB TCW No.6/2015; • DEVB TCW 7/2015; • HyD Guidelines HQ/GN/13

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S10.12 – Table 10.12.1, CM5	LV5	Screen Hoarding Screen hoarding shall be erected along areas of the construction boundary where the works site borders with publicly accessible routes and/or is close to visually sensitive receivers (VSRs), to screen undesirable views of the works site. It is proposed that the screening be compatible with the surrounding environment in terms of material choice and colour.	Screen undesirable views of the construction sites	CEDD (via Contractor)	All construction areas and temporary works areas	Construction stage	
S10.12 – Table 10.12.1, CM7	LV7	Construction Light Control All security floodlights for construction sites should be carefully controlled to minimise light pollution and night-time glare to nearby users.	Minimise impact of night-time lighting and glare	CEDD (via Contractor)	All construction areas and temporary works areas	Construction stage	
Landscape and Visual (Operational Phase)							
S10.12 – Table 10.12.1, OM3	LV11	Operation Light Control Night time lighting should be controlled during operation to minimise glare and light spill from the potential development/ infrastructure. Street and night time lighting shall also be controlled to minimise glare impact to adjacent VSRs during the operation phase.	Avoid glare and light pollution	ArchSD/ Housing Department/ Private Sector	Throughout the development area	Detailed design, construction stage	
S10.12 – Table 10.12.1, OM6	LV14	Aesthetic Design of Built Development Compatible design, construction materials and surface finishes of the proposed structure should match with the nearby existing external appearance of the proposed buildings for achieving visual uniformity. Finishing materials shall have due consideration to form, light earthy tone colours treatments, micro- and macro-texture, and	Improve visual amenity of the new buildings and structures, integrate as best possible into the surrounding landscape	ArchSD/ Housing Department/ Private Sector	Above ground buildings and utility structures	Detailed design, construction stage	

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		reflectivity/ light absorbance to avoid glare.					
S10.12 – Table 10.12.1, OM7	LV15	<u>Maximise Greening on Engineering Structures and Surfaces</u> Where space and appropriate planting conditions allow (i.e. where suitable depth of planting medium is possible, maintenance access available and enough light penetration to ground level), climbing plants should be considered to grow up vertical surfaces such as greening facade of building blocks, viaduct piers or noise barriers. The planting once established will assist in breaking up the appearance of uniform engineered structures and surfaces. Tree planting and care that integrate with wider streetscape elements such as hardscape paving, outdoor furniture as well as lighting poles should be considered to create a pedestrian-friendly network. Streetscape design, including integrity with the building space at ground floor, keeping a suitable distance between trees and buildings should follow the Greening, Landscape and Tree Management Section (GLTM) of the Development Bureau's Guidelines on Greening of Noise Barriers (April 2012).	To soften the hard, straight edges and provide greening along viaducts and structures	Initiating Government Department (relevant user department)/ Private Sector	All structures as feasible, final location to be confirmed at detailed design stage	Detailed design, construction stage and maintenance in operation phase	• GLTM of the Development Bureau's Guidelines on Greening of Noise Barriers (April 2012) • DEVB (GLTM) No. 3/2012 – Site Coverage of Greenery for Government Building Projects
S10.12 – Table 10.12.1, OM8	LV16	<u>Noise Barrier Design</u> The visual impact of noise mitigation measures will be mitigated by appropriate detailed design to reduce visual bulkiness and incorporate aesthetically pleasing surface treatments to promote visual amenity, including suitable combination of transparent and sound absorbent materials, appropriate colour selection of panels and supporting structures, or provision of at-grade planting of trees, shrubs and/or climbers camouflage to the barriers, as well as design of supporting structures to incorporate a high level of quality and aesthetics. A combination of transparent panels at top and solid panels at bottom would lighten the	Minimise potential adverse visual impacts	CEDD (via Contractor)	Noise barriers	Detailed design, construction stage	• GLTM of the Development Bureau's Guidelines on Greening of Noise Barriers (April 2012) DEVB (GLTM) No. 3/2012 – Site Coverage of Greenery for

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		visual impact, and at the same time maintain the attractiveness by using colourful panels. The noise barriers would be implemented for District Distributor Roads and Local Distributor Roads. Relevant technical documents DEVB (GLTM) No. 2/2012 - Allocation of Space for Quality Greening on Roads, DEVB (GLTM) No. 3/2012 – Site Coverage of Greenery for Government Building Projects, and Guidelines on Design of Noise Barriers by HyD and EPD in 2003 shall be reference.					Government Building Projects

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Waste Management (Construction Waste)							
S11.2.7	WM1	<u>Comments on C&DMMP given by PFC</u> • To ensure good quality rock is put to full use. Where necessary, the Project Proponent should consult the Mines Division, GEO for advice on the appropriate arrangement to put to full use the good quality rock. The Project Proponent should also maintain close liaison with the quarry operators for the necessary disposal arrangements; • To on-site reuse all surplus inert C&D hard material generated within the Project for balanced cut-and-fill designs. The Project Proponent is reminded that surplus fill might be generated by others in the subsequent building development works within the Project's area. The detailed site formation design should reserve sufficient capacity to absorb all such fill materials so that no disposal would be required outside the Project area; • To carry out on-site temporary storage in case of any programme mismatch between fill generation and demand, the Project Proponent should carry out on-site temporary storage. Where necessary, the Project Proponent shall ensure suitable environmental mitigation measures such as provision of covers ad water spraying system are duly implemented. The Project Proponent shall also carry out necessary measures to ensure the stability of the temporary stockpiles; • To adopt in-situ remedial measures for the contaminated soil in accordance with the EPD's Practice Guide for Investigation and Remediation of Contaminated Land. The remedial soil shall be completely reused within the	Enhance the management of C&D materials and to minimise their generation at source	Contractor	All construction sites	Detailed design and construction stage	• Section 4.1.3 of the Project Administrative Handbook for Civil Engineering Works (2014 Edition)

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		development site; • To set up effective control procedures to ensure the traceability of disposal and reuse of the C&D materials; and • To adopt re-usable non-timber formwork and precast concrete construction as far as practicable.					

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S11.5.1	WM2	<u>Good Site Practices</u> The following good site practices are recommended throughout the construction activities: • nomination of an approved personnel, such as a site manager, to be responsible for the implementation of good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site; • training of site personnel in site cleanliness, appropriate waste management procedures and concepts of waste reduction, reuse and recycling; • provision of sufficient waste disposal points and regular collection for disposal; • appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; • regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; • a Waste Management Plan (WMP) should be prepared by the contractor and submitted to the Engineer for approval.	Minimise waste generation during construction	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance
S11.5.1	WM3	<u>Waste Reduction Measures</u> Waste reduction is best achieved at the planning and design phase, as well as by ensuring the implementation of good site practices. The following recommendations are proposed to achieve reduction: • segregate and store different types of waste in different containers, skip or stockpiles to enhance reuse or recycling of materials and their proper disposal;	Reduce waste generation	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		• proper storage and site practices to minimise the potential for damage and contamination of construction materials; • plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste; • sort out demolition debris and excavated materials from demolition works to recover reusable/recyclable portions (i.e. soil, broken concrete, metal etc.); and • provide training to workers on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling.					

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S11.5.1	WM4	Storage, Collection and Transportation of Waste The following recommendation should be implemented to minimise the impacts: • waste such as soil should be handled and stored well to ensure secure containment; and • depends on actual site activities, certain locations within the site area would be used for storage of waste to enhance reuse. However, there would not be any designated location for storage of waste, and the storage locations would need to be adjusted to suite actual site conditions.	Good site practice to minimise the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	• Land (Miscellaneous Provisions) Ordinance • Waste Disposal Ordinance • ETWB TCW No. 19/2005
S11.5.1	WM5	Excavated Sediment The anticipated minor amount excavated sediment is proposed to be stabilised / solidified by mixing with cement so that the mixture is suitable to be reused on-site as backfill in construction of road base.	Handle excavated sediment	Contractor	All construction sites where applicable	Construction stage	• ETWB-TCW 34/2002
S11.5.1	WM6	Collection and Transportation of Waste The following recommendation should be implemented to minimise the impacts: • waste such as soil should be handled and stored well to ensure secure containment; • stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; and • different locations should be designated to stockpile each material to enhance reuse.	Minimise waste impacts from storage	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance
S11.5.1	WM7	Site Formation and C&D Materials Wherever practicable, C&D materials should be segregated from other wastes to avoid contamination and ensure	Minimise waste impacts from excavated and C&D materials	Contractor	All construction sites	Construction Stage	• Land (Miscellaneous Provisions)

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		acceptability at public fill reception facilities or reclamation sites. The following mitigation measures should be implemented in handling the excavated and C&D materials: • maintain temporary stockpiles and reuse excavated fill material for backfilling; • carry out on-site sorting; • make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; and • implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified.					Ordinance • Waste Disposal Ordinance • ETWB TCW No. 19/2005 • Project Administrative Handbook for Civil Engineering Works, 2012 Edition
S11.5.1	WM8	<u>Chemical Waste</u> If chemical wastes are produced at the construction site, the Contractors should register with EPD as chemical waste producer. Chemical wastes should be stored in appropriate containers and collected by a licensed chemical waste collector. Chemical wastes (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while the chemical waste that cannot be recycled should be disposed of at either the Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction stage	• Waste Disposal (Chemical Waste) General) Regulation • Code of Practice on the Packaging, Labelling and Storage of Chemical Waste
S11.5.1	WM9	<u>Asbestos Containing Materials</u> Some key precautionary measures related to the handling and disposal of asbestos are listed as below. • Adoption of protection, such as full containment, mini containment, or segregation of work area;	Precautionary measures to handle and disposal of asbestos	Contractor	All construction sites	Construction Stage	• Handling of Asbestos Containing Materials in Buildings (ProPECC PN

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		• Provision of decontamination facilities for cleaning of workings, equipment and bagged waste before leaving the work area; • Adoption of engineering control techniques to prevent fibre release from work area, such as use of negative pressure equipment with high efficiency particulate air (HEPA) filters to control air flow between the work area and the outside environment; • Wetting of asbestos containing materials before and during disturbance, minimizing the breakage and dropping of asbestos containing materials, and packing of debris and waste immediately after it is produced; • Cleaning of work area by wet wiping and vacuuming with HEPA filtered vacuum cleaner; • Coating on any surfaces previously in contact with or contained by asbestos with a sealant; • Proper bagging, safe storage and disposal of asbestos and asbestos contaminated waste; • Pre-treatment of all effluent from the work area before discharged; and • Air monitoring strategy to check the leakage and clearance of the work area during and after the asbestos work.					2/97)
S11.5.1	WM10	<u>General Refuse</u> • General refuse should be stored in enclosed bins separately from construction and chemical wastes. Recycling bins should also be placed to encourage recycling. • Preferably enclosed and covered areas should be provided for general refuse collection and routine	Minimise production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance

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		cleaning for these areas should also be implemented to keep areas clean. • A reputable waste collector should be employed to remove general refuse on a daily basis.					
Waste Management (Operational Waste)							
S11.5.2	WM11	Municipal Solid Waste General refuse from residential and commercial buildings should be collected with lidded bins and delivered to a central collection point and stored in enclosed containers to prevent windblown, vermin, water pollution and visual impact. At least daily collection should be arranged by the waste collector.	Remove general refuse generated from the proposed development	FEHD/ Relevant Operators	All construction sites	Operational stage	• Waste Disposal Ordinance
S11.5.2	WM12	Chemical Waste • Localized chemical waste storage areas should be located close to the source of waste generation for temporary storage. Drum-type containers with proper labelling should be used to collect chemical wastes for storage at the designated areas. • A licensed collector should be employed for the chemical waste collection and the chemical wastes should be disposed at an appropriate facility, such as Chemical Waste Treatment Centre (CWTC) in Tsing Yi. • Collection receipts issued by the licensed collector showing the quantities and types of chemical waste taken off-site and details of the treatment facility should be kept for record.	Reduce chemical waste due to waste handling	Contractors/ Relevant Operators	All construction sites	Operational stage	

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
Land Contamination							
S12.6	LC1	Undertaking environmental Site Inspection (SI) for all potentially contaminated sites as listed in the Contamination Assessment Plan (CAP).	Verify the land contamination potential before the commencement of construction	Project Proponent / Detailed Design Consultant / Private developer	All potentially contaminated sites as listed in the CAP	Prior to the construction stage	• 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); • Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management; • Guidance Notes for Contaminated Land Assessment and Remediation; and • Practice Guide for Investigation and Remediation of Contaminated

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							Land • Recommendations in Health Risk Assessment
S12.7	LC2	Re-appraisal would be required for the 'potentially contaminated landuses', 'industrial site with no potential for land contamination' and 'Non-Industrial landuses' within the land contamination assessment area as the development of these sites/ areas would only commence a number of years later, which may allow changes in the land usage of these sites and may give rise to potential land contamination issues. The Project Proponent's appointed consultant would prepare a supplementary CAP presenting the findings of the re-appraisal and strategy of the recommended SI, if required, and submit to EPD for review and approval.	To assess the latest site situation and identify any potential additional hot spots and contaminated sites.	Project Proponent / Detailed Design Consultant / Private developer	All the surveyed sites as listed in the CAP, other remaining areas of the PDAs and works areas for the associated infrastructures	Prior to the construction stage	Ditto
S12.7	LC3	After approval of the supplementary CAP and upon completion of the SI works, the Project Proponent should prepare and submit a supplementary Contamination Assessment Report (CAR) for all potentially contaminated sites listed in the CAP to EPD for agreement.	Present the findings of SI and evaluate the level and extent of potential contamination	Project Proponent / Detailed Design Consultant / Private developer	All the surveyed sites as listed in the CAP, other remaining areas of the PDAs and works areas for the associated infrastructures	Prior to the construction stage	Ditto
S.12.8	LC4	Preparation and submission of Remediation Action Plan (RAP) to EPD for agreement if land contamination is confirmed.	Recommend appropriate mitigation measures for the contaminated soil	Project Proponent / Detailed Design Consultant /	All the surveyed sites as listed in the	Prior to the construction stage	Ditto

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			and groundwater identified in the assessment if remediation is required	Private developer	CAP, other remaining areas of the PDAs and works areas for the associated infrastructures		
S.12.8	LC5	Preparation and submission of Remediation Report (RR) to EPD for agreement.	Demonstrate that the decontamination work is adequate and is carried out in accordance with the endorsed CAR and RAP	Project Proponent / Detailed Design Consultant / Private developer	All the surveyed sites as listed in the CAP, other remaining areas of the PDAs and works areas for the associated infrastructures	Prior to the construction stage	Ditto

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
EM&A Project							
S14.2	EM1	An Independent Environmental Checker needs to be employed as per the EM&A Manual.	Control EM&A Performance	Project Proponent	All construction sites	Construction stage	• EIA Ordinance Guidance Note No.4/2010 • EIAO-TM
S14.2 – 14.4	EM2	1) An Environmental Team needs to be employed as per the EM&A Manual. 2) Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures. 3) An environmental impact monitoring needs to be implementing by the Environmental Team to ensure all the requirements given in the EM&A Manual are fully complied with.	Perform environmental monitoring & auditing	Project Proponent	All construction sites	Construction stage	• EIA Ordinance Guidance Note No.4/2010 • EIAO-TM

Note: Chapters 1 to 3 of the EIA report present the background information of the Project, identified concurrent projects, objectives and scope for various environmental aspects, and description on alternative options and construction description. Chapters 4 to 13 of the EIA report present the EIA findings and mitigation measures are described below with cross-reference to the EIA report. Chapters 14 to 16 describe the environmental monitoring requirements, summary of environmental outcomes and conclusion.

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
Common Mitigation Measures (Applicable to DP7)							
Construction Dust Impact							
S4.4.6	D1	Water spraying every hour on exposed worksites and haul road.	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and EIAO-TM criteria
S4.4.6	D2	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and EIAO-TM criteria
S4.4.6	D3	The following dust suppression measures should be incorporated to control the dust nuisance throughout the construction phase: • Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads;	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and EIAO-TM criteria

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		• A stockpile of dusty material should not be extended beyond the pedestrian barriers, fencing or traffic cones; • The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores; • When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period; • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens,					

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		sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport should be totally enclosed by impervious sheeting; • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides; • Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed; • Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and • Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shortcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies.					
S4.4.6	D4	Implement regular dust monitoring under EM&A programme during the construction stage.	Monitoring of dust impact	Contractor	Selected dust monitoring stations	Construction stage	• EIAO-TM

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Odour Impact							
S4.6.4	D5	The following at-source mitigation measures should be implemented to control odour emission from the proposed STW and SPS: • Potential odour sources should be enclosed; • Negative pressure should be maintained within the facilities; • Installation of deodouriser with an odour removal efficiency of at least 99.5% to control odour emission via ventilation exhaust; • Exhaust of the deodouriser should be oriented away from sensitive receivers and vertically upwards to avoid direct facing to any sensitive receivers; and • Maintenance of deodouriser should be regularly conducted to ensure good condition.	Minimise odour impact at the nearby sensitive receivers	Relevant government departments	Refer to Figure 4.13	Upon operation of the proposed STW and SPS	• EIAO-TM
S4.6.4	D6	For the planned District Open Space (DO3.1): • No sensitive uses should be introduced in the exceedance area within the planned DO3.1;.	Minimise odour impact on the nearby planned sensitive receivers	Relevant government departments	Refer to Figures 3.1d and 4.14a-b	Operational stage	• EIAO-TM

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
Construction Noise							
S5.5.3	N1	Implement construction noise mitigation measures, including, but not limited to, good site management practices, use of quiet plant, installation of movable temporary noise barrier and setup up of liaison group to ensure construction noise impacts at the NSRs comply with the construction noise criteria. 1. Good site management practices • only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; • machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; • plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; • silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; • mobile plant should be sited as far away from NSRs as possible and practicable; and • material stockpiles, site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities. 2. Use of quiet plant • Use of quiet plant listed in the Quality Powered Mechanical Equipment (QPME) / other commonly used PME listed in Environmental Protection Department	Control construction noise impacts	Contractor	All construction sites	Construction stage	• EIAO-TM

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		(EPD) web pages. 3. Installation of movable temporary noise barrier • Install movable temporary noise barriers (typical design is wooden framed barrier with a small-cantilevered upper portion of superficial density no less than 7kg/m^2 on a skid footing with 25mm thick internal sound absorptive lining), and full enclosure, screen the noisy plants including air compressors, generators etc. 4. Setup of liaison group Setup a liaison group among CEDD, relevant government departments, contractors of the work contracts, etc. during construction phase to ensure proper implementation of the proposed noise mitigation measures.					

