

Appendix 4.1 Environmental Mitigation Implementation Schedule (EMIS)

Environmental Mitigation Implementation Schedule

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

Table A14.1 Implementation Schedule of Air Quality Mitigation Measures

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
Construction Dust Impact							
S4.6.6 and S4.6.27	CD1	<p>The following dust suppression measures should be incorporated to control the dust nuisance throughout the construction phase:</p> <ul style="list-style-type: none"> • Water spraying every hour on active works areas, exposed areas and haul roads. The extent of watering may vary depending on actual site conditions. • Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads; 	Minimise dust impact at the nearby sensitive receivers	Contractor	All Construction sites	Construction Stage	<ul style="list-style-type: none"> • Air Pollution Control Ordinance • To control the dust impact to meet HKAQO and EIAO-TM criteria

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S4.6.6 and S4.6.27	CD1 (CONT.)	<ul style="list-style-type: none"> A stockpile of dusty material should not be extended beyond the pedestrian barriers, fencing or traffic cones; 	Minimise dust impact at the nearby sensitive receivers	Contractor	All Construction sites	Construction Stage	<ul style="list-style-type: none"> Air Pollution Control Ordinance To control the dust impact to meet HKAQO and EIAO-TM criteria
S4.6.27	CD2	<ul style="list-style-type: none"> The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores; 	Minimise dust impact at the nearby sensitive receivers	Contractor	All Construction sites	Construction Stage	<ul style="list-style-type: none"> Air Pollution Control Ordinance To control the dust impact to meet HKAQO and EIAO-TM criteria

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S4.6.27	CD2 (CONT.)	<ul style="list-style-type: none"> When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period; The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; 	Minimise dust impact at the nearby sensitive receivers	Contractor	All Construction sites	Construction Stage	<ul style="list-style-type: none"> Air Pollution Control Ordinance To control the dust impact to meet HKAQO and EIAO-TM criteria
S4.6.27	CD3	<ul style="list-style-type: none"> Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; 	Minimise dust impact at the nearby sensitive receivers	Contractor	All Construction sites	Construction Stage	<ul style="list-style-type: none"> Air Pollution Control Ordinance To control the dust impact to meet HKAQO and EIAO-TM criteria

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S4.6.27	CD3 (CONT.)	<ul style="list-style-type: none"> Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; Any skip hoist for material transport should be totally enclosed by impervious sheeting; Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides; 	Minimise dust impact at the nearby sensitive receivers	Contractor	All Construction sites	Construction Stage	<ul style="list-style-type: none"> Air Pollution Control Ordinance To control the dust impact to meet HKAQO and EIAO-TM criteria
S4.6.27	CD4	<ul style="list-style-type: none"> Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed; Site layout should be planned such that machinery and dusty activities (e.g. haul roads, stockpiling areas) are located away from ASRs as far as possible; 	Minimise dust impact at the nearby sensitive receivers	Contractor	All Construction sites	Construction Stage	<ul style="list-style-type: none"> Air Pollution Control Ordinance To control the dust impact to meet HKAQO and EIAO-TM criteria

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S4.6.27	CD4 (CONT.)	<ul style="list-style-type: none"> Construction machinery should be maintained regularly so as to ensure no deterioration on the emission performance; Solid screens or barriers should be erected around dusty activities; The use of diesel or petrol powered generators should be avoided and mains electricity or battery powered equipment should be adopted where practicable; Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shortcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies. 	Minimise dust impact at the nearby sensitive receivers	Contractor	All Construction sites	Construction Stage	<ul style="list-style-type: none"> Air Pollution Control Ordinance To control the dust impact to meet HKAQO and EIAO-TM criteria

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
<i> Vehicular Emissions from PTI and Car Parks</i>							
S4.7.27	V1	Adequate ventilation systems will be provided to avoid accumulation of emissions within the PTI and designed in accordance with EPD's Practice Note on "Control of Air Pollution in Semi-Confined Public Transport Interchanges" (ProPECC PN 1/98). The exhaust air outlets should be located away from nearby air sensitive uses to avoid causing air pollutant nuisance. If necessary, control equipment such as filters or scrubbing units should be used to minimize the impact induced on surroundings. Ventilation systems should also be maintained at regular intervals to ensure proper operation. The above measures will also be adopted at all car parks within the housing sites.	Minimise vehicular emission impact at the nearby sensitive receivers	Relevant government departments	Planned PTIs in SHR and HPR Sites and car parks within the housing sites.	Upon operation of the proposed PTIs and car parks within the housing sites.	EPD's Practice Note on "Control of Air Pollution in Semi-Confined Public Transport Interchanges" (ProPECC PN 1/98)
<i> Odour Impact</i>							
S4.7.53	O1	The following at-source mitigation measures should be implemented to control odour emission from the proposed SHR SPS: <ul style="list-style-type: none"> • Potential odour sources should be enclosed inside reinforced concrete structure; • Negative pressure should be maintained within the SPS; • Installation of deodoursier with an odour removal efficiency of at least 99.5% to control emission via ventilation exhaust; and • Exhaust of the deodouriser should be oriented away from sensitive receivers. 	Minimise odour impact at the nearby sensitive receivers	Relevant government departments	Planned SHR SPS	Upon operation of the proposed SPS	EIAO-TM

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S4.7.54	O2	<p>For the planned refuse collection points (RCPs) within the proposed housing sites, it is recommended that their siting should be away from the nearby ASRs as far as possible. The design of the planned RCPs should incorporate proper ventilation and deodourising and exhaust system to minimize the potential odour nuisance on the nearby ASRs. The ventilation and deodourising system shall be properly maintained. In addition, the following good housekeeping measures shall be implemented:</p> <ul style="list-style-type: none"> • immediate cleansing after each refuse collection operation would be put in place during the operation of the RCP; • the roller shutter of the vehicular access of the RCP would only be opened during access of refuse collection vehicles; • RCP including the roller shutter would be closed during other times; and • the refuse would not be stored overnight within the RCP, i.e. the refuse will be delivered to the landfill within a day to avoid accumulation of refuse within the RCP. 	Minimise odour impact at the nearby sensitive receivers	Relevant government departments	Planned RCPs	Upon operation of the proposed RCPs	EIAO-TM

Table A14.2 Implementation Schedule of Noise Mitigation Measures

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
Construction Noise							
S5.6.7 – S5.6.13	CN1	<p><u>Adoption of Quieter Construction Method</u></p> <ul style="list-style-type: none"> A quieter construction method, Non-Explosive Chemical Expansion Agent (Soundless Chemical Demolition Agent), is proposed to be adopted to replace the use of hand-held breaker in site clearance. <p><u>Use of Quality PME</u></p> <ul style="list-style-type: none"> Use of Quality Powered Mechanical Equipment (QPME) is recommended to reduce the noise impact (See Table 5.13 of EIA). <p><u>Use of Noise Insulation Fabric</u></p> <ul style="list-style-type: none"> Noise insulating fabric can be adopted for certain PME such as piling machine <p><u>Use of Movable Barrier</u></p> <ul style="list-style-type: none"> Use of movable noise barrier with a cantilevered upper portion shall be placed as close to the PME as possible and a location intercepting the line of sight between the NSRs and PME. The barrier material shall have a surface density of not less than 10 kg/m² with 25 mm thick internal sound absorptive lining to achieve the maximum screening 	Control construction noise impacts	Contractor	All construction sites	Construction stage	EIAO-TM

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
		effect.					
S5.6.7 – S5.6.13	CN1 (CONT.)	<ul style="list-style-type: none"> The future contractor will be required through contract specifications to provide and implement sufficient direct mitigation measures with reference to the recommendations in this EIA or the future detailed design to achieve acceptable noise levels on the nearby NSRs. <p><u>Use of Noise Enclosure</u></p> <ul style="list-style-type: none"> Movable noise enclosure made up of plywood is proposed to surround certain static PME. The internal wall of the enclosure should be laid with sound absorbent such as mineral wool. The future contractor will also be required to prepare a construction noise management plan with reference to Section 8 and Annex 21 of the EAIO-TM as well as this EIA Report and EM&A Manual. The construction management plan shall identify the inventory of noise sources and assess the effectiveness and practicality of all mitigation measures to minimize the construction noise impact and shall be submitted six months prior to commencement of construction. <p><u>Good Site Management Practices</u></p> <ul style="list-style-type: none"> Only well-maintained plant should be operated on-site and plants should be serviced regularly during the construction period; 	Control construction noise impacts	Contractor	All construction sites	Construction stage	EIAO-TM

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S5.6.14	CN1 (CONT.)	<ul style="list-style-type: none"> • Mobile plant, if any, should be sited as far from NSRs as possible; • Plant known to emit noise strongly in one direction should, wherever possible, be properly orientated so that the noise is directed away from the nearby NSRs; • Use of site hoarding as a noise barrier to screen noise at low level NSRs; • Machines and plant that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum; and • Any material stockpiles and other structures should be effectively utilized, wherever practicable, to screen the noise from on-site construction activities. 	Control construction noise impacts	Contractor	All construction sites	Construction stage	EIAO-TM
S5.6.16 – S5.6.17	CN2	To further alleviate the construction noise impact during the examination period of TWGHs Yau Tze Tin Memorial College (E11), Primary School and Secondary School at TM54 Site 4A (East) (E14 and E15), C.C.C. Mong Wong Far Yok Memorial Primary School (E30) and SRBCEPSA Ho Sau Ki School (E31), minimum separation distances between critical construction activities and the schools have been recommended. Please refer to Table 5.16 of EIA report for details. The contractors shall liaise with the schools to confirm their examination period when planning their work sequence.	Control construction noise impacts	Contractor	All construction sites	Construction stage	EIAO-TM

