Appendix 13.1 Project Implementation Schedule

Note: Chapters 1 to 2 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 3 to 12 of the EIA Report present the EIA findings and mitigation measures, which are described below with cross-reference to the EIA Report. Chapters 13 to 15 describe the environmental monitoring requirements, summary of environmental outcomes and conclusion.

The following schedule includes common mitigation measures that are applicable to all project components, and common mitigation measures which are applicable to specific Schedule 2 Designated Projects which are subject to environmental permit application. It is divided into the Following Sections:

- Common Mitigation Measures (Applicable to ALL Project Components, including DPs and Non-DPs)
- Common Mitigation Measures (Applicable to DP1 - Construction of new primary distributor road (P1))
- Common Mitigation Measures (Applicable to DP2 - Construction of eight new distributor roads (D1 to D8))
- Common Mitigation Measures (Applicable to DP5 - Construction of slip roads (between: Road D8 Junction and existing Castle Peak Road; Junction of D8/P1 and Junction of D7/P1; and Kong Sham Western Highway connection to Road D3))
- Common Mitigation Measures (Applicable to DP6 - Construction of partly depressed and partly decked-over roads (Road D2; Road D4 and Road D6))
- Common Mitigation Measures (Applicable to DP9 - Construction of four new sewage pumping stations (Sites 2-34; 3-41; 3-48; and 4-35))
- Common Mitigation Measures (Applicable to DP12 - Construction of Road P1 and slip-road partly located in “Conservation Area” of Yuen Tau Shan)

Implementation Schedule of Mitigation Measures

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location of the Measure	Implementation Timing	Requirements and / or Standards to be Achieved
Common Mitigation Measures (Applicable to ALL Project Components, including DPs and Non-DPs)							
Air Quality (Construction Phase)							
S3.11	S4.10	Watering once per hour on active works areas, exposed areas and unpaved haul roads to reduce dust emission	To minimise the dust impact	Contractor	All active works areas, exposed areas and unpaved haul roads	Construction Phase	• Air Pollution Control Ordinance (APCO) • To control the dust impact to meet HKAQO and TM-EIAO criteria
S3.10	S4.10	The active construction works area should be reduced to one-third of monthly average work of the respective Work Contract so as to alleviate adverse dust impact	To minimise the dust impact	Contractor	For the work site of the Work Contract nearest to the ASRs at Site 3-6, Site 3-8, Site 3-14, Site 4-20, and existing ASRs at Oaklands Court (A208), Ling Liang Church Primary School (A209, and Tin Ha Road Playground (A310) and San Uk Tsuen (A702),	Construction Phase	• Air Pollution Control Ordinance (APCO) • To control the dust impact to meet HKAQO and TM-EIAO criteria
3.11	S4.10	When there are open excavation and spoil handling works, hoarding of 3m high should be provided along the construction site boundary adjacent to the non-construction areas such as residential, educational institutes or recreation area in use so as to minimize the dust impact.	To minimize the dust impact.	Contractor	All construction work sites	Construction Phase	• Air Pollution Control Ordinance (APCO) • To control the dust impact to meet HKAQO and TM-EIAO criteria
S3.11	S4.10	Dust suppression measures stipulated in the Air Pollution Control (Construction Dust) Regulation and good site practices: • Use of regular watering to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather.	To minimise the dust impact	Contractor	All construction work sites	Construction Phase	• APCO and Air Pollution Control (Construction Dust) Regulation • To control the dust impact to meet HKAQO and TM-EIAO criteria

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location of the Measure	Implementation Timing	Requirements and / or Standards to be Achieved
		• Use of frequent watering for particularly dusty construction areas and areas close to Air Sensitive Receivers (ASRs). • Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering shall be applied to aggregate fines. • Open stockpiles shall be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs. • Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations. • Establishment and use of vehicle wheel and body washing facilities at the exit points of the site. • Provision of wind shield and dust extraction units or similar dust mitigation measures at the loading area of barging point, and use of water sprinklers at the loading area where dust generation is likely during the loading process of loose material, particularly in dry seasons/ periods. • Provision of not less than 2.4m high hoarding from ground level along site boundary where adjoins a road, streets or other accessible to the public except for a site entrance or exit. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period. • Imposition of speed controls for vehicles on site haul roads. • Where possible, routing of vehicles and positioning of construction plant should be at the maximum possible distance from ASRs. • 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.					
Air Quality (Operational Phase)							
S3.9	S4.10	Portion of Area 3-1 (OU, PBU + SWU), it is proposed that air sensitive uses at Site 3-1 should not be located at these exceedance zone or the fresh air intake of the building located at least 6mAG	To avoid the odour impact	Site Developers / Operators	Site 3-1	Prior to operation of the Project	EIAO-TM
S3.10	S4.10	Provision of deodourising units for the 4 planned sewage pumping stations (SPS).	To alleviate the odour impact	CEDD	4 Planned SPSs within Project	Operation Phase	EIAO-TM
Construction Noise							
S4.6	S5.13	Use of quiet plant which should be made reference to the Powered Mechanical Equipment (PME) listed in the Technical Memorandum or the Quality Powered Mechanical Equipment (QPME) / other commonly used PME listed in Environmental Protection Department (EPD) web pages as far as possible which includes the Sound Power Level (SWLs) for specific quiet PME.	Reduce the noise levels of plant items	Contractor	All construction sites where practicable	Construction Phase	EIAO-TM
S4.6	S5.13	Install movable noise barrier and enclosures. The movable noise barrier can provide 5 dB(A) noise reduction for mobile plant and 10 dB(A) noise reduction for static plant. The barrier material shall have a surface mass of not less than 14 kg/m^2. The enclosures can provide 15 dB(A) noise reduction.	Screen the noisy plant items to be used at all construction sites	Contractor	All construction sites where practicable	Construction Phase	EIAO-TM

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location of the Measure	Implementation Timing	Requirements and / or Standards to be Achieved
S4.6	S5.13	Proper workfront management and proper grouping of PME during construction activities operated at the critical work areas	Reduce the construction noise impact	Contractor	Refer to Section 4.6 of the EIA report	Construction Phase	EIAO-TM
S4.6	S5.13	Maintain the recommended minimum separation between the schools and the critical works areas during examination periods	Reduce the construction noise impact	Contractor	Refer to Section 4.6 of the EIA report	Construction Phase	EIAO-TM
S4.6	S5.13	Good site practices listed below shall be adopted by all the contractors to further ameliorate the noise impacts. • Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program. • Silencers or mufflers on construction equipment should be utilised and should be properly maintained during the construction program. • Mobile plant, if any, should be sited as far away from NSRs as possible. • Machines and plant (such as trucks) that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum. • Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs. • Material stockpiles and other structures should be effectively utilised, wherever practicable, in screening noise from on-site construction activities.	Control construction airborne noise	Contractor	All construction work sites where practicable	Construction Phase	EIAO-TM
S4.6	S5.13	Liaison with the school representative(s) to obtain the examination schedule so as to avoid noisy construction activities during school examination period.	Control construction airborne noise	Contractor	All construction sites within 300 m of educational institutions	Construction Phase	EIAO-TM
S4.6	S5.13	Set up a liaison group among CEDD, relevant government departments, contractors of the Works contracts, etc. during construction phase of the Project to ensure proper implementation of mitigation measures.	Control construction airborne noise	Contractor	All construction sites	Construction Phase	EIAO-TM
Operational Noise (Road Traffic Noise)							
S4.7	S5.13	Provide low noise surfacing material on: • Planned Road P1, D1, D2, D3, D4 and D5; • Tin Wah Road (Project road section) • Kiu Fat Street (Improved road section) / Proposed Road L5 • Proposed Road L1, L2, L3, L5 • Proposed New Road near Site 4-24, 4-29, 5-13 • Proposed Roundabout at Junction J2 and J8 • Existing Hung Chi Road / Hung Shui Kiu Tin Sam Road (East Section and South of San Lee Uk Tsuen)	Reduce operation noise from road traffic	CEDD (Design stage & Construction Phase)() & HyD (operation phase)	Refer to Figure 4.7.1 to 4.7.6.	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
S4.7	S5.13	Provide noise barriers on the Project roads.	Reduce operation noise from road traffic	CEDD (Design stage & Construction Phase) & HyD (during operation phase)	Refer to Figure 4.7.1 to 4.7.16.	Prior to operation of the Project for existing NSRs. While for mitigation measures to protect planned NSRs,	EIAO-TM

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location of the Measure	Implementation Timing	Requirements and / or Standards to be Achieved
						it should be constructed before population intake of planned NSRsPrior to operation of the Project for planned NSRs.	
S4.7	S5.13	Alternative development layout, special building design, acoustic windows and acoustic balcony for the noise sensitive facades at some planned residential sites (Table 4.33 of EIA Report)	Reduce operation noise from road traffic	Housing Department/Private Developers	Refer to Figure 4.7.17 – 4.7.27.	Prior to operation of the Project for planned NSRs.	EIAO-TM
S4.7	S5.13	Provision of boundary wall, air conditioning and noise insulated windows for some planned Educational Institutes (Table 4.29 and 4.33 of EIA Report)	Reduce operation noise from road traffic	ASD	Refer to Figure 4.7.17 – 4.7.27.	Prior to operation of the Project for planned NSRs.	EIAO-TM
Operational Noise (Fixed Plant Noise)							
S4.9	S5.12	The selected equipment for the proposed fixed plants should be free of characteristics of tonality, intermittency and impulsiveness. If the selected equipment cannot be free of the abovementioned characteristics, additional measures should be adopted to mitigate the abovementioned characteristics or reduce the sound power level of the selected equipment in accordance with the correction factors as specified in IND-TM.	Comply with fixed plant noise criteria	CEDD and / or PlanD (CEDD and / or PlanD would further liaison and agree the responsibility of implementation and maintenance of the recommended environmental protection measures/mitigation measures.) / Contractor	All plant rooms where practicable	Design and Operational phase	IND-TM
S4.9	S5.13	For existing and planned NSRs which are located near to the proposed noise sources, the following tentative noise mitigation measures are considered: • All the pumps and noisy plants should be enclosed inside building structures; • Proper selection of quiet plant to reduce the tonality at NSRs; • Installation of silencer / acoustic enclosure / acoustic louvers for the exhaust of ventilation system. • Openings of ventilation system should be located away from NSRs.	Reduce operation fixed noise	Relevant government departments / Future Operator	All plant rooms where practicable	Design and Operational phase	Noise Control Ordinance and its TM, EIAO-TM
Operational Noise (Rail Noise)							
S4.8	S5.13	Provision of acoustic fins for the dwellings at Residential Development in Site 4-22 (NSR WR-P5d), Residential Development in Site 5-7 (NSR LR-P5a) and Residential Development in Site 5-9 (NSR LR-P6.2) to narrow the angle of view to the railway track.	To alleviate railway noise impact	Housing Department/Private Developers	Figure 4.8.2 – 4.8.4	Prior to operation of the Project for planned NSRs.	Noise Control Ordinance and EIAO-TM
S4.8	S5.13	Provision of relocation to non-sensitive use or fixed glazing at Residential Development in Site 4-22 (NSRs WR-P5e.1 & P5f.1) and Site 5-9 (NSRs LR-P6.1, P6.2 & P6.3)	To alleviate railway noise impact	Housing Department/Private Developers	Figure 4.8.2 – 4.8.4	Prior to operation of the Project for planned NSRs.	Noise Control Ordinance and EIAO-TM
S4.8	S5.13	25m Setback from West Rail Line for Educational Institute at Site 5-21 (NSR WR-P10).	To alleviate railway noise impact	ASD	Figure 4.8.6	Prior to operation of the Project for planned NSR.	Noise Control Ordinance and EIAO-TM
S4.8	S5.13	70m Setback from West Rail Line for Residential Development at Site 4-29 (NSRs WR-P7b & P7c).	To alleviate railway noise impact	Relevant government departments / Future Operator	Figure 4.8.5	Prior to operation of the Project for planned NSR.	Noise Control Ordinance and EIAO-TM

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location of the Measure	Implementation Timing	Requirements and / or Standards to be Achieved
Water Quality (Construction Phase)							
S5.13	S6.11	Surface run-off from construction sites should be discharged into stormwater drains via adequately designed sand/silt removal facilities such as sand traps, silt traps and sedimentation basins. Channels/earth bunds/sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities. Perimeter channels should be provided on site boundaries where necessary to intercept stormwater run-off from outside the site so that it will not wash across the site. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks.	To minimise impact from construction site run-off	Contractor	Construction sites	Construction phase	Water Pollution Control Ordinance (WPCO), Technical Memorandum on EIA Ordinance (EIAO-TM), ProPECC PN 1/94, Technical Memorandum on Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters (TM-DSS)
S5.13	6.11	Silt removal facilities, channels and manholes should be maintained and the deposited silt and grit should be removed regularly, at the onset of and after each rainstorm to prevent local flooding. Any practical options for the diversion and re-alignment of drainage should comply with both engineering and environmental requirements in order to provide adequate hydraulic capacity of all drains.	To minimise impact from construction site run-off	Contractor	Construction sites	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, TM-DSS
S5.13	6.11	Construction works should be programmed to minimise soil excavation works in rainy seasons (April to September). If excavation in soil cannot be avoided in these months or at any time of year when rainstorms are likely, for the purpose of preventing soil erosion,, temporary exposed slope surfaces should be covered e.g. by tarpaulin, and temporary access roads should be protected by crushed stone or gravel, as excavation proceeds. Intercepting channels should be provided (e.g. along the crest / edge of excavation) to prevent stormwater run-off from washing across exposed soil surfaces. Arrangements should always be in place in such a way that adequate surface protection measures can be safely carried out well before the arrival of a rainstorm.	To minimise impact from construction site run-off	Contractor	Construction sites	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, TM-DSS
S5.13	6.11	Earthworks final surfaces should be well compacted and the subsequent permanent work or surface protection should be carried out immediately after the final surfaces are formed to prevent erosion caused by rainstorms. Appropriate drainage like intercepting channels should be provided where necessary.	To minimise impact from construction site run-off	Contractor	Construction sites	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, TM-DSS
S5.13	6.11	Measures should be taken to minimise the ingress of rainwater into trenches. If excavation of trenches in wet seasons is necessary, they should be dug and backfilled in short sections. Rainwater pumped out from trenches or foundation excavations should be discharged into stormwater drains via silt removal facilities.	To minimise impact from construction site run-off	Contractor	Construction sites	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, TM-DSS
S5.13	6.11	Open stockpiles of construction materials (e.g. aggregates, sand and fill material) on sites should be covered with tarpaulin or similar fabric during rainstorms	To minimise impact from construction site run-off	Contractor	Construction sites	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, TM-DSS
S5.13	6.11	Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent stormwater run-off from getting into foul sewers. Discharge of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system.	To minimise impact from construction site run-off	Contractor	Construction sites	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, TM-DSS
S5.13	6.11	Good site practices should be adopted to remove rubbish and litter from construction sites so as to prevent the rubbish and litter from spreading from the site area. It is recommended to clean the construction sites on a regular basis.	To minimise impact from construction site run-off	Contractor	Construction sites	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, TM-DSS
S5.13	6.11	Water used in ground boring and drilling for site investigation or rock / soil anchoring should as far as practicable be re-circulated after sedimentation. When there is a need for final disposal, the wastewater should be discharged into stormwater drains via silt removal facilities.	To minimise impact from boring and drilling water	Contractor	Construction sites	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, TM-DSS
S5.13	6.11	All vehicles and plant should be cleaned before they leave a construction site to minimise the deposition of earth, mud, debris on roads. A wheel washing bay should be provided at every site exit if practicable and wash-water should have sand and silt settled out or removed before discharging into stormwater drains. The section of construction road	To minimise impact from wheel washing water	Contractor	Construction sites	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, **TM-DSS**

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		between the wheel washing bay and the public road should be paved with backfall to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.					
S5.13	6.11	Acidic wastewater generated from acid cleaning, etching, pickling and similar activities should be neutralised to within the pH range of 6 to 10 before discharging into foul sewers.	To minimise impact from acidic wastewater	Contractor	Construction sites	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, TM-DSS
S5.13	6.11	There is a need to apply to EPD for a discharge licence for discharge of effluent from the construction site under the WPCO. The discharge quality must meet the requirements specified in the discharge licence. All the run-off and wastewater generated from the works areas should be treated so that it satisfies all the standards listed in the TM-DSS.	To minimise impact from effluent discharges	Contractor	Construction sites	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, TM-DSS
S5.13	6.11	Beneficial uses of the treated effluent for other on-site activities such as dust suppression, wheel washing and general cleaning etc., can minimise water consumption and reduce the effluent discharge volume. If monitoring of the treated effluent quality from the works areas is required during the construction phase of the Project, the monitoring should be carried out in accordance with the relevant WPCO licence. The beneficial uses of the treated effluent for other on-site activities such as dust suppression, wheel washing and general cleaning etc., can minimise water consumption and reduce the effluent discharge volume. If monitoring of the treated effluent quality from the works areas is required during the construction phase of the Project, the monitoring should be carried out in accordance with the relevant WPCO licence.	To minimise impact from effluent discharges	Contractor	Construction sites	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, TM-DSS
S5.13	6.11	To minimise the potential water quality impacts from the construction works located near any inland watercourses, the practices outlined in ETWB TC (Works) No. 5/2005 "Protection of natural streams/rivers from adverse impacts arising from construction works" should be adopted where applicable: • Impermeable sheet piles and cofferdams should be used as required to divert water flow from the construction works area so that all the construction works would be undertaken within a dry zone and physically separated from the watercourses. • The proposed works should preferably be carried out within the dry season where the flow in the stormwater culvert/water channel/stream is low. • The use of less or smaller construction plants may be specified in works areas close to the inland water bodies. • Temporary storage of materials (e.g. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction materials should be located well away from any watercourses during carrying out of the construction works. • Stockpiling of construction materials and dusty materials should be covered and located away from any watercourses. • Construction debris and spoil should be covered up and/or disposed of as soon as possible to avoid being washed into the nearby water receivers. • Construction activities, which generate large amount of wastewater, should be carried out in a distance away from the watercourses, where practicable. • Mitigation measures to control site run-off from entering the nearby water environment should be implemented to minimise water quality impacts. Surface channels should be provided along the edge of the waterfront within the work sites to intercept the run-off. • Construction effluent, site run-off and sewage should be properly collected and/or treated. • Any temporary works site inside the stormwater 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 stormwater quality. • Proper shoring may need to be erected in order to prevent soil/mud from slipping into the inland water bodies.	To minimise impact from construction works near watercourses	Contractor	Construction sites	Construction phase	WPCO, EIAO-TM, ETWB TC (Works) No. 5/2005
S5.13	6.11	The key water quality measure for protection of the revitalised drainage channel water is to avoid polluted site run-off from reaching the revitalised drainage channel water. Relevant mitigation measures should follow the practices outlined in ETWB TC (Works) No. 5/2005	To minimise impact from revitalisation and	Contractor	Construction sites	Construction phase	WPCO, EIAO-TM, ETWB TC (Works) No. 5/2005

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location of the Measure	Implementation Timing	Requirements and / or Standards to be Achieved
		"Protection of natural streams / rivers from adverse impacts arising from construction works" as listed below: • Impermeable sheet piles and cofferdams should be used as required to divert water flow from the construction works area so that all the construction works would be undertaken within a dry zone and physically separated from the revitalised drainage channel water. • The proposed works should preferably be carried out within the dry season where the flow in the revitalised drainage channel is low. • The use of less or smaller construction plants may be specified in works areas close to the revitalised drainage channel. • Temporary storage of materials (e.g. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction materials should be located well away from the revitalised drainage channel during carrying out of the construction works. • Stockpiling of construction materials and dusty materials should be covered and located away from the revitalised drainage channel water. • Construction debris and spoil should be covered up and/or disposed of as soon as possible to avoid being washed into the nearby revitalised drainage channel. • Construction activities, which generate large amount of wastewater, should be carried out a distance away from the revitalised drainage channel, where practicable. • Mitigation measures to control site run-off from entering the nearby revitalised drainage channel should be implemented to minimise water quality impacts. Surface channels should be provided along the edge of the revitalised drainage channel within the work sites to intercept the run-off. • Construction effluent, site run-off and sewage should be properly collected and/or treated. • Any temporary works site inside the revitalised drainage channel 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 revitalised drainage channel water. Proper shoring may need to be erected in order to prevent soil / mud from slipping into the revitalised drainage channel.	greening of Drainage Channel Banks				
S5.13	6.11	The construction method and sequence of the proposed construction in watercourses / concrete flood storage pond for works sites of DP12 should be carefully designed so that all the construction works including any excavation and pilling operations would be undertaken within a dry zone and physically separated from the watercourses downstream.	To minimise impact from construction in watercourses / concrete flood storage pond	**Contractor**	Construction sites	Construction phase	WPCO, EIAO-TM
S5.13	6.11	Impermeable sheet pile walls or cofferdam walls or steel casing should be installed to fully enclose the construction works area (including all the excavation and piling works) in the watercourse / pond prior to the commencement of any works in watercourse / pond. Dewatering of the construction works area or diversion of water flow should be undertaken before the construction works to avoid water flow in the construction works area. Silt removal facilities should be used to clarify the effluent generated from the dewatering operation before discharging back to the watercourse / drainage system.	To minimise impact from construction in watercourses / concrete flood storage pond	**Contractor**	Construction sites	Construction phase	WPCO, EIAO-TM, TM-DSS
S5.13	6.11	Any construction works including excavation and pilling activities should be undertaken in a dry zone surrounded by the impermeable sheet pile walls or cofferdam walls or steel casing. Silt curtains should also be deployed around the construction works area inside the watercourse, where practicable, as a second layer of protection to further minimise sediment and contaminant release. All wastewater generated from the pilling activities should be regarded as part of the construction site effluent, which should be properly collected and treated as appropriate to meet the standards stipulated in the TM-DSS	To minimise impact from construction in watercourses / concrete flood storage pond	**Contractor**	Construction sites	Construction phase	WPCO, EIAO-TM

