

Project Implementation Schedule

Note: Chapters 1 to 2 of the EIA report present the background information of the Project, identified designated project, concurrent projects, objectives and scope for various environmental aspects, and description on recommended outline development plan. Chapters 3 to 14 of the EIA report present the EIA findings and mitigation measures are described below with cross-reference to the EIA report. Chapters 16 to 18 summarize the environmental outcomes and describe the environmental monitoring requirements and conclusion.

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
<i>DPI – Ecological Area</i>							
<i>Construction Dust Impact</i>							
S3.8	D1-DP1	Mitigation measures in form of regular watering under a good site practice should be adopted. Watering once per hour on exposed worksites and haul road is proposed to achieve dust removal efficiency of 92.1%. While the above watering frequencies are to be followed, the extent of watering may vary depending on actual site conditions but should be sufficient to maintain an equivalent intensity of no less than 1.6 L/m ² to achieve the respective dust removal efficiencies	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> • APCO To control the dust impact to meet HKAQO and TM-EIAO
S3.8	D2-DP1	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> • APCO To control the dust impact to meet HKAQO and TM-EIAO
S3.8	D3-DP1	<p>Following dust suppression measures should also be incorporated by the Contractor to control the dust nuisance throughout the construction phase</p> <ul style="list-style-type: none"> • 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; • A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones; • The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores; • When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly 	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> • APCO To control the dust impact to meet HKAQO and TM-EIAO

Project Implementation Schedule

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		<p>maintained throughout the construction period.</p> <ul style="list-style-type: none"> • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport should be totally enclosed by impervious sheeting; • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides; • Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed; • Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and • Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shortcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies. 					
S3.8	D4-DP1	Implement regular dust monitoring under EM&A programme during the construction phase.	Monitoring of dust impact	Contractor	Selected representative dust monitoring station	Construction phase	<ul style="list-style-type: none"> • TM-EIAO
Noise Impact (Construction Phase)							
S4.8	N-CP1-DP1	<p>Implement the following good site management practices:</p> <ul style="list-style-type: none"> • only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; • machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; 	Control construction airborne noise	Contractor	All construction sites where practicable	Construction phase	<ul style="list-style-type: none"> • Annex 5, TM-EIA

Project Implementation Schedule

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		<ul style="list-style-type: none"> plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; mobile plant should be sited as far away from NSRs as possible and practicable; material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities. 					
S4.8	N-CP2-DP1	Install temporary site hoarding (approx 2.4m high) located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period.	Reduce the construction noise levels at low-level zone of NSRs through partial screening.	Contractor	All construction sites where practicable	Construction phase	• Annex 5, TM-EIA
S4.8	N-CP3-DP1	Install movable noise barriers and full enclosure, screen the noisy plants including air compressor and generator.	Screen the noisy plant items to be used at all construction sites	Contractor	All construction sites where practicable	Construction phase	• Annex 5, TM-EIA
S4.8	N-CP4-DP1	Use of "Quiet" Plant and Working Methods	Reduce the noise levels of plant items	Contractor	All construction sites where practicable	Construction phase	• Annex 5, TM-EIA
S4.8	N-CP5-DP1	Sequencing operation of construction plants where practicable.	Operate sequentially within the same work site to reduce the construction airborne noise	Contractor	All construction sites where practicable	Construction phase	• Annex 5, TM-EIA
S4.8	N-CP6-DP1	Implement a noise monitoring under EM&A programme.	Monitor the construction noise levels at the selected representative locations	Contractor	Selected representative noise monitoring stations	Construction phase	• TM-EIA
Water Quality Impact (Construction Phase)							
S5.7	W1-CP-DP1	<p><u>Construction Runoff and Site Drainage</u></p> <p>In accordance with the Practice Note for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN 1/94), construction phase mitigation measures, where appropriate, should include the following:</p> <ul style="list-style-type: none"> Update and implementation of Stormwater Pollution Control Plan At the start of site establishment, perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works and erosion and sedimentation control facilities implemented. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities. The design of the temporary on-site drainage system will be undertaken by the contractor prior to the commencement of construction. Diversion of natural stormwater should be provided as far as possible. The design of temporary on-site drainage should prevent runoff going through site surface, construction machinery and 	Minimize water quality impact from construction site runoff and general construction activities	Contractor	All construction sites where practicable	Construction phase	<ul style="list-style-type: none"> Water Pollution Control Ordinance ProPECC PN1/94 TM-EIAO TM-DSS

Project Implementation Schedule

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		<p>equipments in order to avoid or minimize polluted runoff. Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m3 capacities, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity shall be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped.</p> <ul style="list-style-type: none"> • The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a silt/sediment trap. The silt/sediment traps should be incorporated in the permanent drainage channels to enhance deposition rates. • The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94. The detailed design of the sand/silt traps should be undertaken by the contractor prior to the commencement of construction. • Construction works should be programmed to minimize surface excavation works during the rainy seasons (April to September). All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means. • All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas. • Measures should be taken to minimise the ingress of site drainage into excavations. If the excavation of trenches in wet periods is necessary, it should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities. • All open stockpiles of construction materials (for example, aggregates, sand and fill material) of should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system. • Manholes (including newly constructed ones) should 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. 					

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		<ul style="list-style-type: none"> • Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarized in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events. • All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities should be provided at every construction site exit where practicable. Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains. • Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain. • Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts. • All fuel tanks and storage areas should be provided with locks and sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby. • Regular environmental audit on the construction site should be carried out in order to prevent any malpractices. Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the meander, wetlands and fish ponds. 					
S5.7	W2-CP-DP1	<p><u>Groundwater from Contaminated Area</u></p> <ul style="list-style-type: none"> • No mitigation measure is required for groundwater treatment in LMC Loop. • Additional investigation is required to identify if contaminated groundwater is found • If the investigation results indicated that the groundwater to be generated from construction works would be contaminated, the contaminated groundwater should be either discharged into recharged wells, or properly treated in compliance with the requirements of Technical Memorandum on Standards for 	Minimize groundwater quality impact from contaminated area	Contractor	Areas where contamination is found.	Construction phase	<ul style="list-style-type: none"> • Water Pollution Control Ordinance • TM-DSS • TM-EIAO

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		<p>Effluents Discharged into Drainage on Sewerage Systems, Inland and Coastal Waters.</p> <ul style="list-style-type: none"> If recharged well method were used, the groundwater quality in the recharged well should not be affected by recharging operation, i.e. the pollution levels of the recharged groundwater should not be higher than that in the recharging wells. If treatment and discharge method were used, the design of wastewater treatment facilities, such as active carbon and petrol interceptor, should be submitted to the EPD and a discharge license should be obtained under the WPCO through the Regional Offices of EPD. 					
S5.7	W3-CP-DP1	<p><u>Sewage from Workforce</u></p> <ul style="list-style-type: none"> Portable chemical toilets and sewage holding tanks should be provided for handling the construction sewage generated by the workforce. A licensed contractor should be employed to provide appropriate and adequate portable toilets to cater 0.15m³/day/employed populations and be responsible for appropriate disposal and maintenance. Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment during the construction phase of the Project. Regular environmental audit on the construction site should be conducted in order to provide an effective control of any malpractices and achieve continual improvement of environmental performance on site. 	Minimize water quality from sewage effluent	Contractor	All construction sites where practicable	Construction phase	<ul style="list-style-type: none"> Water Pollution Control Ordinance TM-DSS
S5.7	W4-CP-DP1	<p><u>Riverbanks Formation</u></p> <ul style="list-style-type: none"> In order to prevent sediment transport during riverbank works, deployment of silt curtain should be implemented, especially when construction works encroach or occur in close distance to water body. It is recommended to carry out all the riverbank works within a cofferdam or diaphragm wall. Water quality of the Shenzhen River and the meander would be monitored to ensure effectiveness of the implemented mitigation measures. 	Minimize water quality impact from riverbank works	Contractor	Riverbank works	Construction Phase	<ul style="list-style-type: none"> Water Pollution Control Ordinance TM-DSS TM-EIAO
S5.7	W1-CP-BR	<p><u>Bio-remediation in Shenzhen River</u></p> <ul style="list-style-type: none"> Water quality monitoring and audit is recommended to ensure that the proposed bio-remediation operation would not result in adverse water quality impact. Details of the water quality monitoring programme are presented in the EM&A Manual. If unacceptable water quality impact in the receiving water is recorded, additional measures such as slowing down, or rescheduling of works should be implemented as necessary. 	Minimize water quality impact from bio-remediation of Shenzhen River	Contractor	Shenzhen River where practicable	Construction phase	<ul style="list-style-type: none"> Water Pollution Control Ordinance TM-EIAO

Project Implementation Schedule

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<i>Water Quality Impact (Operational Phase)</i>							
S5.7	W1-OP-D1	<u>Non-point sources runoff (surface runoff)</u> <ul style="list-style-type: none"> • Runoff will be controlled by management practices and will be intercepted by silt traps before discharged into ecological area. • Regular cleaning should be undertaken twice a week and it is recommended each of the cleaning events should not be separated by more than four days, preferably using either manually or vacuum air sweeper/truck equipped with side broom. The collected pollutants would be tankered away for off-site disposal at landfill sites. • During the EM&A programme, it is recommend to verify the efficiency of silt traps and cleaning frequencies by water quality monitoring during typical rainstorm events. 	Minimize water quality from non point source pollutant	Operator	All area where practicable	Operational phase	<ul style="list-style-type: none"> • Water Pollution Control Ordinance • TM-DSS
<i>Waste Management (Construction Phase)</i>							
S7.6	WM1-DP1	<u>Waste Reduction Measures</u> Waste reduction is best achieved at the planning and design phase, as well as by ensuring the implementation of good site practices. The following recommendations are proposed to achieve reduction: <ul style="list-style-type: none"> • segregate and store different types of waste in different containers, skip or stockpiles to enhance reuse or recycling of materials and their proper disposal; • proper storage and site practices to minimize the potential for damage and contamination of construction materials; • plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste; • sort out demolition debris and excavated materials from demolition works to recover reusable/recyclable portions (i.e. soil, broken concrete, metal etc.); • provide training to workers on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling. 	Reduce waste generation	Contractor	All construction sites where practicable	Construction phase	<ul style="list-style-type: none"> • Waste Disposal Ordinance
S7.6	WM2-DP1	Prepare Waste Management Plan and submit to the Engineer for approval	Minimize waste generation during construction	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> • Waste Disposal Ordinance
S7.6	WM3-DP1	<u>Good Site Practice</u> The following good site practices are recommended throughout the construction activities: <ul style="list-style-type: none"> • nomination of an approved personnel, such as a site manager, to be responsible for the implementation of good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site; 	Minimize waste generation during construction	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> • Waste Disposal Ordinance

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		<ul style="list-style-type: none"> • training of site personnel in site cleanliness, appropriate waste management procedures and concepts of waste reduction, reuse and recycling; • provision of sufficient waste disposal points and regular collection for disposal; • appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; • regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; 					
S7.6	WM4-DP1	<p><u>Storage of Waste</u> The following recommendation should be implemented to minimize the impacts:</p> <ul style="list-style-type: none"> • waste such as soil should be handled and stored well to ensure secure containment; • stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; • different locations should be designated to stockpile each material to enhance reuse; 	Minimize waste impacts from storage	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> • Waste Disposal Ordinance
S7.6	WM5-DP1	<p><u>Collection and Transportation of Waste</u> The following recommendation should be implemented to minimize the impacts:</p> <ul style="list-style-type: none"> • remove waste in timely manner; • employ the trucks with cover or enclosed containers for waste transportation; • obtain relevant waste disposal permits from the appropriate authorities; and • disposal of waste should be done at licensed waste disposal facilities. 	Minimize waste impacts from storage	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> • Waste Disposal Ordinance
S7.6	WM6-DP1	<p><u>Excavated and C&D Material</u> Wherever practicable, C&D materials should be segregated from other wastes to avoid contamination and ensure acceptability at Public Fill Reception Facilities areas or reclamation sites. The following mitigation measures should be implemented in handling the excavated and C&D materials:</p> <ul style="list-style-type: none"> • maintain temporary stockpiles and reuse excavated fill material for backfilling; • carry out on-site sorting; • make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; and • implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified. 	Minimize waste impacts from excavated and C&D materials	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> • Land (Miscellaneous Provisions) Ordinance • Waste Disposal Ordinance • ETWB TCW No. 19/2005

Project Implementation Schedule

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		<p>The recommended C&D materials handling should include:</p> <ul style="list-style-type: none"> On-site Sorting of C&D Materials Reuse of C&D Materials Use of Standard Formwork and Planning of Construction Materials Purchasing Provision of Wheel Wash Facilities <p>Details refer to Section 7.6.1.4 of the EIA report.</p>					
S7.6	WM7-DP1	<p><u>Contaminated Soil</u></p> <p>As a precaution, it is recommended that standard good site practice should be implemented during the construction phase to minimize any potential exposure to contaminated soils or groundwater. The details of mitigation measures to minimize the potential environmental implications arising from the handling of contaminated materials refer to Land Contamination Section.</p>	Remediate contaminated soil	Contractor	All construction sites where applicable	Construction phase	<ul style="list-style-type: none"> Practice Guide for Investigation and Remediation of Contaminated Land
S7.6	WM8-DP1	<p><u>Chemical Waste</u></p> <ul style="list-style-type: none"> If chemical wastes are produced at the construction site, the Contractors should register with EPD as chemical waste producers. Chemical wastes should be stored in appropriate containers and collected by a licensed chemical waste contractor. Chemical wastes (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while the chemical waste that cannot be recycled should be disposed of at either the Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation. 	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal (Chemical Waste) (General) Regulation Code of Practice on the Packaging, Labelling and Storage of Chemical Waste
S7.6	WM9-DP1	<p><u>General Waste</u></p> <ul style="list-style-type: none"> General refuse should be stored in enclosed bins separately from construction and chemical wastes. Recycling bins should also be placed to encourage recycling. Preferably enclosed and covered areas should be provided for general refuse collection and routine cleaning for these areas should also be implemented to keep areas clean. A reputable waste collector should be employed to remove general refuse on a daily basis. 	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal Ordinance
S7.6	WM10-DP1	<p><u>Sewage</u></p> <ul style="list-style-type: none"> The WMP should document the locations and number of portable chemical toilets depending on the number of workers, land availability, site condition and activities. Regularly collection by licensed collectors should be arranged to minimize potential environmental impacts. 	Minimize production of sewage impacts	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal Ordinance
Land Contamination							
S8.7	LC1-DP1	<p><u>Remediation of arsenic-contaminated soil</u></p> <ul style="list-style-type: none"> “Solidification/Stabilization” (S/S) treatment method was 	To remediate arsenic-contaminated soil	Project Proponent /	LMC Loop, contaminated area	Prior to commencement	<ul style="list-style-type: none"> TM-EIAO Practice Guide (PG)