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S5.5.3	N2	Carry out construction noise monitoring in accordance with the EM&A Manual.	Monitor the construction noise impacts	Contractor	Selected noise monitoring stations	Construction stage	EIAO-TM
Operational Noise (Fixed Noise)							
S5.7.3	N5	The maximum allowable sound power level for the planned fixed noise sources should be complied with during the selection of equipment and mitigation measures.	To comply with noise criteria of EIAO-TM	Relevant government departments / Future operators	All planned fixed noise sources at Electricity Substation, Refuse Collection Points, Sewage Pumping Stations, Sewage Treatment Works, Divisional Fire Station and Ambulance Depot, Public Transport Interchange, Sports Centre and Market, District Police Station,	S5.7.3	• N5

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
					Storage Use Sites, Open Storage Sites, Storage and Workshop Sites, Retention Tank and Government Depot.		

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
Water Quality (Construction Phase)							
S6.8.1.2	W1	<u>*General Construction Activities*</u> In accordance with the Practice Note for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN1/94), best management practices should be implemented on site as far as practicable. The best practices are detailed below: • At the start of site establishment, perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities; • Diversion of natural stormwater should be provided as far as possible. The design of temporary on-site drainage should prevent runoff going through site surface, construction machinery and equipment in order to avoid or minimise polluted runoff. Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m^3 capacities, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity shall be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped; • The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a silt/sediment trap. The silt/sediment traps should be incorporated in the permanent drainage channels to	To minimise water quality impact from construction site runoff and general construction activities	Contractor	All construction sites where applicable	Construction stage	• Water Pollution Control Ordinance • ProPECC PN1/94 • EIAO-TM • TM-DSS

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		enhance deposition rates; • The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94. The detailed design of the sand/silt traps should be undertaken by the contractor prior to the commencement of construction; • Construction works should be programmed to minimise surface excavation works during the rainy seasons (April to September). All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means; • All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas; • If the excavation of trenches in wet periods is necessary, it should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities; • All open stockpiles of construction materials (for example, aggregates, sand and fill material) should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system; • Manholes (including newly constructed ones) should					

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		always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers; • Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarized in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events; • All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities should be provided at every construction site exit where practicable. Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains; • Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain; • Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts; • All fuel tanks and storage areas should be provided with					

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		locks and sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby;and • Regular environmental audit on the construction site should be carried out in order to prevent any malpractices. Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the water bodies, mangroves and open sea.					
S6.8.1.4	W2	*Prevention of Accidental Spillage of Chemicals* • The chemicals used during construction, such as fuel, oil, solvents and lubricants shall be properly stored and contained in designated area with secondary containment to prevent spillage and contamination of the nearby water environment. • Any maintenance activities and workshops with chemicals use shall be located away from watercourses on hard standings within a bunded area. Sumps and oil interceptors should be provided as appropriate. • The Contractor shall register as a chemical waste producer and employ licensed collector for collection of chemical waste from the construction site. Any chemical waste generated shall be managed in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	To prevent water quality impact due to chemical spillage	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • Waste Disposal (Chemical Waste) (General) Regulation
S6.8.1.7	W3	*Sewage from workforce* • Portable chemical toilets and sewage holding tanks are recommended for handling the construction sewage generated by the workforce. A licensed contractor should be employed to provide appropriate and adequate portable	To minimise water quality impact from sewage effluent in construction phase	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • TM-DSS

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		toilets and be responsible for appropriate disposal and maintenance; • Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment during the construction phase of the Project; • Regular environmental audit on the construction site should be conducted in order to provide an effective control of any malpractices and achieve continual improvement of environmental performance on site.					
S6.8.1.9	W4	*Contaminated Groundwater and Site Runoff* To prevent the water quality due to the contaminated water from the area with contamination, the following mitigation measures should be adopted. • Cover the contaminated soil and surface to prevent the generation of contaminated water. • No open stockpiling of contaminated soil should be allowed to prevent generation of contaminated water due to precipitation. • Contaminated water, either from groundwater or runoff, should be treated by wastewater treatment facility (WTF) to an acceptable level as indicated in TM-DSS before disposal if the deployment of such WTF is feasible. • Recharging the contaminated groundwater back to the aquifer should be sought if treatment of the contaminated groundwater by WTF is not feasible, subject to the agreement with EPD.	To minimise water quality impact from contaminated groundwater in construction phase	Contractor	All construction sites where practicable	Construction stage	• TM-DSS
S6.8.1.10	W5	*Construction Works of near/ within Watercourses* • Cofferdams and impermeable sheet piles should be	To avoid any direct water quality impact to	Contractor	All construction sites where	Construction stage	• ETWB TC (Works) No.

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		installed as appropriate to isolate the flow of the nullah from the construction works area. The detailed design of the cofferdams will be conducted by the Contractor during the construction phase to fulfil the requirements in DSD Technical Circular No. 1/2017 "Temporary Flow Diversions and Temporary Works Affecting Capacity in Stormwater Drainage System" for DSD approval, in order to formulate feasible options of these temporary structure. • Stockpiling of construction materials and dusty materials should be located from any watercourses, contained in bunded areas and covered with tarpaulin. • Construction debris and spoil should be covered with tarpaulin during storage. Timely removal of materials away from the site for disposal should be arranged to avoid being washed into the nearby watercourses. • Water pumps should be used to collect any wastewater and construction site surface runoff within the cofferdam/ temporary works platform. The collected wastewater shall be properly treated before discharge. • Toe-board and bunds shall be provided along the edge of the works area/ temporary platform to prevent wastewater/ debris from falling into the watercourses. • Any temporary works site inside the watercourses should be temporarily isolated, such as by placing of sandbags or silt curtains with lead edge at bottom and properly supported props to prevent adverse impact on the water quality. • Proper shoring may need to be erected in order to prevent soil / mud from slipping into the inland water bodies. • Construction effluent, site run-off and sewage should be properly collected and/or treated.	existing watercourses		practicable		5/2005

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S6.8.1.11	W6	*Removal/ Diversion of watercourses* • Cofferdams and impermeable sheet piles should be installed as appropriate to isolate the water flow from the construction works area. • Dewatering or flow diversion shall be conducted prior to the construction works to prevent water overflow to the surrounding area. • Watercourse removal and flow diversion should be conducted in dry season as far as practicable when the water flow is low. • Water drained from the watercourse shall be diverted to new/ temporary drainage for watercourse diversion. For watercourse removal, the water drained shall be collected and treated to meet the requirements of WPCO and TM-DSS before discharge. • Any excavated land-based sediment from the removal/ diversion of watercourse shall be properly stored at bunded areas away from any watercourse and covered with tarpaulin before transporting out of the site.	To avoid water quality impact on existing watercourses to be retained	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • TM-DSS • ETWB TC (Works) No. 5/2005 • ProPECC PN1/94
Water Quality (Operational Phase)							
S6.8.2.1	W8	*Emergency Discharge from Sewage Treatment Works and Sewage Pumping Stations* The following mitigation measures will be implemented to the design of SPSs and STW to prevent emergency discharge to Deep Bay: • Twin rising mains would be provided. Should one of the duty mains be taken out of operation, the remaining one would still be able to deliver flow; • Standby pumps and treatment facilities would be provided	To prevent the impact on Deep Bay due to the emergency discharge	DSD	Proposed SPSs and STW	Operational Stage	• DSD's Sewerage Manual

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		in case of unexpected breakdown of pumping and treatment facilities such that the standby pumps and treatment facilities could take over and function to replace the broken pumps; and • Dual electricity supply or backup power supply facilities such as diesel generator would be provided in case of power failure to sustain the function of pumping and treatment facilities.					
S6.8.2.3	W9	*Change in Drainage System and Road Runoff* • Proper drainage systems with silt traps and oil interceptors should be installed. • Runoff will be intercepted by properly designed and managed silt traps at appropriate spacing so that common roadside debris, refuse and fallen leaves etc. can be captured before allowing the runoff to drain into watercourses such as Yuen Long Creek. • At the outlets to watercourses, the delegated operation parties should manage the road/open area cleaning prior to the occurrence of a storm to remove pollutants. The collected pollutants would be tankered away for off-site disposal at landfill sites.	To reduce impact on drainage system due to road/ surface runoff	DSD	Proposed drainage system and future site operators	Operational Stage	-
S6.8.2.7	W11	*Wastewater from Storage and Workshop Area* • Discharge license under WPCO should be applied by the tenants in other specific uses (Storage and Workshop, and Open Storage) subject to their future operation needs. Compliance with WPCO for discharge of wastewater shall be ensured.	To ensure wastewater discharge from storage and workshop areas comply with WPCO	Future operator	Proposed storage and workshop areas	Operational Stage	• WPCO

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Sewage and Sewerage Treatment Implications							
S7.6.5	SS2	*Emergency Discharge of Proposed STW* The following mitigation measures will be implemented: • Twin rising mains would be provided. Should one of the duty mains be taken out of operation, the remaining one would still be able to deliver flow; • Standby pumps and treatment facilities would be provided in case of unexpected breakdown of pumping and treatment facilities such that the standby pumps and treatment facilities could take over and function to replace the broken pumps; and • Dual electricity supply or backup power supply facilities such as diesel generator would be provided in case of power failure to sustain the function of pumping and treatment facilities.	To prevent the impact to Deep Bay due to the emergency discharge	DSD	Proposed Sewage Treatment Work at YLS	Operational stage	N/A

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Ecology (Construction Phase)							
S8.6.6	EC7	Precautionary surveys to check for presence of any aquatic fauna species of conservation importance in the watercourses to be directly impacted before commencement of works; affected aquatic fauna of conservation importance shall be captured and translocated to suitable receptor site(s)	To minimise direct impacts on aquatic species of conservation importance	CEDD/ Contractor	All affected watercourses	Before commencement of construction works	• EIAO-TM
S8.6.5	EC8	To conduct a baseline plant survey within all proposed works areas to ascertain the presence and update the quantities and conditions of any flora species of conservation importance; to transplant all affected plant species of conservation importance to suitable receptor site(s) before commencement of construction works	To minimise direct impacts on plant species of conservation importance	CEDD/ Contractor	All potential works areas	Before commencement of construction works	• EIAO-TM
S8.6.6	EC11	Checking and clearance for nesting birds (buildings and vegetation) shall be conducted/ supervised by a qualitied ecologist with relevant experience	To minimise direct impacts on nesting birds	CEDD/ Contractor	All works areas	Before commencement of construction work	• EIAO-TM
S8.6.6	EC12	Checking and clearance of bat roosts shall be conducted/ supervised by a qualitied ecologist with relevant experienced	To minimise direct impacts on bat roost(s)	CEDD/ Contractor	All works areas	Before commencement of construction work	• EIAO-TM
S8.6.6	EC13	Good site practices to control construction phase water quality impacts	To minimise induced water quality impacts on nearby water bodies	CEDD/ Contractor	All works areas	Construction Phase	• EIAO-TM

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Fisheries							
S9.5.2	F1	To adopt the mitigation measures for the control of water quality impacts	To protect fisheries resources from potential direct impacts arising from deterioration of water quality	CEDD/ Contractor	All works areas	Construction phase	• EIAO-TM

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location	Implementation Stage	Requirements and / or standards to be achieved
Landscape and Visual (Construction Phase)							
S10.12 – Table 10.12.1, CM1	LV1	<u>Optimisation of Construction Areas and Providing Temporary Landscape on Temporary Construction</u> Construction areas' control shall be enforced, where possible, to ensure that the landscape and visual impacts arising from the construction activities are minimised. It includes reduction of the extent of working areas and temporary works areas, management on storing and using the construction equipment and materials, and consideration of detailed schedules to shorten the construction period. Temporary landscape treatments are considered to be adopted such as applying hydro-seeding on temporary stockpiles and reclamation areas to alleviate the potential impacts.	Minimise impacts from construction activities on adjacent landscape and visual sensitive receivers	CEDD (via Contractor)	All construction areas and temporary works areas	Detailed design, prior to construction, construction stage	
S10.12 – Table 10.12.1, CM2	LV2	<u>Minimise Topographical Changes</u> To minimise landscape and visual impacts, the vertical and horizontal alignment of the at-grade road construction works should be optimised to reduce topographical/ landform changes, as well as reduce land take and interference with natural terrain and reduce overall earth movements. Where there is a need to significantly cut into the existing landform, retaining walls should be considered as well as cut slopes, to minimise landform changes and land resumption, whilst also considering visual amenity. Earthworks and engineered slopes should be designed to provide a structurally stable and visually interesting landform, which is compatible with surrounding landscape and mimics the natural contouring and terrain (e.g. introduction and continuation of natural features such as spurs and ridges where appropriate) to support landscape	Minimise landscape and visual impacts from topographical/ landform changes	CEDD (via Contractor)	All construction areas	Detailed design, construction stage	

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		and visual assimilation with the surrounding terrain.					
S10.12 – Table 10.12.1, CM3	LV3	<u>Tree Protection & Preservation</u> Existing trees to be retained within the Project Site should be carefully protected during construction. Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works areas. A detailed tree survey will be carried out for the Tree Removal Application (TRA) process which will be carried out at the later detailed design stage of the Project. The detailed tree survey will propose which trees should be retained, transplanted or felled and will include details of tree protection measures for those trees to be retained.	Protect and Preserve Trees	CEDD (via Contractor)	On site	Detailed design, construction stage	• DEVB TCW No.7/2015; • ETWB TCW No.29/2004
S10.12 – Table 10.12.1, CM4	LV4	<u>Transplanting of Existing Trees</u> Trees unavoidably affected by the Project works should be transplanted where practical. Trees should be transplanted straight to their final receptor site and not held in a temporary nursery as far as possible. A detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with DEVB TCW No.6/2015 and DEVB TCW 7/2015 and final locations of transplanted trees should be agreed prior to commencement of the work. For trees associated with highways e.g. roadside planting along highways, that are unavoidably affected and should be transplanted, following HyD Guidelines HQ/GN/13 'Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit'.	Transplant Trees where suitable for transplantation	CEDD (via Contractor)	On site where possible	Prior to construction, construction stage	• DEVB TCW No.6/2015; • DEVB TCW 7/2015; • HyD Guidelines HQ/GN/13

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S10.12 – Table 10.12.1, CM5	LV5	Screen Hoarding Screen hoarding shall be erected along areas of the construction boundary where the works site borders with publicly accessible routes and/or is close to visually sensitive receivers (VSRs), to screen undesirable views of the works site. It is proposed that the screening be compatible with the surrounding environment in terms of material choice and colour.	Screen undesirable views of the construction sites	CEDD (via Contractor)	All construction areas and temporary works areas	Construction stage	
S10.12 – Table 10.12.1, CM7	LV7	Construction Light Control All security floodlights for construction sites should be carefully controlled to minimise light pollution and night-time glare to nearby users.	Minimise impact of night-time lighting and glare	CEDD (via Contractor)	All construction areas and temporary works areas	Construction stage	
S10.12 – Table 10.12.1, CM8	LV8	Woodland Conservation Woodland conservation is proposed to avoid large scale of potential loss of the existing secondary woodland within the PDA.	Avoid the loss of natural woodland areas	CEDD (via Contractor)	On site	Detailed design, construction stage	• DEVB TCW No.7/2015; • ETWB TCW No.29/2004
Landscape and Visual (Operational Phase)							
S10.12 – Table 10.12.1, OM1	LV9	Compensatory Planting Compensatory tree planting for felled trees shall be provided to the satisfaction of relevant Government departments. The required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Removal Application process under DEVB TCW No.7/2015. Compensatory planting is proposed at the potential open areas such as open spaces, amenity areas, open areas of the streetscapes, as well as the open areas within development	Compensate for trees lost due to the Project	CEDD (via Contractor)	Onsite where possible. Otherwise consider offsite locations	Detailed design, construction stage and maintenance in operational stage	• DEVB TCW No.7/2015