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		before disposal. It is recommended that the construction works in watercourses / pond should be undertaken in dry seasons, where practicable, when the water flow is low.					
S5.13	6.11	Construction works for removal and diversion of watercourses should be undertaken within a dry zone. Where necessary, cofferdams or similar impermeable sheet pile walls should be used to isolate the works areas from the neighbouring waters.	To minimise impact from removal and diversion of watercourse	Contractor	Construction sites	Construction phase	WPCO, EIAO-TM
S5.13	6.11	Construction works at watercourse should be undertaken only after flow diversion or dewatering operation is fully completed to avoid water flow in the works area. Dewatering of watercourse should be performed by diverting the water flow to new or temporary drainage. Where necessary, cofferdams or similar impermeable sheet pile walls should be used to isolate the works areas from neighbouring waters. The permanent or temporary drainage for carrying the diverted flow from existing watercourse to be removed should be constructed and completed before dewatering of that existing watercourse. Construction of all the proposed permanent and temporary drainage should be undertaken in a dry zone prior to receiving any water flow.	To minimise impact from removal and diversion of watercourse	Contractor	Construction sites	Construction phase	WPCO, EIAO-TM, TM-DSS
S5.13	6.11	The Contractor should provide a dry zone for all the construction works to be undertaken in watercourses and stormwater drainage following the tentative works sequence as described above or using other approved methods as appropriate to suit the works condition. The flow diversion works should be conducted in dry season, where possible, when the flow in the watercourse is low. The wastewater and ingress water from the site should be properly treated to comply with the WPCO and the TM-DSS before discharge.	To minimise impact from removal and diversion of watercourse	Contractor	Construction sites	Construction phase	WPCO, EIAO-TM, TM-DSS
S5.13	6.11	The site practices outlined in the ProPECC PN 1/94 “Construction Site Drainage” and ETWB TC (Works) No. 5/2005 “Protection of natural streams/rivers from adverse impacts arising from construction works” should be adopted for the proposed demolition or diversion of watercourses where applicable.	To minimise impact from removal and diversion of watercourse	Contractor	Construction sites	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, EIAO-TM, ETWB TC (Works) No. 5/2005
S5.13	6.11	Construction works at the existing ponds / wet areas should be conducted only after dewatering of these ponds / wet areas is fully completed. The drained water generated from the dewatering of these ponds / wet areas to be removed should be temporarily stored in appropriate storage tanks or containers for reuse on-site as far as possible. Any surplus drained water should be tankered away for proper disposal at STW in a controlled manner.	To minimise impact from removal of ponds / wet areas	Contractor	Construction sites	Construction phase	WPCO, EIAO-TM
S5.13	6.11	It is recommended to drain only one pond at a time to minimise the potential water quality impact. Dewatering works at ponds / wet areas should be conducted within dry season to minimise the quantity of drained water. No direct discharge of drained water to the stormwater drainage system or marine water should be allowed.	To minimise impact from removal of ponds / wet areas	Contractor	Construction sites	Construction phase	WPCO, EIAO-TM
S5.13	6.11	Contractor must register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation, should be observed and complied with for control of chemical wastes.	To minimise impact from accidental spillage	Contractor	Construction sites	Construction phase	WPCO, Waste Disposal Ordinance (WDO), Waste Disposal (Chemical Waste) (General) Regulation, EIAO-TM
S5.13	6.11	Any service workshop and maintenance facilities should be located on hard standings within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.	To minimise impact from accidental spillage	Contractor	Construction sites	Construction phase	WPCO, WDO, Waste Disposal (Chemical Waste) (General) Regulation, EIAO-TM
S5.13	6.11	Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows:: • Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport. • Chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents. • Storage area should be selected at a safe location on site and adequate space should be allocated to the storage area.	To minimise impact from accidental spillage	Contractor	Construction sites	Construction phase	WPCO, WDO, Waste Disposal (Chemical Waste) (General) Regulation, EIAO-TM

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location of the Measure	Implementation Timing	Requirements and / or Standards to be Achieved
S5.13	6.11	No discharge of sewage to the stormwater system and marine water will be allowed. Adequate and sufficient portable chemical toilets should be provided in the works areas to handle sewage from construction workforce. A licensed waste collector should be employed to clean and maintain the chemical toilets on a regular basis.	To minimise impact from workforce sewage effluent	Contractor	Construction sites	Construction phase	WPCO, EIAO-TM, TM-DSS
S5.13	6.11	Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the surrounding environment. Regular environmental audit of the construction site should be conducted to provide an effective control of any malpractices and achieve continual improvement of environmental performance on site.	To minimise impact from workforce sewage effluent	Contractor	Construction sites	Construction phase	WPCO, EIAO-TM
S5.13	6.11	Any excavated contaminated material and exposed contaminated surface should be properly housed and covered to avoid generation of contaminated run-off. Open stockpiling of contaminated materials should not be allowed. Any contaminated run-off or wastewater generated from the land decontamination processes should be properly collected and diverted to wastewater treatment facilities (WTF). The WTF shall deploy suitable treatment processes (e.g. oil interceptor / activated carbon) to reduce the pollution level to an acceptable standard and remove any prohibited substances (such as total petroleum hydrocarbon) to an undetectable range. All treated effluent from the wastewater treatment system shall meet the requirements as stated in TM-DSS and should be either discharged into the foul sewers or tankered away for proper disposal.	To minimise impact from contaminated site run-off and wastewater from land decontamination	Contractor	Construction sites	Construction phase	TM-DSS, WPCO, EIAO-TM
S5.13	6.11	No direct discharge of groundwater from contaminated areas should be adopted. Prior to any excavation works within the potentially contaminated areas, the baseline groundwater quality in these areas should be reviewed based on the past relevant site investigation data and any additional groundwater quality measurements to be performed with reference to Guidance Note for Contaminated Land Assessment and Remediation and the review results should be submitted to EPD for examination. If the review results indicated that the groundwater to be generated from the excavation works would be contaminated, this contaminated groundwater should be either properly treated or properly recharged into the ground in compliance with the requirements of the TM-DSS. If wastewater treatment is to be deployed for treating the contaminated groundwater, the wastewater treatment unit shall deploy suitable treatment processes (e.g. oil interceptor / activated carbon) to reduce the pollution level to an acceptable standard and remove any prohibited substances (such as total petroleum hydrocarbon) to an undetectable range. All treated effluent from the wastewater treatment plant shall meet the requirements as stated in the TM-DSS and should be either discharged into the foul sewers or tankered away for proper disposal.	To minimise impact from groundwater from contaminated areas	Contractor	Construction sites	Construction phase	WPCO, TM-DSS, Guidance Note for Contaminated Land Assessment and Remediation, TM-DSS
S5.13	6.11	If deployment of wastewater treatment is not feasible for handling the contaminated groundwater, groundwater recharging wells should be installed as appropriate for recharging the contaminated groundwater back into the ground. The recharging wells should be selected at places where the groundwater quality will not be affected by the recharge operation as indicated in section 2.3 of the TM-DSS. The baseline groundwater quality should be determined prior to the selection of the recharge wells, and submit a working plan to EPD for agreement. Pollution levels of groundwater to be recharged shall not be higher than pollutant levels of ambient groundwater at the recharge well. Groundwater monitoring wells should be installed near the recharge points to monitor the effectiveness of the recharge wells and to ensure that no likelihood of increase of groundwater level and transfer of pollutants beyond the site boundary. Prior to recharge, free products should be removed as necessary by installing the petrol interceptor. The Contractor should apply for a discharge licence under the WPCO through the Regional Office of EPD for groundwater recharge operation or discharge of treated groundwater.	To minimise impact from groundwater from contaminated areas	Contractor	Construction sites	Construction phase	WPCO, EIAO-TM, TM-DSS
S5.13	6.11	The following measures should be implemented by the Contractors to minimise the chance of emergency construction site discharge (due to failure of treatment facilities such as sand traps, silt traps, sedimentation basins, oil interceptors etc.):	To minimise impact from construction site discharges	Contractor	Construction sites	Construction phase	WPCO, EIAO-TM, TM-DSS

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location of the Measure	Implementation Timing	Requirements and / or Standards to be Achieved
		• Provide spare or standby treatment facilities of suitable capacities for emergency replacement in case damage or defect or malfunctioning of the duty treatment facilities is observed. • Conduct daily integrity checking of the construction site drainage and treatment facilities to inspect malfunctions, in particular before, during and after a storm event. • Carry out regular maintenance or desilting works to maintain effectiveness of the construction site drainage and treatment facilities in particular before, during and after a storm event.					
S5.13	6.11	An Emergency Response Plan (ERP) should be developed to minimise the potential impact from construction site discharges under failure of treatment facilities during emergency situations or inclement weather. The ERP should give the emergency contacts to mobilise retention facilities and stakeholders to be notified as well as the details of the proposed construction site drainage system and the design and operation of duty and standby treatment facilities. The ERP should also provide the procedures and guidelines for routine integrity checking and maintenance of the drainage system and treatment facilities as well as the emergency response and rectification procedures to restore normal operation of the treatment facilities in case of treatment failure during emergency situation or inclement weather. The Best Management Practices (BMPs) in controlling water pollution arising from the construction activities and an event and action plan with action and limit levels for water quality monitoring should be included in the ERP. The ERP should be submitted to the EPD for approval before commencement of the construction works.	To minimise impact from construction site discharges	Contractor	Construction sites	Construction phase	WPCO, EIAO-TM, TM-DSS
S5.13	6.11	Construction of the Project would involve diversion of the existing twin 800 mm diameter rising mains along Tin Ying Road. New sewerage facilities for receiving the diverted sewage flow from the existing rising mains should be constructed prior to the commencement of any demolition and construction works at the existing rising mains. All sewage flow running in the existing rising mains along Tin Ying Road should be diverted to the new sewerage system prior to any demolition and construction works at the existing rising mains. No discharge of sewage flow to the environment should be allowed during the sewerage diversion works.	To minimise impact from sewerage diversion works	Contractor	Construction sites	Construction phase	WPCO, EIAO-TM
S5.13	6.11	All excavated materials generated from removal and diversion of watercourses, removal and construction works in ponds and wet areas as well as the proposed bridge pier construction works in watercourses should be collected and handled in compliance with the Waste Disposal Ordinance. Excavated sediment, if any, generated from the excavation activities in watercourses, ponds and wet areas should be tested and classified in accordance with the ETWB TCW No. 34/2002 for determining the disposal arrangement for the sediment. No direct disposal of the construction wastes or excavated materials into the stormwater drainage system and marine water should be allowed.	To manage the disposal of sediment	Contractor	Construction sites	Construction phase	Waste Disposal Ordinance, ETWB TCW No. 34/2002
Water Quality (Operational Phase)							
S5.14	6.11	The following precautionary measures are recommended to minimise the risk of failure of the proposed sewerage system: • Regular inspection, checking and maintenance of the sewerage system; • Provisions of twin rising mains as backup and to facilitate maintenance and repairing purposes; • Provisions of leakage collection systems linking to the nearest chamber at its downstream to the rising main for collection of sewage leakage from the damaged rising main; • Use tankers to store emergency discharge and transport to the Sewage Treatment Works for disposal in case of both twin rising mains failure; and • Provisions of spare / standby parts of sewage pipeworks to facilitate maintenance and repairing of equipment.	To minimise impact from failure of the proposed sewerage system	Future Operator	Proposed sewerage system	Design and Operational phase	WPCO, EIAO-TM

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location of the Measure	Implementation Timing	Requirements and / or Standards to be Achieved
S5.14	6.11	In order to minimise the chance of emergency sewage discharge, the following precautionary measures are proposed in the design of the SPSs: • A standby pump and screen should be provided to cater for breakdown and maintenance of the duty pump in order to avoid emergency discharge. • Backup power supply in the form of dual / ring circuit power supply or generator should be provided to secure electricity supply. • An alarm should be installed to signal emergency high water level in the wet well. • An emergency storage tank / spare volume of wet well should be provided for the proposed SPS to cater for breakdown and maintenance of duty pump. • Regular maintenance and checking of plant equipment should be undertaken to prevent equipment failure. • Twin rising mains system should be provided to facilitate maintenance works and to avoid emergency discharge of sewage. • A telemetry system to the nearest manned station / plant should be provided so that swift action can be undertaken in case of malfunction of the unmanned facilities. • A bar screen (with clear spacing of approximately 25 mm) should be provided to cover the lower half of the opening of any emergency sewage bypass which can prevent the discharge of floating solids into receiving waters as far as practicable while ensuring flooding at the facilities would not occur event if the screen is blocked.	To minimise impact from emergency sewage discharge	Future Operator	SPSs	Design and Operational phase	WPCO, EIAO-TM
S5.14	6.11	A Contingency Plan to deal with the emergency discharges that may occur during operation of the SPS should be developed in the detailed design stage including the following items: • Locations of water bodies or WSRs in the vicinity of the emergency discharges. • A list of relevant government departments to be informed and to provide assistance in the event of emergency discharge, including key contact persons and telephone numbers. • Reporting procedures required in the event of emergency discharges. • Procedures listing the most effective means in rectifying the breakdown of the SPS in order to minimise the discharge duration.	To minimise impact from emergency sewage discharge	Future Operator	SPSs	Design and Operational phase	WPCO, EIAO-TM
S5.14	6.11	Exposed surface shall be avoided within the development sites to minimise soil erosion. The development site shall be either hard paved or covered by landscaping area and plantation where appropriate.	To minimise non-point source storm pollution	Future Operator	Project	Design and Operational phase	WPCO, EIAO-TM
S5.14	6.11	The major water channels and nullahs within the development sites should be retained as far as practicable to maintain the original flow path. The drainage system should be designed to avoid flooding.	To minimise non-point source storm pollution	Future Operator	Project	Design and Operational phase	WPCO, EIAO-TM
S5.14	6.11	Green areas / tree / shrub planting etc. should be introduced within the development site as far as possible including open space and along roadside amenity strips and central dividers, which can help to reduce soil erosion.	To minimise non-point source storm pollution	Future Operator	Project	Design and Operational phase	WPCO, EIAO-TM
S5.14	6.11	Screening facilities such as standard gully grating and trash grille, with spacing which is capable of screening large substances such as fallen leaves and rubbish should be provided at the inlet of drainage system.	To minimise non-point source storm pollution	Future Operator	Project	Design and Operational phase	WPCO, EIAO-TM
S5.14	6.11	Road gullies with standard design and silt traps and oil interceptors should be incorporated during the detailed design to remove particles present in stormwater run-off, where appropriate.	To minimise non-point source storm pollution	Future Operator	Project	Design and Operational phase	WPCO, EIAO-TM
S5.14	6.11	Evergreen tree species, which in general generate relatively smaller amount of fallen leaves, should be selected where possible.	To minimise non-point source storm pollution	Future Operator	Project	Design and Operational phase	WPCO, EIAO-TM
S5.14	6.11	Good management measures such as regular cleaning and sweeping of road surface/ open areas are suggested. The road surface/ open area cleaning should also be carried out prior to occurrence rainstorm.	To minimise non-point source storm pollution	Future Operator	Project	Operational phase	WPCO, EIAO-TM
S5.14	6.11	Manholes, as well as stormwater gullies, ditches provided at the development sites should be regularly inspected and cleaned (e.g. monthly). Additional inspection and cleansing should be carried out before forecast heavy rainfall.	To minimise non-point source storm pollution	Future Operator	Project	Operational phase	WPCO, EIAO-TM

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location of the Measure	Implementation Timing	Requirements and / or Standards to be Achieved
S5.14	6.11	Various blue-green infrastructures have been proposed under this Project to reduce the drainage loading to the drainage system. They include: • Provision of bioswales, where practicable at roadside, to convey stormwater and provide removal of coarse and medium sediments. As the water is transported along the bioswales, it is treated to remove pollutants and the cleaned water can then be discharged into the receiving water bodies or retained for non-potable reuse, e.g. irrigation. • Rainwater harvesting should be implemented within the development site, where possible, to collect rainwater from building roofs, podiums, walkway canopies and other built structures for reuse as an alternative water source e.g. irrigation. The system should meet the prevailing WSD guidelines. • Porous paving material should be used, where practical to increase stormwater infiltration and improve groundwater recharge and reducing flooding from surface run-off.	To minimise non-point source storm pollution	Future Operator	Project	Design and operational phase	WPCO, EIAO-TM
S5.14	6.11	A Stormwater Pollution Control Plan should be developed for potential polluting facilities to prevent or minimise the potential of pollutants coming into contact with rainwater or run-off. The plan shall incorporate details such as locations, sizes and types of measures / installations and the BMPs	To minimise non-point source storm pollution	Future Operator	Project	Design and operational phase	WPCO, EIAO-TM
S5.14	6.11	All the works areas including wastewater generating processes and dusty operations of the concrete batching plants should be fully enclosed to avoid generation of contaminated rainwater run-off.	To minimise impact from concrete batching plants	Future Operator	"I" Zone	Design and operational phase	WPCO, EIAO-TM
S5.14	6.11	All wastewater generated from the concrete batching plants should be collected, treated, stored and recycled to reduce resource consumption. All spent effluents from the works processes should be collected and diverted to sedimentation basins with sufficient treatment capacity. The overlying water from the sedimentation basins should be recycled for reuse within the plants. The deposited sediment should be dewatered and the dry matter should be properly disposed off-site.	To minimise impact from concrete batching plants	Future Operator	"I" Zone	Design and operational phase	WPCO, EIAO-TM, WDO
S5.14	6.11	Stormwater or rainwater run-off is uncontaminated and shall be physically separated from the wastewater streams and spent effluent generated from the works processes of the concrete batching plants.	To minimise impact from concrete batching plants	Future Operator	"I" Zone	Operational phase	WPCO, EIAO-TM, TM-DSS
S5.14	6.11	Industrial wastewater generated in the proposed multi-storey buildings in the "I" zone and "PBU+SWU" areas should be properly collected, treated (as required) and then discharged to the foul sewers.	To minimise impact from multi-storey buildings	Future Operator	"I" Zone and "PBU & SWU"	Design and operational phase	WPCO, EIAO-TM, TM-DSS
S5.14	6.11	Discharge licence for discharging effluents from the multi-storey industrial buildings into the foul sewers should be applied. The discharge quality should meet the water quality standards for effluents discharging to the foul sewers and the requirements as specified by the EPD in the discharge licence. The industrial wastewater should be properly treated to meet the WPCO and the TM-DSS before it is discharged into public sewerage system. The design capacity and treatment technologies of the on-site wastewater treatment facilities should be determined during the detailed design stage when detailed design of the industrial processes is available.	To minimise impact from multi-storey buildings	Future Operator	"I" Zone and "PBU & SWU"	Design and operational phase	WPCO, EIAO-TM, TM-DSS
S5.14	6.11	An ERP should be developed by the future Plant Operators to deal with emergency situations caused by malfunctioning of the on-site Wastewater Treatment Facilities (WTF). The ERP for the on-site WTF should cover the following: • Contact personnel and the means to contact. • Procedures to initiate emergency repairs. • Procedures to temporarily divert the incoming effluent to any designated temporary holding facility. • Procedures to partially/fully treat effluents at an alternative treatment facility.	To minimise impact from multi-storey buildings	Future Operator	"I" Zone and "PBU & SWU"	Design and operational phase	WPCO, EIAO-TM
S5.14	6.11	The EPR should be developed in the detailed design stage when the detailed design of the WTF and industrial processes is available. Domestic wastewater (from toilets) generated in the multi-storey buildings should be discharged directly to the public sewerage system.	To minimise impact from multi-storey buildings	Future Operator	"I" Zone and "PBU & SWU"	Design and operational phase	WPCO, EIAO-TM, TM-DSS

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S5.14	6.11	Perimeter drainage systems should be provided to collect stormwater run-off generated in the open areas of the "I" zone and "PBU + SWU" areas. Under normal operation, rainwater run-off collected in the perimeter drainage system should be diverted to suitable pollutant removal devices (e.g. sedimentation basins and oil interceptors) for necessary treatment and then discharged into the nearby storm water system. The pollutant removal devices of the perimeter drainage system should be designed with sufficient capacity for the "first flush" flow, which would carry most of the pollutants. The subsequent overland flow generated from rainstorms after the "first flush" flow should be bypassing the pollutant removal facilities and discharged directly to the nearby drainage system.	To minimise impact from surface runoff in open area	Future Operator	"I" Zone and "PBU & SWU"	Design and operational phase	WPCO, EIAO-TM, TM-DSS
S5.14	6.11	Stop-logs should be installed at a suitable location(s) in the perimeter drainage system so that contaminants can be contained in the event of accidental spillage. Under emergency situations, the relevant stop-logs should be closed to isolate the lot with accidental spillage and prevent it from entering the nearby stormwater system. . Contaminated surface water, if any, generated in the lot with accidental spillage should be contained within the site by the stop-log system. The collected surface water should be diverted to the on-site WTF for necessary treatment and the treated effluent from the on-site WTF should be discharged into the foul sewers. The effluent of the on-site WTF should meet the water quality standards and the requirements of the discharge license for effluents discharging into the foul sewers. To ensure that there is no chance of contaminated run-off leaving the site untreated during high rainfall, the perimeter drainage system should have sufficient capacity (within the channels or at a designated sump) to store any contaminated run-off (spillage plus collected rainwater) from the area isolated by the stop-logs and allow it to be treated at the on-site WTF. If there is any chemical waste collected, the handling and disposal should comply with the requirements under the Waste Disposal Ordinance.	To minimise impact from surface runoff in open area	Future Operator	"I" Zone and "PBU & SWU"	Design and operational phase	WPCO, EIAO-TM
S5.14	6.11	Good management and housekeeping measures such as regular cleaning and sweeping of surface/ open areas are recommended. All stormwater drainage and pollutant removal devices should be regularly inspected and cleaned (e.g. weekly). Additional inspection and cleaning should be carried out before forecast heavy rainfall.	To minimise impact from surface runoff in open area	Future Operator	"I" Zone "PBU & SWU"	Operational phase	WPCO, EIAO-TM
S5.14	6.11	An ERP should be developed by the future Operators to deal with emergency situations of accidental spillage. The ERP should cover the following: • Contact personnel and the means to contact. • Procedures to contain contaminants and prevent their escape and/or dispersion, e.g., through closing the stop-logs to isolate in the lot's perimeter drainage system from the surrounding stormwater drainage system. • Procedures to divert/transport the contaminated materials to a designated temporary storage area or appropriate treatment facility. • Procedures to clear up the lot and/or perimeter drainage system prior to opening the stop-logs.	To minimise impact from surface runoff in open area	Future Operator	"I" Zone and "PBU & SWU"	Design and operational phase	WPCO, EIAO-TM Waste Disposal Ordinance, Waste Disposal (Chemical Waste) (General) Regulation
S5.14	6.11	The practices outlined in ProPECC PN 5/93 "Drainage Plan subject to Comments by Environmental Protection Department" should be adopted where applicable for handling, treatment and disposal of operational stage effluent. Drainage outlets provided in covered areas, such as covered railway station, covered electricity substation, covered podiums and other roofed areas, should be discharged to foul sewers.	To control operational site effluents	Future Operator	Project	Design and operational phase	WPCO, EIAO-TM, ProPECC PN 5/93. TM-DSS
S5.14	6.11	Drainage serving covered PTI, covered petrol filling stations, covered refuse transfer station and refuse collection points and covered EFTS depot should be connected to foul sewers. Sedimentation facilities, petrol interceptors or other appropriate wastewater treatment system should be provided to treat the wastewater or surface run-off generated in these facilities as necessary to meet the discharge standards as stipulated in the TM-DSS prior to the discharge of these effluents to the public sewers.	To control operational site effluents	Future Operator	Project	Design and operational phase	WPCO, EIAO-TM, TM-DSS
S5.14	6.11	For maintenance of stormwater drainage system, reference should be made to ETWB TC (Works) No. 14/2004 "Maintenance of Stormwater Drainage Systems and Natural Watercourses" where applicable. The circular sets out the departmental responsibilities for	To minimise impact from maintenance of	Future Operator	Stormwater drainage system	Operational phase	WPCO, EIAO-TM, ETWB TC (Works) No. 14/2004