Project Implementation Schedule

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		<p>proposed for the remediation of arsenic-contaminated soil. Toxicity Characteristic Leaching Procedure (TCLP) test should be undertaken after S/S in order to ensure that the contaminant will not leach to the environment. Unconfined Compressive Strength (UCS) test should be conducted, and not less than 1MPa should be met prior to the backfilling or stockpiled for future reuse within the study area. Off-site disposal or reuse of the solidified material is not allowed.</p>		Contractor		of construction works within the contaminated area	<p>for Investigation and Remediation of Contaminated Land</p> <ul style="list-style-type: none"> • Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management • Guidance Notes for Contaminated Land Assessment and Remediation • Practice Guide for Investigation and Remediation of Contaminated Land
S8.7	LC2-DP1	<p><u>Excavation and Transportation</u></p> <ul style="list-style-type: none"> • Excavation profiles must be properly designed and executed with attention to the relevant requirements for environment, health and safety; • In case the soil to be excavated is situated beneath the groundwater table, it may be necessary to lower the groundwater table by installing well points or similar means; • Excavation should be carried out during dry season as far as possible to minimise contaminated runoff from contaminated soils; • Stockpiling site(s) should be lined with impermeable sheeting and bunded. Stockpiles should be properly covered by impermeable sheeting to reduce dust emission during dry season or contaminated run-off during rainy season. Watering should be avoided on stockpiles of contaminated soil to minimise contaminated runoff; • Supply of suitable clean backfill material after excavation, if required; • Vehicles containing any excavated materials should be suitably covered to limit potential dust emissions or contaminated run-off, and truck bodies and tailgates should be sealed to prevent any discharge during transport or during wet season; • Speed control for the trucks carrying contaminated materials should be enforced; and • Vehicle wheel washing facilities at the site's exit points should be established and used. 	To minimise the potential environmental impacts arising from the handling of contaminated materials	Contractor	Contaminated area	Prior to commencement of construction works within the contaminated area	<ul style="list-style-type: none"> • TM-EIAO • Practice Guide (PG) for Investigation and Remediation of Contaminated Land • Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management • Guidance Notes for Contaminated Land Assessment and Remediation • Practice Guide for Investigation and Remediation of Contaminated Land
S8.7	LC3-DP1	<p><u>Solidification/Stabilization</u></p> <ul style="list-style-type: none"> • The loading, unloading, handling, transfer or storage of cement 	To minimise the potential environmental impacts arising	Contractor	Contaminated area	The course of remediation	<ul style="list-style-type: none"> • TM-EIAO • Practice Guide (PG)

Project Implementation Schedule

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		<p>should be carried out in an enclosed system;</p> <ul style="list-style-type: none"> Mixing process and other associated material handling activities should be properly scheduled to minimise potential noise impact and dust emission; The mixing facilities should be sited as far apart as practicable from the nearby noise sensitive receivers; Mixing of contaminated soil and cement / water / other additive(s) should be undertaken at a solidification plant to minimise the potential for leaching; Runoff from the solidification / stabilization area should be prevented by constructing a concrete bund along the perimeter of the solidification / stabilization area; The run-off contained in the concrete bund area along the perimeter of the paved solidification / stabilization area, if any, will be collected, stored and used for the mixing process of cement / contaminated soil; If stockpile of treated soil is required, the stockpiling site(s) should be lined with impermeable sheeting and banded. Stockpiles should be properly covered by impermeable sheeting to reduce dust emission during dry season or site run-off during rainy season; and If necessary, there should be clear and separated areas for stockpiling of untreated and treated materials. 	from the handling of contaminated materials				<p>for Investigation and Remediation of Contaminated Land</p> <ul style="list-style-type: none"> Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management Guidance Notes for Contaminated Land Assessment and Remediation Practice Guide for Investigation and Remediation of Contaminated Land
S8.7	LC4-DP1	<p><u>Safety Measures</u></p> <ul style="list-style-type: none"> Set up a list of safety measures for site workers; Provide written information and training on safety for site workers; Keep a log-book and plan showing the contaminated zones and clean zones; Maintain a hygienic working environment; Avoid dust generation; Provide face and respiratory protection gear to site workers if necessary; Provide personal protective clothing (e.g. chemical resistant jackboot, liquid tight gloves) to site workers, if necessary; Provide first aid training and materials to site worker; Bulk earth moving equipment should be utilized as much as possible to minimize workers' handling and contact of the contaminated materials; and Eating, drinking and smoking should not be allowed in contaminated areas to avoid inadvertent ingestion of contaminant. 	To minimize the potential adverse effects on health and safety of construction workers	Contractor	Contaminated area	The course of remediation	<ul style="list-style-type: none"> Occupation Safety and Health Ordinance (OSHO) (Charter 509)
S8.8	LC5-DP1	Re-appraisal on the entire contamination assessment area for associated infrastructure in the adjacent areas in Hong Kong outside LMC Loop.	Ensure any potential contamination activities from land use changes after the approval of this land	Project Proponent / Detailed design consultant	Entire contamination assessment area for associated infrastructure in the	After land resumption	<ul style="list-style-type: none"> TM-EIAO Practice Guide (PG) for Investigation and Remediation of

Project Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
			contamination assessment study		adjacent areas in Hong Kong outside LMC Loop		Contaminated Land <ul style="list-style-type: none"> • Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management • Guidance Notes for Contaminated Land Assessment and Remediation • Practice Guide for Investigation and Remediation of Contaminated Land
Cultural Heritage (Operational Phase)							
S10.6	CH1-DP1	<ul style="list-style-type: none"> • Tree belts could be planted to screen visual impacts to LMC Tsuen, Pun Uk Tsuen, Chau Tau Tsuen, LMC Police Station, Mi Tak Study Hall 	To mitigate the visual impact from the project	Project Proponent / Detailed design consultant / Contractor	LMC Loop	Prior to operational of the Project	<ul style="list-style-type: none"> • TM-EIAO
Landscape and Visual Impact (Construction Phase)							
S11.5 .4 Table 11.5.9	L-CP1-DP1	<p><u>Preservation and Protection of Existing Trees (Good Site Practice)</u></p> <ul style="list-style-type: none"> • The proposed works should avoid disturbance to the existing trees within and close to the works areas. The tree preservation proposals shall be coordinated with the layout and design of the engineering and architectural works at detailed design phase for further retention of individual trees. • It is recommended that a full detailed tree survey and felling application will be undertaken and submitted for approval by the relevant government departments in accordance with ETWB TCW No. 3/2006, 'Tree Preservation'. This will be conducted during the detailed design phase of the project and submitted to DLO for approval. The methodology and scope including the programme for the tree survey and felling application are also subject to the approval of the relevant authorities. • Trees which are not in conflict with the proposals would be retained and shall be protected by means of fencing during construction phase to prevent damage to tree canopies and root zones from vehicles and storage of materials. • Specifications for the protection of existing trees will be 	Avoid disturbance and protection of the existing trees	Detailed design consultant / Contractor	Within project site	Detailed design and construction phase	<ul style="list-style-type: none"> • EIAO – TM • ETWB TCW 2/2004 • ETWB TCW 3/2006

Project Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
		provided during the preparation of the detailed tree survey by Detailed Design consultants at detailed design and construction phase.					
S11.5 .4 Table 11.5.9	L-CP2-DP1	<p><u>Works Area and Temporary Works Areas (Good Site Practice)</u></p> <ul style="list-style-type: none"> The construction sequence and construction programme shall be optimized in order to minimize the duration of impact. Construction site controls shall be enforced including the storage of materials, the location and appearance of site accommodation and site storage; and the careful design of site lighting to prevent light spillage. The temporary works areas shall be restored to its original condition or enhanced through the introduction of new amenity areas or planting areas following the completion of the construction phase. 	Minimize landscape impacts	Contractor	The whole project area where applicable	Construction phase	<ul style="list-style-type: none"> TM-EIAO
S11.5 .4 Table 11.5.9	L-CP3-DP1	<p><u>Advance Implementation of Mitigation Planting</u></p> <ul style="list-style-type: none"> Replanting of existing / disturbed vegetation shall be undertaken at the earliest possible stage of the construction phase of the project using predominantly native plant species although ornamental species may be used for roadside planting and amenity areas. 	Minimize landscape impacts	Detailed design consultant/ Contractor	The whole project area where applicable	Detailed design and construction phases	<ul style="list-style-type: none"> TM-EIAO
S11.5 .4 Table 11.5.9	L-CP4-DP1	<p><u>Transplantation of Existing Trees</u></p> <ul style="list-style-type: none"> Some specimens have relatively higher amenity value which are in conflict with the proposals shall be considered for transplantation. For trees affected by the proposed infrastructure works the final receptor sites shall be preferably adjacent to their current locations alongside of the alignment to retain their contribution to the local landscape context. For the LMC Loop the receptor locations will be selected to allow the trees to be moved directly to their final locations in accordance with the detailed landscape proposals. The transplanting proposals are subject to review at the detailed design phase and to agreement-in-principle with the relevant management and maintenance agents and/or government departments. The implementation programme for the proposed works shall reserve sufficient time for the advanced tree transplanting preparation works to enhance the survival of the transplanted trees. The transplanting proposals will be subject to the findings of the detailed tree survey and felling application to be undertaken by the detailed design consultants and following approval by the relevant departments. 	Minimize landscape impacts and retention of landscape resources	Detailed design consultant/ Contractor	The whole project area where applicable	Detailed design and construction phases	<ul style="list-style-type: none"> TM-EIAO ETWB TCW 3/2006 LAO PN 7/2007
S11.5 .4 Table 11.5.9	L-CP5-DP1	<p><u>Coordination with Concurrent Projects</u></p> <ul style="list-style-type: none"> Coordinated implementation programme with concurrent 	Minimize landscape impacts	Contractor	The whole project area where applicable	Construction phase	<ul style="list-style-type: none"> TM-EIAO

Project Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
		projects to minimise impacts and where possible reduce the period of disturbance.					
S11.5.4 Table 11.5.9	L-CP6-DP1	<p><u>Creation of Wetland and Landscape Buffer</u></p> <ul style="list-style-type: none"> The existing reedbed acquired for development areas for the project will be reinstated as part of the Ecological Area. The reinstatement shall be undertaken at the earliest possible stage during the construction phase of the project. Creation of 12.78ha of Ecological Area (EA) containing reed marsh and marsh will be created at the southern portion of the LMC Loop, and a 50m width landscape buffer area will be set up in between the EA and the development area. Wetland creation concepts please refer to Figure 11.9zf and Chapter 12 Ecology Impact Assessment of this EIA. Native tree and shrub mix will be utilised for the creation of landscape buffer along northern edge of EA to support the creation of avifauna habitat from ecologist perspectives as well as enhance the aesthetic and landscape diversity within the LMC Loop Development. Creation of minimum 11.72 Ha. of permanent compensatory off-site wetland areas at Sam Po Shue and Hoo Hok Wai. For the potential locations for off-site wetlands please refer to Figure 11.9zf and 11.9zh, Chapter 2 Project Description and Chapter 12 Ecology Impact Assessment of this EIA. 	Compensation for the loss of landscape resources	Project Proponent / Detailed design consultant/ Contractor / Operator	The whole project area where applicable	Detailed design, construction and operational phases	• TM-EIAO
S11.5.4 Table 11.5.9	L-CP7-DP1	<p><u>Design of Retaining Wall and Slopes</u></p> <ul style="list-style-type: none"> The proposed treatment of Retaining Wall and Slopes will be undertaken in accordance with GEO Publication No. 1/2011 "Technical Guidelines on Landscape Treatment and Bio-engineering for Slopes". These engineering structures will be aesthetically enhanced through the use of soft landscape works including tree and shrub planting to give man-made slopes a more natural appearance blending into the local rural landscape. Whip sized tree planting is preferred on the face of soil cut slopes and at the crest and toe of the slope, and within berm planters. The smaller, younger plant stock will adapt to their new growing conditions more quickly than larger sized stock and establish a naturalistic effect more rapidly. Hydroseeding will be applied on slope has a gradient more than 30 degree. 	Minimize landscape impacts	Detailed design consultants	The whole project area where applicable	Detailed design phase	• TM-EIAO •
S11.6.5 Table 11.6.3	V-CP1-DP1	<p><u>Preservation and Protection of Existing Trees (Good Site Practice)</u></p> <ul style="list-style-type: none"> The proposed works should avoid disturbance to the existing trees within and close to the works areas. The tree preservation proposals shall be coordinated with the layout and design of the engineering and architectural works at detailed design phase for further retention of individual trees. The preservation of existing tree shall provide instant 	Minimise visual impact	Detailed design consultant / Contractor	The whole project area where applicable	Detailed design and construction phases	• TM-EIAO