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
Operation Noise (Road Traffic Noise)							
S5.7.15 – S5.7.17	ON1	At-source mitigation measures, including the application of low noise road surfacing material and vertical barriers of various heights have been proposed at appropriate locations along the Project road and other roads. Provision of a fully enclosed pedestrian walkway (~15m long) behind the noise barrier opening at the road crossing near junction improvement works at J13. The extents and locations of proposed direct mitigation measures are indicated in Table 5.22 of the EIA report.	Control the road traffic noise impacts	CEDD (Design stage and Construction phase) & HyD (Operation phase)	Refer to Figures 6.3 and 6.4	Prior to operation of the Project for existing NSRs. While for mitigation measures to protect planned NSRs, it should be constructed before population intake of planned NSRs	•EIAO-TM
S5.7.15	ON2	Further environmental reviews will be conducted at the later detailed design stage to review the proposed noise mitigation measures taking into account the latest design standard for the application of the low noise road surfacing materials. Details could refer to Table 5.24 of the EIA report.	Reduce the noise from road traffic	CEDD (Design stage & Construction Phase) & HyD (operation phase)	Affected Sections of roads	Prior to operation of the Project for planned NSRs.	•EIAO-TM
S5.7.27 – S5.7.33	ON3	Acoustics windows for the planned public housing development and erection of a 2m high solid concrete boundary wall (approximately 129m long) near the welfare facilities planned at SHR Site, were proposed to alleviate the road traffic noise impact (Table 5.27 of the EIA Report). The provision of acoustic windows and boundary wall for the planned public housing would be subject to further study by the Hong Kong Housing Authority (HKHA).	Reduce the noise from road traffic	Housing Department	San Hing Road Site and Hong Po Road Site	Prior to operation of the Project for planned NSRs.	•EIAO-TM

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S5.7.27 – S5.7.33	ON3 (CONT.)	For the proposed welfare facility at HPR site, it is recommended that uses that do not rely on openable window for ventilation to be located at the façade closest to the access road. For the uses relying on openable windows for ventilation for clinics, convalescences and homes for the aged diagnostic rooms and wards, these uses are not recommended to be located along the façade facing the realigned Hong Po Road/access road.	Reduce the noise from road traffic	Housing Department	San Hing Road Site and Hong Po Road Site	Prior to operation of the Project for planned NSRs.	•EIAO-TM
5.7.22	ON4	At-receiver mitigation measures (e.g. alternative layout design and acoustic windows) at E23_TN03 of Tuen Mun Area 54 Site 5 development to be implemented by HKHA to alleviate residual traffic noise impact. An Environmental Assessment Study will be conducted by HKHA in the detailed design stage to address the environment impacts and to comply with relevant criteria.	Reduce the noise from road traffic	Housing Department	Tuen Mun Area 54 Site 5	Prior to J13 road improvement works	EIAO-TM
Operation Noise (Fixed Noise Sources)							
S5.8.8	ON5	The recommended maximum permissible Sound Power Level (SWL) of the ventilation fans potentially to be installed at the PTIs should be reviewed with the final design of the PTIs during the detailed design stage. The PTIs will be enclosed and designed to avoid direct line-of-sight to the NSRs. Recommendations include a canopy and hanger wall shall be provided at the ingress	Reduce operation fixed noise	Relevant government departments/ Future Operator	Planned PTIs	Design and Operation Stage	•IND-TM

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
		and egress of the PTIs and solid panels to be erected as necessary next to the vehicle bays to screen the line-of-sight of the PTI from the nearby NSRs.					
S5.8.9	ON6	<p>The following good practices should be incorporated into the design of the proposed PTIs and SPS during detailed design stage:</p> <ul style="list-style-type: none"> The pumps and noisy plants should be enclosed inside the SPS building structure; Proper selection of quiet plant aiming to reduce tonality at NSRs; Openings of ventilation systems should be located away from NSRs as far as practicable and oriented away from the NSRs to avoid direct line-of-sight to the concerned NSRs; and Installation of silencer/ acoustic louvre for the exhaust of ventilation system. 	Reduce operation fixed noise	Relevant government departments/ Future Operator	All plant rooms where practicable	Design and Operation Stage	<ul style="list-style-type: none"> Noise Control Ordinance and its TM, EIAO-TM
Operation Noise (Rail Noise)							
S5.9.10 -5.9.12	ON7	Provision of acoustic windows (baffle type) at Block 1 of SHR Site. An Environmental Assessment Study will be conducted by HKHA in the detailed design stage to address the environmental impacts.	Reduce the noise from railway operation	Housing Department	Refer to Figure 6.5	Prior to operation of the Project for planned NSRs.	EIAO-TM

Table A14.3 Implementation Schedule of Water Quality Mitigation Measures

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
Water Quality (Construction Phase)							
6.8.1	CW1	Construction phase mitigation measures, in accordance with the ProPECC PN 1/94, include the use of sediment traps, wheel washing facilities for vehicles leaving the site, adequate maintenance and provision of drainage systems (such as box culvert / pipe) to prevent flooding and overflow due to interception of the existing streams, sewage collection and treatment, and comprehensive waste management (collection, handling, transportation, disposal) procedures. The site practices outlined in ProPECC PN 1/94 “Construction Site Drainage” provides good practice guidelines for dealing with various types of discharge from a construction site and should be adopted as far as practicable to minimise the potential water quality impacts from various construction activities and construction site run off on WSRs within and outside the Project site.	To minimise water quality impact from construction site runoff and general construction activities	Contractor	All construction sites where applicable	Construction stage	<ul style="list-style-type: none"> •Water Pollution Control Ordinance •ProPECC PN1/94 •EICO-TM •TM-DSS
6.8.2	CW2	The construction of the Project will start with site clearance and formation works, preferably in dry season. During construction, a temporary drainage channel system should be properly designed, maintained or connected to divert any runoff away from the site and eliminate the risk of overflow of surface water from the construction sites during heavy rain. It is important to ensure	To minimise water quality impact from construction site runoff and general construction activities	Contractor	All construction sites where applicable	Construction stage	<ul style="list-style-type: none"> •Water Pollution Control Ordinance •ETWB TC (Works) •EIAO-TM

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
		that the proposed drainage can take its full drainage function prior to the commencement of the earth works and landfilling within the Sites.					
S6.8.3 – S6.8.4	CW3	<p><u>General Construction Activities and Site Runoff</u> In accordance with the ProPECC PN 1/94, best management practices should be implemented as far as practicable as below:</p> <ul style="list-style-type: none"> At the start of the site formation, appropriate site drainage such as perimeter cut-off drains should be constructed to direct off-site water around the site. Internal drainage works and erosion and sedimentation control facilities should be implemented. Channels, earth bunds or sandbag barriers should be provided on site to collect site runoff and prevent untreated runoff from entering nearby watercourses. Silt removal facilities with sufficient capacity should also be adequately designed, installed and properly maintained to treat the collected runoff to appropriate quality (as specified in the effluent discharge license) before discharge. The design of efficient silt removal facilities should be based on guidelines in Appendix A of ProPECC PN 1/94. Detailed design of the sand/ silt traps should be undertaken by the contractor prior to the commencement of the construction. 	To minimise water quality impact from construction site near watercourses	Contractor	All construction sites where applicable	Construction stage	<ul style="list-style-type: none"> Water Pollution Control Ordinance ProPECC PN1/94 EIAO-TM TM-DSS

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S6.8.3 – S6.8.4	CW3 (CONT.)	<ul style="list-style-type: none"> Dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into drains or watercourses, through silt/ sediment traps. Silt/ sediment traps should also be incorporated in the permanent drainage channels to enhance deposition rates. The overall slope of the site should be kept to a minimum to reduce the erosive potential of surface water flows. In addition, all the entrances and exits of construction sites should be protected by coarse stone ballast. An additional advantage accruing from the use of crushed stone is the positive traction gained during prolonged periods of inclement weather and the reduction of surface sheet flows. Sediment tanks of sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m³ capacity, are recommended as general mitigation measures for settling storm water prior to disposal. The system capacity should be flexible and able to handle multiple inputs from a variety of sources and particularly suited to applications where the influent is pumped. 	To minimise water quality impact from construction site near watercourses	Contractor	All construction sites where applicable	Construction stage	<ul style="list-style-type: none"> Water Pollution Control Ordinance ProPECC PN1/94 EIAO-TM TM-DSS

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S6.8.3 – S6.8.4	CW3 (CONT.)	<ul style="list-style-type: none"> All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly, dried and disposed of with other inert C&D material. Construction works should be scheduled to minimise surface excavation works during the rainy seasons (April to September). The temporary cut faces, exposes faces of fill slopes or earth stockpiles should be properly protected during rainstorms. All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed. If excavation cannot be avoided during the rainy season, or any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means. All open stockpiles of construction materials, such as aggregates, sand and fill materials, should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent washing away of construction materials, soil, silt or debris into drainage system. 	To minimise water quality impact from construction site near watercourses	Contractor	All construction sites where applicable	Construction stage	<ul style="list-style-type: none"> Water Pollution Control Ordinance ProPECC PN1/94 EIAO-TM TM-DSS