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		the maintenance of stormwater drainage systems and natural watercourses in government and private lands. Any required maintenance or desilting work (e.g. to remove any silt, grit or rubbish deposited in the inland water system) should be carried out during periods of low flow in the dry season to minimise impacts on downstream water quality and sediment suspension.	stormwater drainage system				
S5.14	6.11	Opportunities should be explored to maximise the use of reclaimed water and reduce the TSE discharge as far as possible under the detailed EIA studies for HSK STW.	To minimise impact from TSE from HSK STW	Project Proponent of HSK STW	Project	Operational Phase	WPCO, EIAO-TM
Waste Management (Construction Waste)							
S7.6	S8.2	<u>Good Site Practice</u> The following good site practices are recommended during the construction phase: • Nomination of an approved personnel, such as a site manager, to be responsible for the implementation of good site practices; • Training of site personnel in site cleanliness, proper waste management and chemical handling procedures; • Provision of sufficient waste disposal points and regular collection of waste for disposal; • Adoption of appropriate measures to minimise windblown litter and dust during handling, transportation and disposal of waste; and • Preparation of a WMP in accordance with the ETWB TCW No. 19/2005 Environmental Management on Construction Sites and submitted it to the Engineer for approval.	Minimise waste generation during construction	Contractor	All construction sites	Construction phase	• Waste Disposal Ordinance • Public Cleansing and Prevention of Nuisances Regulation (Cap. 132BK)
S7.6	S8.2	<u>Waste Reduction Measures</u> Waste reduction is best achieved by proper planning and design at the planning and design phases, as well as by ensuring the implementation of good site practices. The following recommendations are proposed to achieve waste reduction: • Segregate and store different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal; • Adopt proper storage and site practices to minimise the potential for damage to, and contamination of, construction materials; • Plan the delivery and stock of construction materials carefully to minimise the amount of waste generated; • Sort out demolition debris and excavated materials from demolition works to recover reusable / recyclable portions (i.e. soil, rock, broken concrete, etc.); • Maximise the use of reusable steel formwork to reduce the amount of C&D materials; • Minimise over ordering of concrete, mortars and cement grout by doing careful check before ordering; and	Minimise waste generation during construction	Contractor	All construction sites	Construction phase	• Waste Disposal Ordinance

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		• Adopt pre-cast construction method instead of cast-in-situ method for construction of concrete structures as far as possible.					
S7.6	S8.2	<u>Storage of Waste</u> Storage of materials on site may induce adverse environmental impacts if not properly managed. The following recommendations should be implemented to minimise the impacts: • Waste, such as soil, should be handled and stored well to ensure secure containment, thus minimising the potential of pollution; • Maintain and clean storage areas routinely; • Stockpiling area should be provided with covers and water spraying system to prevent materials from being wind-blown or washed away; and • Different locations should be designated to stockpile each material to enhance reuse.	Minimise waste impacts during storage of waste	Contractor	All construction sites	Construction phase	• Waste Disposal Ordinance
S7.6	S8.2	<u>Collection and Transportation of Waste</u> Waste hauler with appropriate permits should be employed by the Contractor for the collection and transportation of waste from works areas to respective disposal outlets. The following recommendation should be implemented to minimise the impacts: • Remove waste in timely manner; • Employ the trucks with cover or enclosed containers for waste transportation; • Obtain relevant waste disposal permits from the appropriate authorities; and • Dispose of waste at licensed waste disposal facilities.	Minimise waste impacts during collection and transportation of waste	Contractor	All construction sites	Construction phase	• Waste Disposal Ordinance
S7.6	S8.2	<u>Construction and Demolition (C&D) Materials</u> Wherever practicable, C&D materials should be segregated from other waste to avoid contamination and ensure acceptability at the public filling areas or reclamation sites. The following mitigation measures should be implemented in handling the C&D materials: • Adopt “selective demolition” technique to demolish the existing structure and facilities with a view to recovering broken concrete effectively for recycling purpose, where possible; • Maintain the stockpile areas and reuse excavated fill material for backfilling; • Carry out on-site sorting to recover the inert C&D materials and reusable and recyclable materials prior to disposal off-site; • Make provisions in the contract documents to allow and promote the use of recycled aggregates where appropriate; and	Minimise waste impacts from C&D materials	Contractor	All construction sites	Construction phase	• Waste Disposal Ordinance • Land (Miscellaneous Provisions) Ordinance • Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 354N)

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		• Implement a trip-ticket system for each works contract in accordance with DEVB TC(W) No. 6/2010 Trip-ticket System for Disposal of Construction and Demolition Material to ensure that the disposal of C&D materials are properly documented and verified. The Contractor should be responsible for devising a system to work for on-site sorting of C&D materials. It is recommended that the system should include the identification of the source of generation, estimated quantity of waste generated, arrangement for on-site sorting and/or collection, designated stockpiling areas, frequency of collection by recycling contractors and frequency of removal off-site.					
S7.6	S8.2	<u>Asbestos Containing Materials</u> Due to the potential large amount of asbestos containing materials during the site clearance stage, asbestos investigation is required. However, as asbestos investigation will involve a large number of buildings and most premises will involve private access, which cannot be obtained at this stage, it is considered that an asbestos specialist shall be employed by the responsible parties during the construction stage to investigate this issue. Sufficient and reasonable lead time shall be allowed for preparation, vetting and implementation of Asbestos Investigation Report and Asbestos Abatement Plan in accordance with Air Pollution Control Ordinance before commencement of any demolition or site clearance work. Some key precautionary measures related to the handling and disposal of asbestos are listed as following: • 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; • 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, minimising 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	Control the asbestos containing materials and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction phase	• Code of Practice on Handling, Transportation and Disposal of Asbestos Waste • ProPECC PN 2/97 Handling of Asbestos Containing Materials in Buildings

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location of the Measure	Implementation Timing	Requirements and / or Standards to be Achieved
		• Air monitoring strategy to check the leakage and clearance of the work area during and after the asbestos work.					
S7.6	S8.2	<u>Chemical Waste</u> For those processes which generated chemical waste, it may be possible to find alternatives to eliminate the use of chemicals, to reduce the generation quantities or to select a chemical type of less impact on environment, health and safety as far as possible. If chemical waste is produced at the construction site, the Contractor will be required to register with the EPD as a chemical waste producer. Chemical waste should be stored in appropriate containers and collected by a licensed chemical waste contractor. Chemical waste (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while chemical waste that cannot be recycled should be disposed of at either the CWTC, or another licensed facility.	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction phase	• Waste Disposal (Chemical Waste) General) Regulation • Code of Practice on the Packaging, Labelling and Storage of Chemical Waste
S7.6	S8.2	<u>General Refuse</u> General refuse should be stored in enclosed bins separately from construction and chemical waste. 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 remove general refuse on a daily basis. It is expected that such arrangements would minimise potential environmental impacts.	Minimise production of general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction phase	• Waste Disposal Ordinance
S7.6	S8.2	<u>Excavated Sediment</u> Since the amount of excavated sediment generated from the inland water removal / diversion works is expected to be small, all excavated sediment will be treated and reused on-site as backfilling materials for the Project. This approach avoids the need for off-site disposal that may result in impacts on the marine environment. In addition, all construction works near the watercourses should be undertaken within a dry zone and during dry season to avoid adverse impacts to the environment. The excavated sediment, if stockpiled on site, should be stored in enclosed containers and transported to the on-site treatment facilities as soon as practicable to minimise any potential odour impacts.	Proper handling of excavated sediment	Contractor	All construction sites	Construction phase	• Waste Disposal Ordinance
S7.6	S8.2	<u>Contaminated Soil</u> It is considered unlikely that contaminated land issues, if any subject to site investigation, would be a concern during either the construction or the operational of the proposed development as remediation on contaminated area would be carried out prior to construction. However, as a precaution, it is recommended that standard good site practices should be implemented during the construction phase to minimise any potential exposure to contaminated soils or groundwater.	Proper handling of contaminated soil	Contractor	All construction sites	Construction phase	• Practice Guide for Investigation and Remediation of Contaminated Land
Waste Management (Operational Waste)							
S7.6	S8.2	<u>Municipal Solid Waste (MSW)</u> Implementation of a waste prevention programme as well as materials recovery and	Minimise production of MSW and avoid odour,	FEHD / relevant operators	All development sites	Operation phase	• Waste Disposal Ordinance

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		recycling programme are recommended in order to minimise the production of waste. The programmes should consist of the following components: • Recycling bins such as paper, aluminium cans, plastic bottles, glass bottles, etc. should be placed at prominent locations to encourage recycling; • Banner should be erected at the recycling bins area; • Operator should make arrangements with the recycler to collect and recycle used fluorescent lamps, toner cartridges as well as the scrap electronic equipment, such as computers to avoid disposal at landfills as far as practicable; • Staff awareness training should be provided on waste management procedures, including waste reduction and recycling; • Operator should set up waste reduction and recycled targets; and • Operator should participate in the Wastewi$e Label scheme to facilitate waste reduction. MSW generated from residential, commercial and industrial buildings should be collected with lidded bins, delivered to the refuse collection room and stored in enclosed containers installed in each building at the ground floor to prevent windblown, vermin, water pollution and visual impact. At least daily collection should be arranged by the waste collector to transport the waste to the RCPs or RTS within the HSK NDA. Odour removal installations are recommended to be installed at the RCPs and RTS to treat the exhaust air. Wastewater generated at the RTS should be treated at the on-site wastewater treatment plant prior to discharge to the public sewerage systems. Such arrangements will minimise potential environmental impacts. Furthermore, the low emission truck, such as EURO V or later model is recommended to be used for waste transportation to minimise traffic emission and the potential air quality impacts. The above recommendations are proposed as technical guidelines for the operator's consideration and will be subject to detailed design.	pest and litter impacts				
S7.6	S8.2	Chemical Waste The proposed mitigation measures for operational phase are the same as that proposed for the construction phase. The operator should register with EPD as a chemical waste producer. Chemical waste should be stored in appropriate containers and collected by a licensed chemical waste contractor. Chemical waste (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while chemical waste that cannot be recycled should be disposed of at either the CWTC, or another licensed facility.	Control the chemical waste and ensure proper storage, handling and disposal.	Relevant operators	All development sites	Operational phase	• Waste Disposal (Chemical Waste) (General) Regulation • Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes
S7.6	S8.2	Screenings, Grits and Sewage Sludge The new HSK STW is designed to handle the sewage generated from the new development areas under this Project. The major solid waste types produced from the STW would be the screenings and grits collected from the inlet works and the dewatered sludge collected from the sewage treatment process. Screenings and grits generated from the STW is suggested to be disposed of at the WENT Landfill whereas the dewatered sludge generated from the STW is suggested to be treated at the STF. The screenings, grits and dewatered sludge will be delivered by road transport in water tight containers or skips to avoid odour emission during transportation. Unloading process will be operated in the designated room inside	Minimise the production of sewage sludge and ensure proper storage, handling and disposal.	DSD / relevant operators	All development sites	Operational phase	• Waste Disposal Ordinance

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		STW which should be enclosed and served by negative pressure by extracting odorous gas to deodorising unit.					
Land Contamination							
S.8.9	-	<u>Identified Potentially Contaminated Sites</u> Prior to development of these sites, the Project Proponent should appoint a consultant to re-appraise these sites to update the corresponding findings and sampling and testing requirements presented in the Contamination Assessment Plan (CAP). Supplementary CAP(s), incorporating the findings of the site re-appraisal and the updated sampling and testing strategy, should be prepared and submitted to EPD for approval prior to conducting any site investigation (SI) works. SI works should then be carried out according to the supplementary CAP(s). Contamination Assessment Report (CAR(s)) and, if contaminated soil and/or groundwater identified, Remediation Action Plan (RAP(s)) should be prepared and submitted to EPD for approval.	Identify the presence, nature and extent of contamination and formulate the necessary remedial actions.	CEDD / Detailed Design Consultant / Contractor	All potentially contaminated sites as listed in CAP.	After the land is resumed and handed over to the Project Proponent and prior to commencement of any remediation / construction works.	• EIAO-TM; • 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 Land.
S.8.9	-	<u>Remaining Non-Contaminated Sites</u> After the sites are handed over to the Project Proponent for development, the Project Proponent should appoint a consultant to revisit these sites to assess the latest land uses and site conditions. If any of these sites are found to have potential land contamination issues, the Project Proponents appointed consultant should prepare and submit supplementary CAP(s) to EPD for approval prior to conducting any SI works. SI works should then be carried out according to the supplementary CAP(s). CAR(s) and, if contaminated soil and/or groundwater identified, RAP(s) should be prepared and submitted to EPD for approval.	Identify the presence, nature and extent of contamination and formulate the necessary remedial actions.	CEDD / Detailed Design Consultant / Contractor	Remaining non-contaminated sites within the Assessment Areas.	After the land is resumed and handed over to the Project Proponent and prior to commencement of any remediation / construction works.	• EIAO-TM; • 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 Land.
S.8.9	-	Any contaminated soil and groundwater should be treated according to EPD's approved RAP(s) and RR(s) should be submitted to EPD for agreement after completion of the remediation works.	Remediate any contaminated soil and groundwater and demonstrate that the remediation works are adequate and is carried out in accordance with EPD's approved RAP(s).	Contractor	All identified contaminated sites in future EPD's approved CAR(s)/RAP(s).	After the land is resumed and handed over to the PP and prior to commencement of any construction works.	• 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 Land
Ecology (Design Phase)							
S9.7.2	S10.1.1	The majority of sites of conservation importance/habitats with high ecological value (e.g. San Sang San Tsuen egretry, woodland) have been zoned as "Green Belt" to avoid any direct impacts	Avoid any direct impacts to these sites of conservation importance/habitats with high ecological value	PlanD	Sites of conservation importance/habitats with high ecological value (e.g. San Sang San Tsuen egretry, woodland)	Design phase	TM-EIAO

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S9.7.2	S10.2.1	The alignment of the two proposed slip roads from the existing KSWH connecting to the Road D3 had been adjusted to locate in existing concrete flood storage pond and its maintenance access road	Avoid loss of semi-natural/natural habitats comprising the CA and the four mitigation ponds	PlanD	Mitigation ponds	Design phase	TM-EIAO
S9.7.3	S10.2.2	Provide a wide "Local Open Space" corridor to maintain the flight lines of San Sang San Tsuen egretry	Minimise obstruction between the foraging location in TSW Main Channel and the egretry	PlanD	Local Open Space between San Sang San Tsuen egretry	Design phase	TM-EIAO
S9.7.5	S10.2.3	Preserve *in situ* together with the woodland habitat in Tung Tau Tsuen	Protect the plant species of conservation importance	CEDD / PlanD	Woodland habitat in Tung Tau Tsuen	Design phase	TM-EIAO, Cap. 96
Ecology (Construction Phase)							
S9.7.3	S10.2.4	Scheduling the site formation and construction works at Sites 3-32, 3-33, 3-37, 3-39 and 3-40 outside the breeding season of ardeids	Minimise disturbance impacts to breeding ardeids in San Sang San Tsuen egretry	CEDD / Contractor	Sites 3-32, 3-33, 3-37, 3-39 and 3-40	Construction phase	TM-EIAO
S9.7.4	S10.2.5	Provision of screening (e.g. hoarding) at adjacent habitats within CA at northwest of San Sang San Tsuen	Disturbance impacts (e.g. noise/vibration, visual) to adjacent habitats within the CA	CEDD / Contractor	CA at northwest of San Sang San Tsuen	Construction phase	TM-EIAO
S9.7.6	S10.2.6	Hoarding around "Green Belt" zoning to mitigate construction disturbance impacts to the Crested Serpent Eagle habitat	Minimise construction disturbance impacts to the Crested Serpent Eagle habitat	CEDD / Contractor	Between the construction work in Sites 3-1, 3-4, 3-5, 3-6, 3-7 and 3-8 and Site 3-2 (Green Belt)	Construction phase	TM-EIAO
S9.7.7	S10.2.7	Carefully design the construction methods and sequence of the proposed pier in the watercourses so that all piling and excavation works would be done within dry zone and physically separated from the watercourse downstream	Minimise potential water quality impacts to the habitats of the main channel and waterbird species	CEDD / Consultant	TSW Main Channel	Construction phase	TM-EIAO
S9.7.8	S10.2.8	An ecologist with relevant experience should be consulted before the clearance of any bat roost	Ensure no bat roost would be damaged due to the proposed development	Ecologist appointed by the Project Proponent	Any identified active bat roost within the Project footprint	Construction phase	Cap. 170
S9.7.11	S10.2.10	Provision of hoarding for proper delineation of works boundary	Minimise construction disturbance impacts to existing mitigation ponds	CEDD / Contractor	Mitigation ponds to the west of Kau Lee Uk Tsuen	Construction phase	TM-EIAO
S9.7.14 – S9.7.15	S10.2.11	General dust and noise control measures	Mitigate disturbance impacts to the surrounding habitats and associated wildlife	CEDD / Contractor	All works areas in particular close to sensitive habitats i.e. TSW Main Channel, Ngau Hom Shek knoll, Tung Tau Tsuen woodland, mitigation ponds to the west of Kau Lee Uk Tsuen and San Sang San Tsuen Egretry	Construction phase	TM-EIAO
S9.7.16	S10.2.12	Night-time lighting control	Minimise glare disturbance to wildlife	CEDD / Contractor	All works areas in particular close to sensitive habitats i.e. TSW Main Channel, Ngau Hom Shek knoll, Tung Tau Tsuen woodland,	Construction phase	TM-EIAO

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					mitigation ponds to the west of Kau Lee Uk Tsuen, San Sang San Tsuen egretry		
S9.7.18 - S9.7.19	S10.2.13 - S10.2.15	Good site practices during the construction phase to avoid any pollution entering any nearby watercourses	Minimise water quality impacts to nearby water bodies	CEDD / Contractor	All works areas in particular work sites close to existing watercourses (e.g. TSW Main Channel) or and mitigation ponds	Construction phase	TM-EIAO
Ecology (Operational Phase)							
S9.7.3	S10.2.17	Buffer planting at the boundaries of Sites 3-32, 3-33, 3-37, 3-39 and 3-40	Minimise disturbance to San Sang San Tsuen egretry during the operational phase	CEDD / Contractor	Sites 3-33, 3-39 and 3-40	Operational phase	TM-EIAO
S9.7.4 and S9.7.6	S10.2.18	Provision of buffer/screen planting at the “Industrial” zone and slip road/CA interface as well as "OU" sites adjacent to Site 3-2	Minimise disturbance to the habitats within the CA	CEDD / Contractor	“Industrial” zone and slip road/CA interface well as "OU" sites adjacent to Site 3-2	Operational phase	TM-EIAO
S9.7.8	S10.2.19	Buffer planting to shield vegetated area from the surrounding developed zones	Minimise human disturbances to habitats of bat	CEDD / PlanD / Contractor	Vegetated areas / developed zones interface	Operational phase	TM-EIAO
S9.7.8	S10.2.19	Minimise the lighting along river channel and near vegetated areas in CA or “GB” zones or incorporate wildlife-friendly lighting	Minimise level of light pollution and disturbance to wildlife	CEDD / PlanD	River channels and vegetated areas	Operational phase	TM-EIAO
S9.7.10	S10.2.16	Replace temporary vegetation loss within Project boundary by native shrub and woodland plantings in areas of open space	Compensate vegetation loss within the Project footprint	CEDD / Contractor	Available areas in “Open Space” zoning	Operational phase	TM-EIAO
S9.7.12	S10.2.20	Retention of tree belt on the eastern side of the larger mitigation pond within the Project boundary	Provide screening for the existing ponds	CEDD / Contractor	Mitigation ponds to the west of Kau Lee Uk Tsuen	Operational phase	TM-EIAO
S9.7.13	S10.2.20	Provide amenity strip, additional tree planting and screening measures (e.g. vertical greening walls, green roof, noise barriers) along the new Road P1	Provide screening for the existing ponds	CEDD / Contractor	Mitigation ponds to the west of Kau Lee Uk Tsuen	Operational phase	TM-EIAO
S9.7.17	S10.2.21	Use of tinted materials and superimposing dark patterns or strips on the noise barriers, as per EPD/Highways Department requirements	Minimise bird mortality from collision	CEDD / Contractor	Major road networks with noise barriers installed	Operational phase	Guidelines on Design of Noise Barriers
S9.7.21	S10.2.22	Develop a Contingency Plan under failure of treatment facilities	Minimise the potential sewage discharges to sensitive area such as Deep Bay WCZ under failure of treatment facilities	DSD / Consultant	San Wai STW, new HSK STW	Operational Phase	TM-EIAO
Fisheries							
S.10.7	S13.4.8	Follow the mitigation measures proposed in the water quality assessment for construction and operational phase	To protect fisheries resources from potential indirect impacts arising from deterioration of water quality	Contractor	Within the boundaries of the Project	Construction phase	EIA, contractual requirements
Landscape and Visual (Construction [CM] and Operation [OM] Phases)							

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Table 11.8	CM1	Minimised construction area and contractor's temporary works areas The construction area and contractor's temporary works areas should be minimised. General Good Practice Measures - For areas unavoidably disturbed by the Project on a short term basis e.g. works areas, the general principle to try and restore these to their former state to suit future land use, should be adhered to.	Minimise impacts on adjacent landscape	Government/ Developer/ Detailed Design Consultant/ Contractor	All construction areas and temporary works areas	Prior to construction, construction stages. This should be implemented as soon as the areas become available, to achieve early establishment	
Table 11.8	CM2	Stripping and storing of topsoil Topsoil, where identified, should be stripped and stored for re-use in the construction of the soft landscape works, where practical. The Contract Specification shall include storage and reuse of topsoil as appropriate. On potentially contaminated sites (as per Section 8) where investigation results indicate soil contamination is present, the use of contaminated soils for planting is to be avoided where appropriate.	Minimise the loss of existing topsoil and reduce the need to provide imported material	Government/ Developer/ Detailed Design Consultant/ Contractor	All construction areas	Detailed design, construction stages	
Table 11.8	CM3	Protection of existing trees Tree Protection & Preservation – Exiting 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	Government/ Developer/ Detailed Design Consultant/ Contractor	On site	Detailed design, construction stages	ETWB Technical Circular Works (TCW) No. 29/2004 and 3/2006
Table 11.8	CM4	Transplantation of existing trees where practical 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 Tree Transplanting Specification shall be provided in the Contract Specification, where applicable. Sufficient time for necessary tree root and crown preparation periods shall be allowed in the Project programme. A detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBTC 2/2004 and 3/2006 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, HyD HQ/GN/13 'Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit' should be referred to.	Transplant Trees where suitable for transplantation	Government/ Developer/ Detailed Design Consultant/ Contractor	Onsite where possible. Otherwise consider offsite locations	Prior to Construction, Construction Phase & Maintenance in Operation Phase	ETWB TCW 3/2006 and 2/2004 HyD HQ/GN/13 Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit
Table 11.8	CM5	Control of night-time lighting Control of night-time lighting and glare by hooding all lights. Construction day and night time lighting should be controlled to minimise glare impact to adjacent VSRs during the Construction phase.	Minimise impact of night-time lighting and glare	Government/ Developer/ Contractor	All construction areas and temporary works areas	Construction stage	
Table 11.8	CM6	Construction of decorative hoarding around construction works Erection of decorative mesh screens or construction hoardings around works areas in visually unobtrusive colours.	To screen undesirable views of the works site.	Contractor	All construction areas and temporary works areas	Construction stage	