Project Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
		greening and screening effect for proposed works.					
	V-CP2-DP1	<p><u>Works Area and Temporary Works Areas (Good Site Practice)</u></p> <ul style="list-style-type: none"> The construction sequence and construction programme shall be optimized in order to minimize the duration of impact. Construction site controls shall be enforced including the storage of materials, the location and appearance of site accommodation and site storage; and the careful design of site lighting to prevent light spillage. Hoarding designed with recessive colour shall be set up around the construction site providing screening effect for the construction works. The site office or temporary above-ground structures shall be sited at less visual prominent locations. 	Minimise visual impact	Contractor	The whole project area where applicable	Construction phase	• TM-EIAO
	V-CP3-DP1	<p><u>Advance Implementation of Mitigation Planting</u></p> <ul style="list-style-type: none"> Replanting of existing / disturbed vegetation shall be undertaken at the earliest possible stage of the construction phase of the project using predominantly native plant species although ornamental species may be used for roadside planting and amenity areas. 	Minimise visual impact and advance mitigation planting for screening purpose.	Detailed design consultant / Contractor	The whole project area where applicable	Detailed design and construction phases	• TM-EIAO
	V-CP5-DP1	<p><u>Coordination with Concurrent Projects</u></p> <ul style="list-style-type: none"> Coordinated implementation programme with concurrent projects to minimise impacts and where possible reduce the period of disturbance. 	Minimize visual impacts	Contractor	The whole project area where applicable	Construction phase	• TM-EIAO
	V-CP6-DP1	<p><u>Creation of Wetland and Landscape Buffer</u></p> <ul style="list-style-type: none"> The creation of EA and landscape buffer on the Loop shall provide screening effect for low level views towards the LMC Loop Development from the lowland plain surrounding the LMC Loop and soften the building mass and create a better visual integration with existing landscape context. 	Creation of screening buffer to alleviate the visual impact	Project Proponent / Detailed design consultant / Contractor / Operator	The whole project area where applicable	Detailed design, construction and operational phases	• TM-EIAO
	V-CP7-DP1	<p><u>Design of Retaining Wall and Slopes</u></p> <ul style="list-style-type: none"> The proposed treatment of Retaining Wall and Slopes will be undertaken in accordance with GEO Publication No. 1/2011 "Technical Guidelines on Landscape Treatment and Bio-engineering for Man-made Slopes and Retaining Walls". These engineering structures will be aesthetically enhanced through the use of soft landscape works including tree and shrub planting to give man-made slopes a more natural appearance blending into the local rural landscape. Whip sized tree planting is preferred on the face of soil cut slopes and at the crest and toe of the slope, and within berm planters. The smaller, younger plant stock will adapt to their new growing conditions more quickly than larger sized stock and establish a naturalistic effect more rapidly. Hydroseeding will be applied on slope has a gradient more than 30 degree. 	Minimize visual impacts and maximise greening opportunities for visual enhancement.	Detailed design consultant	The whole project area where applicable	Detailed design phase	• TM-EIAO •

Project Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
<i>Landscape and Visual Impact (Operational Phase)</i>							
S11.5 Table 11.5.10	L-OP1-DP1	<p><u>Roadside and Amenity Planting</u></p> <ul style="list-style-type: none"> The planting proposals will utilise both native and ornamental species which suitable for roadside planting to soften the built structures and enhance visual amenity of existing and proposed road corridors. The implementation of new planting shall be undertaken as soon as technically feasible using a sectional completion approach during construction phase to ensure the effectiveness of this mitigation during operational phase and as early as possible during the operational phase. 	Enhance local landscape value	Detailed design consultant/ Contractor / Operator	The whole project area where applicable	Detailed design, construction and operational phases	• TM-EIAO
S11.5 Table 11.5.10	L-OP2-DP1	<p><u>Compensatory Planting Proposals</u></p> <ul style="list-style-type: none"> As the works are largely located within rural areas and alongside existing roads the planting proposals have sought to utilise all of the available space for new tree and shrub planting to create comprehensive landscape framework which is connected to areas of retained and preserved vegetation and designed to integrate the proposals within their future landscape setting. The planting proposals shall be maintained in accordance with good horticultural practice in order to realise the objectives of the mitigation measures. This includes the replacement of defective plant species on the new planting areas to enhance the aesthetic, landscape and ecological quality of the proposals. Both on-site and off-site opportunities for compensatory planting shall be considered. The preliminary compensatory planting proposal will follow the Technical Circular ETWB TCW No. 3/2006 except for felling of trees for slope works which are exempted from the compensation planting ratio requirement. New tree planting in general roadside planting areas and planting areas within the LMC Loop and above ground structures will utilise a combination of semi-mature to light standard sized stock as shown in Figures 11.9a and 11.9h to 11.9zi in the EIA report to create an instant greening effect at local level. New planting areas within the LMC Loop including tree planting in the landscape buffers, open spaces and roadside planting areas will accommodate approximately 5,000 new trees. Planting of more broad-leaf tree species will be considered where space allows and location is suitable for tree establishment. This planting concept would create comfortable shaded area for pedestrians and visitors in open spaces. 	Enhance local landscape value	Detailed design consultant/ Contractor /	The whole project area where applicable	Detailed design and construction phases	• TM-EIAO

Project Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
		<ul style="list-style-type: none"> • New planting areas along the road alignment of WCR (DP2), ECR (DP6) and access road to Flushing Water Service Reservoir (DP7) will accommodate approximately 2,600 new trees. • For the affected tree on the sloping areas, due to constrained growing conditions, whip planting will be proposed on slopes which have gentler gradient at a planting distance of about 1500mm. Slopes that have a gradient more than 30 degree, hydroseeding will be applied instead. Upon full establishment of whip planting and hydroseeding, greening coverage on affected sloping areas will be reinstated. Following the above planting principles, the newly formed and remnant sloping areas along the road alignment would accommodate approximately 500 whips. • Based on a preliminary estimation, the above planting proposal would achieve a replanting ratio of minimum 1:1 in terms of quantity and quality except for slope works according to ETWB TCW No. 3/2006. This tree replanting ratio would compensate the total girth and number of tree loss as well as the total number of tree loss on sloping area. Given the constraints of growing condition and safety reasons of planting larger size tree stock on sloping areas, greening measures on new formed and remnant slopes, including extensive hydroseeding and whips planting, would restore the quality of these greenback drop in rural area. • The species selection for planting areas within the LMC Loop will utilise a range of native, ornamental and amenity tree species. These proposals will be subject to further development during the detailed design phase of the project.. • Proposed planting on slopes will utilise woodland mix with majority of native species on new or disturbed slopes along the WCR and ECR. 					
S11.5 Table 11.5.10	L-OP7-DP1	<p><u>Reinstatement of Affected Fishponds</u></p> <ul style="list-style-type: none"> • Enhancement of 11.72 Ha. of wetland/fishponds at Sham Po Shue and Hoo Hok Wai with ecological function for the off-site compensation of the permanent loss of fishponds. Off-site fishponds enhancement proposal refer to Figure 11.9zh, Chapter 2 Project description and Chapter 12 Ecology Impact Assessment of this EIA. • Temporary loss of fishponds along WCR (DP2), Direct Link to LMC Station (DP4) and ECR (DP6) by the road widening and improvement works will be largely reinstated to fishponds with tree planting at selected locations. Reinstatement of affected fishponds refer to Figure 11.9j,k,l,m,r, t and u in the EIA report. These ponds will be 	Reinstate and enhance local landscape value	Project Proponent / Detailed design consultant/ Contractor / Operator	The whole project area where applicable	Construction and operational phases	<ul style="list-style-type: none"> • TM-EIAO

Project Implementation Schedule

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		used for both functional or amenity purposes to enhance the existing landscape and visual context.					
S11.5 Table 11.5.10	L-OP8-DP1	<p><u>Application of Terraced Podium Landscape, Vertical Greening and Green Roof</u></p> <ul style="list-style-type: none"> • Terraced podium design shall be incorporated into the building design of the LMC Loop Development to maximise the greening opportunities on upper level of the development, reduce the apparent visual mass of the structure and provide visual amenity for views looking from street level as well as in distance at elevated levels as to create better integration with existing landscape and visual context. • Incorporation of alternative greening measures including vertical and roof greening on building or built structures where condition allow particularly those fronting the public realm to reduce the apparent visual mass of the structure. 	Enhance local landscape value	Developer / Detailed design consultant / Contractor	The whole project area where applicable	Detailed design, construction and operational phases	• TM-EIAO
S11.6 Table 11.6.4	V-OP1-DP1	<p><u>Roadside and Amenity Planting</u></p> <ul style="list-style-type: none"> • The planting proposals will utilise native species to soften the proposed structures. The implementation of new planting shall be undertaken as soon as technically feasible using a sectional completion approach during construction phase to ensure the effectiveness of this mitigation during operational phase and as early as possible during the operational phase. This measure will enhance the visual amenity along existing and proposed road corridor. 	Enhance visual amenity	Detailed design consultant/ Contractor / Operator	The whole project area where applicable	Detailed design, construction and operational phases	• TM-EIAO • ETWB TCW
S11.6 Table 11.6.4	V-OP2-DP1	<p><u>Compensatory Planting Proposals</u></p> <ul style="list-style-type: none"> • As the works are largely located within rural areas and alongside existing roads the planting proposals have sought to utilise all of the available space for new tree and shrub planting to create comprehensive landscape framework which is connected to areas of retained and preserved vegetation and designed to integrate the proposals within their future landscape setting. • Both on-site and off-site opportunities for compensatory planting shall be considered for enchantment of landscape and visual context. • Design of road layout and built environment shall accommodate enough planting areas for compensatory planting to restore the quality of these greenback drop in rural area. 	Minimise visual impact and enhance visual amenity	Detailed design consultant /Contractor	The whole project area where applicable	Detailed design and construction phases	• TM-EIAO • ETWB TCW
S11.6 Table 11.6.4	V-OP3-DP1	<p><u>Responsive Design of Buildings and Structure</u></p> <ul style="list-style-type: none"> • The design of the proposed building structures and road connections networks will incorporate design features as part of visual mitigation measures including: <u>Integrated Design Approach</u> 	Minimise visual impact	Detailed design consultant	Development sites on the LMC Loop, STW, and Flushing Water Service Reservoir, PTI at LMC Station and other building where	Detailed design phase	• TM-EIAO • ETWB TCW

Project Implementation Schedule

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		<ul style="list-style-type: none"> • Building massing - the proposed use of a responsive design for the disposition of the main elements of the proposed scheme including the locations of buildings and utility structures. Grouping of utilities and infrastructure components into proposed buildings as far as technically feasible to reduce the mass of development. The disposition and height profile of the developments and above ground utilities structures responds to the existing context, is designed to minimise the wall effects and create a subtle transition at the edges of the site where it meets the rural landscape. Measures may include the creation of setbacks, articulating the development frontage, maintenance of view corridors and the utilisation of gradation or articulated height profile to enhance the sense of visual integration with the existing context, avoid abrupt transitions between the existing and proposed built environment and reduce the apparent visual mass of the proposed developments. <p><u>Treatment of Built Structures</u></p> <ul style="list-style-type: none"> • The architectural design should seek to reduce the apparent visual mass of the structures further through the use of materials and finishes such as colour blocking, innovative surface treatments and vertical greening. <p><u>Responsive finishes for the Proposed Structures</u></p> <ul style="list-style-type: none"> • In terms of the building finishes natural tones should be considered for the colour palette and non-reflective finishes recommended for the outward facing building facades to reduce the glare effect. <p><u>Innovative Architectural Design</u></p> <ul style="list-style-type: none"> • Adoption of recessive colours for the buildings and engineered structures including the proposed viaducts and noise barrier finishes and colour blocking to reduce the collective visual mass of the development. 			applicable.		
S11.6 Table 11.6.4	V-OP5-DPI	<p><u>Design of Engineering Structures</u></p> <p>The design of the proposed Engineering Structures such as the proposed viaducts elevated PTI, slip road and service reservoir should pay particular attention to the appearance and construction methods of the structures, these would include the following:</p> <ul style="list-style-type: none"> • The detailed design landscape consultants shall work in unison with the engineers on the aesthetic aspects of the structures and their relationship with the landscape. • Wherever light levels, the water regime and the requirements of the environmental mitigation measures permit, trees and vegetation would be reinstated below or adjacent to the structures. Irrigation may be required in some locations and hard landscape solutions considered where the clearance is 	Minimise visual impact	Detailed design consultant	The whole project area where applicable	Detailed design phase	<ul style="list-style-type: none"> • TM-EIAO • ETWB TCW • ACABAS

Project Implementation Schedule

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		<p>low. Planting would be used wherever possible to minimise the apparent height of structures and to soften their appearance in medium and long distance views.</p> <ul style="list-style-type: none"> The design of the viaduct should avoid unnecessary visual clutter; this would be achieved through the co-ordination of the various engineering disciplines involved to arrive at integrated design solutions. Such as the location of columns of viaduct should not block any views from VSRs in the proximity and the shape of column should be slim down as far as technically feasible to reduce the structural mass at street level, at where space is allowed planting area for shade tolerant tree, shrub and climber species would be provide at the base of the column to soften the vertical emphasis at street level. Fair faced concrete would not be used for viaduct parapets to minimise glare from the structure and to avoid the visually detracting effect of staining. Drainage and utilities to be concealed within the structures. 					
S11.6 Table 11.6.4	V-OP7-DP1	<p><u>Reinstatement of Affected Fishponds</u></p> <ul style="list-style-type: none"> Temporary loss of fishponds along WCR (DP2), Direct Link to LMC Station (DP3) and ECR (DP6) by the road widening and improvement works will be largely reinstated to fishponds with tree planting at selected locations. Reinstatement of affected fishponds refer to Figure 11.9j,k,l,m,r, t and u in the EIA report. These ponds will be used for both functional or amenity purposes to enhance the existing landscape and visual context. 	Enhance visual amenity and integration of existing visual context	Contractor	The whole project area where applicable	Construction Phase	<ul style="list-style-type: none"> TM-EIAO ETWB TCW
S11.6 Table 11.6.4	V-OP8-DP1	<p><u>Application of Terraced Podium Landscape, Vertical Greening and Green Roof</u></p> <ul style="list-style-type: none"> Terraced podium design shall be incorporated into the building design of the LMC Loop Development to maximise the greening opportunities on upper level of the development, reduce the apparent visual mass of the structure and provide visual amenity for views looking from street level as well as in distance at elevated levels as to create better integration with existing landscape and visual context. Incorporation of alternative greening measures including vertical and roof greening on building or built structures where condition allow particularly those fronting the public realm to reduce the apparent visual mass of the structure. 	Enhance visual amenity and integration of existing visual context	Developer / Detailed design consultant/ Contractor / Operator	The whole project area where applicable	Detailed design, construction and operational Phases	<ul style="list-style-type: none"> TM-EIAO ETWB TCW
Ecology							
S12.7	E1-DP1	<p><u>Disturbance to Fish Ponds at HHW</u></p> <ul style="list-style-type: none"> Development set back a minimum of 23m from the edge of 	Minimize the indirect impact from LMC Loop development	Detailed design consultant/	Fish ponds at HHW and LMC	Detailed design, construction and	<ul style="list-style-type: none"> Species targets to be provided in HCMP.