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S6.8.3 – S6.8.4	CW3 (CONT.)	<ul style="list-style-type: none"> Measures should be taken to minimise the ingress of any site drainage into excavations. If excavation of trenches in wet periods is necessary, it should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities. Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers. Precautions to be taken at any time of year when rainstorms are imminent or forecasted, and actions to be taken during or after rainstorms are all summarised in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events, especially for areas located near steep slopes. 	To minimise water quality impact from construction site near watercourses	Contractor	All construction sites where applicable	Construction stage	<ul style="list-style-type: none"> Water Pollution Control Ordinance ProPECC PN1/94 EIAO-TM TM-DSS

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S6.8.3 – S6.8.4	CW3 (CONT.)	<ul style="list-style-type: none"> All vehicles and mechanical plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and located wheel washing bay should be provided at every site exits. Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved to prevent vehicle tracking of soil and silty water to public roads and drains. The bentonite, grouting and cement materials should only be delivered to the construction site when they are to be used. They should be stored in a covered warehouse and the excess amount should be removed from the site as soon as the construction is completed. Solid waste, building debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impact. They should be properly held in place when temporary stored on site to avoid blockage of drains and catchpits. 	To minimise water quality impact from construction site near watercourses	Contractor	All construction sites where applicable	Construction stage	<ul style="list-style-type: none"> Water Pollution Control Ordinance ProPECC PN1/94 EIAO-TM TM-DSS

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S6.8.3 – S6.8.4	CW3 (CONT.)	<ul style="list-style-type: none"> Oil interceptors should be provided in the drainage system downstream of any potential oil/ fuel pollution sources. They should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rainfall. All fuel tanks and storage areas on site should be provide with locks and placed on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching adjacent water sensitive receivers. Expedient discharge of construction site surface water into public foul sewers shall be strictly prohibited. All construction site surface water must be intercepted, desilted, conveyed and discharged into the nearby public stormwater drainage system or watercourse whichever is appropriate. Groundwater pumped out of wells, etc, for the lowering of groundwater level in basement or foundation construction should be discharge into storm drains after the removal of silt in silt removal facilities. 	To minimise water quality impact from construction site near watercourses	Contractor	All construction sites where applicable	Construction stage	<ul style="list-style-type: none"> Water Pollution Control Ordinance ProPECC PN1/94 EIAO-TM TM-DSS

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S6.8.3 – S6.8.4	CW3 (CONT.)	<ul style="list-style-type: none"> Water used in ground boring and drilling for site investigation or rock/soil anchoring should as far as practicable be recirculated after sedimentation. Where there is a need for final disposal, the wastewater should be discharged into storm drains via silt removal facilities. Regular site inspections should be carried out to prevent any malpractices and ensure that the recommended mitigation measures are properly implemented on site. Notices should be posted at conspicuous locations to remind the workers not discharge any sewage or wastewater into water bodies, marsh and ponds near the construction sites. 	To minimise water quality impact from construction site near watercourses	Contractor	All construction sites where applicable	Construction stage	<ul style="list-style-type: none"> Water Pollution Control Ordinance ProPECC PN1/94 EIAO-TM TM-DSS
S6.8.5 – S6.8.7	CW4	<p><u>Prevention of Accidental Spillage of Chemicals</u></p> <ul style="list-style-type: none"> Chemical used during construction, such as fuel, oil solvents and lubricants, shall be properly stored and contained in designated areas with secondary containment to prevent spillage and contamination of the nearby water bodies. 	To prevent water quality impact due to chemical spillage	Contractor	All construction sites where practicable	Construction stage	<ul style="list-style-type: none"> Water Pollution Control Ordinance Waste Disposal (Chemical Waste) (General) Regulations

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S6.8.5 – S6.8.7	CW4	<ul style="list-style-type: none"> When in use, chemical containers, diesel generator and diesel-powered air compressor should be placed with drip trays underneath to minimise the potential impact of chemicals accidentally spilled. Breaker tips that are not in use and left on ground should be placed with drip trays or tarpaulin underneath to contain the potential impact of lubricants spilled from the tips. Any maintenance activities and workshops with chemicals use shall be located away from watercourses on hard standings within a bunded area. Sumps and oil interceptors should be provided as appropriate. The Contractor shall register as a chemical waste producer and employ licensed collector for collection of chemical waste from the construction site. Any chemical waste generated shall be managed in accordance with the Waste Disposal (Chemical Waste) (General) Regulation. 	To prevent water quality impact due to chemical spillage	Contractor	All construction sites where practicable	Construction stage	<ul style="list-style-type: none"> Water Pollution Control Ordinance Waste Disposal (Chemical Waste) (General) Regulations

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S6.8.8 – S6.8.9	CW5	<p><u>Sewage from Construction Workforce</u></p> <ul style="list-style-type: none"> Portable chemical toilets and sewage holding tanks should be deployed on site for handling the construction sewage generated by the workforce. Location of sewage holding tank should be located far away from watercourse nearby. A licensed contractor should be engaged to provide and maintain appropriate and adequate portable toilets to cater for 230 m³ per day and be responsible for collection and disposal of sewage. Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater off-site during construction. Regular environmental site inspection should be conducted by the contractor and environmental team to identify and rectify any malpractices and achieve continual improvement of environmental performance on site. It is anticipated that sewage generation during the construction phase of the Project would not cause water quality impact after undertaking all required measures. 	To minimise water quality impact from sewage effluent in construction phase	Contractor	All construction sites where practicable	Construction stage	<ul style="list-style-type: none"> Water Pollution Control Ordinance TM-DSS

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S6.8.10	CW6	<p><u>Groundwater and Site Runoff</u></p> <p>To avoid the water quality impact due to the pumping and discharge of potentially contaminated water from contaminated area, the following mitigation measures should be adopted.</p> <ul style="list-style-type: none"> Contaminated water, either from groundwater or runoff, should be treated by wastewater treatment facility (WTF) to an acceptable level as indicated in TM-DSS before disposal if the deployment of such WTF is feasible.; and Recharging the contaminated groundwater back to the aquifer should be sought if treatment of the contaminated groundwater by WTF is not feasible, subject to the agreement with the EPD. 	To minimise water quality impact from contaminated groundwater and site runoff	Contractor	All construction sites where practicable	Construction stage	<ul style="list-style-type: none"> TM-DSS

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S6.8.11	CW7	<p><u>Construction Works of near/within Watercourses</u></p> <ul style="list-style-type: none"> • Temporary shoring or sand bags or water pumping should be installed as appropriate to isolate the flow of the watercourses from the construction works area. The detailed design of the temporary diversion works will be conducted by the contractor during the construction phase to fulfil the requirements in DSD Technical Circular No. 1/2017 “Temporary Flow Diversions and Temporary Works Affecting Capacity in Stormwater Drainage System” for DSD approval so that feasible options of these temporary structures can be formulated. • Water pumps should be used to collect wastewater and construction site surface runoff within the cofferdam/ temporary working platform. The collected wastewater shall be properly treated for silt removal prior to discharge. • Toe-boards and bunds should be provided along the edge of the works area/ temporary platform to prevent wastewater/ debris from falling into the watercourses. 	To avoid any direct water quality impact to existing watercourses	Contractor	All construction sites where practicable	Construction stage	ETWB (Works) 5/2005 TC No.

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S6.8.11	CW7 (CONT.)	<ul style="list-style-type: none"> Stockpiling of construction materials and dusty materials should be located away from any watercourses, contained in bunded areas and covered with tarpaulin. Construction debris and spoil should be covered with tarpaulin during storage. Regular clearance of materials for disposal off-site should be arranged to avoid overwhelming and being washed into the nearby watercourses during rainfalls. Any temporary works site inside the watercourses should be temporarily isolated by placing of sandbags or silt curtains with lead edge at bottom and properly supported props to prevent adverse water quality impact. Proper shoring may need to be erected to prevent soil/ mud from slipping into the watercourses. 	To avoid any direct water quality impact to existing watercourses	Contractor	All construction sites where practicable	Construction stage	ETWB TC (Works) No. 5/2005

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S6.8.12	CW8	<p><u>Removal/Diversion of Watercourses</u></p> <p>During removal and diversion of watercourse, precautionary measures shall be implemented to prevent adverse water quality impact to the surrounding environment. Good site practices as described in ETWB TC (Works) No. 5/2005 and ProPECC PN 1/94 should be adopted where applicable. These include:</p> <ul style="list-style-type: none"> • Temporary shoring or sand bags and impermeable sheet piles should be installed as appropriate to isolate the water flow from construction works area. • Dewatering or flow diversion shall be conducted prior to the construction works to prevent water overflow to the surrounding area. • Watercourse removal and flow diversion should be conducted in dry season as far as practicable when the flow is low. 	To avoid water quality impact on existing watercourses to be retained	Contractor	All construction sites where practicable	Construction stage	<ul style="list-style-type: none"> • Water Pollution Control Ordinance • TM-DSS • ETWB TC (Works) No. 5/2005 • ProPECC PN1/94
S6.8.13	CW9	Water drained along the watercourse shall be diverted to new/ temporary drainage prior to watercourse removal. During removal, water remained at the watercourse should be collected and treated to meet the requirements of TM-DSS prior to discharge. A precautionary site check and translocation, if necessary, for aquatic fauna of conservation interest have been recommended prior to site formation at the watercourse.	To avoid water quality impact on existing watercourses to be retained	Contractor	All construction sites where practicable	Construction stage	<ul style="list-style-type: none"> • Water Pollution Control Ordinance • TM-DSS • ETWB TC (Works) No. 5/2005 ProPECC PN1/94