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		Screen hoarding shall be erected along areas of the construction works site boundary where the works site borders publically accessible routes and/or is close to visually sensitive receivers (VSRs). It is proposed that the screening be compatible with the surrounding environment and where possible, non-reflective, recessive colours be used.					
Table 11.8	CM7	Reduction of construction period to practical minimum Reduction of construction period to practical minimum.	Minimise length of exposure to construction works	Government/ Developer/ Detailed Design Consultant/ Contractor	All construction areas and temporary works areas	Construction stage	
Table 11.8	CM8	Prevention of run-off Limitation of / Ensuring no run-off into surrounding landscape and prohibit run-off from entering adjacent water bodies and waterways Refer to guidelines.	Minimise / limit impacts on surrounding landscape and adjacent water sea areas	Government/ Developer/ Detailed Design Consultant/ Contractor	All construction areas and temporary works areas	Construction stage	Guidelines for this include ETWB Technical Circular (Works) No. 5/2005 Protection of natural streams/rivers from adverse impacts arising from construction works; Building Department (BD) Practice Note for Authorised Persons and Registered Structural Engineers 295: Protection of natural streams/rivers from adverse impacts arising from construction works
Table 11.8	CM9	Phasing of construction stage Phasing of the construction stage to reduce visual impacts.	Minimise visual impacts during the construction phase	Government/ Developer/ Detailed Design Consultant/ Contractor	All construction areas and temporary works areas	Construction stage	
Table 11.8	CM10	Advance screen planting Advance screen planting of fast growing tree and shrub species to noise barriers and hoardings. Trees shall be capable of reaching a height >10m within 10 years.	Minimise length of exposure without long term mitigation measures	Government/ Developer/ Detailed Design Consultant/ Contractor	Areas adjacent to noise barriers and hoardings	Detailed design, construction stages	ETWB TCW 3/2006 and 2/2004
Table 11.8	CM11	Minimise disturbance footprints To minimise landscape and visual impacts, the footprint and elevation of such elements should be optimised to reduce topographical/ landform changes, as well as reduce land take and interference with natural terrain. 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, while also considering visual amenity. Earthworks and engineered slopes should be designed to be a visually interesting landform, compatible with the surrounding landscape and to mimic the natural contouring and terrain e.g. introduction and continuation of natural features such as spurs and ridges where appropriate, to support assimilation with the hillside setting.	Reduce topographical changes and minimize land resumption	Government/ Developer/ Detailed Design Consultant/ Contractor	Throughout NDA	Detailed design, construction stages	GEO Publication No. 1/2011, Technical Guidelines on Landscape Treatment on Slopes
Table 11.8	CM12	Protection of existing water courses For all the natural rivers and streams inside the development area, consideration of protection measures should be made to minimise any impacts from the construction works. Avoid affecting Watercourses – In the detailed design, consideration should be made of watercourses, to minimise any impacts e.g. at new bridge crossings, viaducts, road alignment etc. Guidelines stated should be followed. Bridges and box culverts should also be used to minimise the necessity of watercourse modification and protect the watercourses where necessary.	Avoid direct impacts to watercourses	Detailed Design Consultant/ Contractor	All natural rivers and streams inside development area	Detailed design, construction stages	Guidelines for this include ETWB Technical Circular (Works) No. 5/2005 Protection of natural streams/rivers from adverse impacts arising from construction works; Building Department (BD) Practice Note for Authorised Persons and Registered Structural Engineers 295: Protection of natural streams/rivers from adverse impacts arising from construction works
Table 11.8	CM13	Hydroseeding on modified slopes 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. Woodland tree seedlings and/ or shrubs should be planted where 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.	To prevent erosion and subsequent loss of landscape resources and character. To ensure man-made slopes are as visually amenable as possible.	Government/ Developer/ Detailed Design Consultant/ Contractor	Modified slopes onsite	Prior to Construction, Construction Phase & Maintenance in Operation Phase	GEO publication (1999) – Use of Vegetation as Surface Protection on Slope; GEO Publication No. 1/2011-Technical Guidelines on Landscape Treatment for Slopes

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Table 11.8	CM14	Integrate Open Space Network with existing nullah conditions For watercourses affected during construction, measures should be sought to minimise the impact with respect to the existing nullah conditions, existing shrubs and trees along the banks. Where natural streams are unavoidably affected along some of their length, they can be diverted to avoid the proposed new developments and retain the integrity of the whole stream. Detailed design of any stream diversion should follow the Guidelines in ETWB Technical Circular (Works) No. 5/2005 (Protection of natural streams/rivers from adverse impacts arising from construction works) and appropriate construction methods should be used.	Minimise / limit impacts on surrounding landscape and adjacent water sea areas	Government/ Developer/ Detailed Design Consultant/ Contractor	Watercourses affected during construction	Prior to Construction, Construction Phase & Maintenance in Operation Phase	ETWB TCW No. 5/2005 – Protection of natural streams/rivers from adverse impacts arising from construction works; DSD Practice Note No.1/2005, Guidelines on Environmental Considerations for River Channel Design
Table 11.9	OM1	Compensatory tree planting where practical Compensatory Planting – Compensatory tree planting for felled trees shall be provided to the satisfaction of relevant Government departments. Required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Removal Application process under ETWBTC 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. Tree compensation within the HSK NDA will be provided at a 1:1 ratio. This means that for every tree that is removed, a new one will be planted. Furthermore, trees affected by DPs will be compensated within their respective DP areas.	Compensate for felled trees to the satisfaction of relevant Government departments	CEDD (via Contractor)	Throughout NDA	Detailed design, construction stages through to maintenance in operation phase	Tree Removal Application process under ETWBTC 7/2015
Table 11.9	OM2	Sensitive design of above-ground structures All above-ground structures, including Sewage Pumping Stations, Electrical Sub-Stations, EFLS Stations, Emergency and Firemen's' Accesses, etc. shall be sensitively designed in a manner that responds to the existing and planned urban context. The footprint and massing of development components and the works area should also be kept to a practical minimum and the detailed design of development components for Construction phase should follow the Sustainable Building Design Guidelines. The form, textures, finishes and colours of the proposed development components should aim to be compatible with the existing surroundings. To improve visual amenity designs should be aesthetically pleasing and treatment of structures also improve visual amenity.	Ensure aesthetically pleasing designs to improve visual amenity	CEDD / MTR / EFTS Operator	Above ground utility structure as listed	Detailed design, construction stages	
Table 11.9	OM3	Sensitive design of hardscape elements along roadsides Streetscape elements along new and existing roads (e.g. paving, signage, street furniture, lighting etc.) shall be sensitively designed in a manner that responds to the existing and planned urban context.	Ensure hardscape elements are sensitively designed and respond to planning context	CEDD (via Contractor)	Along roadsides	Detailed design, construction stages through to maintenance in operation phase	
Table 11.9	OM4	Reinstatement of streetscape elements All streetscape areas and hard and soft landscape areas disturbed during construction shall be reinstated to equal or better quality, to the satisfaction of the relevant Government departments	Reinstate streetscapes to equal or better quality	CEDD (via Contractor)	All streetscape areas	Detailed design, construction stages through to maintenance in operation phase	DEVB TCW 2/2012
Table 11.9	OM5	Visual softening via soft landscape elements Attractive soft landscape in areas adjoining Sewage Pumping Stations, Electrical Sub-Stations, EFTS Stations, Emergency and Firemen's' Accesses, etc. (taking into account the necessary setbacks) so as to provide a visual softening and greening effect (e.g. provision of tree / shrub / climber planting).	Ensure aesthetically pleasing designs for utility structures to improve visual amenity	CEDD (via Contractor)	Utility structures as listed	Detailed design, construction stages through to maintenance in operation phase	DEVB TCW 2/2012
Table 11.9	OM6	Quality greening along roadside amenity strips Shade trees, ornamental tree / shrub / climber planting should be provided along roadside amenity strips to enhance the townscape quality. Provision of utility free planting strips for quality planting shall be adopted according to DEVB TCW 2/2012	Provide pleasant roadside amenity to the benefit of patrons	CEDD (via Contractor)	Along roadsides	Detailed design, construction stages through to maintenance in operation phase	DEVB TCW 2/2012
Table 11.9	OM7	Design of street lighting Appropriate design of street lighting to avoid glare and light pollution to surrounding areas.	Appropriate design to avoid glare and light pollution	CEDD (via Contractor)	Along roadsides	Detailed design, construction stages	

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location of the Measure	Implementation Timing	Requirements and / or Standards to be Achieved
Table 11.9	OM8	Sensitive and chromatic treatment of architectural facades Elegant architectural and engineering design, sensitive architectural and chromatic treatment for building facades. The form, textures, finishes and colours of the proposed development components should aim to be compatible with the existing surroundings. To improve visual amenity designs should be aesthetically pleasing and treatment of structures also improve visual amenity. For example, natural building materials such as stone and timber, should be considered for architectural features, and light earthy tone colours such as shades of green, shades of grey, shades of brown and off-white should also be considered to reduce the visibility of the development components.	Ensure aesthetically pleasing designs to improve visual amenity	ArchSD, Housing Department, Private Developer	Throughout NDA	Detailed design, construction stages	
Table 11.9	OM9	Sensitive design of landscape areas Elegant, sensitive design and generous planting of the associated landscape areas. Open Space Provision - the principles adopted in the RODP planning ensure that public open space systems are incorporated. All requirements for open space areas stipulated in the planning documents for the formulation of the Preliminary Layout Plan should be adhered to.	Incorporating Open Space Provision principles to improve landscape amenity	ArchSD, Housing Department, Private Developer	Throughout NDA	Detailed design, construction stages through to maintenance in operation phase	
Table 11.9	OM10	Sensitive design of vertical noise barriers and enclosures The visual impact of noise barriers & enclosures will be mitigated by appropriate detailed design, 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.	Ensure aesthetically pleasing designs for noise barriers and enclosures to improve visual amenity	CEDD (via Contractor)	All noise barriers and enclosures	Detailed design, construction stages	
Table 11.9	OM11	Tree planting to site boundaries Tree planting screens along appropriate site boundaries	Provide adequate screening with trees to improve visual amenity	CEDD (via Contractor)	Along site boundaries	Detailed design, construction stages through to maintenance in operation phase	
Table 11.9	OM12	Night time lighting Control of lighting glare. A balance between lighting for safety, and avoiding excessive lighting can be achieved through consideration of the following: the type of lamp (light source) used; use of directional lighting to avoid light spill into sensitive areas; height of the lighting column can affect the amount/extent of glare; and control/timing of lighting periods of some facilities, particularly those close to sites of conservation importance.	Appropriate design to avoid glare and light pollution	ArchSD, Housing Department, Private Developer	Throughout NDA	Detailed design, construction stages	
Table 11.9	OM13	Green roofs and vertical greening Green roofs and vertical greening provision of green roofs and vertical greening where feasible and appropriate to mitigate visual impacts of buildings and structures	Improve landscape amenity to assist in mitigating visual impacts of buildings and structures	Initiating Government Department, Private Developer	Throughout NDA	Detailed design, construction stages through to maintenance in operation phase	
Table 11.9	OM14	Greening of viaduct structures and noise barriers Aesthetic improvement of viaduct structures and noise barriers through greening of structure where feasible and appropriate to mitigate visual impact of viaduct or noise barrier form.	Improve landscape amenity to assist in mitigating visual impacts of viaduct structure or noise barrier	CEDD (via Contractor)	All viaduct structures and noise barriers as feasible, final location to be confirmed at detailed design stage	Detailed design, construction stages through to maintenance in operation phase	
Cultural Heritage Impact (Construction and Operational Phases)							
Table 12.4	13.1.1	The archaeological impact arising from the construction works should be assessed when the detailed design of the works is available. Preservation in situ is the top priority to safeguard the archaeological remains in the impacted area by amending the layout plans of the construction works. However, if the works cannot avoid disturbance to the archaeological deposit, depending on degree of direct impact, the following mitigation measures should be considered, such as archaeological surveys, archaeological watching brief, preservation by record and relocation of archaeological remains. The scope and programme of the archaeological fieldwork would be agreed with AMO.	Minimise impact to archaeology in SAIs.	Contractor	Tseung Kong Wai SAI (F1) and Tung Tau Tsuen SAI (F2)	Prior to construction phase commencement	➢ Environmental Impact Assessment Ordinance EIAO (Cap.499) and Technical Memorandum (EIAO-TM) ➢ Guidance Note on Assessment of Impact on Sites of Culture Heritage in Environmental Impact Assessment Studies (GCH-EIA)

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location of the Measure	Implementation Timing	Requirements and / or Standards to be Achieved
							➢ Antiquities and Monuments Ordinance (A&MO) ➢ Hong Kong Planning Standards and Guidelines (HKPSG) ➢ Guidelines for Cultural Heritage Impact Assessment (GCHIA)
Table 12.4	13.1.2	Further archaeological survey is required to be conducted at APA 1 and APA 2 to ascertain the extent of any archaeological remains within the APAs if any construction works will be carried out. Based on the findings of the survey, mitigation measures could be proposed, such as preservation in situ, preservation by record, or relocation of archaeological remains, in prior agreement with the AMO. Direct impact arising from the proposed development within APA 3 should be avoided as far as possible.	Minimise impact to archaeology in APAs.	Contractor	APA 1, APA 2, APA 3	Prior to construction phase commencement	EIAO-TM GCH-EIA A&MO HKPSG GCHIA
12.9.6	13.1.5	Preservation by record (including cartographic and photographic record) prior to any construction works would be required for the directly impacted built heritage.	Minimise impact to built heritage	Contractor	Twelve nil grade built heritage in Yick Yuen Tsuen, Tin Sam San Tsuen and south of Tin Sam that are going to be directly impacted during the construction phase by land site formation works.	Prior to construction phase commencement	EIAO-TM GCH-EIA HKPSG GCHIA
12.9.7	---	A Conservation Management Plan should be proposed to implement future maintenance and management of the cultural heritage.	Maximise the public education, heritage and cultural tourism related opportunities in this area as heritage attractions.	CEDD	Graded Historic buildings, declared monuments and nil grade built heritage in Ha Tsuen area mostly within the "Village Type Development" and "Green Belt" zone.	Prior to construction phase commencement	EIAO-TM GCH-EIA A&MO HKPSG GCHIA
EM&A Project							
		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	EIAO Guidance Note No.4/2010 TM-EIAO
		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	EIAO Guidance Note No.4/2010 TM-EIAO
Common Mitigation Measures (Applicable to DP1 - Construction of new primary distributor road (P1))							
Construction Dust Impact							
As per input under 'Common Mitigation Measures (Applicable to ALL Project Components, including DPs and Non-DPs)' above							
Construction Noise							

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location of the Measure	Implementation Timing	Requirements and / or Standards to be Achieved
S4.6	S5.13	Use of quiet plant which should be made reference to the Powered Mechanical Equipment (PME) listed in the Technical Memorandum or the Quality Powered Mechanical Equipment (QPME) / other commonly used PME listed in Environmental Protection Department (EPD) web pages as far as possible which includes the Sound Power Level (SWLs) for specific quiet PME.	Reduce the noise levels of plant items	Contractor	All construction sites where practicable	Construction Phase	EIAO-TM
S4.6	S5.13	Install movable noise barrier and enclosures. The movable noise barrier can provide 5 dB(A) noise reduction for mobile plant and 10 dB(A) noise reduction for static plant. The barrier material shall have a surface mass of not less than 14 kg/m^2. The enclosures can provide 15 dB(A) noise reduction.	Screen the noisy plant items to be used at all construction sites	Contractor	All construction sites where practicable	Construction Phase	EIAO-TM
S4.6	S5.13	Good site practices listed below shall be adopted by all the contractors to further ameliorate the noise impacts. • Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program. • Silencers or mufflers on construction equipment should be utilised and should be properly maintained during the construction program. • Mobile plant, if any, should be sited as far away from NSRs as possible. • Machines and plant (such as trucks) that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum. • Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs. • Material stockpiles and other structures should be effectively utilised, wherever practicable, in screening noise from on-site construction activities.	Control construction airborne noise	Contractor	All construction work sites where practicable	Construction Phase	EIAO-TM
Operational Noise (Road Traffic Noise)							
S4.7	S5.13	Provide low noise surfacing material on Road P1	Reduce operation noise from road traffic	CEDD (commencement stage) & HyD (during operation phase)	Refer to Figure 4.7.1 to 4.7.16.	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
S4.7	S5.13	Provide noise barriers for the planned noise sensitive receivers	Reduce operation noise from road traffic	Relevant government departments / Private developers	Refer to Figure 4.7.1 to 4.7.16.	Prior to operation of the Project for planned NSRs.	EIAO-TM
Water Quality (Construction Phase)							
As per input under 'Common Mitigation Measures (Applicable to ALL Project Components, including DPs and Non-DPs)' above							
Water Quality (Operational Phase)							
S5.14	6.11	Exposed surface shall be avoided within the development sites to minimise soil erosion. The development site shall be either hard paved or covered by landscaping area and plantation where appropriate.	To minimise non-point source storm pollution	Future Operator	DP1	Design and Operational phase	WPCO, EIAO-TM

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location of the Measure	Implementation Timing	Requirements and / or Standards to be Achieved
S5.14	6.11	The major water channels and nullahs within the development sites should be retained as far as practicable to maintain the original flow path. The drainage system should be designed to avoid flooding.	To minimise non-point source storm pollution	Future Operator	DP1	Design and Operational phase	WPCO, EIAO-TM
S5.14	6.11	Green areas / tree / shrub planting etc. should be introduced within the development site as far as possible including open space and along roadside amenity strips and central dividers, which can help to reduce soil erosion.	To minimise non-point source storm pollution	Future Operator	DP1	Design and Operational phase	WPCO, EIAO-TM
S5.14	6.11	Screening facilities such as standard gully grating and trash grille, with spacing which is capable of screening large substances such as fallen leaves and rubbish should be provided at the inlet of drainage system.	To minimise non-point source storm pollution	Future Operator	DP1	Design and Operational phase	WPCO, EIAO-TM
S5.14	6.11	Road gullies with standard design and silt traps and oil interceptors should be incorporated during the detailed design to remove particles present in stormwater run-off, where appropriate.	To minimise non-point source storm pollution	Future Operator	DP1	Design and Operational phase	WPCO, EIAO-TM
S5.14	6.11	Evergreen tree species, which in general generate relatively smaller amount of fallen leaves, should be selected where possible.	To minimise non-point source storm pollution	Future Operator	DP1	Design and Operational phase	WPCO, EIAO-TM
S5.14	6.11	Good management measures such as regular cleaning and sweeping of road surface/ open areas are suggested. The road surface/ open area cleaning should also be carried out prior to occurrence rainstorm.	To minimise non-point source storm pollution	Future Operator	DP1	Operational phase	WPCO, EIAO-TM
S5.14	6.11	Manholes, as well as stormwater gullies, ditches provided at the development sites should be regularly inspected and cleaned (e.g. monthly). Additional inspection and cleansing should be carried out before forecast heavy rainfall.	To minimise non-point source storm pollution	Future Operator	DP1	Operational phase	WPCO, EIAO-TM
Waste Management							
As per input under 'Common Mitigation Measures (Applicable to ALL Project Components, including DPs and Non-DPs)' above							
Land Contamination							
As per input under 'Common Mitigation Measures (Applicable to ALL Project Components, including DPs and Non-DPs)' above							
Ecology (Construction Phase)							
S9.7.4	S10.2.5	Provision of screening (e.g. hoarding) at adjacent habitats within CA at northwest of San Sang San Tsuen	Disturbance impacts (e.g. noise/vibration, visual) to adjacent habitats within the CA	CEDD / Contractor	CA at northwest of San Sang San Tsuen	Construction phase	TM-EIAO
S9.7.11	S10.2.10	Provision of hoarding for proper delineation of works boundary	Minimise construction disturbance impacts to existing mitigation ponds	CEDD / Contractor	Mitigation ponds to the west of Kau Lee Uk Tsuen	Construction phase	TM-EIAO
S9.7.14 – S9.7.15 and S9.7.18	S10.2.11	General good site practice for control of dust, noise and water quality	Mitigate disturbance impacts to the mitigation ponds	CEDD / Contractor	Mitigation ponds to the west of Kau Lee Uk Tsuen	Construction phase	TM-EIAO
S9.7.16	S10.2.12	Night-time lighting control	Minimise glare disturbance to wildlife	CEDD / Contractor	All works areas in particular sensitive habitats i.e. mitigation ponds to the west of Kau Lee Uk Tsuen, San Sang San Tsuen egretry	Construction phase	TM-EIAO
Ecology (Operational Phase)							
S9.7.8	S10.2.19	Minimise the lighting along river channel and near vegetated areas in CA or "GB" zones or incorporate wildlife-friendly lighting	Minimise level of light pollution and disturbance to wildlife	CEDD / PlanD	River channels and vegetated areas	Operational phase	TM-EIAO