Project Implementation Schedule

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		<p>Meander.</p> <ul style="list-style-type: none"> • Management of fish pond habitat to enhance ecological value to twice existing value, in order to compensate for disturbance to large waterbirds. • Creation and establishment will occur prior to commencement of substantive works associated with any element of the project for which fish pond compensation is required. <p><u>Construction phase</u></p> <ul style="list-style-type: none"> • Erection of a 3m high, dull green site boundary fence to minimise disturbance to wetland habitats caused by human activity in LMC Loop. <p><u>Operation phase</u></p> <ul style="list-style-type: none"> • Creation of a vegetated setback of minimum 23m from the edge of LMC Loop. 	on the disturbance to fish ponds at HHW	Contractor/ Operator		operational phases	
S12.7	E2-DP1	<p><u>Construction run-off</u></p> <ul style="list-style-type: none"> • Temporary sewerage and drainage will be designed and installed to collect wastewater and prevent it from entering nearby water bodies; • Proper locations well away from nearby water bodies will be used for temporary storage of materials (i.e. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction debris and spoil, and these will be identified before commencement of works; • To prevent muddy water entering nearby water bodies, work sites close to nearby water bodies will be isolated, using such items as sandbags or silt curtains with lead edge at bottom and properly supported props. Other protective measures will also be taken to ensure that no pollution or siltation occurs to the water gathering grounds of the work site; • If temporary access along a riverbed is unavoidable, this will be kept to the minimum in width and length. Temporary river crossings will be supported on stilts above the river bed; • Stockpiling of construction materials, if necessary, will be properly covered and located away from nearby water bodies; • Construction debris and spoil will be covered and/or properly disposed of as soon as possible to avoid being washed into nearby water bodies; • Construction effluent, site run-off and sewage will be properly collected and/or treated. Wastewater from any construction site will be minimised via the following in descending order: reuse, recycling and treatment; • Proper locations for discharge outlets of wastewater 	Minimize the indirect impact from the increasing suspended solids and pollutants in LMC Meander	Contractor	Within project construction site	Construction phase	

Project Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
		<p>treatment facilities well away from sensitive receivers will be identified (i.e. treated wastewater will not be discharged into LMC Meander, natural streams, marsh, reedbed, active or abandoned fish ponds);</p> <ul style="list-style-type: none"> • Adequate lateral support will be erected where necessary in order to prevent soil/mud from slipping into the Ecological Area or LMC Meander; • Site boundary will be clearly marked and any works beyond the boundary strictly prohibited; • Regular water monitoring and site audit will be carried out at adequate points along LMC Meander, and at the outfalls of the natural streams around LMC Loop. If the monitoring and audit results show that pollution occurs, adequate measures including temporarily cessation of works will be considered. 					
S12.7	E3-DP1	<p><u>Pollutant Runoff to Downstream areas from Accidental Spillage</u></p> <ul style="list-style-type: none"> • Prepare an emergency contingency plan • The plan will include, but not be limited to, the following: <ul style="list-style-type: none"> - Potential emergency situations; - Chemicals or hazardous materials used on-site (and their location); - Emergency response team; - Emergency response procedures; - List of emergency telephone hotlines; - Locations and types of emergency response equipment; - Training plan and testing for effectiveness. 	Minimize indirect impact from pollutant runoff to downstream areas from accidental spillage	Contractor / Operator	Areas within project site near streams	Construction and operational phases	
S12.7	E4-DP1	<ul style="list-style-type: none"> • Use opaque, non-transparent, non-reflective noise barriers for all developments associated with the Project. • Design of buildings should not incorporate use of night-time lighting at or near top of buildings, highly reflective materials should not be used where vegetation is adjacent and glass surfaces should not be angled upwards in a way that reflects the sky. Unnecessary lighting should be eliminated. Appropriate glass and façade treatments should be used where required to minimise impact. Unnecessary lighting should be avoided. <p>These include the following:</p> <ul style="list-style-type: none"> • Fritting, or the placement of ceramic lines or dots on glass, has little effect on the human-perceived transparency of the window but creates a visual barrier to birds outside. This treatment also has the advantage of reducing air conditioning loads by lowering heat gain, while still allowing light transmission for interior spaces. It is most successful when the frits are applied on the outside surface. Frosted glass has 	Minimize the mortality impacts on birds	Developer / Detailed design consultant/ contractor/ operator	Areas within project site	Detailed design, construction and operational phases	

Project Implementation Schedule

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		<p>similar effects.</p> <ul style="list-style-type: none"> • Angled glass may be used only for smaller panes in buildings with a limited amount of glass. • The use of glass that reflects UV light (primarily visible to birds, but not to humans) acts to reduce collision. • Film and art treatment allow glass surfaces to be used a medium of expression, often related to the nature and use of the building, as well indicating to birds their impenetrability. • Lightweight external screens can be added to windows or become a façade element of larger buildings, and are suitable where non-operable windows are prevalent, which is often the case in modern buildings in HK. <p>In terms of reducing night-time mortality impacts, eliminating unnecessary lighting is one of the easiest methods, and has the added advantage of saving energy and expense. Potential impacts of nocturnal avian collision with buildings should be minimised by not creating sky glow from the use of night-time lighting at or near the top of buildings or other structures. In addition to avoiding uplighting, light spillage should be minimised, while green and blue lights should be used where possible. As far as possible, lights should be controlled by motion sensors, and building operations should be managed in such a way as reduce or eliminate night lighting near windows. The potential advantages of removing unnecessary lighting in terms of reducing the carbon footprint of the LMC Loop development are obvious.</p>					
S12.7	E5-DP1	<ul style="list-style-type: none"> • Minimize loss of natural vegetation along LMC Meander, and suitable replacement planting with possible installation of otter holts and the provision of potential feeding area and spraint locations for otters in the stabilized bank subject to detailed design. • No significant change to velocity of water flow, water level or water quality. • No direct lighting on Meander. • 3m high, dull green site boundary fence for all developments associated with the project. • Pre-construction surveys for otter holts or natal dens will be conducted in LMC Loop before the commencement of construction works. Work in the area of any otter holt found to cease pending examination by experienced Ecologist. If in use for breeding, works in the area will temporarily stop until end of breeding activity. • No construction activities within 100m of LMC Meander between one hour prior to sunset and one hour after sunrise. • Provision of compensatory reed marsh in the Ecological Area in LMC Loop, including open water channels and islands 	Minimize impacts on Eurasian Otter	Detailed design consultant / Contractor	Construction site within the project	Detailed design and construction phase	

Project Implementation Schedule

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		within the reed marsh, both of which features are considered to be used by the species.					
S12.7	E10-DP1	<ul style="list-style-type: none"> Preserve undisturbed, semi-natural habitat conditions of LMC Meander and adjacent areas of LMC Loop up to approximately 150m in width in order to avoid disturbance to core part of flight line corridor. This area to comprise an Ecological Area largely constituting reed marsh and a 50m wide buffer zone densely planted with shrubs and trees. Small number of low buildings (max 14mPD high, except the building height of on-site STW is 15mPD high) allowed in inner 25m of this area at a plot ratio of 0.1. At Ha Wan Tsuen entry point for many birds to LMC Loop area provide a wider Ecological Area to minimise disturbance from nearby buildings. Further minimisation of impact by maintaining a lower building height in areas adjacent to the buffer zone for the EA. In addition, the sewage treatment works, which is located near the point where many birds cross from the Meander to HHW, should not exceed 15mPD. 	Minimize impacts on flight line corridor from LMC Loop development	Developer / Detailed design consultant / Contractor / Operator	Within project site	Detailed design, construction and operational phase	
S12.7	E11-DP1	<ul style="list-style-type: none"> Employ site boundary fence as long as possible. Use of movable barrier for more intense site formation activity. Provision of fencing with 30cm gap between the existing reed marsh and LMC Meander during the establishment period of Ecological Area and the gap will be closed once established. Restrict work to period from 0900h to 1700h. All major works along the edge of LMC Meander and in the Ecological Area will be conducted in the wet season. 	Minimize disturbance impacts of mitigation provisions	Contractor	Within project site	Construction phase	
S12.7	E12-DP1	<ul style="list-style-type: none"> Minimal night-time lighting No direct light on Meander 	Minimize impacts on LMC Meander	Project Proponent / Contractor / Operator	All	Construction and operational phases	
S12.7	E13-DP1	<p><u>Loss of 10.96ha of Reed Marsh</u></p> <ul style="list-style-type: none"> Provide unfragmented, managed and undisturbed reed marsh in a 12.78ha 'Ecological Area' (EA) to compensate for the loss of ecological function of the existing reedbed. Creation and establishment will occur prior to total clearance of the reedbed in LMC Loop, though initial removal of 2.26 ha will be required to allow site formation of the EA. This will constitute a temporary residual impact that cannot be entirely resolved for 2-3 years, by which time the reed marsh in the EA will be fully established. Reed marsh in EA to be established prior to clearance of 	Minimize direct impact on the loss of 10.96ha of reed marsh from LMC Loop development	Project Proponent / Detailed design consultant/ Contractor/ Operator	Ecological area	EA established prior to construction and manage at all phases	<ul style="list-style-type: none"> Species targets that require to be determined via fieldwork and as part of HCMP creation process.

Project Implementation Schedule

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		<p>remainder of reeds.</p> <ul style="list-style-type: none"> Implement a 50m wide buffer zone to buffer disturbance to the EA from the developed area. Although an area of passive recreational activity, the buffer zone will be planted with trees and shrubs of ecological value to screen and minimise disturbance to the EA and add ecological value to the site. Any buildings in the buffer zone will be of no more than 14mPD in height (except the building height of on-site STW is 15mPD) and placed in the internal 25m of the 50m wide strip, as part of a plot ratio of 0.1. Appropriate planting of taller and denser trees will be carried out around individual buildings in this zone in order to further shroud them from both the EA and the air. The use of green roofs, where feasible, should also be considered. 					
S12.7	E14-DP1	<p><u>Loss of 0.5ha of Marsh</u></p> <ul style="list-style-type: none"> The EA should include a marsh area and small areas of open water to enhance micro-habitat diversity, and this will also attract species currently using the pond areas in LMC Loop. The marsh habitat should include emergent vegetation such as lilies. Not only will this attract species that currently use the pond area in LMC Loop, but will also provide an attractive focal point for users of LMC Loop. 	Minimize direct impact on the loss of 0.5ha of marsh from LMC Loop development	Project Proponent / Detailed design consultant/ Contractor/ Operator	Ecological area	EA established prior to construction and manage at all phases	<ul style="list-style-type: none"> Species targets that require to be determined via fieldwork and as part of HCMP creation process.
S12.7	E15-DP1	<ul style="list-style-type: none"> Create Ecological Area before wider development of LMC Loop to ensure suitable conditions exist in core area of corridor. 	Minimize impacts on flight line corridor from LMC Loop development	Project Proponent / Detailed design consultant/ Contractor/ Operator	Ecological area	EA established prior to construction and manage at all phases	
S12.7	E16-DP1	<ul style="list-style-type: none"> Provision of compensatory reed marsh in the Ecological Area will provide habitat suitable for Common Evening Hawker. Measures designed to protect other fauna and water quality will generally benefit odonata. 	Protect Odonata	Project Proponent / Detailed design consultant/ Contractor/ Operator	Ecological area	EA established prior to construction and manage at all phases	
S12.9	EG2-DP1	All generic mitigation measures proposed in Tables 12.82a and 12.82b in the EIA report.	Avoid, minimize and mitigate overall ecological impact.	Project proponent / contractor / detailed design consultant / developer / operator	All areas.	All phases	<ul style="list-style-type: none"> EIAO
Fisheries (Construction Phase)							
S13.7	F4-DP1	During the construction stage, a layer of sheet pile wall will be erected	Bund stability	Contractor	Fish ponds	Construction	<ul style="list-style-type: none"> TM-EIAO