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		lots. The provision of space for compensatory planting takes into accounts the subsequent schedules. The location of compensatory planting includes the roadside areas, street tree planting, central medians and any soft landscape areas affected by the works area.					
S10.12 – Table 10.12.1, OM2	LV10	<u>Woodland Compensation</u> Specific Woodland compensatory planting is proposed for any areas of woodland that are unavoidably affected. The compensatory woodland planting will principally be within the LRs of lower value such as (LR3 Hillside Shrubland and Grassland), where integrity of the wider woodland resource is possible. Plant species should be selected to include a mix of species with pioneering characteristics (fast-growing/ light-tolerant/ drought-tolerant/ wind-tolerant, etc.), native species and complementary species to the local area.	Compensate for areas of woodland unavoidably affected by the Project	CEDD/ AFCD	Onsite where possible. Otherwise consider offsite locations	Construction stage and maintenance in operational stage	• DEVB TCW No.7/2015
S10.12 – Table 10.12.1, OM3	LV11	<u>Operation Light Control</u> Night time lighting should be controlled during operation to minimise glare and light spill from the potential development/ infrastructure. Street and night time lighting shall also be controlled to minimise glare impact to adjacent VSRs during the operation phase.	Avoid glare and light pollution	ArchSD/ Housing Department/ Private Sector	Throughout the development area	Detailed design, construction stage	
S10.12 – Table 10.12.1, OM6	LV14	<u>Aesthetic Design of Built Development</u> Compatible design, construction materials and surface finishes of the proposed structure should match with the nearby existing external appearance of the proposed buildings for achieving visual uniformity. Finishing materials shall have due consideration to form, light earthy tone colours treatments, micro- and macro-texture, and reflectivity/ light absorbance to avoid glare.	Improve visual amenity of the new buildings and structures, integrate as best possible into the surrounding landscape	ArchSD/ Housing Department/ Private Sector	Above ground buildings and utility structures	Detailed design, construction stage	

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S10.12 – Table 10.12.1, OM7	LV15	<u>Maximise Greening on Engineering Structures and Surfaces</u> Where space and appropriate planting conditions allow (i.e. where suitable depth of planting medium is possible, maintenance access available and enough light penetration to ground level), climbing plants should be considered to grow up vertical surfaces such as greening facade of building blocks, viaduct piers or noise barriers. The planting once established will assist in breaking up the appearance of uniform engineered structures and surfaces. Tree planting and care that integrate with wider streetscape elements such as hardscape paving, outdoor furniture as well as lighting poles should be considered to create a pedestrian-friendly network. Streetscape design, including integrity with the building space at ground floor, keeping a suitable distance between trees and buildings should follow the Greening, Landscape and Tree Management Section (GLTM) of the Development Bureau's Guidelines on Greening of Noise Barriers (April 2012).	To soften the hard, straight edges and provide greening along viaducts and structures	Initiating Government Department (relevant user department)/ Private Sector	All structures as feasible, final location to be confirmed at detailed design stage	Detailed design, construction stage and maintenance in operation phase	• GLTM of the Development Bureau's Guidelines on Greening of Noise Barriers (April 2012) • DEVB (GLTM) No. 3/2012 – Site Coverage of Greenery for Government Building Projects

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
Waste Management (Construction Waste)							
S11.2.7	WM1	<u>Comments on C&DMMP given by PFC</u> • To ensure good quality rock is put to full use. Where necessary, the Project Proponent should consult the Mines Division, GEO for advice on the appropriate arrangement to put to full use the good quality rock. The Project Proponent should also maintain close liaison with the quarry operators for the necessary disposal arrangements; • To on-site reuse all surplus inert C&D hard material generated within the Project for balanced cut-and-fill designs. The Project Proponent is reminded that surplus fill might be generated by others in the subsequent building development works within the Project's area. The detailed site formation design should reserve sufficient capacity to absorb all such fill materials so that no disposal would be required outside the Project area; • To carry out on-site temporary storage in case of any programme mismatch between fill generation and demand, the Project Proponent should carry out on-site temporary storage. Where necessary, the Project Proponent shall ensure suitable environmental mitigation measures such as provision of covers ad water spraying system are duly implemented. The Project Proponent shall also carry out necessary measures to ensure the stability of the temporary stockpiles; • To adopt in-situ remedial measures for the contaminated soil in accordance with the EPD's Practice Guide for Investigation and Remediation of Contaminated Land. The remedial soil shall be completely reused within the development site;	Enhance the management of C&D materials and to minimise their generation at source	Contractor	All construction sites	Detailed design and construction stage	• Section 4.1.3 of the Project Administrative Handbook for Civil Engineering Works (2014 Edition)

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		• To set up effective control procedures to ensure the traceability of disposal and reuse of the C&D materials; and • To adopt re-usable non-timber formwork and precast concrete construction as far as practicable.					

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S11.5.1	WM2	<u>Good Site Practices</u> The following good site practices are recommended throughout the construction activities: • nomination of an approved personnel, such as a site manager, to be responsible for the implementation of good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site; • training of site personnel in site cleanliness, appropriate waste management procedures and concepts of waste reduction, reuse and recycling; • provision of sufficient waste disposal points and regular collection for disposal; • appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; • regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; • a Waste Management Plan (WMP) should be prepared by the contractor and submitted to the Engineer for approval.	Minimise waste generation during construction	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance
S11.5.1	WM3	<u>Waste Reduction Measures</u> Waste reduction is best achieved at the planning and design phase, as well as by ensuring the implementation of good site practices. The following recommendations are proposed to achieve reduction: • segregate and store different types of waste in different containers, skip or stockpiles to enhance reuse or recycling of materials and their proper disposal;	Reduce waste generation	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		• proper storage and site practices to minimise the potential for damage and contamination of construction materials; • plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste; • sort out demolition debris and excavated materials from demolition works to recover reusable/recyclable portions (i.e. soil, broken concrete, metal etc.); and • provide training to workers on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling.					

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S11.5.1	WM4	Storage, Collection and Transportation of Waste The following recommendation should be implemented to minimise the impacts: • waste such as soil should be handled and stored well to ensure secure containment; and • depends on actual site activities, certain locations within the site area would be used for storage of waste to enhance reuse. However, there would not be any designated location for storage of waste, and the storage locations would need to be adjusted to suite actual site conditions.	Good site practice to minimise the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	• Land (Miscellaneous Provisions) Ordinance • Waste Disposal Ordinance • ETWB TCW No. 19/2005
S11.5.1	WM5	Excavated Sediment The anticipated minor amount excavated sediment is proposed to be stabilised / solidified by mixing with cement so that the mixture is suitable to be reused on-site as backfill in construction of road base.	Handle excavated sediment	Contractor	All construction sites where applicable	Construction stage	• ETWB-TCW 34/2002
S11.5.1	WM6	Collection and Transportation of Waste The following recommendation should be implemented to minimise the impacts: • waste such as soil should be handled and stored well to ensure secure containment; • stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; and • different locations should be designated to stockpile each material to enhance reuse.	Minimise waste impacts from storage	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance
S11.5.1	WM7	Site Formation and C&D Materials Wherever practicable, C&D materials should be segregated from other wastes to avoid contamination and ensure	Minimise waste impacts from excavated and C&D materials	Contractor	All construction sites	Construction Stage	• Land (Miscellaneous Provisions)

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		acceptability at public fill reception facilities or reclamation sites. The following mitigation measures should be implemented in handling the excavated and C&D materials: • maintain temporary stockpiles and reuse excavated fill material for backfilling; • carry out on-site sorting; • make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; and • implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified.					Ordinance • Waste Disposal Ordinance • ETWB TCW No. 19/2005 • Project Administrative Handbook for Civil Engineering Works, 2012 Edition
S11.5.1	WM8	<u>Chemical Waste</u> If chemical wastes are produced at the construction site, the Contractors should register with EPD as chemical waste producer. Chemical wastes should be stored in appropriate containers and collected by a licensed chemical waste collector. Chemical wastes (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while the chemical waste that cannot be recycled should be disposed of at either the Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction stage	• Waste Disposal (Chemical Waste) General) Regulation • Code of Practice on the Packaging, Labelling and Storage of Chemical Waste
S11.5.1	WM9	<u>Asbestos Containing Materials</u> Some key precautionary measures related to the handling and disposal of asbestos are listed as below. • Adoption of protection, such as full containment, mini containment, or segregation of work area;	Precautionary measures to handle and disposal of asbestos	Contractor	All construction sites	Construction Stage	• Handling of Asbestos Containing Materials in Buildings (ProPECC PN

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		• Provision of decontamination facilities for cleaning of workings, equipment and bagged waste before leaving the work area; • Adoption of engineering control techniques to prevent fibre release from work area, such as use of negative pressure equipment with high efficiency particulate air (HEPA) filters to control air flow between the work area and the outside environment; • Wetting of asbestos containing materials before and during disturbance, minimizing the breakage and dropping of asbestos containing materials, and packing of debris and waste immediately after it is produced; • Cleaning of work area by wet wiping and vacuuming with HEPA filtered vacuum cleaner; • Coating on any surfaces previously in contact with or contained by asbestos with a sealant; • Proper bagging, safe storage and disposal of asbestos and asbestos contaminated waste; • Pre-treatment of all effluent from the work area before discharged; and • Air monitoring strategy to check the leakage and clearance of the work area during and after the asbestos work.					2/97)
S11.5.1	WM10	<u>General Refuse</u> • General refuse should be stored in enclosed bins separately from construction and chemical wastes. Recycling bins should also be placed to encourage recycling. • Preferably enclosed and covered areas should be provided for general refuse collection and routine	Minimise production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance

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		cleaning for these areas should also be implemented to keep areas clean. • A reputable waste collector should be employed to remove general refuse on a daily basis.					
Waste Management (Operational Waste)							
S11.5.2	WM11	Municipal Solid Waste General refuse from residential and commercial buildings should be collected with lidded bins and delivered to a central collection point and stored in enclosed containers to prevent windblown, vermin, water pollution and visual impact. At least daily collection should be arranged by the waste collector.	Remove general refuse generated from the proposed development	FEHD/ Relevant Operators	All construction sites	Operational stage	• Waste Disposal Ordinance
S11.5.2	WM12	Chemical Waste • Localized chemical waste storage areas should be located close to the source of waste generation for temporary storage. Drum-type containers with proper labelling should be used to collect chemical wastes for storage at the designated areas. • A licensed collector should be employed for the chemical waste collection and the chemical wastes should be disposed at an appropriate facility, such as Chemical Waste Treatment Centre (CWTC) in Tsing Yi. • Collection receipts issued by the licensed collector showing the quantities and types of chemical waste taken off-site and details of the treatment facility should be kept for record.	Reduce chemical waste due to waste handling	Contractors/ Relevant Operators	All construction sites	Operational stage	

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
Land Contamination							
S12.6	LC1	Undertaking environmental Site Inspection (SI) for all potentially contaminated sites as listed in the Contamination Assessment Plan (CAP).	Verify the land contamination potential before the commencement of construction	Project Proponent / Detailed Design Consultant / Private developer	All potentially contaminated sites as listed in the CAP	Prior to the construction stage	• 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); • Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management; • Guidance Notes for Contaminated Land Assessment and Remediation; and • Practice Guide for Investigation and Remediation of Contaminated

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							Land • Recommendations in Health Risk Assessment
S12.7	LC2	Re-appraisal would be required for the 'potentially contaminated landuses', 'industrial site with no potential for land contamination' and 'Non-Industrial landuses' within the land contamination assessment area as the development of these sites/ areas would only commence a number of years later, which may allow changes in the land usage of these sites and may give rise to potential land contamination issues. The Project Proponent's appointed consultant would prepare a supplementary CAP presenting the findings of the re-appraisal and strategy of the recommended SI, if required, and submit to EPD for review and approval.	To assess the latest site situation and identify any potential additional hot spots and contaminated sites.	Project Proponent / Detailed Design Consultant / Private developer	All the surveyed sites as listed in the CAP, other remaining areas of the PDAs and works areas for the associated infrastructures	Prior to the construction stage	Ditto
S12.7	LC3	After approval of the supplementary CAP and upon completion of the SI works, the Project Proponent should prepare and submit a supplementary Contamination Assessment Report (CAR) for all potentially contaminated sites listed in the CAP to EPD for agreement.	Present the findings of SI and evaluate the level and extent of potential contamination	Project Proponent / Detailed Design Consultant / Private developer	All the surveyed sites as listed in the CAP, other remaining areas of the PDAs and works areas for the associated infrastructures	Prior to the construction stage	Ditto
S.12.8	LC4	Preparation and submission of Remediation Action Plan (RAP) to EPD for agreement if land contamination is confirmed.	Recommend appropriate mitigation measures for the contaminated soil	Project Proponent / Detailed Design Consultant /	All the surveyed sites as listed in the	Prior to the construction stage	Ditto

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			and groundwater identified in the assessment if remediation is required	Private developer	CAP, other remaining areas of the PDAs and works areas for the associated infrastructures		
S.12.8	LC5	Preparation and submission of Remediation Report (RR) to EPD for agreement.	Demonstrate that the decontamination work is adequate and is carried out in accordance with the endorsed CAR and RAP	Project Proponent / Detailed Design Consultant / Private developer	All the surveyed sites as listed in the CAP, other remaining areas of the PDAs and works areas for the associated infrastructures	Prior to the construction stage	Ditto

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EM&A Project							
S14.2	EM1	An Independent Environmental Checker needs to be employed as per the EM&A Manual.	Control EM&A Performance	Project Proponent	All construction sites	Construction stage	• EIA Ordinance Guidance Note No.4/2010 • EIAO-TM
S14.2 – 14.4	EM2	1) An Environmental Team needs to be employed as per the EM&A Manual. 2) Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures. 3) An environmental impact monitoring needs to be implementing by the Environmental Team to ensure all the requirements given in the EM&A Manual are fully complied with.	Perform environmental monitoring & auditing	Project Proponent	All construction sites	Construction stage	• EIA Ordinance Guidance Note No.4/2010 • EIAO-TM

Note: Chapters 1 to 3 of the EIA report present the background information of the Project, identified concurrent projects, objectives and scope for various environmental aspects, and description on alternative options and construction description. Chapters 4 to 13 of the EIA report present the EIA findings and mitigation measures are described below with cross-reference to the EIA report. Chapters 14 to 16 describe the environmental monitoring requirements, summary of environmental outcomes and conclusion.

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
Common Mitigation Measures (Applicable to DP8)							
Construction Dust Impact							
S4.4.6	D1	Water spraying every hour on exposed worksites and haul road.	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and EIAO-TM criteria
S4.4.6	D2	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and EIAO-TM criteria
S4.4.6	D3	The following dust suppression measures should be incorporated to control the dust nuisance throughout the construction phase: • Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads;	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and EIAO-TM criteria

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		• A stockpile of dusty material should not be extended beyond the pedestrian barriers, fencing or traffic cones; • The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores; • When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period; • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens,					

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		sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport should be totally enclosed by impervious sheeting; • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides; • Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed; • Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and • Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shortcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies.					
S4.4.6	D4	Implement regular dust monitoring under EM&A programme during the construction stage.	Monitoring of dust impact	Contractor	Selected dust monitoring stations	Construction stage	• EIAO-TM

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Odour Impact							
S4.6.4	D5	The following at-source mitigation measures should be implemented to control odour emission from the proposed STW and SPS: • Potential odour sources should be enclosed; • Negative pressure should be maintained within the facilities; • Installation of deodouriser with an odour removal efficiency of at least 99.5% to control odour emission via ventilation exhaust; • Exhaust of the deodouriser should be oriented away from sensitive receivers and vertically upwards to avoid direct facing to any sensitive receivers; and • Maintenance of deodouriser should be regularly conducted to ensure good condition.	Minimise odour impact at the nearby sensitive receivers	Relevant government departments	Refer to Figure 4.13	Upon operation of the proposed STW and SPS	• EIAO-TM

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Construction Noise							
S5.5.3	N1	Implement construction noise mitigation measures, including, but not limited to, good site management practices, use of quiet plant, installation of movable temporary noise barrier and setup up of liaison group to ensure construction noise impacts at the NSRs comply with the construction noise criteria. 1. Good site management practices • only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; • machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; • plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; • silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; • mobile plant should be sited as far away from NSRs as possible and practicable; and • material stockpiles, site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities. 2. Use of quiet plant • Use of quiet plant listed in the Quality Powered Mechanical Equipment (QPME) / other commonly used PME listed in Environmental Protection Department	Control construction noise impacts	Contractor	All construction sites	Construction stage	• EIAO-TM

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		(EPD) web pages. 3. Installation of movable temporary noise barrier • Install movable temporary noise barriers (typical design is wooden framed barrier with a small-cantilevered upper portion of superficial density no less than 7kg/m^2 on a skid footing with 25mm thick internal sound absorptive lining), and full enclosure, screen the noisy plants including air compressors, generators etc. 4. Setup of liaison group Setup a liaison group among CEDD, relevant government departments, contractors of the work contracts, etc. during construction phase to ensure proper implementation of the proposed noise mitigation measures.					