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location of the Measure	Implementation Timing	Requirements and / or Standards to be Achieved
S9.7.13	S10.2.20	Retention of tree belt on the eastern side of the larger mitigation pond within the Project boundary	Provide screening for the existing ponds	CEDD / Contractor	Mitigation ponds to the west of Kau Lee Uk Tsuen	Operational phase	TM-EIAO
S9.7.12	S10.2.20	Provide amenity strip, additional tree planting and screening measures (e.g. vertical greening walls, green roof, noise barriers) along the new Road P1	Provide screening for the existing ponds	CEDD / Contractor	Mitigation ponds to the west of Kau Lee Uk Tsuen	Operational phase	TM-EIAO
S9.7.17	S10.2.21	Use of tinted materials and superimposing dark patterns or strips on the noise barriers, as per EPD/Highways Department requirements	Minimise bird mortality from collision	CEDD / Contractor	Major road networks with noise barriers installed	Operational phase	Guidelines on Design of Noise Barriers
Fisheries							
S.10.7	S13.4.8	Follow the mitigation measures proposed in the water quality assessment for construction and operational phase	To protect fisheries resources from potential indirect impacts arising from deterioration of water quality	Contractor	Within the boundaries of the Project	Construction phase	TM-EIAO, contractual requirements
Landscape and Visual (Construction Phase)							
Schedule 2 DP Package A – Table 11.6	CM1	<u>Minimised construction area and contractor's temporary works areas</u> The construction area and contractor's temporary works areas should be minimised. General Good Practice Measures - For areas unavoidably disturbed by the Project on a short term basis e.g. works areas, the general principle to try and restore these to their former state to suit future land use, should be adhered to.	Minimise impacts on adjacent landscape	Government/ Developer/ Detailed Design Consultant/ Contractor	All construction areas and temporary works areas	Prior to construction, construction stages. This should be implemented as soon as the areas become available, to achieve early establishment	
Schedule 2 DP Package A – Table 11.6	CM2	<u>Stripping and storing of topsoil</u> Topsoil, where identified, should be stripped and stored for re-use in the construction of the soft landscape works, where practical. The Contract Specification shall include storage and reuse of topsoil as appropriate. On potentially contaminated sites (as per Section 8) where investigation results indicate soil contamination is present, the use of contaminated soils for planting is to be avoided where appropriate.	Minimise the loss of existing topsoil and reduce the need to provide imported material	Government/ Developer/ Detailed Design Consultant/ Contractor	All construction areas	Detailed design, construction stages	
Schedule 2 DP Package A – Table 11.6	CM3	<u>Protection of existing trees</u> Tree Protection & Preservation – Exiting 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	Government/ Developer/ Detailed Design Consultant/ Contractor	On site	Detailed design, construction stages	ETWB Technical Circular Works (TCW) No. 29/2004 and 3/2006
Schedule 2 DP Package A – Table 11.6	CM4	<u>Transplantation of existing trees where practical</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 Tree Transplanting Specification shall be provided in the Contract Specification, where applicable. Sufficient time for necessary tree root and crown preparation periods shall be allowed in the Project programme.	Transplant Trees where suitable for transplantation	Government/ Developer/ Detailed Design Consultant/ Contractor	Onsite where possible. Otherwise consider offsite locations	Prior to Construction, Construction Phase & Maintenance in Operation Phase	ETWB TCW 3/2006 and 2/2004 HyD HQ/GN/13 Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location of the Measure	Implementation Timing	Requirements and / or Standards to be Achieved
		A detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBTC 2/2004 and 3/2006 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, HyD HQ/GN/13 'Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit' should be referred to.					
Schedule 2 DP Package A – Table 11.6	CM5	Control of night-time lighting Control of night-time lighting and glare by hooding all lights. Construction day and night time lighting should be controlled to minimise glare impact to adjacent VSRs during the Construction phase.	Minimise impact of night-time lighting and glare	Government/ Developer/ Contractor	All construction areas and temporary works areas	Construction stage	
Schedule 2 DP Package A – Table 11.6	CM6	Construction of decorative hoarding around construction works Erection of decorative mesh screens or construction hoardings around works areas in visually unobtrusive colours. Screen hoarding shall be erected along areas of the construction works site boundary where the works site borders publically accessible routes and/or is close to visually sensitive receivers (VSRs). It is proposed that the screening be compatible with the surrounding environment and where possible, non-reflective, recessive colours be used.	To screen undesirable views of the works site.	Contractor	All construction areas and temporary works areas	Construction stage	
Schedule 2 DP Package A – Table 11.6	CM7	Reduction of construction period to practical minimum Reduction of construction period to practical minimum.	Minimise length of exposure to construction works	Government/ Developer/ Detailed Design Consultant/ Contractor	All construction areas and temporary works areas	Construction stage	
Schedule 2 DP Package A – Table 11.6	CM8	Prevention of run-off Limitation of / Ensuring no run-off into surrounding landscape and prohibit run-off from entering adjacent water bodies and waterways Refer to guidelines.	Minimise / limit impacts on surrounding landscape and adjacent water sea areas	Government/ Developer/ Detailed Design Consultant/ Contractor	All construction areas and temporary works areas	Construction stage	Guidelines for this include ETWB Technical Circular (Works) No. 5/2005 Protection of natural streams/rivers from adverse impacts arising from construction works; Building Department (BD) Practice Note for Authorised Persons and Registered Structural Engineers 295: Protection of natural streams/rivers from adverse impacts arising from construction works
Schedule 2 DP Package A – Table 11.6	CM9	Phasing of construction stage Phasing of the construction stage to reduce visual impacts.	Minimise visual impacts during the construction phase	Government/ Developer/ Detailed Design Consultant/ Contractor	All construction areas and temporary works areas	Construction stage	
Schedule 2 DP Package A – Table 11.6	CM10	Advance screen planting Advance screen planting of fast growing tree and shrub species to noise barriers and hoardings. Trees shall be capable of reaching a height >10m within 10 years.	Minimise length of exposure without long term mitigation measures	Government/ Developer/ Detailed Design Consultant/ Contractor	Areas adjacent to noise barriers and hoardings	Detailed design, construction stages	ETWB TCW 3/2006 and 2/2004
Schedule 2 DP Package A – Table 11.6	CM11	Minimise disturbance footprints To minimise landscape and visual impacts, the footprint and elevation of such elements should be optimised to reduce topographical/ landform changes, as well as reduce land take and interference with natural terrain. 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, while also considering visual amenity. Earthworks and engineered slopes should be designed to be a visually interesting landform, compatible with the surrounding landscape and to mimic the natural contouring and terrain e.g. introduction and continuation of natural features such as spurs and ridges where appropriate, to support assimilation with the hillside setting.	Reduce topographical changes and minimise land resumption	Government/ Developer/ Detailed Design Consultant/ Contractor	Throughout NDA	Detailed design, construction stages	GEO Publication No. 1/2011, Technical Guidelines on Landscape Treatment on Slopes

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location of the Measure	Implementation Timing	Requirements and / or Standards to be Achieved
Schedule 2 DP Package A – Table 11.6	CM12	Protection of existing water courses For all the natural rivers and streams inside the development area, consideration of protection measures should be made to minimise any impacts from the construction works. Avoid affecting Watercourses – In the detailed design, consideration should be made of watercourses, to minimise any impacts e.g. at new bridge crossings, viaducts, road alignment etc. Guidelines stated should be followed. Bridges and box culverts should also be used to minimise the necessity of watercourse modification and protect the watercourses where necessary.	Avoid direct impacts to watercourses	Detailed Design Consultant/ Contractor	All natural rivers and streams inside development area	Detailed design, construction stages	Guidelines for this include ETWB Technical Circular (Works) No. 5/2005 Protection of natural streams/rivers from adverse impacts arising from construction works; Building Department (BD) Practice Note for Authorised Persons and Registered Structural Engineers 295: Protection of natural streams/rivers from adverse impacts arising from construction works
Schedule 2 DP Package A – Table 11.6	CM13	Hydroseeding on modified slopes 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. Woodland tree seedlings and/ or shrubs should be planted where 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.	To prevent erosion and subsequent loss of landscape resources and character. To ensure man-made slopes are as visually amenable as possible.	Government/ Developer/ Detailed Design Consultant/ Contractor	Modified slopes onsite	Prior to Construction, Construction Phase & Maintenance in Operation Phase	GEO publication (1999) – Use of Vegetation as Surface Protection on Slope; GEO Publication No. 1/2011-Technical Guidelines on Landscape Treatment for Slopes
Schedule 2 DP Package A – Table 11.6	CM14	Integrate Open Space Network with existing nullah conditions For watercourses affected during construction, measures should be sought to minimise the impact with respect to the existing nullah conditions, existing shrubs and trees along the banks. Where natural streams are unavoidably affected along some of their length, they can be diverted to avoid the proposed new developments and retain the integrity of the whole stream. Detailed design of any stream diversion should follow the Guidelines in ETWB Technical Circular (Works) No. 5/2005 (Protection of natural streams/rivers from adverse impacts arising from construction works) and appropriate construction methods should be used.	Minimise / limit impacts on surrounding landscape and adjacent water sea areas	Government/ Developer/ Detailed Design Consultant/ Contractor	Watercourses affected during construction	Prior to Construction, Construction Phase & Maintenance in Operation Phase	ETWB TCW No. 5/2005 – Protection of natural streams/rivers from adverse impacts arising from construction works; DSD Practice Note No.1/2005, Guidelines on Environmental Considerations for River Channel Design
Landscape and Visual (Operational Phase)							
Schedule 2 DP Package A – Table 11.7	OM1	Compensatory tree planting where practical Compensatory Planting – Compensatory tree planting for felled trees shall be provided to the satisfaction of relevant Government departments. Required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Removal Application process under ETWBTC 3/2006. 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. Tree compensation within the HSK NDA will be provided at a 1:1 ratio. This means that for every tree that is removed, a new one will be planted. Furthermore, trees affected by DPs will be compensated within their respective DP areas.	Compensate for trees and shrubs lost due to the Project.	Government / Developer/ Detailed Design Consultant/ Contractor	Onsite where possible. Otherwise consider offsite locations	Prior to Construction, Construction Phase & Maintenance in Operation Phase	
Schedule 2 DP Package A – Table 11.7	OM3	Sensitive design of hardscape elements along roadsides Streetscape elements along new and existing roads (e.g. paving, signage, street furniture, lighting etc.) shall be sensitively designed in a manner that responds to the existing and planned urban context.	Minimise potential adverse landscape and visual impacts	Government / Developer/ Detailed Design Consultant/ Contractor	Streetscapes	Detailed design, construction and establishment works stages	
Schedule 2 DP Package A – Table 11.7	OM4	Reinstatement of streetscape elements All streetscape areas and hard and soft landscape areas disturbed during construction shall be reinstated to equal or better quality, to the satisfaction of the relevant Government departments.	Compensate for impacts on existing landscape, reinstating to equal or better quality	Government / Developer/ Detailed Design Consultant/	Streetscape and hard and soft landscape areas	Detailed design, construction and establishment works stages	

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location of the Measure	Implementation Timing	Requirements and / or Standards to be Achieved
				Contractor			
Schedule 2 DP Package A – Table 11.7	OM6	Quality greening along roadside amenity strips Furniture, ornamental tree / shrub / climber planting should be provided along roadside amenity strips to enhance the townscape quality.	Compensate for impacts on existing landscape, reinstating to equal or better quality	Government / Developer/ Detailed Design Consultant/ Contractor	Along roadside amenity	Detailed design, construction and establishment works stages	
Schedule 2 DP Package A – Table 11.7	OM7	Design of street lighting Appropriate design of street lighting to avoid glare and light pollution to surrounding areas.	Minimise potential adverse landscape and visual impacts	Detailed Design Consultant	Streetscapes	Detailed design stage	
Schedule 2 DP Package A – Table 11.7	OM10	Sensitive design of vertical noise barriers and enclosures The visual impact of noise barriers & enclosures will be mitigated by appropriate detailed design, 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.	Minimise potential adverse landscape and visual impacts	Government (via Contractor)	Noise barriers and enclosures	Detailed design stage	
Schedule 2 DP Package A – Table 11.7	OM14	Greening of viaduct structures and noise barriers Aesthetic improvement of viaduct structures and noise barriers through greening of structure where feasible and appropriate to mitigate visual impact of viaduct or noise barrier form.	Improve landscape amenity to assist in mitigating visual impacts of viaduct structure or noise barrier	CEDD (via Contractor)	All viaduct structures and noise barriers as feasible, final location to be confirmed at detailed design stage	Detailed design, construction stages through to maintenance in operation phase	
Cultural Heritage Impact (Construction and Operational Phase)							
12.11.2	---	No impact to cultural heritage is anticipated. Hence no mitigation measures required.	---	---	---	---	---
EM&A Project							
		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	EIAO Guidance Note No.4/2010 TM-EIAO
		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	EIAO Guidance Note No.4/2010 TM-EIAO
Common Mitigation Measures (Applicable to DP2 - Construction of eight new distributor roads (D1 to D8))							
Construction Dust Impact							
As per input under 'Common Mitigation Measures (Applicable to ALL Project Components, including DPs and Non-DPs)' above							
Construction Noise							
As per input under 'Common Mitigation Measures (Applicable to DP1) above							
Operational Noise (Road Traffic Noise)							

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location of the Measure	Implementation Timing	Requirements and / or Standards to be Achieved
S4.7	S5.13	Provide low noise surfacing material on Planned Road P1, D1, D2, D3, D4 and D5	Reduce operation noise from road traffic	CEDD (commencement stage) & HyD (during operation phase)	Refer to Figure 4.7.1 to 4.7.16.	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
S4.7	S5.13	Provide noise barriers for the existing noise sensitive receivers:	Reduce operation noise from road traffic	CEDD	Refer to Figure 4.7.1 to 4.7.16.	Prior to operation of the Project for existing NSRs.	EIAO-TM
S4.7	S5.13	Provide noise barriers for the planned noise sensitive receivers:	Reduce operation noise from road traffic	Relevant government departments / Private developers	Refer to Figure 4.7.1 to 4.7.16.	Prior to operation of the Project for planned NSRs.	EIAO-TM
S4.7	S5.13	Alternative development layout and special building design for the noise sensitive facades at some planned residential sites (Table 4.29 and 4.33 of EIA Report)	Reduce operation noise from road traffic	Housing Department/Private Developers	Refer to Figure 4.7.17 – 4.7.27.	Prior to operation of the Project for planned NSRs.	EIAO-TM
Water Quality (Construction Phase)							
As per input under 'Common Mitigation Measures (Applicable to ALL Project Components, including DPs and Non-DPs)' above							
Water Quality (Operational Phase)							
As per input under 'Common Mitigation Measures (Applicable to DP1) above							
Waste Management							
As per input under 'Common Mitigation Measures (Applicable to ALL Project Components, including DPs and Non-DPs)' above							
Land Contamination							
As per input under 'Common Mitigation Measures (Applicable to ALL Project Components, including DPs and Non-DPs)' above							
Ecology (Construction Phase)							
S9.7.16	S10.2.12	Night-time lighting control	Minimise glare disturbance to wildlife	CEDD / Contractor	All works areas in particular sensitive habitats i.e. Tung Tau Tsuen woodland, San Sang San Tsuen egretry	Construction phase	TM-EIAO
S9.7.18	S10.2.13 - S10.2.15	Good site practices during the construction phase to avoid any pollution entering any nearby watercourses	Minimise water quality impacts to nearby water bodies	CEDD / Contractor	All works areas in particular work sites close to existing watercourses	Construction phase	TM-EIAO
Ecology (Operational Phase)							

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location of the Measure	Implementation Timing	Requirements and / or Standards to be Achieved
S9.7.8	S10.2.19	Minimise the lighting along river channel and near vegetated areas in CA or "GB" zones or incorporate wildlife-friendly lighting	Minimise level of light pollution and disturbance to wildlife	CEDD / PlanD	River channels and vegetated areas	Operational phase	TM-EIAO
S9.7.17	S10.2.21	Use of tinted materials and superimposing dark patterns or strips on the noise barriers, as per EPD/Highways Department requirements	Minimise bird mortality from collision	CEDD / Contractor	Major road networks with noise barriers installed	Operational phase	Guidelines on Design of Noise Barriers
Fisheries							
S.10.7	S13.4.8	Follow the mitigation measures proposed in the water quality assessment for construction and operational phase	To protect fisheries resources from potential indirect impacts arising from deterioration of water quality	Contractor	Within the boundaries of the Project	Construction phase	TM-EIAO, contractual requirements
Landscape and Visual (Construction Phase)							
Schedule 2 DP Package A – Table 11.6	CM1	<u>Minimised construction area and contractor's temporary works areas</u> The construction area and contractor's temporary works areas should be minimised. General Good Practice Measures - For areas unavoidably disturbed by the Project on a short term basis e.g. works areas, the general principle to try and restore these to their former state to suit future land use, should be adhered to.	Minimise impacts on adjacent landscape	Government/ Developer/ Detailed Design Consultant/ Contractor	All construction areas and temporary works areas	Prior to construction, construction stages. This should be implemented as soon as the areas become available, to achieve early establishment	
Schedule 2 DP Package A – Table 11.6	CM2	<u>Stripping and storing of topsoil</u> Topsoil, where identified, should be stripped and stored for re-use in the construction of the soft landscape works, where practical. The Contract Specification shall include storage and reuse of topsoil as appropriate. On potentially contaminated sites (as per Section 8) where investigation results indicate soil contamination is present, the use of contaminated soils for planting is to be avoided where appropriate.	Minimise the loss of existing topsoil and reduce the need to provide imported material	Government/ Developer/ Detailed Design Consultant/ Contractor	All construction areas	Detailed design, construction stages	
Schedule 2 DP Package A – Table 11.6	CM3	<u>Protection of existing trees</u> Tree Protection & Preservation – Exiting 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	Government/ Developer/ Detailed Design Consultant/ Contractor	On site	Detailed design, construction stages	ETWB Technical Circular Works (TCW) No. 29/2004 and 3/2006
Schedule 2 DP Package A – Table 11.6	CM4	<u>Transplantation of existing trees where practical</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 Tree Transplanting Specification shall be provided in the Contract Specification, where applicable. Sufficient time for necessary tree root and crown preparation periods shall be allowed in the project programme. A detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBTC 2/2004 and 3/2006 and final locations of transplanted trees should be agreed prior to commencement of the work.	Transplant Trees where suitable for transplantation	Government/ Developer/ Detailed Design Consultant/ Contractor	Onsite where possible. Otherwise consider offsite locations	Prior to Construction, Construction Phase & Maintenance in Operation Phase	ETWB TCW 3/2006 and 2/2004 HyD HQ/GN/13 Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location of the Measure	Implementation Timing	Requirements and / or Standards to be Achieved
		For trees associated with highways e.g. roadside planting along highways, that are unavoidably affected and should be transplanted, HyD HQ/GN/13 'Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit' should be referred to.					
Schedule 2 DP Package A – Table 11.6	CM5	Control of night-time lighting Control of night-time lighting and glare by hooding all lights. Construction day and night time lighting should be controlled to minimise glare impact to adjacent VSRs during the Construction phase.	Minimise impact of night-time lighting and glare	Government/ Developer/ Contractor	All construction areas and temporary works areas	Construction stage	
Schedule 2 DP Package A – Table 11.6	CM6	Construction of decorative hoarding around construction works Erection of decorative mesh screens or construction hoardings around works areas in visually unobtrusive colours. Screen hoarding shall be erected along areas of the construction works site boundary where the works site borders publically accessible routes and/or is close to visually sensitive receivers (VSRs). It is proposed that the screening be compatible with the surrounding environment and where possible, non-reflective, recessive colours be used.	To screen undesirable views of the works site.	Contractor	All construction areas and temporary works areas	Construction stage	
Schedule 2 DP Package A – Table 11.6	CM7	Reduction of construction period to practical minimum Reduction of construction period to practical minimum.	Minimise length of exposure to construction works	Government/ Developer/ Detailed Design Consultant/ Contractor	All construction areas and temporary works areas	Construction stage	
Schedule 2 DP Package A – Table 11.6	CM8	Prevention of run-off Limitation of / Ensuring no run-off into surrounding landscape and prohibit run-off from entering adjacent water bodies and waterways Refer to guidelines.	Minimise / limit impacts on surrounding landscape and adjacent water sea areas	Government/ Developer/ Detailed Design Consultant/ Contractor	All construction areas and temporary works areas	Construction stage	Guidelines for this include ETWB Technical Circular (Works) No. 5/2005 Protection of natural streams/rivers from adverse impacts arising from construction works; Building Department (BD) Practice Note for Authorised Persons and Registered Structural Engineers 295: Protection of natural streams/rivers from adverse impacts arising from construction works
Schedule 2 DP Package A – Table 11.6	CM9	Phasing of construction stage Phasing of the construction stage to reduce visual impacts.	Minimise visual impacts during the construction phase	Government/ Developer/ Detailed Design Consultant/ Contractor	All construction areas and temporary works areas	Construction stage	
Schedule 2 DP Package A – Table 11.6	CM10	Advance screen planting Advance screen planting of fast growing tree and shrub species to noise barriers and hoardings. Trees shall be capable of reaching a height >10m within 10 years.	Minimise length of exposure without long term mitigation measures	Government/ Developer/ Detailed Design Consultant/ Contractor	Areas adjacent to noise barriers and hoardings	Detailed design, construction stages	ETWB TCW 3/2006 and 2/2004
Schedule 2 DP Package A – Table 11.6	CM11	Minimise disturbance footprints To minimise landscape and visual impacts, the footprint and elevation of such elements should be optimised to reduce topographical/ landform changes, as well as reduce land take and interference with natural terrain. 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, while also considering visual amenity. Earthworks and engineered slopes should be designed to be a visually interesting landform, compatible with the surrounding landscape and to mimic the natural contouring and terrain e.g. introduction and continuation of natural features such as spurs and ridges where appropriate, to support assimilation with the hillside setting.	Reduce topographical changes and minimise land resumption	Government/ Developer/ Detailed Design Consultant/ Contractor	Throughout NDA	Detailed design, construction stages	GEO Publication No. 1/2011, Technical Guidelines on Landscape Treatment on Slopes
Schedule 2 DP Package A – Table 11.6	CM12	Protection of existing water courses For all the natural rivers and streams inside the development area, consideration of protection measures should be made to minimise any impacts from the construction works. Avoid affecting Watercourses – In the detailed design, consideration should be made of watercourses, to minimise any impacts e.g. at new bridge crossings, viaducts, road alignment etc. Guidelines stated should be followed. Bridges and box culverts should also be used to minimise the necessity of watercourse modification and protect the watercourses where necessary.	Avoid direct impacts to watercourses	Detailed Design Consultant/ Contractor	All natural rivers and streams inside development area	Detailed design, construction stages	Guidelines for this include ETWB Technical Circular (Works) No. 5/2005 Protection of natural streams/rivers from adverse impacts arising from construction works; Building Department (BD) Practice Note for Authorised Persons and Registered Structural Engineers 295: Protection of

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location of the Measure	Implementation Timing	Requirements and / or Standards to be Achieved
							natural streams/rivers from adverse impacts arising from construction works
Schedule 2 DP Package A – Table 11.6	CM13	Hydroseeding on modified slopes 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. Woodland tree seedlings and/ or shrubs should be planted where 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.	To prevent erosion and subsequent loss of landscape resources and character. To ensure man-made slopes are as visually amenable as possible.	Government/ Developer/ Detailed Design Consultant/ Contractor	Modified slopes onsite	Prior to Construction, Construction Phase & Maintenance in Operation Phase	GEO publication (1999) – Use of Vegetation as Surface Protection on Slope; GEO Publication No. 1/2011-Technical Guidelines on Landscape Treatment for Slopes
Schedule 2 DP Package A – Table 11.6	CM14	Integrate Open Space Network with existing nullah conditions For watercourses affected during construction, measures should be sought to minimise the impact with respect to the existing nullah conditions, existing shrubs and trees along the banks. Where natural streams are unavoidably affected along some of their length, they can be diverted to avoid the proposed new developments and retain the integrity of the whole stream. Detailed design of any stream diversion should follow the Guidelines in ETWB Technical Circular (Works) No. 5/2005 (Protection of natural streams/rivers from adverse impacts arising from construction works) and appropriate construction methods should be used.	Minimise / limit impacts on surrounding landscape and adjacent water sea areas	Government/ Developer/ Detailed Design Consultant/ Contractor	Watercourses affected during construction	Prior to Construction, Construction Phase & Maintenance in Operation Phase	ETWB TCW No. 5/2005 – Protection of natural streams/rivers from adverse impacts arising from construction works; DSD Practice Note No.1/2005, Guidelines on Environmental Considerations for River Channel Design
Landscape and Visual (Operational Phase)							
Schedule 2 DP Package A – Table 11.7	OM1	Compensatory tree planting where practical Compensatory Planting – Compensatory tree planting for felled trees shall be provided to the satisfaction of relevant Government departments. Required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Removal Application process under ETWBTC 3/2006. 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. Tree compensation within the HSK NDA will be provided at a 1:1 ratio. This means that for every tree that is removed, a new one will be planted. Furthermore, trees affected by DPs will be compensated within their respective DP areas.	Compensate for trees and shrubs lost due to the Project.	Government / Developer/ Detailed Design Consultant/ Contractor	Onsite where possible. Otherwise consider offsite locations	Prior to Construction, Construction Phase & Maintenance in Operation Phase	
Schedule 2 DP Package A – Table 11.7	OM2	Sensitive design of above-ground structures All above-ground structures, including SPSs, Electrical Sub-Stations, EFLS Stations, Emergency and Firemens' Accesses, etc. shall be sensitively designed in a manner that responds to the existing and planned urban context. The footprint and massing of development components and the works area should also be kept to a practical minimum and the detailed design of development components for Construction phase should follow the Sustainable Building Design Guidelines. The form, textures, finishes and colours of the proposed development components should aim to be compatible with the existing surroundings. To improve visual amenity designs should be aesthetically pleasing and treatment of structures also improve visual amenity.	Improve visual amenity of the new buildings, NDAs in general and integrate as best possible into the surrounding landscape	Detailed Design Consultant	Throughout NDA	Prior to construction	Schedule 2 DP Package A – Table 11.7
Schedule 2 DP Package A – Table 11.7	OM3	Sensitive design of hardscape elements along roadsides Streetscape elements along new and existing roads (e.g. paving, signage, street furniture, lighting etc.) shall be sensitively designed in a manner that responds to the existing and planned urban context.	Minimise potential adverse landscape and visual impacts	Government / Developer/ Detailed Design Consultant/ Contractor	Streetscapes	Detailed design, construction and establishment works stages	