Project Implementation Schedule

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		along the site boundary adjacent to fish ponds after commencement of site works. The sheet pile wall will be constructed by silent piling method (Press-in method) which induces minimal vibration. Therefore the stability of the fish pond bund will not be influenced by the construction of the sheet pile wall, subsequent construction works and the loading from the road during operational stage. In addition, the sheet pile wall will have grouting or a grout curtain to avoid water seepage from the fish pond to the excavation area. With these measures, significant impacts are not anticipated.				phase	
S13.7	F5-DP1	Temporary traffic arrangements will be instigated to maintain or provide alternative access to fish ponds during construction phase.	Prevent Blockage of Access Roads to Fish Ponds	Contractor	Fish ponds	Construction phase	• TM-EIAO
S13.7	F6-DP1	Standard mitigation measures to control site runoff and other pollutants caused by construction activities and good site practices will be implemented during the construction phase of the Project. Excavated material and other inert construction wastes produced will be transferred to proper recipients (i.e. landfill) (see Waste Management Section). Sewage from the proposed development will be dealt with via a sewerage system and will not be discharged directly to surrounding water bodies.	Avoid water quality impact	Contractor	Fish ponds	Construction phase	• TM-EIAO
S13.7	F7-DP1	<p>Dust Minimization</p> <ul style="list-style-type: none"> • During all excavation works, good site practice should be adopted to minimize impacts on fisheries. The below site practices should be adopted during this time. • 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; • 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; • Excavation profiles must be properly designed and executed with attention to the relevant requirements for environment, health and safety; • In case the soil to be excavated is situated beneath the groundwater table, it may be necessary to lower the groundwater table by installing well points or similar means; • Supply of suitable clean backfill material after excavation, if required; 	Dust minimization	Contractor	Fish ponds	Construction phase	• TM-EIAO

Project Implementation Schedule

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		<ul style="list-style-type: none"> • Vehicles containing any excavated materials should be suitably covered to limit potential dust emissions or contaminated run-off, and truck bodies and tailgates should be sealed to prevent any discharge during transport or during wet season; • Speed control for the trucks carrying contaminated materials should be enforced; and • Vehicle wheel washing facilities at the site's exit points should be established and used. 					
<i>Fisheries (both Construction and Operational Phase)</i>							
S13.7	F8-DP1	<p><u>Contingency plan</u> The contractor should prepare an emergency contingency plan for actions to be taken if significant impacts, such as accidental spillage of chemicals, water seepage from fish ponds, damaged/ destabilized pond bunds, pond water contamination by site runoff, on fish ponds occur. The contractor should submit the emergency contingency plan dealing with, but not limited to, the aforementioned potential impacts to the engineer for review, comment and approval. The fish pond operators will also be consulted for the details of the contingency plan, which will also be submitted to AFCD for review and comment. The plan should include, but not limited to, the following:</p> <ul style="list-style-type: none"> • Potential emergency situations; • Chemicals or hazardous materials used on-site (and their location); • Emergency response team; • Emergency response procedures; • List of emergency telephone hotlines; • Locations and types of emergency response equipment; • Training plan and testing for effectiveness. 	Deal with any accidental spillage event	Contractor / Operator	Fish ponds	Construction and operational phases	• TM-EIAO
<i>Food Safety (Construction Phase)</i>							
S15	F1-DP1	<p><u>Contingency plan</u> The contractor should have effective communication with Food and Environmental Hygiene Department (FEHD) / Centre of Food Safety (CFS), on food surveillance and food incidents. Food Surveillance Programme (http://www.cfs.gov.hk/english/programme/programme_fs/programme_fs.html). is undertaken by CFS to inspect food safety in Hong Kong, with a three-tier surveillance strategy (consisting of routine food surveillance, targeted food surveillance and seasonal food surveillance). Under this programme, aquatic products (including pond fish) at import, wholesale and retail levels are sampled for microbiological (i.e. bacteria and viruses), chemical (i.e. natural toxins, food additives and</p>	Minimize significant impacts on fish ponds	Contractor	Fish pond within project site	Construction phase	• TM-EIAO

Project Implementation Schedule

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		contaminants) and radiation testings. All food safety surveillance results of by a monthly "Food Safety Report" in press releases and also presented in CFS website. If pond fish samples do not comply with food safety standards and they are verified to be from fish ponds of concerned under this study through "food tracing", fish selling shall be stopped as instructed by CFS.					
S15	F2-DP1	<p><u>Dust Minimization</u></p> <ul style="list-style-type: none"> • During all excavation works, good site practice should be adopted to minimize the release of TSP, impact of land contamination and the associated food safety implications. The below site practices should be adopted during excavation works. • 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; • 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; • Excavation profiles must be properly designed and executed with attention to the relevant requirements for environment, health and safety; • In case the soil to be excavated is situated beneath the groundwater table, it may be necessary to lower the groundwater table by installing well points or similar means; • Supply of suitable clean backfill material after excavation, if required; • Vehicles containing any excavated materials should be suitably covered to limit potential dust emissions or contaminated run-off, and truck bodies and tailgates should be sealed to prevent any discharge during transport or during wet season; • Speed control for the trucks carrying contaminated materials should be enforced; and • Vehicle wheel washing facilities at the site's exit points should be established and used. 	Dust minimization	Contractor	Fish pond within project site	Construction phase	<ul style="list-style-type: none"> • Food Adulteration (Metallic Contamination) Regulations

Project Implementation Schedule

Note: Chapters 1 to 2 of the EIA report present the background information of the Project, identified designated project, concurrent projects, objectives and scope for various environmental aspects, and description on recommended outline development plan. Chapters 3 to 14 of the EIA report present the EIA findings and mitigation measures are described below with cross-reference to the EIA report. Chapters 16 to 18 summarize the environmental outcomes and describe the environmental monitoring requirements and conclusion.

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
<i>DP2 – Western Connection Road</i>							
<i>Construction Dust Impact</i>							
S3.8	D1-DP2	Mitigation measures in form of regular watering under a good site practice should be adopted. Watering once per hour on exposed worksites and haul road is proposed to achieve dust removal efficiency of 92.1%. While the above watering frequencies are to be followed, the extent of watering may vary depending on actual site conditions but should be sufficient to maintain an equivalent intensity of no less than 1.6 L/m ² to achieve the respective dust removal efficiencies	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> • APCO To control the dust impact to meet HKAQO and TM-EIAO
S3.8	D2-DP2	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> • APCO To control the dust impact to meet HKAQO and TM-EIAO
S3.8	D3-DP2	<p>Following dust suppression measures should also be incorporated by the Contractor to control the dust nuisance throughout the construction phase</p> <ul style="list-style-type: none"> • 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; • A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones; • The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores; • When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly 	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> • APCO To control the dust impact to meet HKAQO and TM-EIAO

Project Implementation Schedule

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		<p>maintained throughout the construction period.</p> <ul style="list-style-type: none"> • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport should be totally enclosed by impervious sheeting; • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides; • Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed; • Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and • Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shortcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies. 					
S3.8	D4-DP2	Implement regular dust monitoring under EM&A programme during the construction phase.	Monitoring of dust impact	Contractor	Selected representative dust monitoring station	Construction phase	• TM-EIAO
Noise Impact (Construction Phase)							
S4.8	N-CP1-DP2	<p>Implement the following good site management practices:</p> <ul style="list-style-type: none"> • only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; • machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; 	Control construction airborne noise	Contractor	All construction sites where practicable	Construction phase	• Annex 5, TM-EIA

Project Implementation Schedule

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		<ul style="list-style-type: none"> plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; mobile plant should be sited as far away from NSRs as possible and practicable; material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities. 					
S4.8	N-CP2-DP2	Install temporary site hoarding (approx 2.4m high) located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period.	Reduce the construction noise levels at low-level zone of NSRs through partial screening.	Contractor	All construction sites where practicable	Construction phase	• Annex 5, TM-EIA
S4.8	N-CP3-DP2	Install movable noise barriers and full enclosure, screen the noisy plants including air compressor and generator.	Screen the noisy plant items to be used at all construction sites	Contractor	All construction sites where practicable	Construction phase	• Annex 5, TM-EIA
S4.8	N-CP4-DP2	Use of "Quiet" Plant and Working Methods	Reduce the noise levels of plant items	Contractor	All construction sites where practicable	Construction phase	• Annex 5, TM-EIA
S4.8	N-CP5-DP2	Sequencing operation of construction plants where practicable.	Operate sequentially within the same work site to reduce the construction airborne noise	Contractor	All construction sites where practicable	Construction phase	• Annex 5, TM-EIA
S4.8	N-CP6-DP2	Setting the concrete lorry mixer at around 25m away from the existing NSRs along Ha Wan Tsuen Road and Lok Ma Chau Road	Reduce the noise levels from concrete lorry mixer	Contractor	Sections with NSRs along Ha Wan Tsuen Road and Lok Ma Chau Road	Construction phase	• Annex 5, TM-EIA
S4.8	N-CP7-DP2	Implement a noise monitoring under EM&A programme.	Monitor the construction noise levels at the selected representative locations	Contractor	Selected representative noise monitoring stations	Construction phase	• TM-EIA
S4.8	N-CP8-DP2	Provide temporary noise barrier during construction phase.	Control airborne noise from construction access road traffic	Contractor	Refer to Figure 4-8 of the EIA report.	Construction phase	• Noise Control Ordinance and its TM
• Noise Impact (Operational Phase)							
S4.8	N-OP1-DP2	Provide noise barrier where necessary before operation of the proposed project.	Control operational airborne noise due to road traffic	Project Proponent / Contractor	Refer to Figures 4.9, 4.9a to d in the EIA Report	Prior to operation of the Project	Noise Control Ordinance and its TM
Water Quality Impact (Construction Phase)							
S5.7	W1-CP-DP2	<u>Construction Runoff and Site Drainage</u> In accordance with the Practice Note for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN 1/94), construction phase mitigation measures, where appropriate, should include the following: <ul style="list-style-type: none"> Update and implementation of Stormwater Pollution Control Plan At the start of site establishment, perimeter cut-off drains to direct off-site water around the site should be constructed with internal 	Minimize water quality impact from construction site runoff and general construction activities	Contractor	All construction sites where practicable	Construction phase	<ul style="list-style-type: none"> Water Pollution Control Ordinance ProPECC PN1/94 TM-EIAO TM-DSS

Project Implementation Schedule

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		<p>drainage works and erosion and sedimentation control facilities implemented. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities. The design of the temporary on-site drainage system will be undertaken by the contractor prior to the commencement of construction.</p> <ul style="list-style-type: none"> • Diversion of natural stormwater should be provided as far as possible. The design of temporary on-site drainage should prevent runoff going through site surface, construction machinery and equipments in order to avoid or minimize polluted runoff. Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m3 capacities, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity shall be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped. • The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a silt/sediment trap. The silt/sediment traps should be incorporated in the permanent drainage channels to enhance deposition rates. • The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94. The detailed design of the sand/silt traps should be undertaken by the contractor prior to the commencement of construction. • Construction works should be programmed to minimize surface excavation works during the rainy seasons (April to September). All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means. • All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas. • Measures should be taken to minimise the ingress of site drainage into excavations. If the excavation of trenches in wet periods is necessary, it should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via 					

Project Implementation Schedule

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		<p>silt removal facilities.</p> <ul style="list-style-type: none"> • All open stockpiles of construction materials (for example, aggregates, sand and fill material) of should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system. • Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers. • Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarized in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events. • All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities should be provided at every construction site exit where practicable. Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains. • Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain. • Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts. • All fuel tanks and storage areas should be provided with locks and sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby. • Regular environmental audit on the construction site should be carried out in order to prevent any malpractices. Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the meander, wetlands and fish ponds. 					

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S5.7	W2-CP-DP2	<p><u>Groundwater from Contaminated Area</u></p> <ul style="list-style-type: none"> No mitigation measure is required for groundwater treatment in LMC Loop. Additional investigation is required to identify if contaminated groundwater is found If the investigation results indicated that the groundwater to be generated from construction works would be contaminated, the contaminated groundwater should be either discharged into recharged wells, or properly treated in compliance with the requirements of Technical Memorandum on Standards for Effluents Discharged into Drainage on Sewerage Systems, Inland and Coastal Waters. If recharged well method were used, the groundwater quality in the recharged well should not be affected by recharging operation, i.e. the pollution levels of the recharged groundwater should not be higher than that in the recharging wells. If treatment and discharge method were used, the design of wastewater treatment facilities, such as active carbon and petrol interceptor, should be submitted to the EPD and a discharge license should be obtained under the WPCO through the Regional Offices of EPD. 	Minimize groundwater quality impact from contaminated area	Contractor	Areas where contamination is found.	Construction phase	<ul style="list-style-type: none"> Water Pollution Control Ordinance TM-DSS TM-EIAO
S5.7	W3-CP-DP2	<p><u>Sewage from Workforce</u></p> <ul style="list-style-type: none"> Portable chemical toilets and sewage holding tanks should be provided for handling the construction sewage generated by the workforce. A licensed contractor should be employed to provide appropriate and adequate portable toilets to cater 0.15m³/day/employed populations and be responsible for appropriate disposal and maintenance. Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment during the construction phase of the Project. Regular environmental audit on the construction site should be conducted in order to provide an effective control of any malpractices and achieve continual improvement of environmental performance on site. 	Minimize water quality from sewage effluent	Contractor	All construction sites where practicable	Construction phase	<ul style="list-style-type: none"> Water Pollution Control Ordinance TM-DSS
S5.7	W5-CP-DP2	<p><u>Construction of Bridge Crossing</u></p> <ul style="list-style-type: none"> Good site management as stipulated in ProPECC PN1/94 should be fully implemented to avoid polluted liquid or solid wastes from falling into the WSRs. All the fishponds will be drained and no fishpond will be affected by bridge crossing. In the meander, cofferdam or diaphragm walls should be deployed for protecting fish ponds or nearby rivers during bridge pier construction and or road widening work at fishponds. 	Minimize water quality impact from construction of bridge crossing	Contractor	construction sites for bridge crossing where practicable	Construction phase	<ul style="list-style-type: none"> Water Pollution Control Ordinance ProPECC PN1/94 TM-EIAO TM-DSS