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S5.5.3	N2	Carry out construction noise monitoring in accordance with the EM&A Manual.	Monitor the construction noise impacts	Contractor	Selected noise monitoring stations	Construction stage	EIAO-TM
Operational Noise (Fixed Noise)							
S5.7.3	N5	The maximum allowable sound power level for the planned fixed noise sources should be complied with during the selection of equipment and mitigation measures. •	To comply with noise criteria of EIAO-TM	Relevant government departments / Future operators	All planned fixed noise sources at Electricity Substation, Refuse Collection Points, Sewage Pumping Stations, Sewage Treatment Works, Divisional Fire Station and Ambulance Depot, Public Transport Interchange, Sports Centre and Market, District Police Station,	Detailed design and operational stages	• EIAO-TM

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
					Storage Use Sites, Open Storage Sites, Storage and Workshop Sites, Retention Tank and Government Depot.		

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Water Quality (Construction Phase)							
S6.8.1.2	W1	<u>*General Construction Activities*</u> In accordance with the Practice Note for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN1/94), best management practices should be implemented on site as far as practicable. The best practices are detailed below: • At the start of site establishment, perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities; • Diversion of natural stormwater should be provided as far as possible. The design of temporary on-site drainage should prevent runoff going through site surface, construction machinery and equipment in order to avoid or minimise polluted runoff. Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m^3 capacities, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity shall be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped; • The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a silt/sediment trap. The silt/sediment traps should be incorporated in the permanent drainage channels to	To minimise water quality impact from construction site runoff and general construction activities	Contractor	All construction sites where applicable	Construction stage	• Water Pollution Control Ordinance • ProPECC PN1/94 • EIAO-TM • TM-DSS

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		enhance deposition rates; • The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94. The detailed design of the sand/silt traps should be undertaken by the contractor prior to the commencement of construction; • Construction works should be programmed to minimise surface excavation works during the rainy seasons (April to September). All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means; • All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas; • If the excavation of trenches in wet periods is necessary, it should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities; • All open stockpiles of construction materials (for example, aggregates, sand and fill material) should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system; • Manholes (including newly constructed ones) should					

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		always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers; • Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarized in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events; • All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities should be provided at every construction site exit where practicable. Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains; • Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain; • Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts; • All fuel tanks and storage areas should be provided with					

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		locks and sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby;and • Regular environmental audit on the construction site should be carried out in order to prevent any malpractices. Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the water bodies, mangroves and open sea.					
S6.8.1.4	W2	*Prevention of Accidental Spillage of Chemicals* • The chemicals used during construction, such as fuel, oil, solvents and lubricants shall be properly stored and contained in designated area with secondary containment to prevent spillage and contamination of the nearby water environment. • Any maintenance activities and workshops with chemicals use shall be located away from watercourses on hard standings within a bunded area. Sumps and oil interceptors should be provided as appropriate. • The Contractor shall register as a chemical waste producer and employ licensed collector for collection of chemical waste from the construction site. Any chemical waste generated shall be managed in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	To prevent water quality impact due to chemical spillage	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • Waste Disposal (Chemical Waste) (General) Regulation
S6.8.1.7	W3	*Sewage from workforce* • Portable chemical toilets and sewage holding tanks are recommended for handling the construction sewage generated by the workforce. A licensed contractor should be employed to provide appropriate and adequate portable	To minimise water quality impact from sewage effluent in construction phase	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • TM-DSS

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		toilets and be responsible for appropriate disposal and maintenance; • Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment during the construction phase of the Project; • Regular environmental audit on the construction site should be conducted in order to provide an effective control of any malpractices and achieve continual improvement of environmental performance on site.					
S6.8.1.9	W4	*Contaminated Groundwater and Site Runoff* To prevent the water quality due to the contaminated water from the area with contamination, the following mitigation measures should be adopted. • Cover the contaminated soil and surface to prevent the generation of contaminated water. • No open stockpiling of contaminated soil should be allowed to prevent generation of contaminated water due to precipitation. • Contaminated water, either from groundwater or runoff, should be treated by wastewater treatment facility (WTF) to an acceptable level as indicated in TM-DSS before disposal if the deployment of such WTF is feasible. • Recharging the contaminated groundwater back to the aquifer should be sought if treatment of the contaminated groundwater by WTF is not feasible, subject to the agreement with EPD.	To minimise water quality impact from contaminated groundwater in construction phase	Contractor	All construction sites where practicable	Construction stage	• TM-DSS
S6.8.1.10	W5	*Construction Works of near/ within Watercourses* • Cofferdams and impermeable sheet piles should be	To avoid any direct water quality impact to	Contractor	All construction sites where	Construction stage	• ETWB TC (Works) No.

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		installed as appropriate to isolate the flow of the nullah from the construction works area. The detailed design of the cofferdams will be conducted by the Contractor during the construction phase to fulfil the requirements in DSD Technical Circular No. 1/2017 "Temporary Flow Diversions and Temporary Works Affecting Capacity in Stormwater Drainage System" for DSD approval, in order to formulate feasible options of these temporary structure. • Stockpiling of construction materials and dusty materials should be located from any watercourses, contained in bunded areas and covered with tarpaulin. • Construction debris and spoil should be covered with tarpaulin during storage. Timely removal of materials away from the site for disposal should be arranged to avoid being washed into the nearby watercourses. • Water pumps should be used to collect any wastewater and construction site surface runoff within the cofferdam/ temporary works platform. The collected wastewater shall be properly treated before discharge. • Toe-board and bunds shall be provided along the edge of the works area/ temporary platform to prevent wastewater/ debris from falling into the watercourses. • Any temporary works site inside the watercourses should be temporarily isolated, such as by placing of sandbags or silt curtains with lead edge at bottom and properly supported props to prevent adverse impact on the water quality. • Proper shoring may need to be erected in order to prevent soil / mud from slipping into the inland water bodies. • Construction effluent, site run-off and sewage should be properly collected and/or treated.	existing watercourses		practicable		5/2005

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S6.8.1.11	W6	*Removal/ Diversion of watercourses* • Cofferdams and impermeable sheet piles should be installed as appropriate to isolate the water flow from the construction works area. • Dewatering or flow diversion shall be conducted prior to the construction works to prevent water overflow to the surrounding area. • Watercourse removal and flow diversion should be conducted in dry season as far as practicable when the water flow is low. • Water drained from the watercourse shall be diverted to new/ temporary drainage for watercourse diversion. For watercourse removal, the water drained shall be collected and treated to meet the requirements of WPCO and TM-DSS before discharge. • Any excavated land-based sediment from the removal/ diversion of watercourse shall be properly stored at bunded areas away from any watercourse and covered with tarpaulin before transporting out of the site.	To avoid water quality impact on existing watercourses to be retained	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • TM-DSS • ETWB TC (Works) No. 5/2005 • ProPECC PN1/94
Water Quality (Operational Phase)							
S6.8.2.1	W8	*Emergency Discharge from Sewage Treatment Works and Sewage Pumping Stations* The following mitigation measures will be implemented to the design of SPSs and STW to prevent emergency discharge to Deep Bay: • Twin rising mains would be provided. Should one of the duty mains be taken out of operation, the remaining one would still be able to deliver flow; • Standby pumps and treatment facilities would be provided	To prevent the impact on Deep Bay due to the emergency discharge	DSD	Proposed SPSs and STW	Operational Stage	• DSD's Sewerage Manual

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		in case of unexpected breakdown of pumping and treatment facilities such that the standby pumps and treatment facilities could take over and function to replace the broken pumps; and • Dual electricity supply or backup power supply facilities such as diesel generator would be provided in case of power failure to sustain the function of pumping and treatment facilities.					
S6.8.2.3	W9	*Change in Drainage System and Road Runoff* • Proper drainage systems with silt traps and oil interceptors should be installed. • Runoff will be intercepted by properly designed and managed silt traps at appropriate spacing so that common roadside debris, refuse and fallen leaves etc. can be captured before allowing the runoff to drain into watercourses such as Yuen Long Creek. • At the outlets to watercourses, the delegated operation parties should manage the road/open area cleaning prior to the occurrence of a storm to remove pollutants. The collected pollutants would be tankered away for off-site disposal at landfill sites.	To reduce impact on drainage system due to road/ surface runoff	DSD	Proposed drainage system and future site operators	Operational Stage	-
S6.8.2.7	W11	*Wastewater from Storage and Workshop Area* • Discharge license under WPCO should be applied by the tenants in other specific uses (Storage and Workshop, and Open Storage) subject to their future operation needs. Compliance with WPCO for discharge of wastewater shall be ensured.	To ensure wastewater discharge from storage and workshop areas comply with WPCO	Future operator	Proposed storage and workshop areas	Operational Stage	• WPCO

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Sewage and Sewerage Treatment Implications							
S7.6.5	SS1	*Emergency Discharge of Proposed SPSs* The following mitigation measures will be implemented: • Twin rising mains would be provided. Should one of the duty mains be taken out of operation, the remaining one would still be able to deliver flow; • Standby pumps and treatment facilities would be provided in case of unexpected breakdown of pumping and treatment facilities such that the standby pumps and treatment facilities could take over and function to replace the broken pumps; and • Dual electricity supply or backup power supply facilities such as diesel generator would be provided in case of power failure to sustain the function of pumping and treatment facilities.	To prevent the impact to Deep Bay due to the emergency discharge	DSD	Proposed Sewage Pumping Station at YLS	Operational stage	N/A

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Ecology (Construction Phase)							
S8.6.6	EC7	Precautionary surveys to check for presence of any aquatic fauna species of conservation importance in the watercourses to be directly impacted before commencement of works; affected aquatic fauna of conservation importance shall be captured and translocated to suitable receptor site(s)	To minimise direct impacts on aquatic species of conservation importance	CEDD/ Contractor	All affected watercourses	Before commencement of construction works	• EIAO-TM
S8.6.5	EC8	To conduct a baseline plant survey within all proposed works areas to ascertain the presence and update the quantities and conditions of any flora species of conservation importance; to transplant all affected plant species of conservation importance to suitable receptor site(s) before commencement of construction works	To minimise direct impacts on plant species of conservation importance	CEDD/ Contractor	All potential works areas	Before commencement of construction works	• EIAO-TM
S8.6.6	EC11	Checking and clearance for nesting birds (buildings and vegetation) shall be conducted/ supervised by a qualitied ecologist with relevant experience	To minimise direct impacts on nesting birds	CEDD/ Contractor	All works areas	Before commencement of construction work	• EIAO-TM
S8.6.6	EC12	Checking and clearance of bat roosts shall be conducted/ supervised by a qualitied ecologist with relevant experienced	To minimise direct impacts on bat roost(s)	CEDD/ Contractor	All works areas	Before commencement of construction work	• EIAO-TM
S8.6.6	EC13	Good site practices to control construction phase water quality impacts	To minimise induced water quality impacts on nearby water bodies	CEDD/ Contractor	All works areas	Construction Phase	• EIAO-TM

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Fisheries							
S9.5.2	F1	To adopt the mitigation measures for the control of water quality impacts	To protect fisheries resources from potential direct impacts arising from deterioration of water quality	CEDD/ Contractor	All works areas	Construction phase	• EIAO-TM

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Landscape and Visual (Construction Phase)							
S10.12 – Table 10.12.1, CM1	LV1	Optimisation of Construction Areas and Providing Temporary Landscape on Temporary Construction Construction areas' control shall be enforced, where possible, to ensure that the landscape and visual impacts arising from the construction activities are minimised. It includes reduction of the extent of working areas and temporary works areas, management on storing and using the construction equipment and materials, and consideration of detailed schedules to shorten the construction period. Temporary landscape treatments are considered to be adopted such as applying hydro-seeding on temporary stockpiles and reclamation areas to alleviate the potential impacts.	Minimise impacts from construction activities on adjacent landscape and visual sensitive receivers	CEDD (via Contractor)	All construction areas and temporary works areas	Detailed design, prior to construction, construction stage	
S10.12 – Table 10.12.1, CM2	LV2	Minimise Topographical Changes To minimise landscape and visual impacts, the vertical and horizontal alignment of the at-grade road construction works should be optimised to reduce topographical/ landform changes, as well as reduce land take and interference with natural terrain and reduce overall earth movements. Where there is a need to significantly cut into the existing landform, retaining walls should be considered as well as cut slopes, to minimise landform changes and land resumption, whilst also considering visual amenity. Earthworks and engineered slopes should be designed to provide a structurally stable and visually interesting landform, which is compatible with surrounding landscape and mimics the natural contouring and terrain (e.g. introduction and continuation of natural features such as spurs and ridges where appropriate) to support landscape	Minimise landscape and visual impacts from topographical/ landform changes	CEDD (via Contractor)	All construction areas	Detailed design, construction stage	

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		and visual assimilation with the surrounding terrain.					
S10.12 – Table 10.12.1, CM3	LV3	<u>Tree Protection & Preservation</u> Existing trees to be retained within the Project Site should be carefully protected during construction. Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works areas. A detailed tree survey will be carried out for the Tree Removal Application (TRA) process which will be carried out at the later detailed design stage of the Project. The detailed tree survey will propose which trees should be retained, transplanted or felled and will include details of tree protection measures for those trees to be retained.	Protect and Preserve Trees	CEDD (via Contractor)	On site	Detailed design, construction stage	• DEVB TCW No.7/2015; • ETWB TCW No.29/2004
S10.12 – Table 10.12.1, CM4	LV4	<u>Transplanting of Existing Trees</u> Trees unavoidably affected by the Project works should be transplanted where practical. Trees should be transplanted straight to their final receptor site and not held in a temporary nursery as far as possible. A detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with DEVB TCW No.6/2015 and DEVB TCW 7/2015 and final locations of transplanted trees should be agreed prior to commencement of the work. For trees associated with highways e.g. roadside planting along highways, that are unavoidably affected and should be transplanted, following HyD Guidelines HQ/GN/13 'Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit'.	Transplant Trees where suitable for transplantation	CEDD (via Contractor)	On site where possible	Prior to construction, construction stage	• DEVB TCW No.6/2015; • DEVB TCW 7/2015; • HyD Guidelines HQ/GN/13

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S10.12 – Table 10.12.1, CM5	LV5	Screen Hoarding Screen hoarding shall be erected along areas of the construction boundary where the works site borders with publicly accessible routes and/or is close to visually sensitive receivers (VSRs), to screen undesirable views of the works site. It is proposed that the screening be compatible with the surrounding environment in terms of material choice and colour.	Screen undesirable views of the construction sites	CEDD (via Contractor)	All construction areas and temporary works areas	Construction stage	
S10.12 – Table 10.12.1, CM7	LV7	Construction Light Control All security floodlights for construction sites should be carefully controlled to minimise light pollution and night-time glare to nearby users.	Minimise impact of night-time lighting and glare	CEDD (via Contractor)	All construction areas and temporary works areas	Construction stage	
S10.12 – Table 10.12.1, CM8	LV8	Woodland Conservation Woodland conservation is proposed to avoid large scale of potential loss of the existing secondary woodland within the PDA.	Avoid the loss of natural woodland areas	CEDD (via Contractor)	On site	Detailed design, construction stage	• DEVB TCW No.7/2015; • ETWB TCW No.29/2004
Landscape and Visual (Operational Phase)							
S10.12 – Table 10.12.1, OM1	LV9	Compensatory Planting Compensatory tree planting for felled trees shall be provided to the satisfaction of relevant Government departments. The required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Removal Application process under DEVB TCW No.7/2015. Compensatory planting is proposed at the potential open areas such as open spaces, amenity areas, open areas of the streetscapes, as well as the open areas within development	Compensate for trees lost due to the Project	CEDD (via Contractor)	Onsite where possible. Otherwise consider offsite locations	Detailed design, construction stage and maintenance in operational stage	• DEVB TCW No.7/2015

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		lots. The provision of space for compensatory planting takes into accounts the subsequent schedules. The location of compensatory planting includes the roadside areas, street tree planting, central medians and any soft landscape areas affected by the works area.					
S10.12 – Table 10.12.1, OM2	LV10	<u>Woodland Compensation</u> Specific Woodland compensatory planting is proposed for any areas of woodland that are unavoidably affected. The compensatory woodland planting will principally be within the LRs of lower value such as (LR3 Hillside Shrubland and Grassland), where integrity of the wider woodland resource is possible. Plant species should be selected to include a mix of species with pioneering characteristics (fast-growing/ light-tolerant/ drought-tolerant/ wind-tolerant, etc.), native species and complementary species to the local area.	Compensate for areas of woodland unavoidably affected by the Project	CEDD/ AFCD	Onsite where possible. Otherwise consider offsite locations	Construction stage and maintenance in operational stage	• DEVB TCW No.7/2015
S10.12 – Table 10.12.1, OM3	LV11	<u>Operation Light Control</u> Night time lighting should be controlled during operation to minimise glare and light spill from the potential development/ infrastructure. Street and night time lighting shall also be controlled to minimise glare impact to adjacent VSRs during the operation phase.	Avoid glare and light pollution	ArchSD/ Housing Department/ Private Sector	Throughout the development area	Detailed design, construction stage	
S10.12 – Table 10.12.1, OM4	LV12	<u>Screen Planting</u> Tall screen/buffer trees and shrubs should be planted to assist in screening proposed road corridors and associated above ground structures such as elevated road sections and engineered embankments. This measure may additionally form part of the compensatory planting and will improve compatibility with the surrounding environment and create a pleasant pedestrian environment.	Provide adequate screening with trees to improve visual amenity	CEDD (via Contractor)	Along roadside, around suitable structures	Detailed design, construction stage and maintenance in operation phase	