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
Water Quality (Operation Phase)							
S6.8.14	OW1	<p><u>Emergency Discharge from Sewage Treatment Works and Sewage Pumping Stations</u></p> <p>To minimize the risk of SPS failure leading to emergency discharge of untreated sewage from the proposed SHR SPS to Tuen Mun River, the design of SPS shall comprise additional provisions, including:</p> <ul style="list-style-type: none"> • Twin rising mains in case of one of the duty mains be taken out of operation, the remaining one would still be able to deliver flow; • Standby pumps and screens in case of unexpected breakdown or maintenance of the pumps and screens such that the standby screens and pumps could take over and allow continuous operation of the SPS; • Dual electricity supply from different power sub-stations or backup power supply facilities such as diesel generator in case of power failure to sustain the function of pumping facilities; 	To prevent the impact to Tuen Mun River due to the emergency discharge	DSD	Proposed Sewage Pumping Station at SHR Site	Operational stage	<ul style="list-style-type: none"> • DSD's Sewerage Manual • Water Pollution Control Ordinance • EIAO-TM

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S6.8.14	OW1 (CONT.)	<ul style="list-style-type: none"> A storage tank with 2-hour ADWF capacity (about 1,200m³) to hold temporary discharge for a duration required to restore normal operation of the SPS to cater for breakdown and maintenance of duty pump. The proposed SHR SPS is located in urban area, maintenance team can arrive within short time to investigate the problem and resume the SPS operation as soon as possible. Detail arrangement will be formulated in later design stage; Supervisory Control and Data Acquisition (SCADA) system and closed-circuit television (CCTV) will be provided for active monitoring in order to transmit signals showing irregularity or any operational problem of the SPS to the nearby STW or other manned SPS such that immediate actions can be taken in case of emergency; and A hand-cleaned bar screen to cover the lower half of the opening of any overflow bypass to prevent the discharge of floating solids to the receiving water bodies. The clear spacing of the bar screen should normally be 25 mm. 	To prevent the impact to Tuen Mun River due to the emergency discharge	DSD	Proposed Sewage Pumping Station at SHR Site	Operational stage	<ul style="list-style-type: none"> DSD's Sewerage Manual Water Pollution Control Ordinance EIAO-TM

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S6.8.15	OW2	Regular maintenance and plant inspection will be conducted throughout the operation of the SPS to prevent equipment failure. Regular inspection, typically not less than once per week, should cover the essential equipment in the pumping station. With the above measures implemented, abnormality of the equipment should be identified for remedial action to be taken before failure.	To prevent plant failure leading to emergency discharge	DSD	Proposed Sewage Pumping Station at SHR Site	Operational stage	<ul style="list-style-type: none"> • DSD's Sewerage Manual • Water Pollution Control Ordinance • EIAO-TM
S6.8.16	OW3	<p><u>Contingency Plan for Emergency Discharge</u></p> <p>The following items should include in the contingency plan:</p> <ul style="list-style-type: none"> • Locations of waterbodies or WSRs in the vicinity of the emergency discharge; • A list of relevant government departments (including name, address, email address phone and fax number of the key persons) to be informed and their respective follow up action in the event of emergency discharge, including key contact person and telephone numbers; • A framework of emergency response and reporting procedures required in the event of emergency discharges; and • Procedures listing the most effective means in rectifying the breakdown of the SPS in order to minimise the discharge duration. 	To prevent the impact to Tuen Mun River due to the emergency discharge	DSD	Proposed Sewage Pumping Station at SHR Site	Operational stage	<ul style="list-style-type: none"> • Water Pollution Control Ordinance • EIAO-TM

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S6.8.17 – S6.8.25	OW4	<p><u>Change in Drainage System and Runoff from Road Surface and PTIs</u></p> <ul style="list-style-type: none"> • A surface water drainage system should be installed to collect and convey the road surface runoff to the existing/ planned drainage system downstream. The road and PTI drainage should be equipped with properly designed silt trap. • Best Management Practices (BMPs) should be implemented to control erosion and run-off quantity. • Exposed surface should be avoided within the roads to minimise soil erosion. Thus, all roads shall be hard paved. • The drainage system should be designed to avoid flooding with devices and facilities to control sedimentation, runoff quality, prevent ‘first flush’ pollution, and eliminate pollutant discharge into poor flushing water downstream. • 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 reduce impact on drainage system due to road/surface runoff	DSD	Proposed drainage system and future site operators	Operation stage	•N/A

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S6.8.17 – S6.8.25	OW 4 (CONT.)	<ul style="list-style-type: none"> • Road gullies with standard design, silt traps properly designed and spaced, and oil interceptors should be deployed to remove particles, debris, refuse, fallen leaves, and grease present in stormwater run-off, where appropriate. • Good management measures such as regular cleaning and sweeping of road surface/ open areas should be implemented. The road surface/ open area cleansing should also be carried out prior to rainstorm event. • Manholes, as well as stormwater gullies, ditches provided at the Site should be regularly inspected and cleaned. Additional inspection and cleansing should be carried out before forthcoming heavy rainfall. • By adopting flexible but appropriate management measures for different site conditions, there would be no unacceptable water quality impact of non-point pollution sources upon the receiving water bodies. 					

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S6.8.26	OW5	Runoff from Landscape Area Agrochemicals to be adopted are regulated under the Pesticides Ordinance (Cap.133). Only registered agrochemicals under the Pesticides Ordinance shall be used. Bio-pesticides and pesticides with shorter half-life (ie non-persistence in nature) is recommended. The amount of agrochemicals to be applied and application frequency should follow the manufacturer's instructions. In addition, the application of agrochemicals before heavy rainstorm should be avoided.	To reduce impact from agrochemicals	Future Contractor/ Operator	Planned Development Area	Operation Phase	<ul style="list-style-type: none"> Water Pollution Control Ordinance
S6.8.27	OW6	<u>Wastewater from Municipal Facilities and Commercial Activities</u> For individual municipal facilities and commercial tenants, effluent discharge license under the WPCO will be required individually for wastewater discharge. The discharge standards specified under the TM-DSS should be observed. Depending on the effluent characteristics, pre-treatment may be required to comply with the standards for discharging wastewater into public sewerage.	To reduce impact from commercial tenants	Future Contractor/ Operator	Planned Development Area	Operation Phase	<ul style="list-style-type: none"> Water Pollution Control Ordinance

Table A14.4 Implementation Schedule of Sewage and Sewerage Mitigation Measures

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
Sewage and Sewerage Treatment Implications							
S7.12.1 - S7.12.2	S1	<p><u>Emergency Discharge of Proposed SPS</u></p> <p>The following mitigation measures will be implemented:</p> <ul style="list-style-type: none"> • Twin rising mains in case of one of the duty mains be taken out of operation, the remaining one would still be able to deliver flow; • Standby pumps in case of unexpected breakdown of pumping facilities such that the standby pumps could take over and function to replace the broken pumps; • Dual electricity supply or backup power supply facilities such as diesel generator in case of power failure to sustain the function of pumping facilities; and • An emergency storage tank to cater for breakdown and maintenance of duty pump. 	To prevent the impact to Tuen Mun River due to the emergency discharge	DSD	Proposed Sewage Pumping Station at SHR Site	Operational stage	<ul style="list-style-type: none"> • DSD's Sewerage Manual • Water Pollution Control Ordinance • EIAO-TM

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S7.12.1 - S7.12.2	S1 (CONT.)	<ul style="list-style-type: none"> Supervisory Control and Data Acquisition (SCADA) system and closed-circuit television (CCTV) will be provided for active monitoring in order to transmit signals showing irregularity or any operational problem of the SPS to the nearby STW or other manned SPS such that immediate actions can be taken in case of emergency; and A hand-cleaned bar screen to cover the lower half of the opening of any overflow bypass to prevent the discharge of floating solids to the receiving water bodies. The clear spacing of the bar screen should normally be 25 mm. Regular inspection, at least once per week, should cover the essential equipment in the sewage pumping station 	To prevent the impact to Tuen Mun River due to the emergency discharge	DSD	Proposed Sewage Pumping Station at SHR Site	Operational stage	<ul style="list-style-type: none"> DSD's Sewerage Manual Water Pollution Control Ordinance EIAO-TM

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S7.12.3	S2	<p><u>Contingency Plan for Emergency Discharge</u></p> <p>The following items should include in the contingency plan:</p> <ul style="list-style-type: none"> • Locations of waterbodies or WSRs in the vicinity of the emergency discharge; • A list of relevant government departments (including name, address, email address phone and fax number of the key persons) to be informed and their respective follow up action in the event of emergency discharge, including key contact person and telephone numbers; • A framework of emergency response and reporting procedures required in the event of emergency discharges; and • Procedures listing the most effective means in rectifying the breakdown of the SPS in order to minimise the discharge duration. 	To prevent the impact to Tuen Mun River due to the emergency discharge	DSD	Proposed Sewage Pumping Station at SHR Site	Operational stage	<ul style="list-style-type: none"> • Water Pollution Control Ordinance • EIAO-TM