Project Implementation Schedule

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		<ul style="list-style-type: none"> For the low level viaducts crossing the small streams at Ma Tso Lung, Ping Hang and channel near Lung Hau Road, precast structures will be used such that there will be no construction work in the water streams, and thus, to avoid direct water quality impacts. 					
Water Quality Impact (Operational Phase)							
S5.7	W4-OP-DP2	<u>Road Runoff during operational phase</u> <ul style="list-style-type: none"> Update and implementation of Stormwater Pollution Control Plan During operational phase, vehicle dust, tyre scraps and oils might be washed away from the road surface to the nearby water courses by surface runoff or road surface cleaning. Proper drainage systems with silt traps and oil interceptors should be installed. For runoff discharge to Ping Hang Stream, Ma Tso Lung Stream and the Meander, effective mitigation measure to remove the pollutants at source. The Project Proponent or the delegated operation parties should manage the road/open area cleaning prior to the occurrence of a storm. The operator should undertake the cleaning at an interval of twice a week. Each of the cleaning events should not be separated by more than four days and should be carried out during low traffic flow period using vacuum air sweeper/truck equipped with side broom, which is to sweep road sludge and debris into the suction nozzle to increase the removal efficiency of pollutants. The collected pollutants would be tankered away for off-site disposal at landfill sites. During the EM&A programme, it is recommend to verify the efficiency of silt traps and cleaning frequencies by water quality monitoring during typical rainstorm events. 	Minimize water quality from non point source pollutant	Operator	All area where practicable	Operational phase	<ul style="list-style-type: none"> Water Pollution Control Ordinance TM-DSS
Waste Management (Construction Waste)							
S7.6	WM1-DP2	<u>Waste Reduction Measures</u> Waste reduction is best achieved at the planning and design phase, as well as by ensuring the implementation of good site practices. The following recommendations are proposed to achieve reduction: <ul style="list-style-type: none"> segregate and store different types of waste in different containers, skip or stockpiles to enhance reuse or recycling of materials and their proper disposal; proper storage and site practices to minimize the potential for damage and contamination of construction materials; plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste; sort out demolition debris and excavated materials from 	Reduce waste generation	Contractor	All construction sites where practicable	Construction phase	<ul style="list-style-type: none"> Waste Disposal Ordinance

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		<p>demolition works to recover reusable/recyclable portions (i.e. soil, broken concrete, metal etc.);</p> <ul style="list-style-type: none"> provide training to workers on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling. 					
S7.6	WM2-DP2	Prepare Waste Management Plan and submit to the Engineer for approval	Minimize waste generation during construction	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal Ordinance
S7.6	WM3-DP2	<p><u>Good Site Practice</u> The following good site practices are recommended throughout the construction activities:</p> <ul style="list-style-type: none"> nomination of an approved personnel, such as a site manager, to be responsible for the implementation of good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site; training of site personnel in site cleanliness, appropriate waste management procedures and concepts of waste reduction, reuse and recycling; provision of sufficient waste disposal points and regular collection for disposal; appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; 	Minimize waste generation during construction	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal Ordinance
S7.6	WM4-DP2	<p><u>Storage of Waste</u> The following recommendation should be implemented to minimize the impacts:</p> <ul style="list-style-type: none"> waste such as soil should be handled and stored well to ensure secure containment; stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; different locations should be designated to stockpile each material to enhance reuse; 	Minimize waste impacts from storage	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal Ordinance
S7.6	WM5-DP2	<p><u>Collection and Transportation of Waste</u> The following recommendation should be implemented to minimize the impacts:</p> <ul style="list-style-type: none"> remove waste in timely manner; employ the trucks with cover or enclosed containers for waste transportation; obtain relevant waste disposal permits from the appropriate authorities; and disposal of waste should be done at licensed waste disposal facilities. 	Minimize waste impacts from storage	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal Ordinance

Project Implementation Schedule

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S7.6	WM6-DP2	<p><u>Excavated and C&D Material</u> Wherever practicable, C&D materials should be segregated from other wastes to avoid contamination and ensure acceptability at Public Fill Reception Facilities areas or reclamation sites. The following mitigation measures should be implemented in handling the excavated and C&D materials:</p> <ul style="list-style-type: none"> maintain temporary stockpiles and reuse excavated fill material for backfilling; carry out on-site sorting; make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; and implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified. <p>The recommended C&D materials handling should include:</p> <ul style="list-style-type: none"> On-site Sorting of C&D Materials Reuse of C&D Materials Use of Standard Formwork and Planning of Construction Materials Purchasing Provision of Wheel Wash Facilities <p>Details refer to Section 7.6.1.4 of the EIA report.</p>	Minimize waste impacts from excavated and C&D materials	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Land (Miscellaneous Provisions) Ordinance Waste Disposal Ordinance ETWB TCW No. 19/2005
S7.6	WM7-DP2	<p><u>Contaminated Soil</u> As a precaution, it is recommended that standard good site practice should be implemented during the construction phase to minimize any potential exposure to contaminated soils or groundwater. The details of mitigation measures to minimize the potential environmental implications arising from the handling of contaminated materials refer to Land Contamination Section.</p>	Remediate contaminated soil	Contractor	All construction sites where applicable	Construction phase	<ul style="list-style-type: none"> Practice Guide for Investigation and Remediation of Contaminated Land
S7.6	WM8-DP2	<p><u>Chemical Waste</u></p> <ul style="list-style-type: none"> If chemical wastes are produced at the construction site, the Contractors should register with EPD as chemical waste producers. Chemical wastes should be stored in appropriate containers and collected by a licensed chemical waste contractor. Chemical wastes (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while the chemical waste that cannot be recycled should be disposed of at either the Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation. 	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal (Chemical Waste) (General) Regulation Code of Practice on the Packaging, Labelling and Storage of Chemical Waste
S7.6	WM9-DP2	<p><u>General Waste</u></p> <ul style="list-style-type: none"> General refuse should be stored in enclosed bins separately from construction and chemical wastes. Recycling bins should also be placed to encourage recycling. Preferably enclosed and covered areas should be provided for 	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal Ordinance

Project Implementation Schedule

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		<p>general refuse collection and routine cleaning for these areas should also be implemented to keep areas clean.</p> <ul style="list-style-type: none"> A reputable waste collector should be employed to remove general refuse on a daily basis. 					
S7.6	WM10-DP2	<p><u>Sewage</u></p> <ul style="list-style-type: none"> The WMP should document the locations and number of portable chemical toilets depending on the number of workers, land availability, site condition and activities. Regularly collection by licensed collectors should be arranged to minimize potential environmental impacts. 	Minimize production of sewage impacts	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal Ordinance
S7.6	WM11-DP2	<p><u>Sediment</u></p> <p>The following mitigation measures are recommended during transportation and stockpiling:</p> <ul style="list-style-type: none"> stockpiling area(s) must be properly designed and closed to the dredging locations as far as possible; stockpiling area(s) should be lined with impermeable sheeting and bunded; stockpiles should be properly covered by impermeable sheeting; vehicles delivering the sediments should be covered, and truck bodies and tailgates should be sealed to prevent any discharge during transportation; bulk earth moving equipments should be utilized as much as possible to minimize workers' handling and contact of the excavated materials; and personal protective clothing should be provided to site workers. <p>In case contamination of excavated materials is confirmed after testing, the mitigation measures described in Land Contamination Impacts section should also be implemented to minimize potential environmental impacts.</p>	Minimize waste impacts from sediment	Contractor	Western Connection Road	Construction phase	<ul style="list-style-type: none"> Waste Disposal Ordinance
Land Contamination							
S8.7	LC1-DP2	<p><u>Remediation of arsenic-contaminated soil</u></p> <ul style="list-style-type: none"> "Solidification/Stabilization" (S/S) treatment method was proposed for the remediation of arsenic-contaminated soil. Toxicity Characteristic Leaching Procedure (TCLP) test should be undertaken after S/S in order to ensure that the contaminant will not leach to the environment. Unconfined Compressive Strength (UCS) test should be conducted, and not less than 1MPa should be met prior to the backfilling or stockpiled for future reuse within the study area. Off-site disposal or reuse of the solidified material is not allowed. 	To remediate arsenic-contaminated soil	Project Proponent / Contractor	LMC Loop, contaminated area	Prior to commencement of construction works within the contaminated area	<ul style="list-style-type: none"> TM-EIAO Practice Guide (PG) for Investigation and Remediation of Contaminated Land Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management Guidance Notes for Contaminated Land

Project Implementation Schedule

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							Assessment and Remediation • Practice Guide for Investigation and Remediation of Contaminated Land
S8.7	LC2-DP2	<u>Excavation and Transportation</u> <ul style="list-style-type: none"> • Excavation profiles must be properly designed and executed with attention to the relevant requirements for environment, health and safety; • In case the soil to be excavated is situated beneath the groundwater table, it may be necessary to lower the groundwater table by installing well points or similar means; • Excavation should be carried out during dry season as far as possible to minimise contaminated runoff from contaminated soils; • Stockpiling site(s) should be lined with impermeable sheeting and bunded. Stockpiles should be properly covered by impermeable sheeting to reduce dust emission during dry season or contaminated run-off during rainy season. Watering should be avoided on stockpiles of contaminated soil to minimise contaminated runoff; • Supply of suitable clean backfill material after excavation, if required; • Vehicles containing any excavated materials should be suitably covered to limit potential dust emissions or contaminated run-off, and truck bodies and tailgates should be sealed to prevent any discharge during transport or during wet season; • Speed control for the trucks carrying contaminated materials should be enforced; and • Vehicle wheel washing facilities at the site's exit points should be established and used. 	To minimise the potential environmental impacts arising from the handling of contaminated materials	Contractor	Contaminated area	Prior to commencement of construction works within the contaminated area	<ul style="list-style-type: none"> • TM-EIAO • Practice Guide (PG) for Investigation and Remediation of Contaminated Land • Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management • Guidance Notes for Contaminated Land Assessment and Remediation • Practice Guide for Investigation and Remediation of Contaminated Land
S8.7	LC3-DP2	<u>Solidification/Stabilization</u> <ul style="list-style-type: none"> • The loading, unloading, handling, transfer or storage of cement should be carried out in an enclosed system; • Mixing process and other associated material handling activities should be properly scheduled to minimise potential noise impact and dust emission; • The mixing facilities should be sited as far apart as practicable from the nearby noise sensitive receivers; • Mixing of contaminated soil and cement / water / other additive(s) should be undertaken at a solidification plant to minimise the potential for leaching; • Runoff from the solidification / stabilization area should be 	To minimise the potential environmental impacts arising from the handling of contaminated materials	Contractor	Contaminated area	The course of remediation	<ul style="list-style-type: none"> • TM-EIAO • Practice Guide (PG) for Investigation and Remediation of Contaminated Land • Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management • Guidance Notes for

Project Implementation Schedule

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		<p>prevented by constructing a concrete bund along the perimeter of the solidification / stabilization area;</p> <ul style="list-style-type: none"> • The run-off contained in the concrete bund area along the perimeter of the paved solidification / stabilization area, if any, will be collected, stored and used for the mixing process of cement / contaminated soil; • If stockpile of treated soil is required, the stockpiling site(s) should be lined with impermeable sheeting and bunded. Stockpiles should be properly covered by impermeable sheeting to reduce dust emission during dry season or site run-off during rainy season; and • If necessary, there should be clear and separated areas for stockpiling of untreated and treated materials. 					<p>Contaminated Land Assessment and Remediation</p> <ul style="list-style-type: none"> • Practice Guide for Investigation and Remediation of Contaminated Land
S8.7	LC4-DP2	<p><u>Safety Measures</u></p> <ul style="list-style-type: none"> • Set up a list of safety measures for site workers; • Provide written information and training on safety for site workers; • Keep a log-book and plan showing the contaminated zones and clean zones; • Maintain a hygienic working environment; • Avoid dust generation; • Provide face and respiratory protection gear to site workers if necessary; • Provide personal protective clothing (e.g. chemical resistant jackboot, liquid tight gloves) to site workers, if necessary; • Provide first aid training and materials to site worker; • Bulk earth moving equipment should be utilized as much as possible to minimize workers' handling and contact of the contaminated materials; and • Eating, drinking and smoking should not be allowed in contaminated areas to avoid inadvertent ingestion of contaminant. 	To minimize the potential adverse effects on health and safety of construction workers	Contractor	Contaminated area	The course of remediation	<ul style="list-style-type: none"> • Occupation Safety and Health Ordinance (OSHO) (Charter 509)
S8.8	LC5-DP2	Re-appraisal on the entire contamination assessment area for associated infrastructure in the adjacent areas in Hong Kong outside LMC Loop.	Ensure any potential contamination activities from land use changes after the approval of this land contamination assessment study	Project Proponent /Detailed design consultant	Entire contamination assessment area for associated infrastructure in the adjacent areas in Hong Kong outside LMC Loop	After land resumption	<ul style="list-style-type: none"> • TM-EIAO • Practice Guide (PG) for Investigation and Remediation of Contaminated Land • Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management • Guidance Notes for Contaminated Land