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S10.12 – Table 10.12.1, OM6	LV14	Aesthetic Design of Built Development Compatible design, construction materials and surface finishes of the proposed structure should match with the nearby existing external appearance of the proposed buildings for achieving visual uniformity. Finishing materials shall have due consideration to form, light earthy tone colours treatments, micro- and macro-texture, and reflectivity/ light absorbance to avoid glare.	Improve visual amenity of the new buildings and structures, integrate as best possible into the surrounding landscape	ArchSD/ Housing Department/ Private Sector	Above ground buildings and utility structures	Detailed design, construction stage	
S10.12 – Table 10.12.1, OM7	LV15	Maximise Greening on Engineering Structures and Surfaces Where space and appropriate planting conditions allow (i.e. where suitable depth of planting medium is possible, maintenance access available and enough light penetration to ground level), climbing plants should be considered to grow up vertical surfaces such as greening facade of building blocks, viaduct piers or noise barriers. The planting once established will assist in breaking up the appearance of uniform engineered structures and surfaces. Tree planting and care that integrate with wider streetscape elements such as hardscape paving, outdoor furniture as well as lighting poles should be considered to create a pedestrian-friendly network. Streetscape design, including integrity with the building space at ground floor, keeping a suitable distance between trees and buildings should follow the Greening, Landscape and Tree Management Section (GLTM) of the Development Bureau's Guidelines on Greening of Noise Barriers (April 2012).	To soften the hard, straight edges and provide greening along viaducts and structures	Initiating Government Department (relevant user department)/ Private Sector	All structures as feasible, final location to be confirmed at detailed design stage	Detailed design, construction stage and maintenance in operation phase	• GLTM of the Development Bureau's Guidelines on Greening of Noise Barriers (April 2012) • DEVB (GLTM) No. 3/2012 – Site Coverage of Greenery for Government Building Projects

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Waste Management (Construction Waste)							
S11.2.7	WM1	<u>Comments on C&DMMP given by PFC</u> • To ensure good quality rock is put to full use. Where necessary, the Project Proponent should consult the Mines Division, GEO for advice on the appropriate arrangement to put to full use the good quality rock. The Project Proponent should also maintain close liaison with the quarry operators for the necessary disposal arrangements; • To on-site reuse all surplus inert C&D hard material generated within the Project for balanced cut-and-fill designs. The Project Proponent is reminded that surplus fill might be generated by others in the subsequent building development works within the Project's area. The detailed site formation design should reserve sufficient capacity to absorb all such fill materials so that no disposal would be required outside the Project area; • To carry out on-site temporary storage in case of any programme mismatch between fill generation and demand, the Project Proponent should carry out on-site temporary storage. Where necessary, the Project Proponent shall ensure suitable environmental mitigation measures such as provision of covers ad water spraying system are duly implemented. The Project Proponent shall also carry out necessary measures to ensure the stability of the temporary stockpiles; • To adopt in-situ remedial measures for the contaminated soil in accordance with the EPD's Practice Guide for Investigation and Remediation of Contaminated Land. The remedial soil shall be completely reused within the development site;	Enhance the management of C&D materials and to minimise their generation at source	Contractor	All construction sites	Detailed design and construction stage	• Section 4.1.3 of the Project Administrative Handbook for Civil Engineering Works (2014 Edition)

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		• To set up effective control procedures to ensure the traceability of disposal and reuse of the C&D materials; and • To adopt re-usable non-timber formwork and precast concrete construction as far as practicable.					

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S11.5.1	WM2	<u>Good Site Practices</u> The following good site practices are recommended throughout the construction activities: • nomination of an approved personnel, such as a site manager, to be responsible for the implementation of good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site; • training of site personnel in site cleanliness, appropriate waste management procedures and concepts of waste reduction, reuse and recycling; • provision of sufficient waste disposal points and regular collection for disposal; • appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; • regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; • a Waste Management Plan (WMP) should be prepared by the contractor and submitted to the Engineer for approval.	Minimise waste generation during construction	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance
S11.5.1	WM3	<u>Waste Reduction Measures</u> Waste reduction is best achieved at the planning and design phase, as well as by ensuring the implementation of good site practices. The following recommendations are proposed to achieve reduction: • segregate and store different types of waste in different containers, skip or stockpiles to enhance reuse or recycling of materials and their proper disposal;	Reduce waste generation	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		• proper storage and site practices to minimise the potential for damage and contamination of construction materials; • plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste; • sort out demolition debris and excavated materials from demolition works to recover reusable/recyclable portions (i.e. soil, broken concrete, metal etc.); and • provide training to workers on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling.					

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S11.5.1	WM4	Storage, Collection and Transportation of Waste The following recommendation should be implemented to minimise the impacts: • waste such as soil should be handled and stored well to ensure secure containment; and • depends on actual site activities, certain locations within the site area would be used for storage of waste to enhance reuse. However, there would not be any designated location for storage of waste, and the storage locations would need to be adjusted to suite actual site conditions.	Good site practice to minimise the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	• Land (Miscellaneous Provisions) Ordinance • Waste Disposal Ordinance • ETWB TCW No. 19/2005
S11.5.1	WM5	Excavated Sediment The anticipated minor amount excavated sediment is proposed to be stabilised / solidified by mixing with cement so that the mixture is suitable to be reused on-site as backfill in construction of road base.	Handle excavated sediment	Contractor	All construction sites where applicable	Construction stage	• ETWB-TCW 34/2002
S11.5.1	WM6	Collection and Transportation of Waste The following recommendation should be implemented to minimise the impacts: • waste such as soil should be handled and stored well to ensure secure containment; • stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; and • different locations should be designated to stockpile each material to enhance reuse.	Minimise waste impacts from storage	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance
S11.5.1	WM7	Site Formation and C&D Materials Wherever practicable, C&D materials should be segregated from other wastes to avoid contamination and ensure	Minimise waste impacts from excavated and C&D materials	Contractor	All construction sites	Construction Stage	• Land (Miscellaneous Provisions)

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		acceptability at public fill reception facilities or reclamation sites. The following mitigation measures should be implemented in handling the excavated and C&D materials: • maintain temporary stockpiles and reuse excavated fill material for backfilling; • carry out on-site sorting; • make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; and • implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified.					Ordinance • Waste Disposal Ordinance • ETWB TCW No. 19/2005 • Project Administrative Handbook for Civil Engineering Works, 2012 Edition
S11.5.1	WM8	<u>Chemical Waste</u> If chemical wastes are produced at the construction site, the Contractors should register with EPD as chemical waste producer. Chemical wastes should be stored in appropriate containers and collected by a licensed chemical waste collector. Chemical wastes (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while the chemical waste that cannot be recycled should be disposed of at either the Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction stage	• Waste Disposal (Chemical Waste) General) Regulation • Code of Practice on the Packaging, Labelling and Storage of Chemical Waste
S11.5.1	WM9	<u>Asbestos Containing Materials</u> Some key precautionary measures related to the handling and disposal of asbestos are listed as below. • Adoption of protection, such as full containment, mini containment, or segregation of work area;	Precautionary measures to handle and disposal of asbestos	Contractor	All construction sites	Construction Stage	• Handling of Asbestos Containing Materials in Buildings (ProPECC PN

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		• Provision of decontamination facilities for cleaning of workings, equipment and bagged waste before leaving the work area; • Adoption of engineering control techniques to prevent fibre release from work area, such as use of negative pressure equipment with high efficiency particulate air (HEPA) filters to control air flow between the work area and the outside environment; • Wetting of asbestos containing materials before and during disturbance, minimizing the breakage and dropping of asbestos containing materials, and packing of debris and waste immediately after it is produced; • Cleaning of work area by wet wiping and vacuuming with HEPA filtered vacuum cleaner; • Coating on any surfaces previously in contact with or contained by asbestos with a sealant; • Proper bagging, safe storage and disposal of asbestos and asbestos contaminated waste; • Pre-treatment of all effluent from the work area before discharged; and • Air monitoring strategy to check the leakage and clearance of the work area during and after the asbestos work.					2/97)
S11.5.1	WM10	<u>General Refuse</u> • General refuse should be stored in enclosed bins separately from construction and chemical wastes. Recycling bins should also be placed to encourage recycling. • Preferably enclosed and covered areas should be provided for general refuse collection and routine	Minimise production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance

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		cleaning for these areas should also be implemented to keep areas clean. • A reputable waste collector should be employed to remove general refuse on a daily basis.					
Waste Management (Operational Waste)							
S11.5.2	WM11	Municipal Solid Waste General refuse from residential and commercial buildings should be collected with lidded bins and delivered to a central collection point and stored in enclosed containers to prevent windblown, vermin, water pollution and visual impact. At least daily collection should be arranged by the waste collector.	Remove general refuse generated from the proposed development	FEHD/ Relevant Operators	All construction sites	Operational stage	• Waste Disposal Ordinance
S11.5.2	WM12	Chemical Waste • Localized chemical waste storage areas should be located close to the source of waste generation for temporary storage. Drum-type containers with proper labelling should be used to collect chemical wastes for storage at the designated areas. • A licensed collector should be employed for the chemical waste collection and the chemical wastes should be disposed at an appropriate facility, such as Chemical Waste Treatment Centre (CWTC) in Tsing Yi. • Collection receipts issued by the licensed collector showing the quantities and types of chemical waste taken off-site and details of the treatment facility should be kept for record.	Reduce chemical waste due to waste handling	Contractors/ Relevant Operators	All construction sites	Operational stage	

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
Land Contamination							
S12.6	LC1	Undertaking environmental Site Inspection (SI) for all potentially contaminated sites as listed in the Contamination Assessment Plan (CAP).	Verify the land contamination potential before the commencement of construction	Project Proponent / Detailed Design Consultant / Private developer	All potentially contaminated sites as listed in the CAP	Prior to the construction stage	• 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); • Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management; • Guidance Notes for Contaminated Land Assessment and Remediation; and • Practice Guide for Investigation and Remediation of Contaminated

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							Land • Recommendations in Health Risk Assessment
S12.7	LC2	Re-appraisal would be required for the 'potentially contaminated landuses', 'industrial site with no potential for land contamination' and 'Non-Industrial landuses' within the land contamination assessment area as the development of these sites/ areas would only commence a number of years later, which may allow changes in the land usage of these sites and may give rise to potential land contamination issues. The Project Proponent's appointed consultant would prepare a supplementary CAP presenting the findings of the re-appraisal and strategy of the recommended SI, if required, and submit to EPD for review and approval.	To assess the latest site situation and identify any potential additional hot spots and contaminated sites.	Project Proponent / Detailed Design Consultant / Private developer	All the surveyed sites as listed in the CAP, other remaining areas of the PDAs and works areas for the associated infrastructures	Prior to the construction stage	Ditto
S12.7	LC3	After approval of the supplementary CAP and upon completion of the SI works, the Project Proponent should prepare and submit a supplementary Contamination Assessment Report (CAR) for all potentially contaminated sites listed in the CAP to EPD for agreement.	Present the findings of SI and evaluate the level and extent of potential contamination	Project Proponent / Detailed Design Consultant / Private developer	All the surveyed sites as listed in the CAP, other remaining areas of the PDAs and works areas for the associated infrastructures	Prior to the construction stage	Ditto
S.12.8	LC4	Preparation and submission of Remediation Action Plan (RAP) to EPD for agreement if land contamination is confirmed.	Recommend appropriate mitigation measures for the contaminated soil	Project Proponent / Detailed Design Consultant /	All the surveyed sites as listed in the	Prior to the construction stage	Ditto

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			and groundwater identified in the assessment if remediation is required	Private developer	CAP, other remaining areas of the PDAs and works areas for the associated infrastructures		
S.12.8	LC5	Preparation and submission of Remediation Report (RR) to EPD for agreement.	Demonstrate that the decontamination work is adequate and is carried out in accordance with the endorsed CAR and RAP	Project Proponent / Detailed Design Consultant / Private developer	All the surveyed sites as listed in the CAP, other remaining areas of the PDAs and works areas for the associated infrastructures	Prior to the construction stage	Ditto

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EM&A Project							
S14.2	EM1	An Independent Environmental Checker needs to be employed as per the EM&A Manual.	Control EM&A Performance	Project Proponent	All construction sites	Construction stage	• EIA Ordinance Guidance Note No.4/2010 • EIAO-TM
S14.2 – 14.4	EM2	1) An Environmental Team needs to be employed as per the EM&A Manual. 2) Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures. 3) An environmental impact monitoring needs to be implementing by the Environmental Team to ensure all the requirements given in the EM&A Manual are fully complied with.	Perform environmental monitoring & auditing	Project Proponent	All construction sites	Construction stage	• EIA Ordinance Guidance Note No.4/2010 • EIAO-TM

Note: Chapters 1 to 3 of the EIA report present the background information of the Project, identified concurrent projects, objectives and scope for various environmental aspects, and description on alternative options and construction description. Chapters 4 to 13 of the EIA report present the EIA findings and mitigation measures are described below with cross-reference to the EIA report. Chapters 14 to 16 describe the environmental monitoring requirements, summary of environmental outcomes and conclusion.

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
Common Mitigation Measures (Applicable to DP9)							
Construction Dust Impact							
S4.4.6	D1	Water spraying every hour on exposed worksites and haul road.	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and EIAO-TM criteria
S4.4.6	D2	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and EIAO-TM criteria
S4.4.6	D3	The following dust suppression measures should be incorporated to control the dust nuisance throughout the construction phase: • Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads;	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and EIAO-TM criteria

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		• A stockpile of dusty material should not be extended beyond the pedestrian barriers, fencing or traffic cones; • The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores; • When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period; • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens,					

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		sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport should be totally enclosed by impervious sheeting; • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides; • Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed; • Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and • Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shortcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies.					
S4.4.6	D4	Implement regular dust monitoring under EM&A programme during the construction stage.	Monitoring of dust impact	Contractor	Selected dust monitoring stations	Construction stage	• EIAO-TM

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Construction Noise							
S5.5.3	N1	Implement construction noise mitigation measures, including, but not limited to, good site management practices, use of quiet plant, installation of movable temporary noise barrier and setup up of liaison group to ensure construction noise impacts at the NSRs comply with the construction noise criteria. 1. Good site management practices • only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; • machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; • plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; • silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; • mobile plant should be sited as far away from NSRs as possible and practicable; and • material stockpiles, site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities. 2. Use of quiet plant • Use of quiet plant listed in the Quality Powered Mechanical Equipment (QPME) / other commonly used PME listed in Environmental Protection Department	Control construction noise impacts	Contractor	All construction sites	Construction stage	• EIAO-TM

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		(EPD) web pages. 3. Installation of movable temporary noise barrier • Install movable temporary noise barriers (typical design is wooden framed barrier with a small-cantilevered upper portion of superficial density no less than 7kg/m^2 on a skid footing with 25mm thick internal sound absorptive lining), and full enclosure, screen the noisy plants including air compressors, generators etc. 4. Setup of liaison group Setup a liaison group among CEDD, relevant government departments, contractors of the work contracts, etc. during construction phase to ensure proper implementation of the proposed noise mitigation measures.					
S5.5.3	N2	Carry out construction noise monitoring in accordance with the EM&A Manual.	Monitor the construction noise impacts	Contractor	Selected noise monitoring stations	Construction stage	EIAO-TM

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Water Quality (Construction Phase)							
S6.8.1.2	W1	*General Construction Activities* In accordance with the Practice Note for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN1/94), best management practices should be implemented on site as far as practicable. The best practices are detailed below: • At the start of site establishment, perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities; • Diversion of natural stormwater should be provided as far as possible. The design of temporary on-site drainage should prevent runoff going through site surface, construction machinery and equipment in order to avoid or minimise polluted runoff. Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m^3 capacities, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity shall be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped; • The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a silt/sediment trap. The silt/sediment traps should be incorporated in the permanent drainage channels to	To minimise water quality impact from construction site runoff and general construction activities	Contractor	All construction sites where applicable	Construction stage	• Water Pollution Control Ordinance • ProPECC PN1/94 • EIAO-TM • TM-DSS

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		enhance deposition rates; • The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94. The detailed design of the sand/silt traps should be undertaken by the contractor prior to the commencement of construction; • Construction works should be programmed to minimise surface excavation works during the rainy seasons (April to September). All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means; • All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas; • If the excavation of trenches in wet periods is necessary, it should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities; • All open stockpiles of construction materials (for example, aggregates, sand and fill material) should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system; • Manholes (including newly constructed ones) should					

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		always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers; • Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarized in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events; • All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities should be provided at every construction site exit where practicable. Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains; • Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain; • Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts; • All fuel tanks and storage areas should be provided with					

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		locks and sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby;and • Regular environmental audit on the construction site should be carried out in order to prevent any malpractices. Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the water bodies, mangroves and open sea.					
S6.8.1.4	W2	*Prevention of Accidental Spillage of Chemicals* • The chemicals used during construction, such as fuel, oil, solvents and lubricants shall be properly stored and contained in designated area with secondary containment to prevent spillage and contamination of the nearby water environment. • Any maintenance activities and workshops with chemicals use shall be located away from watercourses on hard standings within a bunded area. Sumps and oil interceptors should be provided as appropriate. • The Contractor shall register as a chemical waste producer and employ licensed collector for collection of chemical waste from the construction site. Any chemical waste generated shall be managed in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	To prevent water quality impact due to chemical spillage	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • Waste Disposal (Chemical Waste) (General) Regulation
S6.8.1.7	W3	*Sewage from workforce* • Portable chemical toilets and sewage holding tanks are recommended for handling the construction sewage generated by the workforce. A licensed contractor should be employed to provide appropriate and adequate portable	To minimise water quality impact from sewage effluent in construction phase	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • TM-DSS

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		toilets and be responsible for appropriate disposal and maintenance; • Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment during the construction phase of the Project; • Regular environmental audit on the construction site should be conducted in order to provide an effective control of any malpractices and achieve continual improvement of environmental performance on site.					
S6.8.1.9	W4	*Contaminated Groundwater and Site Runoff* To prevent the water quality due to the contaminated water from the area with contamination, the following mitigation measures should be adopted. • Cover the contaminated soil and surface to prevent the generation of contaminated water. • No open stockpiling of contaminated soil should be allowed to prevent generation of contaminated water due to precipitation. • Contaminated water, either from groundwater or runoff, should be treated by wastewater treatment facility (WTF) to an acceptable level as indicated in TM-DSS before disposal if the deployment of such WTF is feasible. • Recharging the contaminated groundwater back to the aquifer should be sought if treatment of the contaminated groundwater by WTF is not feasible, subject to the agreement with EPD.	To minimise water quality impact from contaminated groundwater in construction phase	Contractor	All construction sites where practicable	Construction stage	• TM-DSS
S6.8.1.10	W5	*Construction Works of near/ within Watercourses* • Cofferdams and impermeable sheet piles should be	To avoid any direct water quality impact to	Contractor	All construction sites where	Construction stage	• ETWB TC (Works) No.