Table A14.5 Implementation Schedule of Ecological Mitigation Measures

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
Ecology (Pre-construction Phase)							
S8.10.3-8.10.4	Eco1	Conducting an update vegetation survey for <i>Aquilaria sinensis</i> ; and preparation of the Vegetation Survey Report for AFCD's review and agreement	To confirm the updated status of affected floral species of conservation interest	CEDD/Detailed Design Consultant	Works area for proposed Road L7	At detailed design stage, prior to commencement of site clearance works	•EIAO-TM
S8.10.7	Eco2	Conducting a confirmation survey for crab species <i>Cryptopotamon anacoluthon</i> and <i>Somanniathelphusa zanklon</i>	To confirm the updated status of affected crab species of conservation interest	CEDD/Detailed Design Consultant	Affected locality identified in EIA	At detailed design phase, prior to commencement of site clearance works	•EIAO-TM
Ecology (Construction Phase)							

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S8.10.2	Eco3	<p><u>Ecological enhancement by provision of woodland planting</u></p> <p>The enhancement planting shall be monitored throughout the establishment period (i.e. period after the completion of the planting works of the proposed compensatory woodland. According to the preliminary woodland enhancement planting plan in Appendix 8.6, a 3-years monitoring is proposed and the parameters to be monitored shall include health condition (good/fair/poor/dead) and survival (%) of the planted trees. The frequency of the monitoring is proposed to be bi-monthly during the first year while quarterly for the following years.</p>	To improve the ecological performance	Contractor	Designated enhancement planting area	Commence as early as possible once the designated enhancement planting area is available	<ul style="list-style-type: none"> •EIAO-TM

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S8.10.3-8.10.4	Eco4	<p><u>Transplanting affected individuals of <i>Aquilaria sinensis</i></u></p> <p>An update vegetation survey on the species prior to the commencement of the site clearance works is recommended. The update vegetation survey shall include the following:</p> <ul style="list-style-type: none"> • Confirm and update the presence, condition and locations of <i>Aquilaria sinensis</i>; • Identify suitable receptor site(s) for the plants (according to the current proposal stated in Section 8.8 of the EIA report, suitable unaffected area in woodland W3 is recommended). Potential receptor site for the transplanting is indicated in Figure 8.4 of the EIA report. Deviation from the proposal shall be fully justified and agreed with AFCD before commencement); and • Propose implementation and monitoring programme for the transplanting. <p>Qualified ecologist(s) shall be in place to conduct the monitoring recommended in the update vegetation survey report. The monitoring would be conducted after the completion of the transplanting. Monthly monitoring for the first year following transplanting and quarterly for the second year is recommended.</p>	To minimise the impact on affected floral species of conservation interest	Contractor	Works area for proposed Road L7	Prior to construction, construction stage	•EIAO-TM

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S8.10.5 and S8.10.6	Eco5	<p><u>Ecological enhancement for the retained section of semi-natural stream R1f</u></p> <p>Proposed ecological enhancement includes reinstatement of the disturbed stream bank and the buffer zone to natural condition by demolition of all artificial structures, following by planting of native plants:</p> <ul style="list-style-type: none"> To demolish artificial bank structures and reinstate natural state of stream bank for reintroduction of riparian vegetation (the demolition works are only undertaken at sections with modified bank structure. Diagram D1 in Appendix 8.5 indicates the extent of the recommended works); To demolish artificial structures e.g. temporary storage structures/buildings, and paved grounds inside the buffer zone to allow planting; To plant the recommended native plant species along the reinstated bank and 6m buffer zone. <p>Besides that, a 12-months establishment period shall be provided after the planting works. Monitoring of the plants once a month is recommended. Species planted along the bank and buffer zone shall be checked by a qualified ecologist to ensure correct species are used in accordance with the recommendation in the EIA.</p>	To enhance the ecological value of the retained stream section for the crab species of conservation interest	Contractor	Along proposed retained section of 208m semi-natural stream R1f and its 6m buffer zone along the southern bank	Construction stage	•EIAO-TM

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S8.10.5 and S8.10.6	Eco5 (CONT.)	<p>Apart from the species identity, monitoring parameters shall include the overall survival rate and general health condition of each species.</p> <p>The monthly monitoring shall be conducted by a qualified ecologist and provide advice whether necessary actions, such as replacement of dead plants, removal of invasive species, etc. are required to ensure the performance of the planting works. The monitoring findings shall be reported properly in the monthly EM&A report.</p>	To enhance the ecological value of the retained stream section for the crab species of conservation interest	Contractor	Along proposed retained section of 208m semi-natural stream R1f and its 6m buffer zone along the southern bank	Construction stage	EIAO-TM
S8.10.7 and S8.10.10	Eco6	<p><u>Preservation of Crab Species of Conservation Interest (<i>Cryptopotamon anacoluthon</i> and <i>Somanniathelphusa zanklon</i>) by Translocation</u></p> <ul style="list-style-type: none"> A confirmation survey is recommended to be undertaken prior to erection of the temporary partition for the ecological enhancement works for the retained section of stream R1f, The translocation practice shall be conducted by the qualified ecologist at the same day of the completion of the erection of the temporary partitions along the bank to be reinstated. 	To minimise the impact on affected crab species of conservation interest	Contractor	Affected localities at R1f	Before commencement of construction works, construction works	•EIAO-TM

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S8.10.7 and S8.10.10	Eco6 (CONT.)	<ul style="list-style-type: none"> The qualified ecologist shall inspect whether individuals of the two crab species are trapped in the enhancement works area defined by the temporary partitions, and carry out translocation immediately according the agreed methodology with AFCD. Collection permit for target species would be applied from AFCD prior to commencement of translocation. <p>A post-translocation monitoring shall be carried out by qualified ecologist(s) by the end of wet season after translocation to assess the recapture rate. The monitoring is recommended to be conducted once a month. The details shall be provided in the confirmation survey report for AFCD's review and agreement.</p>	To minimise the impact on affected crab species of conservation interest	Contractor	Affected localities at R1f	Before commencement of construction works, construction works	<ul style="list-style-type: none"> EIAO-TM

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S8.10.11	Eco7	<p><u>Protection of Offsite Ecological Resources in Close Vicinity during Construction Period</u></p> <p>Clear demarcation of construction site limit should be made to prevent disturbance to offsite ecological resources including adjacent habitats, vegetation and in particular plant species of conservation interest and natural streams which provide suitable habitats for crab species of conservation interest. As clear site demarcation as well as good site practices will be an integral part of the site operation and associated inspections, no further specific ecological monitoring is recommended.</p>	To prevent disturbance to offsite ecological resources	Contractor	All works areas	Construction stage	EIAO-TM

Table A14.6 Implementation Schedule of Landscape and Visual Measures

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
Landscape and Visual (Construction Phase)							
S10.8.9, Tables 10.18-10.21	LV1	<p><u>MM1- Tree Protection and Preservation</u></p> <p>A full tree survey of all trees affected will be undertaken and submitted to the appropriate government department. This will include recommendations for all trees, together with a compensatory planting plan.</p> <p>A tree of large size (#9), which is located close to north edge of SHR Site Extension, should be adequately protected by robust fencing at the commencement of the site formation and/or construction works, to ensure it is free from compaction, excavation, construction materials and debris throughout the construction stage. Tree Protection Zone (TPZ) should be provided to #9. Some trees in urban area are overlapped with proposed infrastructure works. TPZ would be provided to trees adjacent to infrastructure works, and with sufficient protection offered to roadside trees, approximately 100 nos. of trees could be retained within project site boundary.</p>	Protect and Preserve Trees	Relevant government departments/ Detailed Design Consultant/ Contractor	On Site	Detailed design, construction stages	<ul style="list-style-type: none"> •ETWB Technical Circular Works (TCW) No. 29/2004 and 3/2006 •DEVB TC(W) No. 4/2020 and DEVB TC(W) No. 5/2020.

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S10.8.10 , Tables 10.18- 10.21 Figure 10.24a	LV2	<u>MM2 - Tree Transplanting</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. Among the three affected individuals of <i>Aquilaria sinensis</i> , two (2 nos.) of them would be transplanted to recipient site, which is indicated in Figure 10.24a of the EIA report.	Transplant Trees where suitable for transplantation	Relevant government departments/ Detailed Design Consultant/ Contractor	Onsite where possible. Otherwise consider offsite locations The recipient site of the two affected <i>Aquilaria sinensis</i> .	Prior to Construction, Construction Phase	<ul style="list-style-type: none"> ETWB TCW 3/2006 and 2/2004 HyD HQ/GN/13 Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit DEVB TC(W) No. 4/2020 and DEVB TC(W) No. 5/2020.
S10.8, 11 Tables 10.18- 10.21	LV3	<u>MM3 - Compensatory Planting and New Tree Planting</u> Not less than 1,300 nos. of new trees are proposed within proposed development area boundary. Among 1,300 nos. of trees, 800 nos. would be provided within the housing sites.	Compensate for felled trees to the satisfaction of relevant Government departments	Contractor for construction phase (establishment period) Relevant government departments for maintenance in operation phase	Throughout development area	Prior to commencement of work	<ul style="list-style-type: none"> Tree Removal Application process under ETWBTC 4/2020.