Project Implementation Schedule

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							Assessment and Remediation • Practice Guide for Investigation and Remediation of Contaminated Land
<i>Cultural Heritage (Operational Phase)</i>							
S10.6	CH1-DP2	<ul style="list-style-type: none"> Tree belts could be planted to screen visual impacts to LMC Tsuen, Pun Uk Tsuen, Chau Tau Tsuen, LMC Police Station, Mi Tak Study Hall 	To mitigate the visual impact from the project	Project Proponent / Detailed design consultants / Contractor	Western Connection Road	Prior to operation of the Project	• TM-EIAO
<i>Landscape and Visual Impact (Construction Phase)</i>							
S11.5 .4 Table 11.5.9	L-CP1-DP2	<p><u>Preservation and Protection of Existing Trees (Good Site Practice)</u></p> <ul style="list-style-type: none"> The proposed works should avoid disturbance to the existing trees within and close to the works areas. The tree preservation proposals shall be coordinated with the layout and design of the engineering and architectural works at detailed design phase for further retention of individual trees. It is recommended that a full detailed tree survey and felling application will be undertaken and submitted for approval by the relevant government departments in accordance with ETWB TCW No. 3/2006, 'Tree Preservation'. This will be conducted during the detailed design phase of the project and submitted to DLO for approval. The methodology and scope including the programme for the tree survey and felling application are also subject to the approval of the relevant authorities. Trees which are not in conflict with the proposals would be retained and shall be protected by means of fencing during construction phase to prevent damage to tree canopies and root zones from vehicles and storage of materials. Specifications for the protection of existing trees will be provided during the preparation of the detailed tree survey by Detailed Design consultants at detailed design and construction phase. 	Avoid disturbance and protection of the existing trees	Detailed design consultant / Contractor	Within project site	Detailed design and construction phases	<ul style="list-style-type: none"> EIAO – TM ETWB TCW 2/2004 ETWB TCW 3/2006
S11.5 .4 Table 11.5.9	L-CP2-DP2	<p><u>Works Area and Temporary Works Areas (Good Site Practice)</u></p> <ul style="list-style-type: none"> The construction sequence and construction programme shall be optimized in order to minimize the duration of impact. Construction site controls shall be enforced including the storage of materials, the location and appearance of site 	Minimize landscape impacts	Contractor	The whole project area where applicable	Construction phase	• TM-EIAO

Project Implementation Schedule

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		<p>accommodation and site storage; and the careful design of site lighting to prevent light spillage.</p> <ul style="list-style-type: none"> The temporary works areas shall be restored to its original condition or enhanced through the introduction of new amenity areas or planting areas following the completion of the construction phase. 					
S11.5 .4 Table 11.5.9	L-CP3-DP2	<p><u>Advance Implementation of Mitigation Planting</u></p> <ul style="list-style-type: none"> Replanting of existing / disturbed vegetation shall be undertaken at the earliest possible phase of the construction phase of the project using predominantly native plant species although ornamental species may be used for roadside planting and amenity areas. 	Minimize landscape impacts	Detailed design consultant/ Contractor	The whole project area where applicable	Detailed design and construction phases	<ul style="list-style-type: none"> TM-EIAO
S11.5 .4 Table 11.5.9	L-CP4-DP2	<p><u>Transplantation of Existing Trees</u></p> <ul style="list-style-type: none"> Some specimens have relatively higher amenity value which are in conflict with the proposals shall be considered for transplantation. For trees affected by the proposed infrastructure works the final receptor sites shall be preferably adjacent to their current locations alongside of the alignment to retain their contribution to the local landscape context. For the LMC Loop the receptor locations will be selected to allow the trees to be moved directly to their final locations in accordance with the detailed landscape proposals. The transplanting proposals are subject to review at the detailed design phase and to agreement-in-principle with the relevant management and maintenance agents and/or government departments. The implementation programme for the proposed works shall reserve sufficient time for the advanced tree transplanting preparation works to enhance the survival of the transplanted trees. The transplanting proposals will be subject to the findings of the detailed tree survey and felling application to be undertaken by the detailed design consultants and following approval by the relevant departments. 	Minimize landscape impacts and retention of landscape resources	Detailed design consultant/ Contractor	The whole project area where applicable	Detailed design and construction phases	<ul style="list-style-type: none"> TM-EIAO ETWB TCW 3/2006 LAO PN 7/2007
S11.5 .4 Table 11.5.9	L-CP5-DP2	<p><u>Coordination with Concurrent Projects</u></p> <ul style="list-style-type: none"> Coordinated implementation programme with concurrent projects to minimise impacts and where possible reduce the period of disturbance. 	Minimize landscape impacts	Contractor	The whole project area where applicable	Construction phase	<ul style="list-style-type: none"> TM-EIAO
S11.5 .4 Table 11.5.9	L-CP6-DP2	<p><u>Creation of Wetland and Landscape Buffer</u></p> <ul style="list-style-type: none"> The existing reedbed acquired for development areas for the project will be reinstated as part of the Ecological Area. The reinstatement shall be undertaken at the earliest possible stage during the construction phase of the project. Creation of 12.78ha of Ecological Area (EA) containing reed marsh and marsh will be created at the southern portion of the 	Compensation for the loss of landscape resources	Project Proponent / Detailed design consultant/ Contractor / Operator	The whole project area where applicable	Detailed design, construction and operational phases	<ul style="list-style-type: none"> TM-EIAO

Project Implementation Schedule

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		<p>LMC Loop, and a 50m width landscape buffer area will be set up in between the EA and the development area. Wetland creation concepts please refer to Figure 11.9zf and Chapter 12 Ecology Impact Assessment of this EIA.</p> <ul style="list-style-type: none"> Native tree and shrub mix will be utilised for the creation of landscape buffer along northern edge of EA to support the creation of avifauna habitat from ecologist perspectives as well as enhance the aesthetic and landscape diversity within the LMC Loop Development. Creation of minimum 11.72 Ha. of permanent compensatory off-site wetland areas at Sam Po Shue and Hoo Hok Wai. For the potential locations for off-site wetlands please refer to Figure 11.9zf and 11.9zh, Chapter 2 Project Description and Chapter 12 Ecology Impact Assessment of this EIA. 					
S11.5.4 Table 11.5.9	L-CP7- DP2	<p><u>Design of Retaining Wall and Slopes</u></p> <ul style="list-style-type: none"> The proposed treatment of Retaining Wall and Slopes will be undertaken in accordance with GEO Publication No. 1/2011 "Technical Guidelines on Landscape Treatment and Bio-engineering for Slopes". These engineering structures will be aesthetically enhanced through the use of soft landscape works including tree and shrub planting to give man-made slopes a more natural appearance blending into the local rural landscape. Whip sized tree planting is preferred on the face of soil cut slopes and at the crest and toe of the slope, and within berm planters. The smaller, younger plant stock will adapt to their new growing conditions more quickly than larger sized stock and establish a naturalistic effect more rapidly. Hydroseeding will be applied on slope has a gradient more than 30 degree. 	Minimize landscape impacts	Detailed design consultant	The whole project area where applicable	Detailed design phase	<ul style="list-style-type: none"> TM-EIAO
S11.6.5 Table 11.6.3	V-CP1- DP2	<p><u>Preservation and Protection of Existing Trees (Good Site Practice)</u></p> <ul style="list-style-type: none"> The proposed works should avoid disturbance to the existing trees within and close to the works areas. The tree preservation proposals shall be coordinated with the layout and design of the engineering and architectural works at detailed design phase for further retention of individual trees. The preservation of existing tree shall provide instant greening and screening effect for proposed works. 	Minimise visual impact	Detailed design consultant / Contractor	The whole project area where applicable	Detailed design and construction phases	<ul style="list-style-type: none"> TM-EIAO
	V-CP2- DP2	<p><u>Works Area and Temporary Works Areas (Good Site Practice)</u></p> <ul style="list-style-type: none"> The construction sequence and construction programme shall be optimized in order to minimize the duration of impact. Construction site controls shall be enforced including the storage of materials, the location and appearance of site accommodation and site storage; and the careful design of site lighting to prevent light spillage. Hoarding designed with recessive colour shall be set up 	Minimise visual impact	Contractor	The whole project area where applicable	Construction phase	<ul style="list-style-type: none"> TM-EIAO

Project Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
		<p>around the construction site providing screening effect for the construction works.</p> <ul style="list-style-type: none"> The site office or temporary above-ground structures shall be sited at less visual prominent locations. 					
	V-CP3-DP2	<p><u>Advance Implementation of Mitigation Planting</u></p> <ul style="list-style-type: none"> Replanting of existing / disturbed vegetation shall be undertaken at the earliest possible phase of the construction phase of the project using predominantly native plant species although ornamental species may be used for roadside planting and amenity areas. 	Minimise visual impact and advance mitigation planting for screening purpose.	Detailed design consultant / Contractor	The whole project area where applicable	Detailed design and construction phases	• TM-EIAO
	V-CP5-DP2	<p><u>Coordination with Concurrent Projects</u></p> <ul style="list-style-type: none"> Coordinated implementation programme with concurrent projects to minimise impacts and where possible reduce the period of disturbance. 	Minimize visual impacts	Contractor	The whole project area where applicable	Construction phase	• TM-EIAO
	V-CP7-DP2	<p><u>Design of Retaining Wall and Slopes</u></p> <ul style="list-style-type: none"> The proposed treatment of Retaining Wall and Slopes will be undertaken in accordance with GEO Publication No. 1/2011 "Technical Guidelines on Landscape Treatment and Bio-engineering for Man-made Slopes and Retaining Walls". These engineering structures will be aesthetically enhanced through the use of soft landscape works including tree and shrub planting to give man-made slopes a more natural appearance blending into the local rural landscape. Whip sized tree planting is preferred on the face of soil cut slopes and at the crest and toe of the slope, and within berm planters. The smaller, younger plant stock will adapt to their new growing conditions more quickly than larger sized stock and establish a naturalistic effect more rapidly. Hydroseeding will be applied on slope has a gradient more than 30 degree. 	Minimize visual impacts and maximise greening opportunities for visual enhancement.	Detailed design consultant	The whole project area where applicable	Detailed design phase	• TM-EIAO
<i>Landscape and Visual Impact (Operational Phase)</i>							
S11.5 Table 11.5.10	L-OP1-DP2	<p><u>Roadside and Amenity Planting</u></p> <ul style="list-style-type: none"> The planting proposals will utilise both native and ornamental species which suitable for roadside planting to soften the built structures and enhance visual amenity of existing and proposed road corridors. The implementation of new planting shall be undertaken as soon as technically feasible using a sectional completion approach during construction phase to ensure the effectiveness of this mitigation during operational phase and as early as possible during the operational phase. 	Enhance local landscape value	Detailed design consultant/ Contractor / Operator	The whole project area where applicable	Detailed design, construction and operational phase	• TM-EIAO
S11.5 Table 11.5.10	L-OP2-DP2	<p><u>Compensatory Planting Proposals</u></p> <ul style="list-style-type: none"> As the works are largely located within rural areas and alongside existing roads the planting proposals have sought to utilise all of the available space for new tree and shrub 	Enhance local landscape value	Detailed design consultant/ Contractor	The whole project area where applicable	Detailed design and construction phases	• TM-EIAO

Project Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
		<p>planting to create comprehensive landscape framework which is connected to areas of retained and preserved vegetation and designed to integrate the proposals within their future landscape setting.</p> <ul style="list-style-type: none"> • The planting proposals shall be maintained in accordance with good horticultural practice in order to realise the objectives of the mitigation measures. This includes the replacement of defective plant species on the new planting areas to enhance the aesthetic, landscape and ecological quality of the proposals. • Both on-site and off-site opportunities for compensatory planting shall be considered. • The preliminary compensatory planting proposal will follow the Technical Circular ETWB TCW No. 3/2006 except for felling of trees for slope works which are exempted from the compensation planting ratio requirement. New tree planting in general roadside planting areas and planting areas within the LMC Loop and above ground structures will utilise a combination of semi-mature to light standard sized stock as shown in Figures 11.9a and 11.9h to 11.9zi in the EIA Report to create an instant greening effect at local level. • New planting areas within the LMC Loop including tree planting in the landscape buffers, open spaces and roadside planting areas will accommodate approximately 5,000 new trees. Planting of more broad-leaf tree species will be considered where space allows and location is suitable for tree establishment. This planting concept would create comfortable shaded area for pedestrians and visitors in open spaces. • New planting areas along the road alignment of WCR (DP2), ECR (DP6) and access road to Flushing Water Service Reservoir (DP7) will accommodate approximately 2,600 new trees. • For the affected tree on the sloping areas, due to constrained growing conditions, whip planting will be proposed on slopes which have gentler gradient at a planting distance of about 1500mm. Slopes that have a gradient more than 30 degree, hydroseeding will be applied instead. Upon full establishment of whip planting and hydroseeding, greening coverage on affected sloping areas will be reinstated. Following the above planting principles, the newly formed and remnant sloping areas along the road alignment would accommodate approximately 500 whips. • Based on a preliminary estimation, the above planting proposal would achieve a replanting ratio of minimum 1:1 in 					

Project Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
		<p>terms of quantity and quality except for slope works according to ETWB TCW No. 3/2006. This tree replanting ratio would compensate the total girth and number of tree loss as well as the total number of tree loss on sloping area. Given the constraints of growing condition and safety reasons of planting larger size tree stock on sloping areas, greening measures on new formed and remnant slopes, including extensive hydroseeding and whips planting, would restore the quality of these greenback drop in rural area.</p> <ul style="list-style-type: none"> The species selection for planting areas within the LMC Loop will utilise a range of native, ornamental and amenity tree species. These proposals will be subject to further development during the detailed design phase of the project.. Proposed planting on slopes will utilise woodland mix with majority of native species on new or disturbed slopes along the WCR and ECR. 					
S11.5 Table 11.5.10	L-OP6-DP2	<p><u>Creation of Woodland</u></p> <ul style="list-style-type: none"> 1.1 Ha. of woodland areas will be created off-site as ecological mitigation measures for the loss of woodland. The creation of a woodland compensation area will involve planting of woodland and shrubland species in grassland areas currently of low ecological value along the existing Boundary Patrol Road near Horn Hill at Ping Hang. For details of the off-site woodland compensation please refer to Figure 11.9zi, Chapter 2 Project Description and Chapter 12 Ecology Impact Assessment of this EIA. Disturbed wooded slopes along WCR (DP2) and ECR (DP6) by the road widening and improvement works will be infilled with woodland planting of light standard size trees or whips where space allows to restore and enhance the ecological and landscape value of the remnant woodland areas. 	Enhance local landscape value	Project Proponent / Detailed design consultant/ Contractor / Operator	The whole project area where applicable	Detailed design, construction and operational phase	• TM-EIAO
S11.5 Table 11.5.10	L-OP7-DP2	<p><u>Reinstatement of Affected Fishponds</u></p> <ul style="list-style-type: none"> Enhancement of 11.72 Ha. of wetland/fishponds at Sham Po Shue and Hoo Hok Wai with ecological function for the off-site compensation of the permanent loss of fishponds. Off-site fishponds enhancement proposal refer to Figure 11.9zh, Chapter 2 Project description and Chapter 12 Ecology Impact Assessment of this EIA. Temporary loss of fishponds along WCR (DP2), Direct Link to LMC Station (DP4) and ECR (DP6) by the road widening and improvement works will be largely reinstated to fishponds with tree planting at selected locations. Reinstatement of affected fishponds refer to Figure 11.9j,k,l,m,r, t and u in the EIA Report. These ponds will be used for both functional or amenity purposes to enhance the 	Reinstate and enhance local landscape value	Project Proponent / Detailed design consultant/ Contractor / Operator	The whole project area where applicable	Detailed design, construction and operational phases	• TM-EIAO