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		installed as appropriate to isolate the flow of the nullah from the construction works area. The detailed design of the cofferdams will be conducted by the Contractor during the construction phase to fulfil the requirements in DSD Technical Circular No. 1/2017 "Temporary Flow Diversions and Temporary Works Affecting Capacity in Stormwater Drainage System" for DSD approval, in order to formulate feasible options of these temporary structure. • Stockpiling of construction materials and dusty materials should be located from any watercourses, contained in bunded areas and covered with tarpaulin. • Construction debris and spoil should be covered with tarpaulin during storage. Timely removal of materials away from the site for disposal should be arranged to avoid being washed into the nearby watercourses. • Water pumps should be used to collect any wastewater and construction site surface runoff within the cofferdam/ temporary works platform. The collected wastewater shall be properly treated before discharge. • Toe-board and bunds shall be provided along the edge of the works area/ temporary platform to prevent wastewater/ debris from falling into the watercourses. • Any temporary works site inside the watercourses should be temporarily isolated, such as by placing of sandbags or silt curtains with lead edge at bottom and properly supported props to prevent adverse impact on the water quality. • Proper shoring may need to be erected in order to prevent soil / mud from slipping into the inland water bodies. • Construction effluent, site run-off and sewage should be properly collected and/or treated.	existing watercourses		practicable		5/2005

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S6.8.1.11	W6	<u>*Removal/ Diversion of watercourses*</u> • Cofferdams and impermeable sheet piles should be installed as appropriate to isolate the water flow from the construction works area. • Dewatering or flow diversion shall be conducted prior to the construction works to prevent water overflow to the surrounding area. • Watercourse removal and flow diversion should be conducted in dry season as far as practicable when the water flow is low. • Water drained from the watercourse shall be diverted to new/ temporary drainage for watercourse diversion. For watercourse removal, the water drained shall be collected and treated to meet the requirements of WPCO and TM-DSS before discharge. • Any excavated land-based sediment from the removal/ diversion of watercourse shall be properly stored at bunded areas away from any watercourse and covered with tarpaulin before transporting out of the site.	To avoid water quality impact on existing watercourses to be retained	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • TM-DSS • ETWB TC (Works) No. 5/2005 • ProPECC PN1/94
Water Quality (Operational Phase)							
S6.8.2.3	W9	<u>*Change in Drainage System and Road Runoff*</u> • Proper drainage systems with silt traps and oil interceptors should be installed. • Runoff will be intercepted by properly designed and managed silt traps at appropriate spacing so that common roadside debris, refuse and fallen leaves etc. can be captured before allowing the runoff to drain into watercourses such as Yuen Long Creek. • At the outlets to watercourses, the delegated operation	To reduce impact on drainage system due to road/ surface runoff	DSD	Proposed drainage system and future site operators	Operational Stage	-

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		parties should manage the road/open area cleaning prior to the occurrence of a storm to remove pollutants. The collected pollutants would be tankered away for off-site disposal at landfill sites.					
S6.8.2.6	W10	*Maintenance Flushing for Reclaimed Water Service Reservoir* In order to avoid the water quality impact caused by the maintenance flushing, all the effluent generated during the process would be avoided to discharge into the catchment by implementation of the following measures. • Before the flushing, the reclaimed water inside the reservoir would be discharged to the foul sewers and the sludge remained at the bottom will be collected and disposed by a licensed waste collector. • During the flushing, the cleansing water would be collected by a licensed waste collector via the washout pipes at a controlled manner to avoid the possible impact to the nearby watercourses of higher ecological importance.	To reduce water quality impacts during maintenance flushing	WSD	Proposed service reservoir and future site operators	Operational Stage	-
S6.8.2.7	W11	*Wastewater from Storage and Workshop Area* • Discharge license under WPCO should be applied by the tenants in other specific uses (Storage and Workshop, and Open Storage) subject to their future operation needs. Compliance with WPCO for discharge of wastewater shall be ensured.	To ensure wastewater discharge from storage and workshop areas comply with WPCO	Future operator	Proposed storage and workshop areas	Operational Stage	• WPCO

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
Ecology (Construction Phase)							
S8.6.6	EC7	Precautionary surveys to check for presence of any aquatic fauna species of conservation importance in the watercourses to be directly impacted before commencement of works; affected aquatic fauna of conservation importance shall be captured and translocated to suitable receptor site(s)	To minimise direct impacts on aquatic species of conservation importance	CEDD/ Contractor	All affected watercourses	Before commencement of construction works	• EIAO-TM
S8.6.5	EC8	To conduct a baseline plant survey within all proposed works areas to ascertain the presence and update the quantities and conditions of any flora species of conservation importance; to transplant all affected plant species of conservation importance to suitable receptor site(s) before commencement of construction works	To minimise direct impacts on plant species of conservation importance	CEDD/ Contractor	All potential works areas	Before commencement of construction works	• EIAO-TM
S8.6.6	EC11	Checking and clearance for nesting birds (buildings and vegetation) shall be conducted/ supervised by a qualitied ecologist with relevant experience	To minimise direct impacts on nesting birds	CEDD/ Contractor	All works areas	Before commencement of construction work	• EIAO-TM
S8.6.6	EC12	Checking and clearance of bat roosts shall be conducted/ supervised by a qualitied ecologist with relevant experienced	To minimise direct impacts on bat roost(s)	CEDD/ Contractor	All works areas	Before commencement of construction work	• EIAO-TM
S8.6.6	EC13	Good site practices to control construction phase water quality impacts	To minimise induced water quality impacts on nearby water bodies	CEDD/ Contractor	All works areas	Construction Phase	• EIAO-TM

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Fisheries							
S9.5.2	F1	To adopt the mitigation measures for the control of water quality impacts	To protect fisheries resources from potential direct impacts arising from deterioration of water quality	CEDD/ Contractor	All works areas	Construction phase	• EIAO-TM

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location	Implementation Stage	Requirements and / or standards to be achieved
Landscape and Visual (Construction Phase)							
S10.12 – Table 10.12.1, CM1	LV1	<u>Optimisation of Construction Areas and Providing Temporary Landscape on Temporary Construction</u> Construction areas' control shall be enforced, where possible, to ensure that the landscape and visual impacts arising from the construction activities are minimised. It includes reduction of the extent of working areas and temporary works areas, management on storing and using the construction equipment and materials, and consideration of detailed schedules to shorten the construction period. Temporary landscape treatments are considered to be adopted such as applying hydro-seeding on temporary stockpiles and reclamation areas to alleviate the potential impacts.	Minimise impacts from construction activities on adjacent landscape and visual sensitive receivers	CEDD (via Contractor)	All construction areas and temporary works areas	Detailed design, prior to construction, construction stage	
S10.12 – Table 10.12.1, CM2	LV2	<u>Minimise Topographical Changes</u> To minimise landscape and visual impacts, the vertical and horizontal alignment of the at-grade road construction works should be optimised to reduce topographical/ landform changes, as well as reduce land take and interference with natural terrain and reduce overall earth movements. Where there is a need to significantly cut into the existing landform, retaining walls should be considered as well as cut slopes, to minimise landform changes and land resumption, whilst also considering visual amenity. Earthworks and engineered slopes should be designed to provide a structurally stable and visually interesting landform, which is compatible with surrounding landscape and mimics the natural contouring and terrain (e.g. introduction and continuation of natural features such as spurs and ridges where appropriate) to support landscape	Minimise landscape and visual impacts from topographical/ landform changes	CEDD (via Contractor)	All construction areas	Detailed design, construction stage	

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location	Implementation Stage	Requirements and / or standards to be achieved
		and visual assimilation with the surrounding terrain.					
S10.12 – Table 10.12.1, CM3	LV3	<u>Tree Protection & Preservation</u> Existing trees to be retained within the Project Site should be carefully protected during construction. Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works areas. A detailed tree survey will be carried out for the Tree Removal Application (TRA) process which will be carried out at the later detailed design stage of the Project. The detailed tree survey will propose which trees should be retained, transplanted or felled and will include details of tree protection measures for those trees to be retained.	Protect and Preserve Trees	CEDD (via Contractor)	On site	Detailed design, construction stage	• DEVB TCW No.7/2015; • ETWB TCW No.29/2004
S10.12 – Table 10.12.1, CM4	LV4	<u>Transplanting of Existing Trees</u> Trees unavoidably affected by the Project works should be transplanted where practical. Trees should be transplanted straight to their final receptor site and not held in a temporary nursery as far as possible. A detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with DEVB TCW No.6/2015 and DEVB TCW 7/2015 and final locations of transplanted trees should be agreed prior to commencement of the work. For trees associated with highways e.g. roadside planting along highways, that are unavoidably affected and should be transplanted, following HyD Guidelines HQ/GN/13 'Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit'.	Transplant Trees where suitable for transplantation	CEDD (via Contractor)	On site where possible	Prior to construction, construction stage	• DEVB TCW No.6/2015; • DEVB TCW 7/2015; • HyD Guidelines HQ/GN/13

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S10.12 – Table 10.12.1, CM5	LV5	Screen Hoarding Screen hoarding shall be erected along areas of the construction boundary where the works site borders with publicly accessible routes and/or is close to visually sensitive receivers (VSRs), to screen undesirable views of the works site. It is proposed that the screening be compatible with the surrounding environment in terms of material choice and colour.	Screen undesirable views of the construction sites	CEDD (via Contractor)	All construction areas and temporary works areas	Construction stage	
S10.12 – Table 10.12.1, CM7	LV7	Construction Light Control All security floodlights for construction sites should be carefully controlled to minimise light pollution and night-time glare to nearby users.	Minimise impact of night-time lighting and glare	CEDD (via Contractor)	All construction areas and temporary works areas	Construction stage	
Landscape and Visual (Operational Phase)							
S10.12 – Table 10.12.1, OM3	LV11	Operation Light Control Night time lighting should be controlled during operation to minimise glare and light spill from the potential development/ infrastructure. Street and night time lighting shall also be controlled to minimise glare impact to adjacent VSRs during the operation phase.	Avoid glare and light pollution	ArchSD/ Housing Department/ Private Sector	Throughout the development area	Detailed design, construction stage	
S10.12 – Table 10.12.1, OM4	LV12	Screen Planting Tall screen/buffer trees and shrubs should be planted to assist in screening proposed road corridors and associated above ground structures such as elevated road sections and engineered embankments. This measure may additionally form part of the compensatory planting and will improve compatibility with the surrounding environment and create a pleasant pedestrian environment.	Provide adequate screening with trees to improve visual amenity	CEDD (via Contractor)	Along roadside, around suitable structures	Detailed design, construction stage and maintenance in operation phase	

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S10.12 – Table 10.12.1, OM6	LV14	<u>Aesthetic Design of Built Development</u> Compatible design, construction materials and surface finishes of the proposed structure should match with the nearby existing external appearance of the proposed buildings for achieving visual uniformity. Finishing materials shall have due consideration to form, light earthy tone colours treatments, micro- and macro-texture, and reflectivity/ light absorbance to avoid glare.	Improve visual amenity of the new buildings and structures, integrate as best possible into the surrounding landscape	ArchSD/ Housing Department/ Private Sector	Above ground buildings and utility structures	Detailed design, construction stage	
S10.12 – Table 10.12.1, OM7	LV15	<u>Maximise Greening on Engineering Structures and Surfaces</u> Where space and appropriate planting conditions allow (i.e. where suitable depth of planting medium is possible, maintenance access available and enough light penetration to ground level), climbing plants should be considered to grow up vertical surfaces such as greening facade of building blocks, viaduct piers or noise barriers. The planting once established will assist in breaking up the appearance of uniform engineered structures and surfaces. Tree planting and care that integrate with wider streetscape elements such as hardscape paving, outdoor furniture as well as lighting poles should be considered to create a pedestrian-friendly network. Streetscape design, including integrity with the building space at ground floor, keeping a suitable distance between trees and buildings should follow the Greening, Landscape and Tree Management Section (GLTM) of the Development Bureau's Guidelines on Greening of Noise Barriers (April 2012).	To soften the hard, straight edges and provide greening along viaducts and structures	Initiating Government Department (relevant user department)/ Private Sector	All structures as feasible, final location to be confirmed at detailed design stage	Detailed design, construction stage and maintenance in operation phase	• GLTM of the Development Bureau's Guidelines on Greening of Noise Barriers (April 2012) • DEVB (GLTM) No. 3/2012 – Site Coverage of Greenery for Government Building Projects

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
Waste Management (Construction Waste)							
S11.2.7	WM1	<u>Comments on C&DMMP given by PFC</u> • To ensure good quality rock is put to full use. Where necessary, the Project Proponent should consult the Mines Division, GEO for advice on the appropriate arrangement to put to full use the good quality rock. The Project Proponent should also maintain close liaison with the quarry operators for the necessary disposal arrangements; • To on-site reuse all surplus inert C&D hard material generated within the Project for balanced cut-and-fill designs. The Project Proponent is reminded that surplus fill might be generated by others in the subsequent building development works within the Project's area. The detailed site formation design should reserve sufficient capacity to absorb all such fill materials so that no disposal would be required outside the Project area; • To carry out on-site temporary storage in case of any programme mismatch between fill generation and demand, the Project Proponent should carry out on-site temporary storage. Where necessary, the Project Proponent shall ensure suitable environmental mitigation measures such as provision of covers ad water spraying system are duly implemented. The Project Proponent shall also carry out necessary measures to ensure the stability of the temporary stockpiles; • To adopt in-situ remedial measures for the contaminated soil in accordance with the EPD's Practice Guide for Investigation and Remediation of Contaminated Land. The remedial soil shall be completely reused within the development site;	Enhance the management of C&D materials and to minimise their generation at source	Contractor	All construction sites	Detailed design and construction stage	• Section 4.1.3 of the Project Administrative Handbook for Civil Engineering Works (2014 Edition)

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		• To set up effective control procedures to ensure the traceability of disposal and reuse of the C&D materials; and • To adopt re-usable non-timber formwork and precast concrete construction as far as practicable.					

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
S11.5.1	WM2	<u>Good Site Practices</u> The following good site practices are recommended throughout the construction activities: • nomination of an approved personnel, such as a site manager, to be responsible for the implementation of good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site; • training of site personnel in site cleanliness, appropriate waste management procedures and concepts of waste reduction, reuse and recycling; • provision of sufficient waste disposal points and regular collection for disposal; • appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; • regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; • a Waste Management Plan (WMP) should be prepared by the contractor and submitted to the Engineer for approval.	Minimise waste generation during construction	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance
S11.5.1	WM3	<u>Waste Reduction Measures</u> Waste reduction is best achieved at the planning and design phase, as well as by ensuring the implementation of good site practices. The following recommendations are proposed to achieve reduction: • segregate and store different types of waste in different containers, skip or stockpiles to enhance reuse or recycling of materials and their proper disposal;	Reduce waste generation	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		• proper storage and site practices to minimise the potential for damage and contamination of construction materials; • plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste; • sort out demolition debris and excavated materials from demolition works to recover reusable/recyclable portions (i.e. soil, broken concrete, metal etc.); and • provide training to workers on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling.					