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location of the Measure	Implementation Timing	Requirements and / or Standards to be Achieved
Schedule 2 DP Package A – Table 11.7	OM4	Reinstatement of streetscape elements All streetscape areas and hard and soft landscape areas disturbed during construction shall be reinstated to equal or better quality, to the satisfaction of the relevant Government departments.	Compensate for impacts on existing landscape, reinstating to equal or better quality	Government / Developer/ Detailed Design Consultant/ Contractor	Streetscape and hard and soft landscape areas	Detailed design, construction and establishment works stages	
Schedule 2 DP Package A – Table 11.7	OM6	Quality greening along roadside amenity strips Furniture, ornamental tree / shrub / climber planting should be provided along roadside amenity strips to enhance the townscape quality.	Compensate for impacts on existing landscape, reinstating to equal or better quality	Government / Developer/ Detailed Design Consultant/ Contractor	Along roadside amenity	Detailed design, construction and establishment works stages	
Schedule 2 DP Package A – Table 11.7	OM7	Design of street lighting Appropriate design of street lighting to avoid glare and light pollution to surrounding areas.	Minimise potential adverse landscape and visual impacts	Detailed Design Consultant	Streetscapes	Detailed design stage	
Schedule 2 DP Package A – Table 11.7	OM8	Sensitive and chromatic treatment of architectural facades Elegant architectural and engineering design, sensitive architectural and chromatic treatment for building facades. The form, textures, finishes and colours of the proposed development components should aim to be compatible with the existing surroundings. To improve visual amenity designs should be aesthetically pleasing and treatment of structures also improve visual amenity. For example, natural building materials such as stone and timber, should be considered for architectural features, and light earthy tone colours such as shades of green, shades of grey, shades of brown and off-white should also be considered to reduce the visibility of the development components.	Minimise potential adverse landscape and visual impacts	Government/ Developer/ Detailed Design Consultant	All development areas	Detailed design stage	
Schedule 2 DP Package A – Table 11.7	OM9	Sensitive design of landscape areas Elegant, sensitive design and generous planting of the associated landscape areas. Open Space Provision - the principles adopted in the Revised RODP planning ensure that public open space systems are incorporated. All requirements for open space areas stipulated in the planning documents for the formulation of the Preliminary Layout Plan should be adhered to.	Compensate for impacts on existing landscape, reinstating to equal or better quality Reprovision of open space. Enhance visual amenity of the area and improve the overall landscape character	Government/ Developer/ Detailed Design Consultant/ Contractor	All development areas	Detailed design stage	Hong Kong Planning Standards and Guidelines (HKPSG) issued by the Planning Department (As at Aug 2011); Sustainable Building Design Guidelines
Schedule 2 DP Package A – Table 11.7	OM10	Sensitive design of vertical noise barriers and enclosures The visual impact of noise barriers & enclosures will be mitigated by appropriate detailed design, 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.	Minimise potential adverse landscape and visual impacts	Government (via Contractor)	Noise barriers and enclosures	Detailed design stage	Greening, Landscape and Tree Management Section (GLTM) of the Development Bureau's Guidelines on Greening of Noise Barriers (April 2012) Dev. Bureau, Greening, Landscaping & Tree Management Section, Guidelines on Greening of Noise Barriers (April 2012)
Schedule 2 DP Package A – Table 11.7	OM12	Night time lighting Control of lighting glare. A balance between lighting for safety, and avoiding excessive lighting can be achieved through consideration of the following: the type of lamp (light source) used; use of directional lighting to avoid light spill into sensitive areas; height of the lighting column can affect the amount/extent of glare; and control/timing of lighting periods of some facilities, particularly those close to sites of conservation importance.	Minimise potential adverse landscape and visual impacts	Government/ Developer	All areas with lighting	Detailed design, construction and establishment works stages	

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location of the Measure	Implementation Timing	Requirements and / or Standards to be Achieved
Cultural Heritage Impact (Construction and Operational Phase)							
12.10.4	13.1.1	The archaeological impact arising from the construction works should be assessed when the detailed design of the works is available. Preservation in situ is the top priority to safeguard the archaeological remains in the impacted area by amending the layout plans of the construction works. However, if the works cannot avoid disturbance to the archaeological deposit, depending on degree of direct impact, the following mitigation measures should be considered, such as archaeological surveys, archaeological watching brief, preservation by record and relocation of archaeological remains. The scope and programme of the archaeological fieldwork would be agreed with AMO.	Minimise impact to archaeology to SAIs.	Contractor	Tseung Kong Wai SAI (F1)	Prior to construction phase commencement	EIAO-TM GCH-EIA A&MO HKPSG GCHIA
EM&A Project							
		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	EIAO Guidance Note No.4/2010 TM-EIAO
		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	EIAO Guidance Note No.4/2010 TM-EIAO
Common Mitigation Measures (Applicable to DP5 - Construction of slip roads (between: Road D8 Junction and existing Castle Peak Road; Junction of D8/P1 and Junction of D7/P1; and KSWH connection to Road D3))							
Construction Dust Impact							
As per input under 'Common Mitigation Measures (Applicable to ALL Project Components, including DPs and Non-DPs)' above							
Construction Noise							
As per input under 'Common Mitigation Measures (Applicable to DP1) above							
Water Quality (Construction Phase)							
As per input under 'Common Mitigation Measures (Applicable to ALL Project Components, including DPs and Non-DPs)' above							
Water Quality (Operational Phase)							
As per input under 'Common Mitigation Measures (Applicable to DP1) above							
Waste Management							
As per input under 'Common Mitigation Measures (Applicable to ALL Project Components, including DPs and Non-DPs)' above							
Land Contamination							
As per input under 'Common Mitigation Measures (Applicable to ALL Project Components, including DPs and Non-DPs)' above							
Ecology (Design Phase)							
S9.7.2	S10.1.1	The alignment of the two proposed slip roads from the existing KSWH connecting to the Road D3 had been adjusted to locate in existing drainage channel and its maintenance access road	Avoid loss of semi-natural/natural habitats comprising the CA and the four mitigation ponds	PlanD	Mitigation ponds	Design phase	TM-EIAO
Ecology (Construction Phase)							
S9.7.11	S10.2.10	Provision of hoarding for proper delineation of works boundary	Minimise construction disturbance impacts to existing mitigation ponds	CEDD / Contractor	Mitigation ponds to the west of Kau Lee Uk Tsuen	Construction phase	TM-EIAO

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location of the Measure	Implementation Timing	Requirements and / or Standards to be Achieved
S9.7.14 - S9.7.15	S10.2.11	General dust and noise control measures	Mitigate disturbance impacts to the mitigation ponds	CEDD / Contractor	Mitigation ponds to the west of Kau Lee Uk Tsuen	Construction phase	TM-EIAO
S9.7.16	S10.2.12	Night-time lighting control	Minimise glare disturbance to wildlife	CEDD / Contractor	All works areas in particular sensitive habitats i.e. mitigation ponds to the west of Kau Lee Uk Tsuen	Construction phase	TM-EIAO
S9.7.18	S10.2.13 - S10.2.15	Good site practices during the construction phase to avoid any pollution entering any nearby watercourses	Minimise water quality impacts to nearby water bodies	CEDD / Contractor	All works areas in particular work sites close to existing mitigation ponds	Construction phase	TM-EIAO
Ecology (Operational Phase)							
S9.7.8	S10.2.19	Minimise the lighting along river channel and near vegetated areas in CA or "GB" zones or incorporate wildlife-friendly lighting	Minimise level of light pollution and disturbance to wildlife	CEDD / PlanD	Mitigation ponds to west of Kau Lee Uk Tsuen	Operational phase	TM-EIAO
S9.7.12	S10.2.20	Retention of tree belt on the eastern side of the larger mitigation pond within the Project boundary	Provide screening for the existing ponds	CEDD / Contractor	Mitigation ponds to the west of Kau Lee Uk Tsuen	Operational phase	TM-EIAO
S9.7.12	S10.2.20	Provide amenity strip, additional tree planting and screening measures (e.g. vertical greening walls, green roof, noise barriers) along the new Road P1	Provide screening for the existing ponds	CEDD / Contractor	Mitigation ponds to the west of Kau Lee Uk Tsuen	Operational phase	TM-EIAO
S9.7.17	S10.2.21	Use of tinted materials and superimposing dark patterns or strips on the noise barriers, as per EPD/Highways Department requirements	Minimise bird mortality from collision	CEDD / Contractor	Major road networks with noise barriers installed	Operational phase	Guidelines on Design of Noise Barriers
Fisheries							
S.10.7	S13.4.8	Follow the mitigation measures proposed in the water quality assessment for construction and operational phase	To protect fisheries resources from potential indirect impacts arising from deterioration of water quality	Contractor	Within the boundaries of the Project	Construction phase	TM-EIAO, contractual requirements
Landscape and Visual (Construction Phase)							
Schedule 2 DP Package A – Table 11.6	CM1	<u>Minimised construction area and contractor's temporary works areas</u> The construction area and contractor's temporary works areas should be minimised. General Good Practice Measures - For areas unavoidably disturbed by the Project on a short term basis e.g. works areas, the general principle to try and restore these to their former state to suit future land use, should be adhered to.	Minimise impacts on adjacent landscape	Government/ Developer/ Detailed Design Consultant/ Contractor	All construction areas and temporary works areas	Prior to construction, construction stages. This should be implemented as soon as the areas become available, to achieve early establishment	
Schedule 2 DP Package A – Table 11.6	CM2	<u>Stripping and storing of topsoil</u> Topsoil, where identified, should be stripped and stored for re-use in the construction of the soft landscape works, where practical. The Contract Specification shall include storage and reuse of topsoil as appropriate. On potentially contaminated sites (as per Section 8) where investigation results indicate soil contamination is present, the use of contaminated soils for planting is to be avoided where appropriate.	Minimise the loss of existing topsoil and reduce the need to provide imported material	Government/ Developer/ Detailed Design Consultant/ Contractor	All construction areas	Detailed design, construction stages	

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Schedule 2 DP Package A – Table 11.6	CM3	Protection of existing trees Tree Protection & Preservation – Exiting 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	Government/ Developer/ Detailed Design Consultant/ Contractor	On site	Detailed design, construction stages	ETWB Technical Circular Works (TCW) No. 29/2004 and 3/2006
Schedule 2 DP Package A – Table 11.6	CM4	Transplantation of existing trees where practical 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 Tree Transplanting Specification shall be provided in the Contract Specification, where applicable. Sufficient time for necessary tree root and crown preparation periods shall be allowed in the Project programme. A detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBTC 2/2004 and 3/2006 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, HyD HQ/GN/13 'Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit' should be referred to.	Transplant Trees where suitable for transplantation	Government/ Developer/ Detailed Design Consultant/ Contractor	Onsite where possible. Otherwise consider offsite locations	Prior to Construction, Construction Phase & Maintenance in Operation Phase	ETWB TCW 3/2006 and 2/2004 HyD HQ/GN/13 Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit
Schedule 2 DP Package A – Table 11.6	CM5	Control of night-time lighting Control of night-time lighting and glare by hooding all lights. Construction day and night time lighting should be controlled to minimise glare impact to adjacent VSRs during the Construction phase.	Minimise impact of night-time lighting and glare	Government/ Developer/ Contractor	All construction areas and temporary works areas	Construction stage	
Schedule 2 DP Package A – Table 11.6	CM6	Construction of decorative hoarding around construction works Erection of decorative mesh screens or construction hoardings around works areas in visually unobtrusive colours. Screen hoarding shall be erected along areas of the construction works site boundary where the works site borders publically accessible routes and/or is close to visually sensitive receivers (VSRs). It is proposed that the screening be compatible with the surrounding environment and where possible, non-reflective, recessive colours be used.	To screen undesirable views of the works site.	Contractor	All construction areas and temporary works areas	Construction stage	
Schedule 2 DP Package A – Table 11.6	CM7	Reduction of construction period to practical minimum Reduction of construction period to practical minimum.	Minimise length of exposure to construction works	Government/ Developer/ Detailed Design Consultant/ Contractor	All construction areas and temporary works areas	Construction stage	
Schedule 2 DP Package A – Table 11.6	CM8	Prevention of run-off Limitation of / Ensuring no run-off into surrounding landscape and prohibit run-off from entering adjacent water bodies and waterways Refer to guidelines.	Minimise / limit impacts on surrounding landscape and adjacent water sea areas	Government/ Developer/ Detailed Design Consultant/ Contractor	All construction areas and temporary works areas	Construction stage	Guidelines for this include ETWB Technical Circular (Works) No. 5/2005 Protection of natural streams/rivers from adverse impacts arising from construction works; Building Department (BD) Practice Note for Authorised Persons and Registered Structural Engineers 295: Protection of natural streams/rivers from adverse impacts arising from construction works

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location of the Measure	Implementation Timing	Requirements and / or Standards to be Achieved
Schedule 2 DP Package A – Table 11.6	CM9	Phasing of construction stage Phasing of the construction stage to reduce visual impacts.	Minimise visual impacts during the construction phase	Government/ Developer/ Detailed Design Consultant/ Contractor	All construction areas and temporary works areas	Construction stage	
Schedule 2 DP Package A – Table 11.6	CM10	Advance screen planting Advance screen planting of fast growing tree and shrub species to noise barriers and hoardings. Trees shall be capable of reaching a height >10m within 10 years.	Minimise length of exposure without long term mitigation measures	Government/ Developer/ Detailed Design Consultant/ Contractor	Areas adjacent to noise barriers and hoardings	Detailed design, construction stages	ETWB TCW 3/2006 and 2/2004
Schedule 2 DP Package A – Table 11.6	CM11	Minimise disturbance footprints To minimise landscape and visual impacts, the footprint and elevation of such elements should be optimised to reduce topographical/ landform changes, as well as reduce land take and interference with natural terrain. 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, while also considering visual amenity. Earthworks and engineered slopes should be designed to be a visually interesting landform, compatible with the surrounding landscape and to mimic the natural contouring and terrain e.g. introduction and continuation of natural features such as spurs and ridges where appropriate, to support assimilation with the hillside setting.	Reduce topographical changes and minimise land resumption	Government/ Developer/ Detailed Design Consultant/ Contractor	Throughout NDA	Detailed design, construction stages	GEO Publication No. 1/2011, Technical Guidelines on Landscape Treatment on Slopes
Schedule 2 DP Package A – Table 11.6	CM12	Protection of existing water courses For all the natural rivers and streams inside the development area, consideration of protection measures should be made to minimise any impacts from the construction works. Avoid affecting Watercourses – In the detailed design, consideration should be made of watercourses, to minimise any impacts e.g. at new bridge crossings, viaducts, road alignment etc. Guidelines stated should be followed. Bridges and box culverts should also be used to minimise the necessity of watercourse modification and protect the watercourses where necessary.	Avoid direct impacts to watercourses	Detailed Design Consultant/ Contractor	All natural rivers and streams inside development area	Detailed design, construction stages	Guidelines for this include ETWB Technical Circular (Works) No. 5/2005 Protection of natural streams/rivers from adverse impacts arising from construction works; Building Department (BD) Practice Note for Authorised Persons and Registered Structural Engineers 295: Protection of natural streams/rivers from adverse impacts arising from construction works
Schedule 2 DP Package A – Table 11.6	CM13	Hydroseeding on modified slopes 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. Woodland tree seedlings and/ or shrubs should be planted where 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.	To prevent erosion and subsequent loss of landscape resources and character. To ensure man-made slopes are as visually amenable as possible.	Government/ Developer/ Detailed Design Consultant/ Contractor	Modified slopes onsite	Prior to Construction, Construction Phase & Maintenance in Operation Phase	GEO publication (1999) – Use of Vegetation as Surface Protection on Slope; GEO Publication No. 1/2011-Technical Guidelines on Landscape Treatment for Slopes
Schedule 2 DP Package A – Table 11.6	CM14	Integrate Open Space Network with existing nullah conditions For watercourses affected during construction, measures should be sought to minimise the impact with respect to the existing nullah conditions, existing shrubs and trees along the banks. Where natural streams are unavoidably affected along some of their length, they can be diverted to avoid the proposed new developments and retain the integrity of the whole stream. Detailed design of any stream diversion should follow the Guidelines in ETWB Technical Circular (Works) No. 5/2005 (Protection of natural streams/rivers from adverse impacts arising from construction works) and appropriate construction methods should be used.	Minimise / limit impacts on surrounding landscape and adjacent water sea areas	Government/ Developer/ Detailed Design Consultant/ Contractor	Watercourses affected during construction	Prior to Construction, Construction Phase & Maintenance in Operation Phase	ETWB TCW No. 5/2005 – Protection of natural streams/rivers from adverse impacts arising from construction works; DSD Practice Note No.1/2005, Guidelines on Environmental Considerations for River Channel Design
Landscape and Visual (Operational Phase)							
Schedule 2 DP Package A – Table 11.7	OM1	Compensatory tree planting where practical Compensatory Planting – Compensatory tree planting for felled trees shall be provided to the satisfaction of relevant Government departments. Required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Removal Application process under ETWBTC 3/2006.	Compensate for trees and shrubs lost due to the Project.	Government / Developer/ Detailed Design	Onsite where possible. Otherwise consider offsite locations	Prior to Construction, Construction Phase &	

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location of the Measure	Implementation Timing	Requirements and / or Standards to be Achieved
		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. Tree compensation within the HSK NDA will be provided at a 1:1 ratio. This means that for every tree that is removed, a new one will be planted. Furthermore, trees affected by DPs will be compensated within their respective DP areas.		Consultant/ Contractor		Maintenance in Operation Phase	
Schedule 2 DP Package A – Table 11.7	OM3	<u>Sensitive design of hardscape elements along roadsides</u> Streetscape elements along new and existing roads (e.g. paving, signage, street furniture, lighting etc.) shall be sensitively designed in a manner that responds to the existing and planned urban context.	Minimise potential adverse landscape and visual impacts	Government / Developer/ Detailed Design Consultant/ Contractor	Streetscapes	Detailed design, construction and establishment works stages	
Schedule 2 DP Package A – Table 11.7	OM4	<u>Reinstatement of streetscape elements</u> All streetscape areas and hard and soft landscape areas disturbed during construction shall be reinstated to equal or better quality, to the satisfaction of the relevant Government departments.	Compensate for impacts on existing landscape, reinstating to equal or better quality	Government / Developer/ Detailed Design Consultant/ Contractor	Streetscape and hard and soft landscape areas	Detailed design, construction and establishment works stages	
Schedule 2 DP Package A – Table 11.7	OM6	<u>Quality greening along roadside amenity strips</u> Furniture, ornamental tree / shrub / climber planting should be provided along roadside amenity strips to enhance the townscape quality.	Compensate for impacts on existing landscape, reinstating to equal or better quality	Government / Developer/ Detailed Design Consultant/ Contractor	Along roadside amenity	Detailed design, construction and establishment works stages	
Schedule 2 DP Package A – Table 11.7	OM7	<u>Design of street lighting</u> Appropriate design of street lighting to avoid glare and light pollution to surrounding areas.	Minimise potential adverse landscape and visual impacts	Detailed Design Consultant	Streetscapes	Detailed design stage	
Schedule 2 DP Package A – Table 11.7	OM14	<u>Greening of viaduct structures and noise barriers</u> Aesthetic improvement of viaduct structures and noise barriers through greening of structure where feasible and appropriate to mitigate visual impact of viaduct or noise barrier form.	Improve landscape amenity to assist in mitigating visual impacts of viaduct structure or noise barrier	CEDD (via Contractor)	All viaduct structures and noise barriers as feasible, final location to be confirmed at detailed design stage	Detailed design, construction stages through to maintenance in operation phase	Development Bureau TCW No. 2/2013, Greening on Footbridges and Flyovers;
Cultural Heritage Impact (Construction and Operational Phase)							
12.11.2	---	No impact to cultural heritage is anticipated. Hence no mitigation measures required.	---	---	---	---	---
EM&A Project							
		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	EIAO Guidance Note No.4/2010 TM-EIAO
		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	EIAO Guidance Note No.4/2010 TM-EIAO
Common Mitigation Measures (Applicable to DP6 - Construction of partly depressed and decked-over roads (Road D2; Road D4; and Road D6))							
Construction Dust Impact							
As per input under 'Common Mitigation Measures (Applicable to ALL Project Components, including DPs and Non-DPs)' above							