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S10.8,11 Tables 10.18- 10.21	LV3 (CONT.)	As part of any Tree Preservation and Removal Plan (TPRP) (to be carried out at Detailed Design stage), and in accordance with DEVB TC(W) No. 4/2020 Appendix A, a compensatory planting plan will be submitted for approval by the relevant government authorities, taking into account findings of any ecological impact assessment for the Project.	Compensate for felled trees to the satisfaction of relevant Government departments	Contractor for construction phase (establishment period) Relevant government departments for maintenance in operation phase	Throughout development area	Prior to commencement of work	•Tree Removal Application process under ETWBTC 4/2020.
S10.8,13 Tables 10.18- 10.21	LV4	<u>MM5 - Screen Planting</u> Screen planting are proposed along road alignment and corridor, as well as road sections to improve the compatibility with surrounding context for better pedestrian experience and reducing the visual bulkiness of road structure to nearby village area.	Provide adequate screening with trees and shrubs to improve visual amenity	Contractor for construction phase (establishment period) Relevant government departments for maintenance in operation phase	Along roadside amenity	Construction Phase	•N/A

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S10.8.14 , Tables 10.18- 10.21	LV5	<u>MM6 - Landscape Treatment on Man Made Slope / Retaining Structure</u> Hydroseeding shall be provided on modified slopes when grading works are completed. Woodland tree seedling will be incorporated where site conditions allow with suitable slope gradient.	To prevent erosion and subsequent loss of landscape resources and character. To ensure man-made slopes are as visually amenable as possible.	Relevant government departments/ Detailed Design Consultant/ Contractor	Modified slopes onsite (i.e. eastern edge, slope near service reservoirs of HPR site)	Prior to Construction, Construction Phase & Maintenance in Operation Phase	<ul style="list-style-type: none"> •GEO publication (1999) – Use of Vegetation as Surface Protection on Slope; •GEO Publication No. 1/2011- Technical Guidelines on Landscape Treatment for Slopes
S10.8.14 , Tables 10.18- 10.21	LV5 (CONT.)	For the taller retaining structure (8 – 15.3m) of Road L7, climbers are proposed to retaining structure associated with modified slope. Minimum 300mm soil depth and width would be proposed to the planters along the cycling track. For the shorter retaining structure (3.35 – 11.1m), shrub planting with minimum 600m soil depth and width would be provided to soften the hard edge.	To prevent erosion and subsequent loss of landscape resources and character. To ensure man-made slopes are as visually amenable as possible.	Relevant government departments/ Detailed Design Consultant/ Contractor	Modified slopes onsite (i.e. eastern edge, slope near service reservoirs of HPR site)	Prior to Construction, Construction Phase & Maintenance in Operation Phase	<ul style="list-style-type: none"> •GEO publication (1999) – Use of Vegetation as Surface Protection on Slope; •GEO Publication No. 1/2011- Technical Guidelines on Landscape Treatment for Slopes

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S10.8.16 , Tables 10.18- 10.21	LV6	<u>MM8 - Minimize Light Pollution and Glare</u> There is the potential for light pollution and glare during the construction period if night time working is required. To mitigate this, night-time lighting should be minimised and directional, and cowled lights used. It should be countered by the use of non-reflective materials on the building facades.	Minimise impact of nighttime lighting and glare	Contractor	All construction areas and temporary works areas	Construction stage	HyD's Public Lighting Design Manual (September 2006 version)
S10.8.17 , Tables 10.18- 10.21	LV7	<u>MM9 - Hoarding of Construction Works</u> The visual impacts on elevated VSRs in high-rise buildings, from the construction works are not able to be screened, however, at ground level the works can be screened by the use of a hoarding between the works and the lower level VSRs.	Screen undesirable views of the construction sites	Contractor	All construction areas and temporary work areas	Construction stage	Hoardings, Covered Walkways and Gantries (including Temporary Access for Construction Traffic) Building (Planning) Regulations Part IX
S10.8.18 , Tables 10.18- 10.21	LV8	<u>MM10 - Enhancement of Semi-natural Stream</u> Enhancement is recommended for the retained onsite section which includes reinstatement of the disturbed stream bank by demolition of adjacent artificial structures. Riparian vegetation will be reintroduced to the stream, and paved grounds inside the buffer zone to allow planting, recommended native and self-sustaining plant species will be planted along the reinstated bank and 6m buffer zone..	Avoid direct impacts to watercourses	Contractor	All watercourse s of higher ecological value inside the development area	Detailed design, construction stages	<ul style="list-style-type: none"> •ETWB TCW 5/2005; •ProPECC PN1/94

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
Landscape and Visual (Operation Phase)							
S10.8.9, Tables 10.18-10.21	LV9	<u>MM1 - Tree Protection and Preservation</u> A full tree survey of all trees affected will be undertaken and submitted to the appropriate government department. This will include recommendations for all trees, together with a compensatory planting plan.	Protect and Preserve Trees	Relevant government departments/ Detailed Design Consultant/ Contractor	On Site	Operation phase	<ul style="list-style-type: none"> •ETWB Technical Circular Works (TCW) No. 29/2004 and 3/2006 •DEVB TC(W) No. 4/2020 and DEVB TC(W) No. 5/2020.
S10.8.9, Tables 10.18-10.21	LV9 (CONT.)	A tree of large size(#9), which is located close to north edge of SHR Site Extension, should be adequately protected by robust fencing at the commencement of the site formation and/or construction works, to ensure it is free from compaction, excavation, construction materials and debris throughout the construction stage. Tree Protection Zone (TPZ) should be provided to #9.	Protect and Preserve Trees	Relevant government departments/ Detailed Design Consultant/ Contractor	On Site	Operation phase	<ul style="list-style-type: none"> •ETWB Technical Circular Works (TCW) No. 29/2004 and 3/2006 •DEVB TC(W) No. 4/2020 and DEVB TC(W) No. 5/2020.
S10.8.9, Tables 10.18-10.21	LV9 (CONT.)	Some trees in urban area are overlapped with proposed infrastructure works. TPZ would be provided to trees adjacent to infrastructure works, and with sufficient protection offered to roadside trees, approximately 100 nos. of trees could be retained within project site boundary.	Protect and Preserve Trees	Relevant government departments/ Detailed Design Consultant/ Contractor	On Site	Operation phase	<ul style="list-style-type: none"> •ETWB Technical Circular Works (TCW) No. 29/2004 and 3/2006 •DEVB TC(W) No. 4/2020 and DEVB TC(W) No. 5/2020.

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S10.8.10 , Tables 10.18- 10.21 Figure 10.24a	LV10	<p><u>MM2 - Tree Transplanting</u></p> <p>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.</p> <p>Among the three affected individuals of <i>Aquilaria sinensis</i>, two (2 nos.) of them would be transplanted to recipient site, which is indicated in Figure 10.24a of the EIA report.</p>	Transplant Trees where suitable for transplantation	Relevant government departments/ Detailed Design Consultant/ Contractor	<p>Onsite where possible. Otherwise consider offsite locations</p> <p>The recipient site of the two affected <i>Aquilaria sinensis</i>.</p>	Operation phase	<ul style="list-style-type: none"> ETWB TCW 3/2006 and 2/2004 HyD HQ/GN/13 Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit DEVB TC(W) No. 4/2020 and DEVB TC(W) No. 5/2020.

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S10.8.11 , Tables 10.18- 10.21	LV11	<u>MM3 - Compensatory Planting and New Tree Planting</u> Not less than 1,300 nos. of new trees are proposed within proposed development area boundary. Among 1,300 nos. of trees, 800 nos. would be provided within the housing sites and the rest would be planted along proposed Road L7 and the realigned Hong Po Road. As part of any TPRP (to be carried out at Detailed Design stage), and in accordance with DEVB TC(W) No. 4/2020 Appendix A, a compensatory planting plan will be submitted for approval by the relevant government authorities, taking into account findings of any ecological impact assessment for the Project.	Compensate for felled trees to the satisfaction of relevant Government departments	Contractor for construction phase (establishment period) Relevant government departments for maintenance in operation phase	Throughout development area	Maintenance in operation phase	•Tree Removal Application process under ETWBTC 4/2020.
S10.8.12 , Tables 10.18- 10.21	LV12	<u>MM4 - Roadside Greening</u> Greening would be provided in main roads of proposed development including Road L7 and Hong Po Road. Roadside trees and shrubs planting are provided along trunk road, primary distributors, central dividers and road island. Selection of trees should interface with the Greening Master Plan of Tuen Mun District to provide an integral theme that merge with surrounding environment mutually.	Compensate for impacts on existing landscape, reinstating to equal or better quality	Contractor for construction phase (establishment period) Relevant government departments for maintenance in operation phase	Along roadside amenity	Maintenance in operation phase	•DEVB TC(W) No.2/2012

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S10.8.13 , Tables 10.18- 10.21	LV13	<u>MM5 - Screen Planting</u> Screen planting are proposed. They are proposed along road alignment and corridor, as well as road sections to improve the compatibility with surrounding context for better pedestrian experience and reducing the visual bulkiness of road structure to nearby village area.	Provide adequate screening with trees and shrubs to improve visual amenity	Contractor for construction phase (establishment period) Relevant government departments for maintenance in operation phase	Along roadside amenity	Maintenance in operation phase	•N/A
S10.8.14 , Tables 10.18- 10.21 Figure 10.27	LV14	<u>MM6 - Landscape Treatment on Man Made Slope</u> Hydroseeding shall be provided on modified slopes when grading works are completed. Woodland tree seedling will be incorporated where site conditions allow with suitable slope gradient. For the taller retaining structure (8 – 15.3m) of Road L7, climbers are proposed to retaining structure associated with modified slope. Minimum 300mm soil depth and width would be proposed to the planters along the cycling track. For the shorter retaining structure (3.35 – 11.1m), shrub planting with minimum 600m soil depth and width would be provided to soften the hard edge.	To prevent erosion and subsequent loss of landscape resources and character. To ensure man-made slopes are as visually amenable as possible.	Relevant government departments/ Detailed Design Consultant/ Contractor	Modified slopes onsite (i.e. eastern edge, slope near service reservoirs of HPR site)	Prior to Construction, Construction Phase & Maintenance in operation Phase	<ul style="list-style-type: none"> •GEO publication (1999) – Use of Vegetation as Surface Protection on Slope; •GEO Publication No. 1/2011- Technical Guidelines on Landscape Treatment for Slopes