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S11.5.1	WM4	Storage, Collection and Transportation of Waste The following recommendation should be implemented to minimise the impacts: • waste such as soil should be handled and stored well to ensure secure containment; and • depends on actual site activities, certain locations within the site area would be used for storage of waste to enhance reuse. However, there would not be any designated location for storage of waste, and the storage locations would need to be adjusted to suite actual site conditions.	Good site practice to minimise the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	• Land (Miscellaneous Provisions) Ordinance • Waste Disposal Ordinance • ETWB TCW No. 19/2005
S11.5.1	WM5	Excavated Sediment The anticipated minor amount excavated sediment is proposed to be stabilised / solidified by mixing with cement so that the mixture is suitable to be reused on-site as backfill in construction of road base.	Handle excavated sediment	Contractor	All construction sites where applicable	Construction stage	• ETWB-TCW 34/2002
S11.5.1	WM6	Collection and Transportation of Waste The following recommendation should be implemented to minimise the impacts: • waste such as soil should be handled and stored well to ensure secure containment; • stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; and • different locations should be designated to stockpile each material to enhance reuse.	Minimise waste impacts from storage	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance
S11.5.1	WM7	Site Formation and C&D Materials Wherever practicable, C&D materials should be segregated from other wastes to avoid contamination and ensure	Minimise waste impacts from excavated and C&D materials	Contractor	All construction sites	Construction Stage	• Land (Miscellaneous Provisions)

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		acceptability at public fill reception facilities or reclamation sites. The following mitigation measures should be implemented in handling the excavated and C&D materials: • maintain temporary stockpiles and reuse excavated fill material for backfilling; • carry out on-site sorting; • make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; and • implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified.					Ordinance • Waste Disposal Ordinance • ETWB TCW No. 19/2005 • Project Administrative Handbook for Civil Engineering Works, 2012 Edition
S11.5.1	WM8	<u>Chemical Waste</u> If chemical wastes are produced at the construction site, the Contractors should register with EPD as chemical waste producer. Chemical wastes should be stored in appropriate containers and collected by a licensed chemical waste collector. Chemical wastes (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while the chemical waste that cannot be recycled should be disposed of at either the Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction stage	• Waste Disposal (Chemical Waste) General) Regulation • Code of Practice on the Packaging, Labelling and Storage of Chemical Waste
S11.5.1	WM9	<u>Asbestos Containing Materials</u> Some key precautionary measures related to the handling and disposal of asbestos are listed as below. • Adoption of protection, such as full containment, mini containment, or segregation of work area;	Precautionary measures to handle and disposal of asbestos	Contractor	All construction sites	Construction Stage	• Handling of Asbestos Containing Materials in Buildings (ProPECC PN

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		• Provision of decontamination facilities for cleaning of workings, equipment and bagged waste before leaving the work area; • Adoption of engineering control techniques to prevent fibre release from work area, such as use of negative pressure equipment with high efficiency particulate air (HEPA) filters to control air flow between the work area and the outside environment; • Wetting of asbestos containing materials before and during disturbance, minimizing the breakage and dropping of asbestos containing materials, and packing of debris and waste immediately after it is produced; • Cleaning of work area by wet wiping and vacuuming with HEPA filtered vacuum cleaner; • Coating on any surfaces previously in contact with or contained by asbestos with a sealant; • Proper bagging, safe storage and disposal of asbestos and asbestos contaminated waste; • Pre-treatment of all effluent from the work area before discharged; and • Air monitoring strategy to check the leakage and clearance of the work area during and after the asbestos work.					2/97)
S11.5.1	WM10	<u>General Refuse</u> • General refuse should be stored in enclosed bins separately from construction and chemical wastes. Recycling bins should also be placed to encourage recycling. • Preferably enclosed and covered areas should be provided for general refuse collection and routine	Minimise production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		cleaning for these areas should also be implemented to keep areas clean. • A reputable waste collector should be employed to remove general refuse on a daily basis.					
Waste Management (Operational Waste)							
S11.5.2	WM11	Municipal Solid Waste General refuse from residential and commercial buildings should be collected with lidded bins and delivered to a central collection point and stored in enclosed containers to prevent windblown, vermin, water pollution and visual impact. At least daily collection should be arranged by the waste collector.	Remove general refuse generated from the proposed development	FEHD/ Relevant Operators	All construction sites	Operational stage	• Waste Disposal Ordinance
S11.5.2	WM12	Chemical Waste • Localized chemical waste storage areas should be located close to the source of waste generation for temporary storage. Drum-type containers with proper labelling should be used to collect chemical wastes for storage at the designated areas. • A licensed collector should be employed for the chemical waste collection and the chemical wastes should be disposed at an appropriate facility, such as Chemical Waste Treatment Centre (CWTC) in Tsing Yi. • Collection receipts issued by the licensed collector showing the quantities and types of chemical waste taken off-site and details of the treatment facility should be kept for record.	Reduce chemical waste due to waste handling	Contractors/ Relevant Operators	All construction sites	Operational stage	

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
Land Contamination							
S12.7	LC2	Re-appraisal would be required for the 'potentially contaminated landuses', 'industrial site with no potential for land contamination' and 'Non-Industrial landuses' within the land contamination assessment area as the development of these sites/ areas would only commence a number of years later, which may allow changes in the land usage of these sites and may give rise to potential land contamination issues. The Project Proponent's appointed consultant would prepare a supplementary CAP presenting the findings of the re-appraisal and strategy of the recommended SI, if required, and submit to EPD for review and approval.	To assess the latest site situation and identify any potential additional hot spots and contaminated sites.	Project Proponent / Detailed Design Consultant / Private developer	All the surveyed sites as listed in the CAP, other remaining areas of the PDAs and works areas for the associated infrastructures	Prior to the construction stage	Ditto
S12.7	LC3	After approval of the supplementary CAP and upon completion of the SI works, the Project Proponent should prepare and submit a supplementary Contamination Assessment Report (CAR) for all potentially contaminated sites listed in the CAP to EPD for agreement.	Present the findings of SI and evaluate the level and extent of potential contamination	Project Proponent / Detailed Design Consultant / Private developer	All the surveyed sites as listed in the CAP, other remaining areas of the PDAs and works areas for the associated infrastructures	Prior to the construction stage	Ditto
S.12.8	LC4	Preparation and submission of Remediation Action Plan (RAP) to EPD for agreement if land contamination is confirmed.	Recommend appropriate mitigation measures for the contaminated soil and groundwater identified in the	Project Proponent / Detailed Design Consultant / Private developer	All the surveyed sites as listed in the CAP, other remaining	Prior to the construction stage	Ditto

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			assessment if remediation is required		areas of the PDAs and works areas for the associated infrastructures		
S.12.8	LC5	Preparation and submission of Remediation Report (RR) to EPD for agreement.	Demonstrate that the decontamination work is adequate and is carried out in accordance with the endorsed CAR and RAP	Project Proponent / Detailed Design Consultant / Private developer	All the surveyed sites as listed in the CAP, other remaining areas of the PDAs and works areas for the associated infrastructures	Prior to the construction stage	Ditto

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EM&A Project							
S14.2	EM1	An Independent Environmental Checker needs to be employed as per the EM&A Manual.	Control EM&A Performance	Project Proponent	All construction sites	Construction stage	• EIA Ordinance Guidance Note No.4/2010 • EIAO-TM
S14.2 – 14.4	EM2	1) An Environmental Team needs to be employed as per the EM&A Manual. 2) Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures. 3) An environmental impact monitoring needs to be implementing by the Environmental Team to ensure all the requirements given in the EM&A Manual are fully complied with.	Perform environmental monitoring & auditing	Project Proponent	All construction sites	Construction stage	• EIA Ordinance Guidance Note No.4/2010 • EIAO-TM

Environmental Mitigation Implementation Schedule – Planning and Engineering Study for Housing Sites in Yuen Long South - Investigation

Note: Chapters 1 to 3 of the EIA report present the background information of the Project, identified concurrent projects, objectives and scope for various environmental aspects, and description on alternative options and construction description. Chapters 4 to 13 of the EIA report present the EIA findings and mitigation measures are described below with cross-reference to the EIA report. Chapters 14 to 16 describe the environmental monitoring requirements, summary of environmental outcomes and conclusion.

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
Common Mitigation Measures (Applicable to DP10)							
Construction Dust Impact							
S4.4.6	D1	Water spraying every hour on exposed worksites and haul road.	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and EIAO-TM criteria
S4.4.6	D2	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and EIAO-TM criteria
S4.4.6	D3	The following dust suppression measures should be incorporated to control the dust nuisance throughout the construction phase: • Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads;	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction stage	• APCO • To control the dust impact to meet HKAQO and EIAO-TM criteria

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		• A stockpile of dusty material should not be extended beyond the pedestrian barriers, fencing or traffic cones; • The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores; • When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period; • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens,					

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		sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport should be totally enclosed by impervious sheeting; • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides; • Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed; • Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and • Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shortcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies.					
S4.4.6	D4	Implement regular dust monitoring under EM&A programme during the construction stage.	Monitoring of dust impact	Contractor	Selected dust monitoring stations	Construction stage	• EIAO-TM

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
Construction Noise							
S5.5.3	N1	Implement construction noise mitigation measures, including, but not limited to, good site management practices, use of quiet plant, installation of movable temporary noise barrier and setup up of liaison group to ensure construction noise impacts at the NSRs comply with the construction noise criteria. 1. Good site management practices • only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; • machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; • plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; • silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; • mobile plant should be sited as far away from NSRs as possible and practicable; and • material stockpiles, site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities. 2. Use of quiet plant • Use of quiet plant listed in the Quality Powered Mechanical Equipment (QPME) / other commonly used PME listed in Environmental Protection Department	Control construction noise impacts	Contractor	All construction sites	Construction stage	• EIAO-TM

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		(EPD) web pages. 3. Installation of movable temporary noise barrier • Install movable temporary noise barriers (typical design is wooden framed barrier with a small-cantilevered upper portion of superficial density no less than 7kg/m^2 on a skid footing with 25mm thick internal sound absorptive lining), and full enclosure, screen the noisy plants including air compressors, generators etc. 4. Setup of liaison group Setup a liaison group among CEDD, relevant government departments, contractors of the work contracts, etc. during construction phase to ensure proper implementation of the proposed noise mitigation measures.					
S5.5.3	N2	Carry out construction noise monitoring in accordance with the EM&A Manual.	Monitor the construction noise impacts	Contractor	Selected noise monitoring stations	Construction stage	EIAO-TM

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
Water Quality (Construction Phase)							
S6.8.1.2	W1	*General Construction Activities* In accordance with the Practice Note for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN1/94), best management practices should be implemented on site as far as practicable. The best practices are detailed below: • At the start of site establishment, perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities; • Diversion of natural stormwater should be provided as far as possible. The design of temporary on-site drainage should prevent runoff going through site surface, construction machinery and equipment in order to avoid or minimise polluted runoff. Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m^3 capacities, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity shall be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped; • The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a silt/sediment trap. The silt/sediment traps should be incorporated in the permanent drainage channels to	To minimise water quality impact from construction site runoff and general construction activities	Contractor	All construction sites where applicable	Construction stage	• Water Pollution Control Ordinance • ProPECC PN1/94 • EIAO-TM • TM-DSS

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		enhance deposition rates; • The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94. The detailed design of the sand/silt traps should be undertaken by the contractor prior to the commencement of construction; • Construction works should be programmed to minimise surface excavation works during the rainy seasons (April to September). All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means; • All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas; • If the excavation of trenches in wet periods is necessary, it should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities; • All open stockpiles of construction materials (for example, aggregates, sand and fill material) should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system; • Manholes (including newly constructed ones) should					

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		always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers; • Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarized in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events; • All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities should be provided at every construction site exit where practicable. Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains; • Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain; • Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts; • All fuel tanks and storage areas should be provided with					

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		locks and sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby;and • Regular environmental audit on the construction site should be carried out in order to prevent any malpractices. Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the water bodies, mangroves and open sea.					
S6.8.1.4	W2	*Prevention of Accidental Spillage of Chemicals* • The chemicals used during construction, such as fuel, oil, solvents and lubricants shall be properly stored and contained in designated area with secondary containment to prevent spillage and contamination of the nearby water environment. • Any maintenance activities and workshops with chemicals use shall be located away from watercourses on hard standings within a bunded area. Sumps and oil interceptors should be provided as appropriate. • The Contractor shall register as a chemical waste producer and employ licensed collector for collection of chemical waste from the construction site. Any chemical waste generated shall be managed in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	To prevent water quality impact due to chemical spillage	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • Waste Disposal (Chemical Waste) (General) Regulation
S6.8.1.7	W3	*Sewage from workforce* • Portable chemical toilets and sewage holding tanks are recommended for handling the construction sewage generated by the workforce. A licensed contractor should be employed to provide appropriate and adequate portable	To minimise water quality impact from sewage effluent in construction phase	Contractor	All construction sites where practicable	Construction stage	• Water Pollution Control Ordinance • TM-DSS

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		toilets and be responsible for appropriate disposal and maintenance; • Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment during the construction phase of the Project; • Regular environmental audit on the construction site should be conducted in order to provide an effective control of any malpractices and achieve continual improvement of environmental performance on site.					
S6.8.1.9	W4	*Contaminated Groundwater and Site Runoff* To prevent the water quality due to the contaminated water from the area with contamination, the following mitigation measures should be adopted. • Cover the contaminated soil and surface to prevent the generation of contaminated water. • No open stockpiling of contaminated soil should be allowed to prevent generation of contaminated water due to precipitation. • Contaminated water, either from groundwater or runoff, should be treated by wastewater treatment facility (WTF) to an acceptable level as indicated in TM-DSS before disposal if the deployment of such WTF is feasible. • Recharging the contaminated groundwater back to the aquifer should be sought if treatment of the contaminated groundwater by WTF is not feasible, subject to the agreement with EPD.	To minimise water quality impact from contaminated groundwater in construction phase	Contractor	All construction sites where practicable	Construction stage	• TM-DSS

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Water Quality (Operational Phase)							
S6.8.2.3	W9	*Change in Drainage System and Road Runoff* • Proper drainage systems with silt traps and oil interceptors should be installed. • Runoff will be intercepted by properly designed and managed silt traps at appropriate spacing so that common roadside debris, refuse and fallen leaves etc. can be captured before allowing the runoff to drain into watercourses such as Yuen Long Creek. • At the outlets to watercourses, the delegated operation parties should manage the road/open area cleaning prior to the occurrence of a storm to remove pollutants. The collected pollutants would be tankered away for off-site disposal at landfill sites.	To reduce impact on drainage system due to road/ surface runoff	DSD	Proposed drainage system and future site operators	Operational Stage	-
S6.8.2.7	W11	*Wastewater from Storage and Workshop Area* • Discharge license under WPCO should be applied by the tenants in other specific uses (Storage and Workshop, and Open Storage) subject to their future operation needs. Compliance with WPCO for discharge of wastewater shall be ensured.	To ensure wastewater discharge from storage and workshop areas comply with WPCO	Future operator	Proposed storage and workshop areas	Operational Stage	• WPCO

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Ecology (Construction Phase)							
S8.6.5	EC8	To conduct a baseline plant survey within all proposed works areas to ascertain the presence and update the quantities and conditions of any flora species of conservation importance; to transplant all affected plant species of conservation importance to suitable receptor site(s) before commencement of construction works	To minimise direct impacts on plant species of conservation importance	CEDD/ Contractor	All potential works areas	Before commencement of construction works	• EIAO-TM
S8.6.6	EC11	Checking and clearance for nesting birds (buildings and vegetation) shall be conducted/ supervised by a qualitied ecologist with relevant experience	To minimise direct impacts on nesting birds	CEDD/ Contractor	All works areas	Before commencement of construction work	• EIAO-TM
S8.6.6	EC12	Checking and clearance of bat roosts shall be conducted/ supervised by a qualitied ecologist with relevant experienced	To minimise direct impacts on bat roost(s)	CEDD/ Contractor	All works areas	Before commencement of construction work	• EIAO-TM
S8.6.6	EC13	Good site practices to control construction phase water quality impacts	To minimise induced water quality impacts on nearby water bodies	CEDD/ Contractor	All works areas	Construction Phase	• EIAO-TM

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Fisheries							
S9.5.2	F1	To adopt the mitigation measures for the control of water quality impacts	To protect fisheries resources from potential direct impacts arising from deterioration of water quality	CEDD/ Contractor	All works areas	Construction phase	• EIAO-TM

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Landscape and Visual (Construction Phase)							
S10.12 – Table 10.12.1, CM1	LV1	<u>Optimisation of Construction Areas and Providing Temporary Landscape on Temporary Construction</u> Construction areas' control shall be enforced, where possible, to ensure that the landscape and visual impacts arising from the construction activities are minimised. It includes reduction of the extent of working areas and temporary works areas, management on storing and using the construction equipment and materials, and consideration of detailed schedules to shorten the construction period. Temporary landscape treatments are considered to be adopted such as applying hydro-seeding on temporary stockpiles and reclamation areas to alleviate the potential impacts.	Minimise impacts from construction activities on adjacent landscape and visual sensitive receivers	CEDD (via Contractor)	All construction areas and temporary works areas	Detailed design, prior to construction, construction stage	
S10.12 – Table	LV2	<u>Minimise Topographical Changes</u> To minimise landscape and visual impacts, the vertical and	Minimise landscape and visual impacts from topographical/ landform	CEDD (via Contractor)	All construction	Detailed design, construction stage	