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location of the Measure	Implementation Timing	Requirements and / or Standards to be Achieved
Construction Noise							
As per input under 'Common Mitigation Measures (Applicable to DP1) above							
Operational Noise (Road Traffic Noise)							
S4.7	S5.13	Provide low noise surfacing material on D2 and D4	Reduce operation noise from road traffic	CEDD (commencement stage) & HyD (during operation phase)	Refer to Figure 4.7.1 to 4.7.16.	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
S4.7	S5.13	Provide noise barriers for the existing noise sensitive receivers:	Reduce operation noise from road traffic	CEDD	Refer to Figure 4.7.1 to 4.7.16.	Prior to operation of the Project for existing NSRs.	EIAO-TM
S4.7	S5.13	Provide noise barriers for the planned noise sensitive receivers:	Reduce operation noise from road traffic	Relevant government departments / Private developers	Refer to Figure 4.7.1 to 4.7.16.	Prior to operation of the Project for planned NSRs.	EIAO-TM
Water Quality (Construction Phase)							
As per input under 'Common Mitigation Measures (Applicable to ALL Project Components, including DPs and Non-DPs)' above							
Water Quality (Operational Phase)							
As per input under 'Common Mitigation Measures (Applicable to DP1) above							
Waste Management							
As per input under 'Common Mitigation Measures (Applicable to ALL Project Components, including DPs and Non-DPs)' above							
Land Contamination							
As per input under 'Common Mitigation Measures (Applicable to ALL Project Components, including DPs and Non-DPs)' above							
Ecology (Construction Phase)							
S9.7.16	S10.2.14	Night-time lighting control	Minimise glare disturbance to wildlife	CEDD / Contractor	All works areas in particular sensitive habitats i.e. Tung Tau Tsuen woodland	Construction phase	TM-EIAO
S9.7.18	S10.2.13 - S10.2.15	Good site practices during the construction phase to avoid any pollution entering any nearby watercourses	Minimise water quality impacts to nearby water bodies	CEDD / Contractor	All works areas in particular work sites close to existing watercourses (e.g. TSW Main Channel)	Construction phase	TM-EIAO
Ecology (Operational Phase)							
S9.7.8	S10.2.19	Minimise the lighting along river channel and near vegetated areas in CA or "GB" zones or incorporate wildlife-friendly lighting	Minimise level of light pollution and disturbance to wildlife	CEDD / PlanD	River channels and vegetated areas	Operational phase	TM-EIAO
S9.7.17	S10.2.21	Use of tinted materials and superimposing dark patterns or strips on the noise barriers, as per EPD/Highways Department requirements	Minimise bird mortality from collision	CEDD / Contractor	Major road networks with noise barriers installed	Operational phase	Guidelines on Design of Noise Barriers

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location of the Measure	Implementation Timing	Requirements and / or Standards to be Achieved
Fisheries							
S.10.7	S13.4.8	Follow the mitigation measures proposed in the water quality assessment for construction and operational phase	To protect fisheries resources from potential indirect impacts arising from deterioration of water quality	Contractor	Within the boundaries of the Project	Construction phase	TM-EIAO, contractual requirements
Landscape and Visual (Construction Phase)							
Schedule 2 DP Package A – Table 11.6	CM1	<u>Minimised construction area and contractor's temporary works areas</u> The construction area and contractor's temporary works areas should be minimised. General Good Practice Measures - For areas unavoidably disturbed by the Project on a short term basis e.g. works areas, the general principle to try and restore these to their former state to suit future land use, should be adhered to.	Minimise impacts on adjacent landscape	Government/ Developer/ Detailed Design Consultant/ Contractor	All construction areas and temporary works areas	Prior to construction, construction stages. This should be implemented as soon as the areas become available, to achieve early establishment	
Schedule 2 DP Package A – Table 11.6	CM2	<u>Stripping and storing of topsoil</u> Topsoil, where identified, should be stripped and stored for re-use in the construction of the soft landscape works, where practical. The Contract Specification shall include storage and reuse of topsoil as appropriate. On potentially contaminated sites (as per Section 8) where investigation results indicate soil contamination is present, the use of contaminated soils for planting is to be avoided where appropriate.	Minimise the loss of existing topsoil and reduce the need to provide imported material	Government/ Developer/ Detailed Design Consultant/ Contractor	All construction areas	Detailed design, construction stages	
Schedule 2 DP Package A – Table 11.6	CM3	<u>Protection of existing trees</u> Tree Protection & Preservation – Exiting 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	Government/ Developer/ Detailed Design Consultant/ Contractor	On site	Detailed design, construction stages	ETWB Technical Circular Works (TCW) No. 29/2004 and 3/2006
Schedule 2 DP Package A – Table 11.6	CM4	<u>Transplantation of existing trees where practical</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 Tree Transplanting Specification shall be provided in the Contract Specification, where applicable. Sufficient time for necessary tree root and crown preparation periods shall be allowed in the project programme. A detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBTC 2/2004 and 3/2006 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, HyD HQ/GN/13 'Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit' should be referred to.	Transplant Trees where suitable for transplantation	Government/ Developer/ Detailed Design Consultant/ Contractor	Onsite where possible. Otherwise consider offsite locations	Prior to Construction, Construction Phase & Maintenance in Operation Phase	ETWB TCW 3/2006 and 2/2004 HyD HQ/GN/13 Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location of the Measure	Implementation Timing	Requirements and / or Standards to be Achieved
Schedule 2 DP Package A – Table 11.6	CM5	Control of night-time lighting Control of night-time lighting and glare by hooding all lights. Construction day and night time lighting should be controlled to minimise glare impact to adjacent VSRs during the Construction phase.	Minimise impact of night-time lighting and glare	Government/ Developer/ Contractor	All construction areas and temporary works areas	Construction stage	
Schedule 2 DP Package A – Table 11.6	CM6	Construction of decorative hoarding around construction works Erection of decorative mesh screens or construction hoardings around works areas in visually unobtrusive colours. Screen hoarding shall be erected along areas of the construction works site boundary where the works site borders publically accessible routes and/or is close to visually sensitive receivers (VSRs). It is proposed that the screening be compatible with the surrounding environment and where possible, non-reflective, recessive colours be used.	To screen undesirable views of the works site.	Contractor	All construction areas and temporary works areas	Construction stage	
Schedule 2 DP Package A – Table 11.6	CM7	Reduction of construction period to practical minimum Reduction of construction period to practical minimum.	Minimise length of exposure to construction works	Government/ Developer/ Detailed Design Consultant/ Contractor	All construction areas and temporary works areas	Construction stage	
Schedule 2 DP Package A – Table 11.6	CM8	Prevention of run-off Limitation of / Ensuring no run-off into surrounding landscape and prohibit run-off from entering adjacent water bodies and waterways Refer to guidelines.	Minimise / limit impacts on surrounding landscape and adjacent water sea areas	Government/ Developer/ Detailed Design Consultant/ Contractor	All construction areas and temporary works areas	Construction stage	Guidelines for this include ETWB Technical Circular (Works) No. 5/2005 Protection of natural streams/rivers from adverse impacts arising from construction works; Building Department (BD) Practice Note for Authorised Persons and Registered Structural Engineers 295: Protection of natural streams/rivers from adverse impacts arising from construction works
Schedule 2 DP Package A – Table 11.6	CM9	Phasing of construction stage Phasing of the construction stage to reduce visual impacts.	Minimise visual impacts during the construction phase	Government/ Developer/ Detailed Design Consultant/ Contractor	All construction areas and temporary works areas	Construction stage	
Schedule 2 DP Package A – Table 11.6	CM10	Advance screen planting Advance screen planting of fast growing tree and shrub species to noise barriers and hoardings. Trees shall be capable of reaching a height >10m within 10 years.	Minimise length of exposure without long term mitigation measures	Government/ Developer/ Detailed Design Consultant/ Contractor	Areas adjacent to noise barriers and hoardings	Detailed design, construction stages	ETWB TCW 3/2006 and 2/2004
Schedule 2 DP Package A – Table 11.6	CM11	Minimise disturbance footprints To minimise landscape and visual impacts, the footprint and elevation of such elements should be optimised to reduce topographical/ landform changes, as well as reduce land take and interference with natural terrain. 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, while also considering visual amenity. Earthworks and engineered slopes should be designed to be a visually interesting landform, compatible with the surrounding landscape and to mimic the natural contouring and terrain e.g. introduction and continuation of natural features such as spurs and ridges where appropriate, to support assimilation with the hillside setting.	Reduce topographical changes and minimise land resumption	Government/ Developer/ Detailed Design Consultant/ Contractor	Throughout NDA	Detailed design, construction stages	GEO Publication No. 1/2011, Technical Guidelines on Landscape Treatment on Slopes
Schedule 2 DP Package A – Table 11.6	CM12	Protection of existing water courses For all the natural rivers and streams inside the development area, consideration of protection measures should be made to minimise any impacts from the construction works. Avoid affecting Watercourses – In the detailed design, consideration should be made of watercourses, to minimise any impacts e.g. at new bridge crossings, viaducts, road alignment etc. Guidelines stated should be followed. Bridges and box culverts should also be used to minimise the necessity of watercourse modification and protect the watercourses where necessary.	Avoid direct impacts to watercourses	Detailed Design Consultant/ Contractor	All natural rivers and streams inside development area	Detailed design, construction stages	Guidelines for this include ETWB Technical Circular (Works) No. 5/2005 Protection of natural streams/rivers from adverse impacts arising from construction works; Building Department (BD) Practice Note for Authorised Persons and Registered Structural Engineers 295: Protection of natural streams/rivers from adverse impacts arising from construction works

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location of the Measure	Implementation Timing	Requirements and / or Standards to be Achieved
Schedule 2 DP Package A – Table 11.6	CM13	Hydroseeding on modified slopes 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. Woodland tree seedlings and/ or shrubs should be planted where 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.	To prevent erosion and subsequent loss of landscape resources and character. To ensure man-made slopes are as visually amenable as possible.	Government/ Developer/ Detailed Design Consultant/ Contractor	Modified slopes onsite	Prior to Construction, Construction Phase & Maintenance in Operation Phase	GEO publication (1999) – Use of Vegetation as Surface Protection on Slope; GEO Publication No. 1/2011-Technical Guidelines on Landscape Treatment for Slopes
Schedule 2 DP Package A – Table 11.6	CM14	Integrate Open Space Network with existing nullah conditions For watercourses affected during construction, measures should be sought to minimise the impact with respect to the existing nullah conditions, existing shrubs and trees along the banks. Where natural streams are unavoidably affected along some of their length, they can be diverted to avoid the proposed new developments and retain the integrity of the whole stream. Detailed design of any stream diversion should follow the Guidelines in ETWB Technical Circular (Works) No. 5/2005 (Protection of natural streams/rivers from adverse impacts arising from construction works) and appropriate construction methods should be used.	Minimise / limit impacts on surrounding landscape and adjacent water sea areas	Government/ Developer/ Detailed Design Consultant/ Contractor	Watercourses affected during construction	Prior to Construction, Construction Phase & Maintenance in Operation Phase	ETWB TCW No. 5/2005 – Protection of natural streams/rivers from adverse impacts arising from construction works; DSD Practice Note No.1/2005, Guidelines on Environmental Considerations for River Channel Design
Landscape and Visual (Operational Phase)							
Schedule 2 DP Package A – Table 11.7	OM1	Compensatory tree planting where practical Compensatory Planting – Compensatory tree planting for felled trees shall be provided to the satisfaction of relevant Government departments. Required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Removal Application process under ETWBTC 3/2006. 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. Tree compensation within the HSK NDA will be provided at a 1:1 ratio. This means that for every tree that is removed, a new one will be planted. Furthermore, trees affected by DPs will be compensated within their respective DP areas.	Compensate for trees and shrubs lost due to the Project.	Government / Developer/ Detailed Design Consultant/ Contractor	Onsite where possible. Otherwise consider offsite locations	Prior to Construction, Construction Phase & Maintenance in Operation Phase	
Schedule 2 DP Package A – Table 11.7	OM3	Sensitive design of hardscape elements along roadsides Streetscape elements along new and existing roads (e.g. paving, signage, street furniture, lighting etc.) shall be sensitively designed in a manner that responds to the existing and planned urban context.	Minimise potential adverse landscape and visual impacts	Government / Developer/ Detailed Design Consultant/ Contractor	Streetscapes	Detailed design, construction and establishment works stages	
Schedule 2 DP Package A – Table 11.7	OM4	Reinstatement of streetscape elements All streetscape areas and hard and soft landscape areas disturbed during construction shall be reinstated to equal or better quality, to the satisfaction of the relevant Government departments.	Compensate for impacts on existing landscape, reinstating to equal or better quality	Government / Developer/ Detailed Design Consultant/ Contractor	Streetscape and hard and soft landscape areas	Detailed design, construction and establishment works stages	
Schedule 2 DP Package A – Table 11.7	OM6	Quality greening along roadside amenity strips Furniture, ornamental tree / shrub / climber planting should be provided along roadside amenity strips to enhance the townscape quality.	Compensate for impacts on existing landscape, reinstating to equal or better quality	Government / Developer/ Detailed Design Consultant/ Contractor	Along roadside amenity	Detailed design, construction and establishment works stages	

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location of the Measure	Implementation Timing	Requirements and / or Standards to be Achieved
Schedule 2 DP Package A – Table 11.7	OM7	Design of street lighting Appropriate design of street lighting to avoid glare and light pollution to surrounding areas.	Minimise potential adverse landscape and visual impacts	Detailed Design Consultant	Streetscapes	Detailed design stage	
Schedule 2 DP Package A – Table 11.7	OM10	Sensitive design of noise barriers and enclosures The visual impact of noise barriers & enclosures will be mitigated by appropriate detailed design, 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.	Minimise potential adverse landscape and visual impacts	Government (via Contractor)	Noise barriers and enclosures	Detailed design stage	Greening, Landscape and Tree Management Section (GLTM) of the Development Bureau's Guidelines on Greening of Noise Barriers (April 2012) Dev. Bureau, Greening, Landscaping & Tree Management Section, Guidelines on Greening of Noise Barriers (Apr12)
Schedule 2 DP Package A – Table 11.7	OM14	Greening of viaduct structures and noise barriers Aesthetic improvement of viaduct structures and noise barriers through greening of structure where feasible and appropriate to mitigate visual impact of viaduct or noise barrier form.	Improve landscape amenity to assist in mitigating visual impacts of viaduct structure or noise barrier	CEDD (via Contractor)	All viaduct structures and noise barriers as feasible, final location to be confirmed at detailed design stage	Detailed design, construction stages through to maintenance in operation phase	
Cultural Heritage Impact (Construction and Operational Phase)							
12.11.2	---	No impact to cultural heritage is anticipated. Hence no mitigation measures required.	---	---	---	---	---
EM&A Project							
		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	EIAO Guidance Note No.4/2010 TM-EIAO
		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	EIAO Guidance Note No.4/2010 TM-EIAO
Common Mitigation Measures (Applicable to DP9 - Construction of four new sewage pumping stations (Sites 2-34; 3-41; 3-48; and 4-35))							
Construction Dust Impact							
As per input under 'Common Mitigation Measures (Applicable to ALL Project Components, including DPs and Non-DPs)' above							
Construction Noise							
As per input under 'Common Mitigation Measures (Applicable to DP1) above							
Operational Noise (Fixed Noise)							
S4.9	S5.13	The maximum allowable sound power levels for the planned fixed plant noise sources including the four planned SPSs (DP9) as presented in Section 4.9 of the EIA Report should be achieved such that the nearest NSRs can be in compliance with the TM noise criteria. Provision of enclosures on the noisy sewage facilities and acoustic silencers for the ventilation shaft of the four planned SPSs is recommended to alleviate the fixed plant noise impact. For existing and planned NSRs which are located near to the proposed noise sources, the following tentative noise mitigation measures are considered: • All the pumps and noisy plants should be enclosed inside building structures; • Proper selection of quiet plant to reduce the tonality at NSRs;	Reduce operation fixed noise	Relevant government departments / Future Operator	Sewage Pumping Stations	Design and Operational phase	Noise Control Ordinance and its TM, EIAO-TM

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location of the Measure	Implementation Timing	Requirements and / or Standards to be Achieved
		• Installation of silencer / acoustic enclosure / acoustic louvers for the exhaust of ventilation system. • Openings of ventilation system should be located away from NSRs.					
Water Quality (Construction Phase)							
As per input under 'Common Mitigation Measures (Applicable to ALL Project Components, including DPs and Non-DPs)' above							
Water Quality (Operational Phase)							
S5.14	6.11	Precautionary measures are proposed in the design of the SPS: • A standby pump and screen should be provided to cater for breakdown and maintenance of the duty pump in order to avoid emergency discharge. • Backup power supply in the form of dual / ring circuit power supply or generator should be provided to secure electricity supply. • An alarm should be installed to signal emergency high water level in the wet well. • An emergency storage tank / spare volume of wet well should be provided for the proposed SPS to cater for breakdown and maintenance of duty pump. • Regular maintenance and checking of plant equipment should be undertaken to prevent equipment failure. • Twin rising mains system should be provided to facilitate maintenance works and to avoid emergency discharge of sewage. • A telemetry system to the nearest manned station / plant should be provided so that swift action can be undertaken in case of malfunction of the unmanned facilities. • A bar screen (with clear spacing of approximately 25 mm) should be provided to cover the lower half of the opening of any emergency sewage bypass which can prevent the discharge of floating solids into receiving waters as far as practicable while ensuring flooding at the facilities would not occur event if the screen is blocked.	To minimise impact from emergency sewage discharge	Future Operator	SPSs	Design and Operational phase	WPCO, EIAO-TM
S5.14	6.11	A Contingency Plan to deal with the emergency discharges that may occur during operation of the SPS should be developed in the detailed design stage including the following items: • Locations of water bodies or WSRs in the vicinity of the emergency discharges. • A list of relevant government departments to be informed and to provide assistance in the event of emergency discharge, including key contact persons and telephone numbers. • Reporting procedures required in the event of emergency discharges. • Procedures listing the most effective means in rectifying the breakdown of the SPS in order to minimise the discharge duration.	To minimise impact from emergency sewage discharge	Future Operator	SPSs	Design and Operational phase	WPCO, EIAO-TM
Waste Management							
As per input under 'Common Mitigation Measures (Applicable to ALL Project Components, including DPs and Non-DPs)' above							
Land Contamination							
As per input under 'Common Mitigation Measures (Applicable to ALL Project Components, including DPs and Non-DPs)' above							
Ecology (Construction Phase)							
S9.7.4	S10.2.5	Provision of screening (e.g. hoarding) at adjacent habitats within CA at northwest of San Sang San Tsuen	Disturbance impacts (e.g. noise/vibration, visual) to adjacent habitats within the CA	CEDD / Contractor	CA at northwest of San Sang San Tsuen	Construction phase	TM-EIAO
Fisheries							

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location of the Measure	Implementation Timing	Requirements and / or Standards to be Achieved
S.10.7	S13.4.8	Follow the mitigation measures proposed in the water quality assessment for construction and operational phase	To protect fisheries resources from potential indirect impacts arising from deterioration of water quality	Contractor	Within the boundaries of the Project	Construction phase	TM-EIAO, contractual requirements
Landscape and Visual (Construction Phase)							
Schedule 2 DP Package B – Table 11.6B	CM1	<u>Minimised construction area and contractor's temporary works areas</u> The construction area and contractor's temporary works areas should be minimised. General Good Practice Measures - For areas unavoidably disturbed by the Project on a short term basis e.g. works areas, the general principle to try and restore these to their former state to suit future land use, should be adhered to.	Minimise impacts on adjacent landscape	Government/ Developer/ Detailed Design Consultant/ Contractor	All construction areas and temporary works areas	Prior to construction, construction stages. This should be implemented as soon as the areas become available, to achieve early establishment	
Schedule 2 DP Package B – Table 11.6B	CM3	<u>Protection of existing trees</u> Tree Protection & Preservation – Exiting 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	Government/ Developer/ Detailed Design Consultant/ Contractor	On site	Detailed design, construction stages	ETWB Technical Circular Works (TCW) No. 29/2004 and 3/2006
Schedule 2 DP Package B – Table 11.6B	CM4	<u>Transplantation of existing trees where practical</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 Tree Transplanting Specification shall be provided in the Contract Specification, where applicable. Sufficient time for necessary tree root and crown preparation periods shall be allowed in the Project programme. A detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBTC 2/2004 and 3/2006 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, HyD HQ/GN/13 'Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit' should be referred to.	Transplant Trees where suitable for transplantation	Government/ Developer/ Detailed Design Consultant/ Contractor	Onsite where possible. Otherwise consider offsite locations	Prior to Construction, Construction Phase & Maintenance in Operation Phase	ETWB TCW 3/2006 and 2/2004 HyD HQ/GN/13 Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit
Schedule 2 DP Package B – Table 11.6B	CM5	<u>Control of night-time lighting</u> Control of night-time lighting and glare by hooding all lights. Construction day and night time lighting should be controlled to minimise glare impact to adjacent VSRs during the Construction phase.	Minimise impact of night-time lighting and glare	Government/ Developer/ Contractor	All construction areas and temporary works areas	Construction stage	
Schedule 2 DP Package B – Table 11.6B	CM6	<u>Construction of decorative hoarding around construction works</u> Erection of decorative mesh screens or construction hoardings around works areas in visually unobtrusive colours. Screen hoarding shall be erected along areas of the construction works site boundary where the works site borders publically accessible routes and/or is close to visually sensitive receivers (VSRs). It is proposed that the screening be compatible with the surrounding environment and where possible, non-reflective, recessive colours be used.	To screen undesirable views of the works site.	Contractor	All construction areas and temporary works areas	Construction stage	

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location of the Measure	Implementation Timing	Requirements and / or Standards to be Achieved
Schedule 2 DP Package B – Table 11.6B	CM7	Reduction of construction period to practical minimum Reduction of construction period to practical minimum.	Minimise length of exposure to construction works	Government/ Developer/ Detailed Design Consultant/ Contractor	All construction areas and temporary works areas	Construction stage	
Schedule 2 DP Package B – Table 11.6B	CM10	Advance screen planting Advance screen planting of fast growing tree and shrub species to noise barriers and hoardings. Trees shall be capable of reaching a height >10m within 10 years.	Minimise length of exposure without long term mitigation measures	Government/ Developer/ Detailed Design Consultant/ Contractor	Areas adjacent to noise barriers and hoardings	Detailed design, construction stages	ETWB TCW 3/2006 and 2/2004
Schedule 2 DP Package B – Table 11.6B	CM11	Minimise disturbance footprints To minimise landscape and visual impacts, the footprint and elevation of such elements should be optimised to reduce topographical/ landform changes, as well as reduce land take and interference with natural terrain. 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, while also considering visual amenity. Earthworks and engineered slopes should be designed to be a visually interesting landform, compatible with the surrounding landscape and to mimic the natural contouring and terrain e.g. introduction and continuation of natural features such as spurs and ridges where appropriate, to support assimilation with the hillside setting.	Reduce topographical changes and minimise land resumption	Government/ Developer/ Detailed Design Consultant/ Contractor	Throughout NDA	Detailed design, construction stages	GEO Publication No. 1/2011, Technical Guidelines on Landscape Treatment on Slopes
Schedule 2 DP Package B – Table 11.6B	CM13	Hydroseeding on modified slopes 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. Woodland tree seedlings and/ or shrubs should be planted where 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.	To prevent erosion and subsequent loss of landscape resources and character. To ensure man-made slopes are as visually amenable as possible.	Government/ Developer/ Detailed Design Consultant/ Contractor	Modified slopes onsite	Prior to Construction, Construction Phase & Maintenance in Operation Phase	GEO publication (1999) – Use of Vegetation as Surface Protection on Slope; GEO Publication No. 1/2011-Technical Guidelines on Landscape Treatment for Slopes
Schedule 2 DP Package B – Table 11.6B	CM14	Integrate Open Space Network with existing nullah conditions For watercourses affected during construction, measures should be sought to minimise the impact with respect to the existing nullah conditions, existing shrubs and trees along the banks. Where natural streams are unavoidably affected along some of their length, they can be diverted to avoid the proposed new developments and retain the integrity of the whole stream. Detailed design of any stream diversion should follow the Guidelines in ETWB Technical Circular (Works) No. 5/2005 (Protection of natural streams/rivers from adverse impacts arising from construction works) and appropriate construction methods should be used.	Minimise / limit impacts on surrounding landscape and adjacent water sea areas	Government/ Developer/ Detailed Design Consultant/ Contractor	Watercourses affected during construction	Prior to Construction, Construction Phase & Maintenance in Operation Phase	ETWB TCW No. 5/2005 – Protection of natural streams/rivers from adverse impacts arising from construction works; DSD Practice Note No.1/2005, Guidelines on Environmental Considerations for River Channel Design
Landscape and Visual (Operational Phase)							
Schedule 2 DP Package B – Table 11.7B	OM1	Compensatory tree planting where practical Compensatory Planting – Compensatory tree planting for felled trees shall be provided to the satisfaction of relevant Government departments. Required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Removal Application process under ETWBTC 3/2006. 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. Tree compensation within the HSK NDA will be provided at a 1:1 ratio. This means that for every tree that is removed, a new one will be planted. Furthermore, trees affected by DPs will be compensated within their respective DP areas.	Compensate for trees and shrubs lost due to the Project.	Government / Developer/ Detailed Design Consultant/ Contractor	Onsite where possible. Otherwise consider offsite locations	Prior to Construction, Construction Phase & Maintenance in Operation Phase	ETWB TCW 3/2006 and 2/2004
Schedule 2 DP Package B – Table 11.7B	OM2	Sensitive design of above-ground structures All above-ground structures, including SPSs, Electrical Sub-Stations, EFLS Stations, Emergency and Firemens' Accesses, etc. shall be sensitively designed in a manner that responds to the existing and planned urban context.	Improve visual amenity of the new buildings, NDAs in general and integrate as best possible into the **surrounding landscape**	Detailed Design Consultant	Throughout NDA	Prior to construction	**Hong Kong Planning Standards and Guidelines (HKPSG) issued by the Planning Department (As at Aug 2011); Sustainable Building Design Guidelines CIBSE HK Branch,**