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S10.8.15 , Tables 10.18- 10.21	LV15	<u>MM7 - Noise Barrier Treatment</u> Design of noise barrier is required to incorporate surface treatments promoting visual amenity, combination of sound absorbent materials with suitable colour selection of structures and panels, and incorporation of climbers to the barriers. Design of noise barrier will be submitted to the Advisory Committee on the Appearance of Bridges and Associated Structures (ACABAS) for consultation.	Minimise potential adverse visual impacts	Contractor	All noise barriers and enclosures	Operation stage	•DEVB Greening, Landscape and Tree Management Section (April 2012) – Greening of Noise Barriers and HyD PN No. BSTR/PN/003-Revision C – Noise Barriers with Transparent Panels
S10.8.16 , Tables 10.18- 10.21	LV16	<u>MM8 - Minimize Light Pollution and Glare</u> Operation period will occur light pollution due to the new buildings reflecting light and due to the night-time highway lighting increasing the ambient light levels. It will be alleviated by the use of directional and cowled highway lighting, following the standards in HyD's Public Lighting Design Manual (September 2006 version).	Minimise impact of lighting and glare	ArchSD, Housing Department, relevant operators	Throughout the development area	Detailed design, construction & operation stages	HyD's Public Lighting Design Manual (September 2006 version)
S10.8.18 , Tables 10.18- 10.21 Figure 10.24a-e	LV17	<u>MM10 - Enhancement of Semi-natural Stream</u> Enhancement is recommended for the retained onsite section which includes reinstatement of the disturbed stream bank by demolition of adjacent artificial structures and set 6m buffer zone for plantation of native plant species.	Avoid direct impacts to watercourses	Contractor	Semi-natural stream LR 5.1f at and adjacent to HPR site	Operation stage	•ETWB TCW 5/2005; •ProPECC PN1/94

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S10.8.19 , Tables 10.18- 10.21 Figure 10.24a-e	LV18	<u>MM11 - Landscape Work and Green Roof for Infrastructure</u> Green roof and corresponding landscape work such as planting of climbers, shrubs and bamboo would be carried out for SHR SPS (DP1), service reservoirs and proposed PTIs area in order to enhance the greenery of proposed structure. On the other hand, due to limited space, potted plants are suggested on footbridge near Ng Lau Road for amenity purposes.	Minimise potential adverse visual impacts	Contractor	Proposed SHR SPS. proposed service reservoirs, proposed PTIs and the proposed footbridge	Operation stage	•DEVB TC (W) No. 1/2018 Soft Landscape Provisions for Highway Structures
S10.8.20 , Tables 10.18- 10.21 Figure 10.24a-e	LV19	<u>MM12 - Woodland Enhancement Planting</u> Due to the permanent loss of 1.2 ha of mixed woodland of LR4 mostly for the construction of proposed Road L7, compensatory woodland of not less than 1.2 ha for ecological enhancement is proposed.	Compensate the woodland loss in a form of ecological enhancement	Contractor	off-site location where located northeast side of the HPR Site	Operation stage	n/a

Table A14.7 Implementation Schedule of Waste Management Mitigation Measures

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
Waste Management (Construction Phase)							
S11.6.3- S11.6.4	WM1	<p><u>Good Site Practices</u></p> <p>The following good site practices are recommended throughout the construction activities:</p> <ul style="list-style-type: none"> • nomination of approved personnel, such as a site manager, to be responsible for good site practices, and making arrangements for collection of all wastes generated at the site and effective disposal to appropriate facilities; • training of site personnel in proper waste management and chemical waste handling procedures; • provision of sufficient waste disposal points and regular collection for disposal; • appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; • regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; 	Minimise waste generation during construction	Contractor	All construction sites	Construction stage	•Waste Disposal Ordinance

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S11.6.3- S11.6.4	WM2	<ul style="list-style-type: none"> • an EMP should be prepared by the Contractor with reference to the requirements in ETWB TCW No. 19/2005 and should be submitted to the Engineer for approval before construction; • a Waste Management Plan (WMP), as part of EMP, should be submitted to the Engineer/ Architect for approval prior to the commencement of construction works; and • a recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be updated on monthly basis and submitted to the Engineer for approval and record. • In order to monitor the disposal of C&D material at landfills and public fill reception facilities, as appropriate, and to control fly tipping, a trip-ticket system should be included as one of the contractual requirements to be implemented by the Contractor. 	Minimise waste generation during construction	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> •Waste Disposal Ordinance

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S11.6.5- S11.6.6	WM3	<p><u>Waste Reduction Measures</u></p> <p>Waste reduction is best achieved at the planning and design phase, as well as by ensuring the implementation of good site practices. The following recommendations are proposed to achieve reduction:</p> <ul style="list-style-type: none"> • segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal; • separate labelled bins shall be provided to segregate aluminium cans from other general refuse generated by the work force, and to encourage collection of by individual collectors; • any unused chemicals or those with remaining functional capacity shall be recycled; • maximising the use of reusable steel formwork to reduce the amount of C&D material; • prior to disposal of non-inert C&D material, it is recommended that wood, steel and other metals shall be separated for re-use and / or recycling to minimise the quantity of waste to be disposed of to landfill; 	Reduce waste generation	Contractor	All Construction sites	Construction stage	<ul style="list-style-type: none"> •Waste Disposal Ordinance

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S11.6.5- S11.6.6	WM4	<ul style="list-style-type: none"> proper storage and site practices to minimise the potential for damage or contamination of construction materials; plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste; and minimize over ordering of concrete, mortars and cement grout by doing careful check before ordering. In addition to the above good site practices and waste reduction measures, specific mitigation measures are recommended for the identified waste to minimise environmental impacts during handling, transportation and disposal of these wastes. 	Reduce waste generation	Contractor	All Construction sites	Construction stage	<ul style="list-style-type: none"> Waste Disposal Ordinance
S11.6.7	WM5	<p><u>General Refuse</u></p> <ul style="list-style-type: none"> General refuse should be stored in enclosed bins or compaction units separate from C&D material. A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material, on a daily basis. An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light material. 	Minimise production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> Waste Disposal Ordinance

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S11.6.8	WM6	<p><u>Construction and Demolition Material</u></p> <p>The C&D material generated from site formation should be sorted on-site into inert C&D material (that is, public fill) and non-inert C&D material. In order to minimise the impact resulting from collection and transportation of C&D materials for off-site disposal, the excavated material comprising fill material should be reused on-site as backfilling material as far as practicable. Non-inert C&D material, such as wood, plastic, steel and other metals should be reused or recycled and, as a last resort, disposed of to landfill.</p>	Minimise waste impacts from excavated and C&D materials	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> Waste Disposal Ordinance
S.11.6.9	WM7	<p>Suitable areas should be designated within the site for temporary stockpiling of C&D material and to facilitate the sorting process. Within stockpile areas, the following measures should be taken to control potential environmental impacts or nuisance:</p> <ul style="list-style-type: none"> covering material during heavy rainfall; locating stockpiles to minimise potential air quality, water quality and visual impacts; and minimizing land intake of stockpile areas as far as possible. 	Minimise waste impacts from excavated and C&D materials	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> Waste Disposal Ordinance

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S.11.6.10	WM8	When disposing C&D material at a public fill reception facility, it shall be noted that the material should only consist of soil, rock, concrete, brick, cement plaster/mortar, inert building debris, aggregates and asphalt. The material should be free from household refuse, plastic, metals, industrial and chemical waste, animal and vegetable matter, and other material considered to be unsuitable by the Filling Supervisor.	Minimise waste impacts from excavated and C&D materials	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> •Waste Disposal Ordinance
S.11.6.11- S.11.6.12	WM9	Project office in the planning and design of project should actively seek to minimise generation of C&D materials and to reuse inert materials generated, including rock, as far as possible. To achieve this, the project office is required to draw up a C&DMMP at the feasibility study or preliminary design stage for this Project. Requirements associated with the preparation, submission and implementation of C&DMMP introduced in Chapter 4 of the Project Administration Handbook for Civil Engineering Works should be implemented. A separate C&DMMP for the proposed SHR SPS is not required.	Minimise waste impacts from excavated and C&D materials	Contractor	All construction sites	Preliminary design stage	<ul style="list-style-type: none"> •Waste Disposal Ordinance

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S.11.6.13- S11.6.14	WM10	<p><u>Chemical Wastes</u></p> <ul style="list-style-type: none"> For those processes which would generate 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 wastes are produced at the construction site, the Contractor should register with EPD as a Chemical Waste Producer and to follow the guidelines stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Good quality containers compatible with the chemical wastes should be used. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosives, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. 	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> Waste Disposal (Chemical Waste) (General) Regulation Code of Practice on the Packaging, Labelling and Storage of Chemical Waste