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location	Implementation Stage	Requirements and / or standards to be achieved
10.12.1, CM2		horizontal alignment of the at-grade road construction works should be optimised to reduce topographical/ landform changes, as well as reduce land take and interference with natural terrain and reduce overall earth movements. Where there is a need to significantly cut into the existing landform, retaining walls should be considered as well as cut slopes, to minimise landform changes and land resumption, whilst also considering visual amenity. Earthworks and engineered slopes should be designed to provide a structurally stable and visually interesting landform, which is compatible with surrounding landscape and mimics the natural contouring and terrain (e.g. introduction and continuation of natural features such as spurs and ridges where appropriate) to support landscape and visual assimilation with the surrounding terrain.	changes		areas		
S10.12 – Table 10.12.1, CM3	LV3	<u>Tree Protection & Preservation</u> Existing trees to be retained within the Project Site should be carefully protected during construction. Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works areas. A detailed tree survey will be carried out for the Tree Removal Application (TRA) process which will be carried out at the later detailed design stage of the Project. The detailed tree survey will propose which trees should be retained, transplanted or felled and will include details of tree protection measures for those trees to be retained.	Protect and Preserve Trees	CEDD (via Contractor)	On site	Detailed design, construction stage	• DEVB TCW No.7/2015; • ETWB TCW No.29/2004
S10.12 – Table	LV4	<u>Transplanting of Existing Trees</u> Trees unavoidably affected by the Project works should be	Transplant Trees where suitable for transplantation	CEDD (via Contractor)	On site where possible	Prior to construction,	• DEVB TCW No.6/2015;

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10.12.1, CM4		transplanted where practical. Trees should be transplanted straight to their final receptor site and not held in a temporary nursery as far as possible. A detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with DEVB TCW No.6/2015 and DEVB TCW 7/2015 and final locations of transplanted trees should be agreed prior to commencement of the work. For trees associated with highways e.g. roadside planting along highways, that are unavoidably affected and should be transplanted, following HyD Guidelines HQ/GN/13 'Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit'.				construction stage	• DEVB TCW 7/2015; • HyD Guidelines HQ/GN/13
S10.12 – Table 10.12.1, CM5	LV5	Screen Hoarding Screen hoarding shall be erected along areas of the construction boundary where the works site borders with publicly accessible routes and/or is close to visually sensitive receivers (VSRs), to screen undesirable views of the works site. It is proposed that the screening be compatible with the surrounding environment in terms of material choice and colour.	Screen undesirable views of the construction sites	CEDD (via Contractor)	All construction areas and temporary works areas	Construction stage	
S10.12 – Table 10.12.1, CM7	LV7	Construction Light Control All security floodlights for construction sites should be carefully controlled to minimise light pollution and night-time glare to nearby users.	Minimise impact of night-time lighting and glare	CEDD (via Contractor)	All construction areas and temporary works areas	Construction stage	
S10.12 – Table 10.12.1,	LV8	Woodland Conservation Woodland conservation is proposed to avoid large scale of potential loss of the existing secondary woodland within	Avoid the loss of natural woodland areas	CEDD (via Contractor)	On site	Detailed design, construction stage	• DEVB TCW No.7/2015; • ETWB TCW

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CM8		the PDA.					No.29/2004
Landscape and Visual (Operational Phase)							
S10.12 – Table 10.12.1, OM1	LV9	<u>Compensatory Planting</u> Compensatory tree planting for felled trees shall be provided to the satisfaction of relevant Government departments. The required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Removal Application process under DEVB TCW No.7/2015. Compensatory planting is proposed at the potential open areas such as open spaces, amenity areas, open areas of the streetscapes, as well as the open areas within development lots. The provision of space for compensatory planting takes into accounts the subsequent schedules. The location of compensatory planting includes the roadside areas, street tree planting, central medians and any soft landscape areas affected by the works area.	Compensate for trees lost due to the Project	CEDD (via Contractor)	Onsite where possible. Otherwise consider offsite locations	Detailed design, construction stage and maintenance in operational stage	• DEVB TCW No.7/2015
S10.12 – Table 10.12.1, OM2	LV10	<u>Woodland Compensation</u> Specific Woodland compensatory planting is proposed for any areas of woodland that are unavoidably affected. The compensatory woodland planting will principally be within the LRs of lower value such as (LR3 Hillside Shrubland and Grassland), where integrity of the wider woodland resource is possible. Plant species should be selected to include a mix of species with pioneering characteristics (fast-growing/ light-tolerant/ drought-tolerant/ wind-tolerant, etc.), native species and complementary species to the local area.	Compensate for areas of woodland unavoidably affected by the Project	CEDD/ AFCD	Onsite where possible. Otherwise consider offsite locations	Construction stage and maintenance in operational stage	• DEVB TCW No.7/2015
S10.12 – Table	LV11	<u>Operation Light Control</u>	Avoid glare and light	ArchSD/ Housing	Throughout the	Detailed design,	

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10.12.1, OM3		Night time lighting should be controlled during operation to minimise glare and light spill from the potential development/ infrastructure. Street and night time lighting shall also be controlled to minimise glare impact to adjacent VSRs during the operation phase.	pollution	Department/ Private Sector	development area	construction stage	
S10.12 – Table 10.12.1, OM7	LV15	<u>Maximise Greening on Engineering Structures and Surfaces</u> Where space and appropriate planting conditions allow (i.e. where suitable depth of planting medium is possible, maintenance access available and enough light penetration to ground level), climbing plants should be considered to grow up vertical surfaces such as greening facade of building blocks, viaduct piers or noise barriers. The planting once established will assist in breaking up the appearance of uniform engineered structures and surfaces. Tree planting and care that integrate with wider streetscape elements such as hardscape paving, outdoor furniture as well as lighting poles should be considered to create a pedestrian-friendly network. Streetscape design, including integrity with the building space at ground floor, keeping a suitable distance between trees and buildings should follow the Greening, Landscape and Tree Management Section (GLTM) of the Development Bureau's Guidelines on Greening of Noise Barriers (April 2012).	To soften the hard, straight edges and provide greening along viaducts and structures	Initiating Government Department (relevant user department)/ Private Sector	All structures as feasible, final location to be confirmed at detailed design stage	Detailed design, construction stage and maintenance in operation phase	• GLTM of the Development Bureau's Guidelines on Greening of Noise Barriers (April 2012) • DEVB (GLTM) No. 3/2012 – Site Coverage of Greenery for Government Building Projects
S10.12 – Table 10.12.1, OM9	LV17	<u>Man-made Channel Improvements</u> Artificial and man-made watercourse channels within the site will be affected by the works; whilst these are considered to have a low current value there is an opportunity to better integrate these features in to the urban and landscape design. Proposals to integrate these features in to public areas can include creating more natural watercourse with soft banks and ornamental ponds	Enhance channelised watercourse	DSD	Channelised watercourse	Detailed design, Construction and maintenance in operation phase	• DSD PN No.1/2005 – Guidelines on Environmental Considerations for River Channel Design

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		would generate positive impacts.					

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Waste Management (Construction Waste)							
S11.2.7	WM1	<u>Comments on C&DMMP given by PFC</u> • To ensure good quality rock is put to full use. Where necessary, the Project Proponent should consult the Mines Division, GEO for advice on the appropriate arrangement to put to full use the good quality rock. The Project Proponent should also maintain close liaison with the quarry operators for the necessary disposal arrangements; • To on-site reuse all surplus inert C&D hard material generated within the Project for balanced cut-and-fill designs. The Project Proponent is reminded that surplus fill might be generated by others in the subsequent building development works within the Project's area. The detailed site formation design should reserve sufficient capacity to absorb all such fill materials so that no disposal would be required outside the Project area; • To carry out on-site temporary storage in case of any programme mismatch between fill generation and demand, the Project Proponent should carry out on-site temporary storage. Where necessary, the Project Proponent shall ensure suitable environmental mitigation measures such as provision of covers ad water spraying system are duly implemented. The Project Proponent shall also carry out necessary measures to ensure the stability of the temporary stockpiles; • To adopt in-situ remedial measures for the contaminated soil in accordance with the EPD's Practice Guide for Investigation and Remediation of Contaminated Land. The remedial soil shall be completely reused within the development site;	Enhance the management of C&D materials and to minimise their generation at source	Contractor	All construction sites	Detailed design and construction stage	• Section 4.1.3 of the Project Administrative Handbook for Civil Engineering Works (2014 Edition)

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		• To set up effective control procedures to ensure the traceability of disposal and reuse of the C&D materials; and • To adopt re-usable non-timber formwork and precast concrete construction as far as practicable.					

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S11.5.1	WM2	<u>Good Site Practices</u> The following good site practices are recommended throughout the construction activities: • nomination of an approved personnel, such as a site manager, to be responsible for the implementation of good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site; • training of site personnel in site cleanliness, appropriate waste management procedures and concepts of waste reduction, reuse and recycling; • provision of sufficient waste disposal points and regular collection for disposal; • appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; • regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; • a Waste Management Plan (WMP) should be prepared by the contractor and submitted to the Engineer for approval.	Minimise waste generation during construction	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance
S11.5.1	WM3	<u>Waste Reduction Measures</u> Waste reduction is best achieved at the planning and design phase, as well as by ensuring the implementation of good site practices. The following recommendations are proposed to achieve reduction: • segregate and store different types of waste in different containers, skip or stockpiles to enhance reuse or recycling of materials and their proper disposal;	Reduce waste generation	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		• proper storage and site practices to minimise the potential for damage and contamination of construction materials; • plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste; • sort out demolition debris and excavated materials from demolition works to recover reusable/recyclable portions (i.e. soil, broken concrete, metal etc.); and • provide training to workers on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling.					

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S11.5.1	WM4	Storage, Collection and Transportation of Waste The following recommendation should be implemented to minimise the impacts: • waste such as soil should be handled and stored well to ensure secure containment; and • depends on actual site activities, certain locations within the site area would be used for storage of waste to enhance reuse. However, there would not be any designated location for storage of waste, and the storage locations would need to be adjusted to suite actual site conditions.	Good site practice to minimise the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	• Land (Miscellaneous Provisions) Ordinance • Waste Disposal Ordinance • ETWB TCW No. 19/2005
S11.5.1	WM5	Excavated Sediment The anticipated minor amount excavated sediment is proposed to be stabilised / solidified by mixing with cement so that the mixture is suitable to be reused on-site as backfill in construction of road base.	Handle excavated sediment	Contractor	All construction sites where applicable	Construction stage	• ETWB-TCW 34/2002
S11.5.1	WM6	Collection and Transportation of Waste The following recommendation should be implemented to minimise the impacts: • waste such as soil should be handled and stored well to ensure secure containment; • stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; and • different locations should be designated to stockpile each material to enhance reuse.	Minimise waste impacts from storage	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance
S11.5.1	WM7	Site Formation and C&D Materials Wherever practicable, C&D materials should be segregated from other wastes to avoid contamination and ensure	Minimise waste impacts from excavated and C&D materials	Contractor	All construction sites	Construction Stage	• Land (Miscellaneous Provisions)

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
		acceptability at public fill reception facilities or reclamation sites. The following mitigation measures should be implemented in handling the excavated and C&D materials: • maintain temporary stockpiles and reuse excavated fill material for backfilling; • carry out on-site sorting; • make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; and • implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified.					Ordinance • Waste Disposal Ordinance • ETWB TCW No. 19/2005 • Project Administrative Handbook for Civil Engineering Works, 2012 Edition
S11.5.1	WM8	<u>Chemical Waste</u> If chemical wastes are produced at the construction site, the Contractors should register with EPD as chemical waste producer. Chemical wastes should be stored in appropriate containers and collected by a licensed chemical waste collector. Chemical wastes (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while the chemical waste that cannot be recycled should be disposed of at either the Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction stage	• Waste Disposal (Chemical Waste) General) Regulation • Code of Practice on the Packaging, Labelling and Storage of Chemical Waste
S11.5.1	WM9	<u>Asbestos Containing Materials</u> Some key precautionary measures related to the handling and disposal of asbestos are listed as below. • Adoption of protection, such as full containment, mini containment, or segregation of work area;	Precautionary measures to handle and disposal of asbestos	Contractor	All construction sites	Construction Stage	• Handling of Asbestos Containing Materials in Buildings (ProPECC PN

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		• Provision of decontamination facilities for cleaning of workings, equipment and bagged waste before leaving the work area; • Adoption of engineering control techniques to prevent fibre release from work area, such as use of negative pressure equipment with high efficiency particulate air (HEPA) filters to control air flow between the work area and the outside environment; • Wetting of asbestos containing materials before and during disturbance, minimizing the breakage and dropping of asbestos containing materials, and packing of debris and waste immediately after it is produced; • Cleaning of work area by wet wiping and vacuuming with HEPA filtered vacuum cleaner; • Coating on any surfaces previously in contact with or contained by asbestos with a sealant; • Proper bagging, safe storage and disposal of asbestos and asbestos contaminated waste; • Pre-treatment of all effluent from the work area before discharged; and • Air monitoring strategy to check the leakage and clearance of the work area during and after the asbestos work.					2/97)
S11.5.1	WM10	<u>General Refuse</u> • General refuse should be stored in enclosed bins separately from construction and chemical wastes. Recycling bins should also be placed to encourage recycling. • Preferably enclosed and covered areas should be provided for general refuse collection and routine	Minimise production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance

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		cleaning for these areas should also be implemented to keep areas clean. • A reputable waste collector should be employed to remove general refuse on a daily basis.					
Waste Management (Operational Waste)							
S11.5.2	WM11	Municipal Solid Waste General refuse from residential and commercial buildings should be collected with lidded bins and delivered to a central collection point and stored in enclosed containers to prevent windblown, vermin, water pollution and visual impact. At least daily collection should be arranged by the waste collector.	Remove general refuse generated from the proposed development	FEHD/ Relevant Operators	All construction sites	Operational stage	• Waste Disposal Ordinance
S11.5.2	WM12	Chemical Waste • Localized chemical waste storage areas should be located close to the source of waste generation for temporary storage. Drum-type containers with proper labelling should be used to collect chemical wastes for storage at the designated areas. • A licensed collector should be employed for the chemical waste collection and the chemical wastes should be disposed at an appropriate facility, such as Chemical Waste Treatment Centre (CWTC) in Tsing Yi. • Collection receipts issued by the licensed collector showing the quantities and types of chemical waste taken off-site and details of the treatment facility should be kept for record.	Reduce chemical waste due to waste handling	Contractors/ Relevant Operators	All construction sites	Operational stage	

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Land Contamination							
S12.6	LC1	Undertaking environmental Site Inspection (SI) for all potentially contaminated sites as listed in the Contamination Assessment Plan (CAP).	Verify the land contamination potential before the commencement of construction	Project Proponent / Detailed Design Consultant / Private developer	All potentially contaminated sites as listed in the CAP	Prior to the construction stage	• 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); • Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management; • Guidance Notes for Contaminated Land Assessment and Remediation; and • Practice Guide for Investigation and Remediation of Contaminated

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							Land • Recommendations in Health Risk Assessment
S12.7	LC2	Re-appraisal would be required for the 'potentially contaminated landuses', 'industrial site with no potential for land contamination' and 'Non-Industrial landuses' within the land contamination assessment area as the development of these sites/ areas would only commence a number of years later, which may allow changes in the land usage of these sites and may give rise to potential land contamination issues. The Project Proponent's appointed consultant would prepare a supplementary CAP presenting the findings of the re-appraisal and strategy of the recommended SI, if required, and submit to EPD for review and approval.	To assess the latest site situation and identify any potential additional hot spots and contaminated sites.	Project Proponent / Detailed Design Consultant / Private developer	All the surveyed sites as listed in the CAP, other remaining areas of the PDAs and works areas for the associated infrastructures	Prior to the construction stage	Ditto
S12.7	LC3	After approval of the supplementary CAP and upon completion of the SI works, the Project Proponent should prepare and submit a supplementary Contamination Assessment Report (CAR) for all potentially contaminated sites listed in the CAP to EPD for agreement.	Present the findings of SI and evaluate the level and extent of potential contamination	Project Proponent / Detailed Design Consultant / Private developer	All the surveyed sites as listed in the CAP, other remaining areas of the PDAs and works areas for the associated infrastructures	Prior to the construction stage	Ditto
S.12.8	LC4	Preparation and submission of Remediation Action Plan (RAP) to EPD for agreement if land contamination is confirmed.	Recommend appropriate mitigation measures for the contaminated soil	Project Proponent / Detailed Design Consultant /	All the surveyed sites as listed in the	Prior to the construction stage	Ditto

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			and groundwater identified in the assessment if remediation is required	Private developer	CAP, other remaining areas of the PDAs and works areas for the associated infrastructures		
S.12.8	LC5	Preparation and submission of Remediation Report (RR) to EPD for agreement.	Demonstrate that the decontamination work is adequate and is carried out in accordance with the endorsed CAR and RAP	Project Proponent / Detailed Design Consultant / Private developer	All the surveyed sites as listed in the CAP, other remaining areas of the PDAs and works areas for the associated infrastructures	Prior to the construction stage	Ditto

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EM&A Project							
S14.2	EM1	An Independent Environmental Checker needs to be employed as per the EM&A Manual.	Control EM&A Performance	Project Proponent	All construction sites	Construction stage	• EIA Ordinance Guidance Note No.4/2010 • EIAO-TM
S14.2 – 14.4	EM2	1) An Environmental Team needs to be employed as per the EM&A Manual. 2) Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures. 3) An environmental impact monitoring needs to be implementing by the Environmental Team to ensure all the requirements given in the EM&A Manual are fully complied with.	Perform environmental monitoring & auditing	Project Proponent	All construction sites	Construction stage	• EIA Ordinance Guidance Note No.4/2010 • EIAO-TM