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location of the Measure	Implementation Timing	Requirements and / or Standards to be Achieved
		The footprint and massing of development components and the works area should also be kept to a practical minimum and the detailed design of development components for Construction phase should follow the Sustainable Building Design Guidelines. The form, textures, finishes and colours of the proposed development components should aim to be compatible with the existing surroundings. To improve visual amenity designs should be aesthetically pleasing and treatment of structures also improve visual amenity.					**Technical Guidelines for Green Roof Systems in Hong Kong (2011)**
Schedule 2 DP Package B – Table 11.7B	OM5	Visual softening via soft landscape elements Attractive soft landscape in areas adjoining SPSs, Electrical Sub-Stations, EFLS Stations, Emergency and Firemen's' Accesses, etc. (taking into account the necessary setbacks) so as to provide a visual softening and greening effect.	Minimise potential adverse landscape and visual impacts	Government / Developer/ Detailed Design Consultant/ Contractor	Areas adjoining SPSs, Electrical Sub-Stations, EFLS Stations, Emergency and Firemen's' Accesses, etc.	Detailed design, construction and establishment works stages	
Schedule 2 DP Package B – Table 11.7B	OM8	Sensitive and chromatic treatment of architectural facades Elegant architectural and engineering design, sensitive architectural and chromatic treatment for building facades. The form, textures, finishes and colours of the proposed development components should aim to be compatible with the existing surroundings. To improve visual amenity designs should be aesthetically pleasing and treatment of structures also improve visual amenity. For example, natural building materials such as stone and timber, should be considered for architectural features, and light earthy tone colours such as shades of green, shades of grey, shades of brown and off-white should also be considered to reduce the visibility of the development components.	Minimise potential adverse landscape and visual impacts	Government/ Developer/ Detailed Design Consultant	All development areas	Detailed design stage	
Schedule 2 DP Package B – Table 11.7B	OM11	Tree planting to site boundaries Tree planting screens along appropriate site boundaries. Tall screen/buffer trees and shrubs should be planted. This measure may additionally form part of the compensatory planting.	To screen proposed structures such as roads and buildings. Improve compatibility with the surrounding environment and create a pleasant pedestrian environment	Government / Developer/ Detailed Design Consultant/ Contractor	Along site boundaries	Detailed design, construction and establishment works stages	ETWBTC 3/2006
Schedule 2 DP Package B – Table 11.7B	OM12	Night time lighting Control of lighting glare. A balance between lighting for safety, and avoiding excessive lighting can be achieved through consideration of the following: the type of lamp (light source) used; use of directional lighting to avoid light spill into sensitive areas; height of the lighting column can affect the amount/extent of glare; and control/timing of lighting periods of some facilities, particularly those close to sites of conservation importance.	Minimise potential adverse landscape and visual impacts	Government/ Developer	All areas with lighting	Detailed design, construction and establishment works stages	
Schedule 2 DP Package B – Table 11.7B	OM13	Green roofs and vertical greening Green Roofs and Vertical Greening provision of green roofs and vertical greening where feasible and appropriate to mitigate visual impacts of buildings and structures. Roof greening where appropriate should be established on proposed buildings as per the guidelines stated. These guidelines provide further details including information regarding structural loading, design, maintenance, etc. considerations as well as providing information on what types of plants might be suitable.	Reduce exposure to untreated concrete surfaces and particularly mitigate visual impact to VSRs at high levels. Provide greening.	Initiating Government Department, Private Developer	Feasible and appropriate buildings and structures	Detailed design, construction and establishment works stages	ArchSD/Urbis Study on Green Roof Application in HK (2007). Hong Kong Planning Standards and Guidelines (HKPSG) issued by the Planning Department (As at Aug 2011); Sustainable Building Design Guidelines CIBSE HK Branch, Technical Guidelines for Green Roof Systems in Hong Kong (2011) ETWB TCW No. 11/2004 – Cyber Manual for Greening
Cultural Heritage Impact (Construction and Operational Phase)							
12.11.2	---	No impact to cultural heritage is anticipated. Hence no mitigation measures required.	---	---	---	---	---
EM&A Project							

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location of the Measure	Implementation Timing	Requirements and / or Standards to be Achieved
		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	EIAO Guidance Note No.4/2010 TM-EIAO
		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	EIAO Guidance Note No.4/2010 TM-EIAO
Common Mitigation Measures (Applicable to DP12 - Construction of Road P1 and slip-road partly in "Conservation Area" of Yuen Tau Shan)							
Construction Dust Impact							
As per input under 'Common Mitigation Measures (Applicable to ALL Project Components, including DPs and Non-DPs)' above							
Construction Noise							
As per input under 'Common Mitigation Measures (Applicable to DP1) above							
Operational Noise (Road Traffic Noise)							
S4.7	S5.13	Provide low noise surfacing material on Road P1	Reduce operation noise from road traffic	CEDD (commencement stage) & HyD (during operation phase)	Refer to Figure 4.7.1 to 4.7.16.	It should be constructed before population intake of planned NSRs.	EIAO-TM
Water Quality (Construction Phase)							
As per input under 'Common Mitigation Measures (Applicable to ALL Project Components, including DPs and Non-DPs)' above							
Water Quality (Operational Phase)							
As per input under 'Common Mitigation Measures (Applicable to DP1) above							
Waste Management							
As per input under 'Common Mitigation Measures (Applicable to ALL Project Components, including DPs and Non-DPs)' above							
Land Contamination							
As per input under 'Common Mitigation Measures (Applicable to ALL Project Components, including DPs and Non-DPs)' above							
Ecology (Construction Phase)							
S9.7.4	S10.2.5	Provision of screening (e.g. hoarding) at adjacent habitats within CA at northwest of San Sang San Tsuen	Disturbance impacts (e.g. noise/vibration, visual) to adjacent habitats within the CA	CEDD / Contractor	CA at northwest of San Sang San Tsuen	Construction phase	TM-EIAO
S9.7.11	S10.2.10	Provision of hoarding for proper delineation of works boundary	Minimise construction disturbance impacts to existing mitigation ponds	CEDD / Contractor	Mitigation ponds to the west of Kau Lee Uk Tsuen	Construction phase	TM-EIAO
S9.7.14 – S9.7.15	S10.2.11	General dust and noise control measures	Mitigate disturbance impacts to the surrounding habitats and associated wildlife	CEDD / Contractor	All works areas in particular close to sensitive habitats i.e. TSW Main Channel, Ngau Hom Shek knoll, Tung Tau Tsuen woodland, mitigation ponds to the west of Kau	Construction phase	TM-EIAO

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location of the Measure	Implementation Timing	Requirements and / or Standards to be Achieved
					Lee Uk Tsuen and San Sang San Tsuen Egretry		
S9.7.16	S10.2.12	Night-time lighting control	Minimise glare disturbance to wildlife	CEDD / Contractor	All works areas in particular close to sensitive habitats i.e. TSW Main Channel, Ngau Hom Shek knoll, Tung Tau Tsuen woodland, mitigation ponds to the west of Kau Lee Uk Tsuen, San Sang San Tsuen egretry	Construction phase	TM-EIAO
S9.7.18 - S9.7.19	S10.2.13 - S10.2.15	Good site practices during the construction phase to avoid any pollution entering any nearby watercourses	Minimise water quality impacts to nearby water bodies	CEDD / Contractor	All works areas in particular work sites close to existing watercourses (e.g. TSW Main Channel) or and mitigation ponds	Construction phase	TM-EIAO
Ecology (Operational Phase)							
S9.7.4 and S9.7.6	S10.2.18	Provision of buffer/screen planting at the “Industrial” zone and slip road/CA interface as well as "OU" sites adjacent to Site 3-2	Minimise disturbance to the habitats within the CA	CEDD / Contractor	“Industrial” zone and slip road/CA interface well as "OU" sites adjacent to Site 3-2	Operational phase	TM-EIAO
S9.7.8	S10.2.19	Minimise the lighting along river channel and near vegetated areas in CA or “GB” zones or incorporate wildlife-friendly lighting	Minimise level of light pollution and disturbance to wildlife	CEDD / PlanD	River channels and vegetated areas	Operational phase	TM-EIAO
S9.7.17	S10.2.21	Use of tinted materials and superimposing dark patterns or strips on the noise barriers, as per EPD/Highways Department requirements	Minimise bird mortality from collision	CEDD / Contractor	Major road networks with noise barriers installed	Operational phase	Guidelines on Design of Noise Barriers
Fisheries							
S.10.7	S13.4.8	Follow the mitigation measures proposed in the water quality assessment for construction and operational phase	To protect fisheries resources from potential indirect impacts arising from deterioration of water quality	Contractor	Within the boundaries of the Project	Construction phase	TM-EIAO, contractual requirements
Landscape and Visual (Construction Phase)							
Schedule 2 Package A – Table 11.6	CM1	<u>Minimised construction area and contractor’s temporary works areas</u> The construction area and contractor’s temporary works areas should be minimised. General Good Practice Measures - For areas unavoidably disturbed by the Project on a short term basis e.g. works areas, the general principle to try and restore these to their former state to suit future land use, should be adhered to.	Minimise impacts on adjacent landscape	Government/ Developer/ Detailed Design Consultant/ Contractor	All construction areas and temporary works areas	Prior to construction, construction stages. This should be implemented as soon as the areas become available, to achieve early establishment	
Schedule 2 Package A – Table 11.6	CM2	<u>Stripping and storing of topsoil</u> Topsoil, where identified, should be stripped and stored for re-use in the construction of the soft landscape works, where practical. The Contract Specification shall include storage and reuse of topsoil as appropriate. On potentially contaminated sites (as per Section 8) where investigation results indicate soil contamination is present, the use of contaminated soils for planting is to be avoided where appropriate.	Minimise the loss of existing topsoil and reduce the need to provide imported material	Government/ Developer/ Detailed Design Consultant/ Contractor	All construction areas	Detailed design, construction stages	

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location of the Measure	Implementation Timing	Requirements and / or Standards to be Achieved
Schedule 2 Package A – Table 11.6	CM3	Protection of existing trees Tree Protection & Preservation – Exiting 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	Government/ Developer/ Detailed Design Consultant/ Contractor	On site	Detailed design, construction stages	ETWB Technical Circular Works (TCW) No. 29/2004 and 3/2006
Schedule 2 Package A – Table 11.6	CM4	Transplantation of existing trees where practical 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 Tree Transplanting Specification shall be provided in the Contract Specification, where applicable. Sufficient time for necessary tree root and crown preparation periods shall be allowed in the Project programme. A detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBTC 2/2004 and 3/2006 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, HyD HQ/GN/13 'Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit' should be referred to.	Transplant Trees where suitable for transplantation	Government/ Developer/ Detailed Design Consultant/ Contractor	Onsite where possible. Otherwise consider offsite locations	Prior to Construction, Construction Phase & Maintenance in Operation Phase	ETWB TCW 3/2006 and 2/2004 HyD HQ/GN/13 Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit
Schedule 2 Package A – Table 11.6	CM5	Control of night-time lighting Control of night-time lighting and glare by hooding all lights. Construction day and night time lighting should be controlled to minimise glare impact to adjacent VSRs during the Construction phase.	Minimise impact of night-time lighting and glare	Government/ Developer/ Contractor	All construction areas and temporary works areas	Construction stage	
Schedule 2 Package A – Table 11.6	CM6	Construction of decorative hoarding around construction works Erection of decorative mesh screens or construction hoardings around works areas in visually unobtrusive colours. Screen hoarding shall be erected along areas of the construction works site boundary where the works site borders publically accessible routes and/or is close to visually sensitive receivers (VSRs). It is proposed that the screening be compatible with the surrounding environment and where possible, non-reflective, recessive colours be used.	To screen undesirable views of the works site.	Contractor	All construction areas and temporary works areas	Construction stage	
Schedule 2 Package A – Table 11.6	CM7	Reduction of construction period to practical minimum Reduction of construction period to practical minimum.	Minimise length of exposure to construction works	Government/ Developer/ Detailed Design Consultant/ Contractor	All construction areas and temporary works areas	Construction stage	
Schedule 2 Package A – Table 11.6	CM8	Prevention of run-off Limitation of / Ensuring no run-off into surrounding landscape and prohibit run-off from entering adjacent water bodies and waterways Refer to guidelines.	Minimise / limit impacts on surrounding landscape and adjacent water sea areas	Government/ Developer/ Detailed Design Consultant/ Contractor	All construction areas and temporary works areas	Construction stage	Guidelines for this include ETWB Technical Circular (Works) No. 5/2005 Protection of natural streams/rivers from adverse impacts arising from construction works; Building Department (BD) Practice Note for Authorised Persons and Registered Structural Engineers 295: Protection of natural streams/rivers from adverse impacts arising from construction works

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location of the Measure	Implementation Timing	Requirements and / or Standards to be Achieved
Schedule 2 Package A – Table 11.6	CM9	Phasing of construction stage Phasing of the construction stage to reduce visual impacts.	Minimise visual impacts during the construction phase	Government/ Developer/ Detailed Design Consultant/ Contractor	All construction areas and temporary works areas	Construction stage	
Schedule 2 Package A – Table 11.6	CM10	Advance screen planting Advance screen planting of fast growing tree and shrub species to noise barriers and hoardings. Trees shall be capable of reaching a height >10m within 10 years.	Minimise length of exposure without long term mitigation measures	Government/ Developer/ Detailed Design Consultant/ Contractor	Areas adjacent to noise barriers and hoardings	Detailed design, construction stages	ETWB TCW 3/2006 and 2/2004
Schedule 2 Package A – Table 11.6	CM11	Minimise disturbance footprints To minimise landscape and visual impacts, the footprint and elevation of such elements should be optimised to reduce topographical/ landform changes, as well as reduce land take and interference with natural terrain. 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, while also considering visual amenity. Earthworks and engineered slopes should be designed to be a visually interesting landform, compatible with the surrounding landscape and to mimic the natural contouring and terrain e.g. introduction and continuation of natural features such as spurs and ridges where appropriate, to support assimilation with the hillside setting.	Reduce topographical changes and minimise land resumption	Government/ Developer/ Detailed Design Consultant/ Contractor	Throughout NDA	Detailed design, construction stages	GEO Publication No. 1/2011, Technical Guidelines on Landscape Treatment on Slopes
Schedule 2 Package A – Table 11.6	CM12	Protection of existing water courses For all the natural rivers and streams inside the development area, consideration of protection measures should be made to minimise any impacts from the construction works. Avoid affecting Watercourses – In the detailed design, consideration should be made of watercourses, to minimise any impacts e.g. at new bridge crossings, viaducts, road alignment etc. Guidelines stated should be followed. Bridges and box culverts should also be used to minimise the necessity of watercourse modification and protect the watercourses where necessary.	Avoid direct impacts to watercourses	Detailed Design Consultant/ Contractor	All natural rivers and streams inside development area	Detailed design, construction stages	Guidelines for this include ETWB Technical Circular (Works) No. 5/2005 Protection of natural streams/rivers from adverse impacts arising from construction works; Building Department (BD) Practice Note for Authorised Persons and Registered Structural Engineers 295: Protection of natural streams/rivers from adverse impacts arising from construction works
Schedule 2 Package A – Table 11.6	CM13	Hydroseeding on modified slopes 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. Woodland tree seedlings and/ or shrubs should be planted where 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.	To prevent erosion and subsequent loss of landscape resources and character. To ensure man-made slopes are as visually amenable as possible.	Government/ Developer/ Detailed Design Consultant/ Contractor	Modified slopes onsite	Prior to Construction, Construction Phase & Maintenance in Operation Phase	GEO publication (1999) – Use of Vegetation as Surface Protection on Slope; GEO Publication No. 1/2011-Technical Guidelines on Landscape Treatment for Slopes
Schedule 2 Package A – Table 11.6	CM14	Integrate Open Space Network with existing nullah conditions For watercourses affected during construction, measures should be sought to minimise the impact with respect to the existing nullah conditions, existing shrubs and trees along the banks. Where natural streams are unavoidably affected along some of their length, they can be diverted to avoid the proposed new developments and retain the integrity of the whole stream. Detailed design of any stream diversion should follow the Guidelines in ETWB Technical Circular (Works) No. 5/2005 (Protection of natural streams/rivers from adverse impacts arising from construction works) and appropriate construction methods should be used.	Minimise / limit impacts on surrounding landscape and adjacent water sea areas	Government/ Developer/ Detailed Design Consultant/ Contractor	Watercourses affected during construction	Prior to Construction, Construction Phase & Maintenance in Operation Phase	ETWB TCW No. 5/2005 – Protection of natural streams/rivers from adverse impacts arising from construction works; DSD Practice Note No.1/2005, Guidelines on Environmental Considerations for River Channel Design
Landscape and Visual (Operational Phase)							
Schedule 2 Package A – Table 11.7	OM1	Compensatory tree planting where practical Compensatory Planting – Compensatory tree planting for felled trees shall be provided to the satisfaction of relevant Government departments. Required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Removal Application process under ETWBTC 3/2006.	Compensate for trees and shrubs lost due to the Project.	Government / Developer/ Detailed Design Consultant/	Onsite where possible. Otherwise consider offsite locations	Prior to Construction, Construction Phase & Maintenance	

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location of the Measure	Implementation Timing	Requirements and / or Standards to be Achieved
		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. Tree compensation within the HSK NDA will be provided at a 1:1 ratio. This means that for every tree that is removed, a new one will be planted. Furthermore, trees affected by DPs will be compensated within their respective DP areas.		Contractor		in Operation Phase	
Schedule 2 Package A – Table 11.7	OM3	Sensitive design of hardscape elements along roadsides Streetscape elements along new and existing roads (e.g. paving, signage, street furniture, lighting etc.) shall be sensitively designed in a manner that responds to the existing and planned urban context.	Minimise potential adverse landscape and visual impacts	Government / Developer/ Detailed Design Consultant/ Contractor	Streetscapes	Detailed design, construction and establishment works stages	
Schedule 2 Package A – Table 11.7	OM4	Reinstatement of streetscape elements All streetscape areas and hard and soft landscape areas disturbed during construction shall be reinstated to equal or better quality, to the satisfaction of the relevant Government departments.	Compensate for impacts on existing landscape, reinstating to equal or better quality	Government / Developer/ Detailed Design Consultant/ Contractor	Streetscape and hard and soft landscape areas	Detailed design, construction and establishment works stages	
Schedule 2 Package A – Table 11.7	OM6	Quality greening along roadside amenity strips Furniture, ornamental tree / shrub / climber planting should be provided along roadside amenity strips to enhance the townscape quality.	Compensate for impacts on existing landscape, reinstating to equal or better quality	Government / Developer/ Detailed Design Consultant/ Contractor	Along roadside amenity	Detailed design, construction and establishment works stages	
Schedule 2 Package A – Table 11.7	OM7	Design of street lighting Appropriate design of street lighting to avoid glare and light pollution to surrounding areas.	Minimise potential adverse landscape and visual impacts	Detailed Design Consultant	Streetscapes	Detailed design stage	
Schedule 2 Package A – Table 11.7	OM10	Sensitive design of vertical noise barriers and enclosures The visual impact of noise barriers & enclosures will be mitigated by appropriate detailed design, 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.	Minimise potential adverse landscape and visual impacts	Government (via Contractor)	Noise barriers and enclosures	Detailed design stage	Greening, Landscape and Tree Management Section (GLTM) of the Development Bureau's Guidelines on Greening of Noise Barriers (April 2012) Dev. Bureau, Greening, Landscaping & Tree Management Section, Guidelines on Greening of Noise Barriers (Apr 12)
Schedule 2 Package A – Table 11.7	OM14	Greening of viaduct structures and noise barriers Aesthetic improvement of viaduct structures and noise barriers through greening of structure where feasible and appropriate to mitigate visual impact of viaduct and noise barrier form. For viaducts, soft landscaping should be provided to soften the hard, straight edges (for climbers used to cover the vertical, hard surfaces of the piers) and shade tolerant plants should be planted, where light is sufficient, to improve aesthetic value of areas under viaducts. Both at grade planting and use of elevated planters should be considered for the soft landscaping of viaducts, taking into account the preference to minimise the overall viaduct bulk and integrate architectural forms and textural finishes which improve aesthetics.	To soften the hard, straight edges and provide greening along viaducts and noise barriers.	Government / Developer/ Detailed Design Consultant/ Contractor	All viaduct structures and noise barriers as feasible, final location to be confirmed at detailed design stage	Detailed design, construction and establishment works stages	Development Bureau TCW No. 2/2013, Greening on Footbridges and Flyovers;
Cultural Heritage Impact (Construction and Operational Phase)							
12.11.2	---	No impact to cultural heritage is anticipated. Hence no mitigation measures required.	---	---	---	---	---

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Implementation Agent	Location of the Measure	Implementation Timing	Requirements and / or Standards to be Achieved
EM&A Project							
		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	EIAO Guidance Note No.4/2010 TM-EIAO
		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	EIAO Guidance Note No.4/2010 TM-EIAO

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