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S.11.6.13- S11.6.14	WM10 (CONT.)	<ul style="list-style-type: none"> The Contractor shall use a licensed collector to transport and dispose of the chemical wastes generated at the Chemical Waste Treatment Centre at Tsing Yi, or other licenced facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation. 					
S11.6.15- S11.6.16	WM11	<p><u>Asbestos Containing Materials</u></p> <ul style="list-style-type: none"> Due to the potential presence of ACM during the site clearance stage, asbestos investigation is required. An asbestos specialist shall be employed during the design and construction stage to investigate this issue. Sufficient and reasonable lead time shall be allowed for the preparation, vetting and implementation of asbestos investigation report and asbestos abatement plan in accordance with Air Pollution Control Ordinance, Cap. 311, before commencement of any demolition or site clearance work. 	Precautionary measures to handle and disposal of asbestos	Contractor	All construction sites	Construction Stage	<ul style="list-style-type: none"> Handling of Asbestos Containing Materials in Buildings (ProPECC PN 2/97)

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S11.6.17	WM12	<p>Some key precautionary measures related to the handling and disposal of asbestos based on Handling of Asbestos Containing Materials in Buildings (ProPECC PN 2/97) are listed as below:</p> <ul style="list-style-type: none"> • 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; 	Precautionary measures to handle and disposal of asbestos	Contractor	All construction sites	Construction Stage	<ul style="list-style-type: none"> • Handling of Asbestos Containing Materials in Buildings (ProPECC PN 2/97)

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S11.6.17	WM12 (CONT.)	<ul style="list-style-type: none"> Cleaning of work area by wet wiping and vacuuming with HEPA filtered vacuum cleaner; Coating on any surfaces previously in contact with or contained by asbestos with a sealant; Proper bagging, safe storage and disposal of asbestos and asbestos contaminated waste; Pre-treatment of all effluent from the work area before discharged; and Air monitoring strategy to check the leakage and clearance of the work area during and after the asbestos work. 	Precautionary measures to handle and disposal of asbestos	Contractor	All construction sites	Construction Stage	<ul style="list-style-type: none"> Handling of Asbestos Containing Materials in Buildings (ProPECC PN 2/97)
Waste Management (Operation Phase)							
S11.7.2 - S11.7.3	WM13	<p><u>General Refuse</u></p> <p>Recycling bins shall be placed in prominent locations to maximise the capture of recyclables from general refuse.</p> <ul style="list-style-type: none"> General refuse from residential, commercial buildings and institutional uses should be collected with lidded bins and delivered to central collection point(s) and stored in enclosed containers to prevent windblown, vermin, water pollution and visual impact. At least daily collection should be arranged by the waste collector. 	Remove general refuse generated from the proposed development	FEHD/Relevant Operators	All construction sites	Operation stage	<ul style="list-style-type: none"> Waste Disposal Ordinance

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S11.7.4 - S11.7.7	WM14	<p><u>Chemical Waste</u></p> <ul style="list-style-type: none"> All chemical wastes (eg. paints, lubricants, used batteries, acid, alkalis and solvent) should be collected and handled carefully. Localized chemical waste storage areas should be located close to the source of waste generation for temporary storage. Drum-type containers with proper labelling should be used to collect chemical wastes for storage at the designated areas. The producers should register with EPD as chemical waste producers. Chemical wastes should be stored in appropriate containers and collected by a licensed chemical waste collector. All chemical wastes generated from laboratories should be dealt with according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes under the provisions of the Waste Disposal (Chemical Waste) (General) Regulation. 	Ensure proper storage, handling and disposal of chemical waste	Contractors/ Relevant Operators	All construction sites	Operation stage	<ul style="list-style-type: none"> Waste Disposal (Chemical Waste) (General) Regulation Code of Practice on the Packaging, Labelling and Storage of Chemical Waste

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S11.7.4 - S11.7.7	WM14 (CONT.)	<ul style="list-style-type: none"> A licensed collector should be employed for the chemical waste collection and the chemical wastes should be disposed at licensed chemical waste treatment facilities, such as Chemical Waste Treatment Centre (CWTC) in Tsing Yi. 					<ul style="list-style-type: none">
S11.7.8	WM15	<p><u>Screenings</u></p> <ul style="list-style-type: none"> The screenings collected by the screens of the proposed sewage pumping station will be stored in enclosed containers and transported to WENT Landfill for disposal at regular interval. The waste packing should be conducted inside the pumping station building. 	Ensure proper storage, handling and disposal of screenings.	DSD	Proposed Sewage Pumping Station at SHR Site	Operation stage	<ul style="list-style-type: none"> Waste Disposal Ordinance

Table A14.8 Implementation Schedule of Land Contamination Mitigation Measures

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
Land Contamination							
S12.6	LC1	<ul style="list-style-type: none"> Undertaking environmental Site Inspection (SI) for all potentially contaminated sites as listed in the contamination Assessment Plan (CAP). Re-appraisal would be required for the unidentifiable areas and industrial sites currently with no potential for land contamination and non-industrial uses within the Project Site as the development of the assessment area would only commence a number of years later, which may allow changes in the land usage of these sites and may give rise to potential land contamination issues. The Project Proponent's appointed consultant would prepare a supplementary CAP presenting the findings of the reappraisal and strategy of the recommended SI, if required, and submit to EPD for review and approval. 	<ul style="list-style-type: none"> Verify the land contamination potential before the commencement of construction To assess the latest site situation and identify any potential additional hot spots and contaminated sites. 	Project Proponent / Detailed Design Consultant	<p>All potentially contaminated sites as listed in the CAP</p> <p>All the surveyed sites as listed in the CAP, other remaining areas of the PDAs.</p>	Prior to the commencement of any development works at the contaminated sites.	<ul style="list-style-type: none"> Annex 19 of the EIAO-TM, Guidelines for Assessment of Impact on Sites of Cultural Heritage and Other Impacts (Section 3: Potential Contaminated Land Issues); Guidance Manual for Use of Risk Based Remediation Goals (RBRGs) for Contaminated

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
S12.6	LC2	<ul style="list-style-type: none"> After approval of the supplementary CAP and upon completion of the SI works, the Project Proponent should prepare and submit a contamination Assessment Report (CAR) for all potentially contaminated sites listed in the CAP to EPD for agreement. 	Present the findings of SI and evaluate the level and extent of potential contamination.	Project Proponent / Detailed Design Consultant	All the surveyed sites as listed in the CAP, other remaining areas of the PDAs.	Prior to the commencement of any development works at the contaminated sites.	Land Management; <ul style="list-style-type: none"> Guidance Notes for Contaminated Land Assessment and Remediation; and
S12.6	LC3	<ul style="list-style-type: none"> Preparation and submission of Remediation Action Plan (RAP) to EPD for agreement if land contamination is identified. 	Recommend appropriate mitigation measures for the contaminated soil and groundwater identified in the assessment if remediation is required.	Project Proponent / Detailed Design Consultant	All the surveyed sites as listed in the CAP, other remaining areas of the PDAs.	Prior to the commencement of any development works at the contaminated sites.	<ul style="list-style-type: none"> Practice Guide for Investigation and Remediation of Contaminated Land
S12.6	LC4	<ul style="list-style-type: none"> Preparation and submission of Remediation Report (RR) to EPD for agreement. 	Demonstrate that the decontamination work is adequate and is carried out in accordance with the endorsed CAR and RAP.	Project Proponent / Detailed Design Consultant	All the surveyed sites as listed in the CAP, other remaining areas of the PDAs.	Prior to the commencement of any development works at the contaminated sites.	<ul style="list-style-type: none"> Recommendations in Health Risk Assessment

Table A14.9 Implementation Schedule of Cultural Heritage Mitigation Measures

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
Cultural Heritage Impact (Construction and Operational Phase)							
S13.6, Table 13.3	CH01	<ul style="list-style-type: none"> Archaeological Field Survey in northern part of Area 2 will be conducted upon land resumption and clearance of structures prior to the commencement of any construction works at the concerned area. The scope and programme of the proposed archaeological work shall be agreed with AMO within the Archaeological Action Plan to be submitted by a qualified archaeologist engaged by project proponent prior to implementation. Subject to the findings of the archaeological work, appropriate mitigation measures would be proposed by the project proponent in prior agreement with AMO. For the areas with no or low archaeological potential, if antiquities or supposed antiquities are discovered during the construction works, works should cease and AMO should be informed immediately and agreement from AMO would be sought on the follow-up actions if required. 	<ul style="list-style-type: none"> To assess further archaeological potential and development impacts on private land for the purpose of protecting and managing cultural heritage. Control EM&A performance. 	CEDD/Contractor	Northern part of Area 2 to be surveyed upon land resumption and prior to construction	Upon land resumption and prior to construction	<ul style="list-style-type: none"> Antiquities and Monuments Ordinance (Cap 53) Guidance notes on assessment of impact on sites of CH in EIA studies. EIAO (Cap 499) EIAO-TM Annexes 10 and 19. HKPSG Guidelines for Cultural Heritage Impact Assessment

Table A14.10 Implementation Schedule of Environmental Monitoring & Audit

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Timing	Implementation Stage	Requirements and/or standards to be achieved
EM&A Project							
S14.2	EMA1	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> EIA Ordinance Guidance Note No.4/2010 EIAO-TM
S14.2	EMA2	<ul style="list-style-type: none"> An Environmental Team needs to be employed as per the EM&A Manual. Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures. 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	<ul style="list-style-type: none"> EIA Ordinance Guidance Note No.4/2010 EIAO-TM