Project Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
		existing landscape and visual context.					
S11.6 Table 11.6.4	V-OP1-DP2	<p><u>Roadside and Amenity Planting</u></p> <ul style="list-style-type: none"> The planting proposals will utilise native species to soften the proposed structures. The implementation of new planting shall be undertaken as soon as technically feasible using a sectional completion approach during construction phase to ensure the effectiveness of this mitigation during operational phase and as early as possible during the operational phase. This measure will enhance the visual amenity along existing and proposed road corridor. 	Enhance visual amenity	Detailed design consultant/ Contractor / Operator	The whole project area where applicable	Detailed design, construction and operational phases	<ul style="list-style-type: none"> TM-EIAO ETWB TCW
S11.6 Table 11.6.4	V-OP2-DP2	<p><u>Compensatory Planting Proposals</u></p> <ul style="list-style-type: none"> As the works are largely located within rural areas and alongside existing roads the planting proposals have sought to utilise all of the available space for new tree and shrub planting to create comprehensive landscape framework which is connected to areas of retained and preserved vegetation and designed to integrate the proposals within their future landscape setting. Both on-site and off-site opportunities for compensatory planting shall be considered for enchantment of landscape and visual context. Design of road layout and built environment shall accommodate enough planting areas for compensatory planting to restore the quality of these greenback drop in rural area. 	Minimise visual impact and enhance visual amenity	Detailed design consultant/Contractor	The whole project area where applicable	Detailed design and construction phases	<ul style="list-style-type: none"> TM-EIAO ETWB TCW
S11.6 Table 11.6.4	V-OP3-DP2	<p><u>Responsive Design of Buildings and Structure</u></p> <ul style="list-style-type: none"> The design of the proposed building structures and road connections networks will incorporate design features as part of visual mitigation measures including: <p><u>Integrated Design Approach</u></p> <ul style="list-style-type: none"> Building massing - the proposed use of a responsive design for the disposition of the main elements of the proposed scheme including the locations of buildings and utility structures. Grouping of utilities and infrastructure components into proposed buildings as far as technically feasible to reduce the mass of development. The disposition and height profile of the developments and above ground utilities structures responds to the existing context, is designed to minimise the wall effects and create a subtle transition at the edges of the site where it meets the rural landscape. Measures may include the creation of setbacks, articulating the development frontage, maintenance of view corridors and the utilisation of gradation or articulated height profile to enhance the sense of visual integration with the existing context, avoid abrupt transitions between the existing 	Minimise visual impact	Detailed design consultant	Development sites on the LMC Loop, STW, and Flushing Water Service Reservoir, PTI at LMC Station and other building where applicable.	Detailed design phase	<ul style="list-style-type: none"> TM-EIAO ETWB TCW

Project Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
		<p>and proposed built environment and reduce the apparent visual mass of the proposed developments.</p> <p><u>Treatment of Built Structures</u></p> <ul style="list-style-type: none"> The architectural design should seek to reduce the apparent visual mass of the structures further through the use of materials and finishes such as colour blocking, innovative surface treatments and vertical greening. <p>Responsive finishes for the Proposed Structures</p> <ul style="list-style-type: none"> In terms of the building finishes natural tones should be considered for the colour palette and non-reflective finishes recommended for the outward facing building facades to reduce the glare effect. <p><u>Innovative Architectural Design</u></p> <ul style="list-style-type: none"> Adoption of recessive colours for the buildings and engineered structures including the proposed viaducts and noise barrier finishes and colour blocking to reduce the collective visual mass of the development. 					
S11.6 Table 11.6.4	V-OP4-DP2	<p><u>Design of Noise Mitigation Structures</u></p> <ul style="list-style-type: none"> The design for the proposed noise barriers along the at-grade section of proposed ECR section for Planned Eco-lodge at Ma Tso Lung and along the section of road widening works for the WCR shall aim to reduce the visual prominence of the structure through the use of form, materials, texture and colour. Design of panels shall be opaque and with chromatic colours to break-up the visual mass and horizontal emphasis of the barriers. Where space allows barrier design shall incorporate planting such as trees or hedge planting. 	Minimise visual impact	Detailed design consultant	Noise Mitigation Measures in the LMC Loop and along WCR and ECR.	Detailed design phase	<ul style="list-style-type: none"> TM-EIAO ETWB TCW ACABAS
S11.6 Table 11.6.4	V-OP5-DP2	<p><u>Design of Engineering Structures</u></p> <p>The design of the proposed Engineering Structures such as the proposed viaducts elevated PTI, slip road and service reservoir should pay particular attention to the appearance and construction methods of the structures, these would include the following:</p> <ul style="list-style-type: none"> The detailed design landscape consultants shall work in unison with the engineers on the aesthetic aspects of the structures and their relationship with the landscape. Wherever light levels, the water regime and the requirements of the environmental mitigation measures permit, trees and vegetation would be reinstated below or adjacent to the structures. Irrigation may be required in some locations and hard landscape solutions considered where the clearance is low. Planting would be used wherever possible to minimise the apparent height of structures and to soften their appearance in medium and long distance views. The design of the viaduct should avoid unnecessary visual clutter; this would be achieved through the co-ordination of 	Minimise visual impact	Detailed design consultant	The whole project area where applicable	Detailed design phase	<ul style="list-style-type: none"> TM-EIAO ETWB TCW ACABAS

Project Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
		<p>the various engineering disciplines involved to arrive at integrated design solutions. Such as the location of columns of viaduct should not block any views from VSRs in the proximity and the shape of column should be slim down as far as technically feasible to reduce the structural mass at street level, at where space is allowed planting area for shade tolerant tree, shrub and climber species would be provide at the base of the column to soften the vertical emphasis at street level.</p> <ul style="list-style-type: none"> Fair faced concrete would not be used for viaduct parapets to minimise glare from the structure and to avoid the visually detracting effect of staining. Drainage and utilities to be concealed within the structures. 					
S11.6 Table 11.6.4	V-OP6-DP2	<p><u>Creation of Woodland</u></p> <ul style="list-style-type: none"> 1.1 Ha. of woodland areas will be created off-site as ecological mitigation measures for the loss of woodland. The creation of a woodland compensation area will involve planting of woodland and shrubland species in grassland areas currently of low ecological value along the existing Boundary Patrol Road near Horn Hill at Ping Hang. For details of the off-site woodland compensation please refer to Figure 11.9zi, Chapter 2 Project Description and Chapter 12 Ecology Impact Assessment of this EIA. Disturbed wooded slopes along WCR (DP2) and ECR (DP6) by the road widening and improvement works will be infilled with woodland planting of light standard size trees or whips where space allows to restore and enhance the landscape and visual context along LMC Road. 	Enhance visual amenity and integration of existing visual context	Project Proponent / Detailed design consultant/ Contractor / Operator	The whole project area where applicable	Detailed design, construction and operational phases	<ul style="list-style-type: none"> TM-EIAO ETWB TCW
S11.6 Table 11.6.4	V-OP7-DP2	<p><u>Reinstatement of Affected Fishponds</u></p> <ul style="list-style-type: none"> Temporary loss of fishponds along WCR (DP2), Direct Link to LMC Station (DP4) and ECR (DP6) by the road widening and improvement works will be largely reinstated to fishponds with tree planting at selected locations. Reinstatement of affected fishponds refer to Figure 11.9j,k,l,m,r, t and u in the EIA Report. These ponds will be used for both functional or amenity purposes to enhance the existing landscape and visual context. 	Enhance visual amenity and integration of existing visual context	Contractor	The whole project area where applicable	Construction phase	<ul style="list-style-type: none"> TM-EIAO ETWB TCW
Ecology							
S12.7	E2-DP2	<p><u>Construction run-off</u></p> <ul style="list-style-type: none"> Temporary sewerage and drainage will be designed and installed to collect wastewater and prevent it from entering nearby water bodies; Proper locations well away from nearby water bodies will be 	Minimize the indirect impact from the increasing suspended solids and pollutants in LMC Meander	Contractor	Within project construction site	Construction phase	

Project Implementation Schedule

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		<p>used for temporary storage of materials (i.e. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction debris and spoil, and these will be identified before commencement of works;</p> <ul style="list-style-type: none"> • To prevent muddy water entering nearby water bodies, work sites close to nearby water bodies will be isolated, using such items as sandbags or silt curtains with lead edge at bottom and properly supported props. Other protective measures will also be taken to ensure that no pollution or siltation occurs to the water gathering grounds of the work site; • If temporary access along a riverbed is unavoidable, this will be kept to the minimum in width and length. Temporary river crossings will be supported on stilts above the river bed; • Stockpiling of construction materials, if necessary, will be properly covered and located away from nearby water bodies; • Construction debris and spoil will be covered and/or properly disposed of as soon as possible to avoid being washed into nearby water bodies; • Construction effluent, site run-off and sewage will be properly collected and/or treated. Wastewater from any construction site will be minimised via the following in descending order: reuse, recycling and treatment; • Proper locations for discharge outlets of wastewater treatment facilities well away from sensitive receivers will be identified (i.e. treated wastewater will not be discharged into LMC Meander, natural streams, marsh, reedbed, active or abandoned fish ponds); • Adequate lateral support will be erected where necessary in order to prevent soil/mud from slipping into the Ecological Area or LMC Meander; • Site boundary will be clearly marked and any works beyond the boundary strictly prohibited; • Regular water monitoring and site audit will be carried out at adequate points along LMC Meander, and at the outfalls of the natural streams around LMC Loop. If the monitoring and audit results show that pollution occurs, adequate measures including temporarily cessation of works will be considered. 					
S12.7	E3-DP2	<p><u>Pollutant Runoff to Downstream areas from Accidental Spillage</u></p> <ul style="list-style-type: none"> • Prepare an emergency contingency plan • The plan will include, but not be limited to, the following: <ul style="list-style-type: none"> - Potential emergency situations; - Chemicals or hazardous materials used on-site (and 	Minimize indirect impact from pollutant runoff to downstream areas from accidental spillage	Contractor / Operator	Areas within project site near streams	Construction and operational phases	

Project Implementation Schedule

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		their location); - Emergency response team; - Emergency response procedures; - List of emergency telephone hotlines; - Locations and types of emergency response equipment; - Training plan and testing for effectiveness.					
S12.7	E4-DP2	<ul style="list-style-type: none"> Use opaque, non-transparent, non-reflective noise barriers for all developments associated with the Project. 	Minimize the mortality impacts on birds	Project Proponent / Detailed design consultant/ Contractor/ Operator	Areas within project site	Detailed design, construction and operational phases	
S12.7	E5-DP2	<ul style="list-style-type: none"> Minimize loss of natural vegetation along LMC Meander, and suitable replacement planting with possible installation of otter holts and the provision of potential feeding area and spraint locations for otters in the stabilized bank subject to detailed design. No significant change to velocity of water flow, water level or water quality. No direct lighting on Meander. 3m high, dull green site boundary fence for all developments associated with the project. Pre-construction surveys for otter holts or natal dens will be conducted in LMC Loop before the commencement of construction works. Work in the area of any otter holt found to cease pending examination by experienced Ecologist. If in use for breeding, works in the area will temporarily stop until end of breeding activity. No construction activities within 100m of LMC Meander between one hour prior to sunset and one hour after sunrise. Provision of compensatory reed marsh in the Ecological Area in LMC Loop, including open water channels and islands within the reed marsh, both of which features are considered to be used by the species. 	Minimize impacts on Eurasian Otter	Detailed design consultant / Contractor	Construction site within the project	Detailed design and construction phases	
S12.7	E8-DP2	<ul style="list-style-type: none"> Refer to E2 and E3 	Prevent impacts on Rose Bitterling, small snakehead and <i>Somaniathelphus zanklon</i>	Contractor	Within project site	Construction phase	
S12.7	E12-DP2	<ul style="list-style-type: none"> Minimal night-time lighting No direct light on Meander 	Minimize impacts on LMC Meander	Contractor / Operator	All	Construction and operational phases	

Project Implementation Schedule

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S12.7	E13-DP2	<ul style="list-style-type: none"> Construction limited to wet season between the hours of 9am and 5pm. Use of opaque visual/noise barriers and planting of trees shrubs along length of road adjacent to fish ponds. Compensatory habitat management elsewhere to mitigate wetland loss. 	Minimize impacts from the construction and operation disturbance impacts	Contractor/ Operator	Pond habitat along alignment (mainly Ha Wan Tsuen Road)	Construction and operational phase	
S12.7	E14-DP2	<ul style="list-style-type: none"> Replacement planting of native tree species relevant to Deep Bay area and the area impacted. Planting to occur in tandem with that required for woodland loss arising 	Minimize the ecological impacts	Contractor	Woodland and shrubland habitat along Ha Wan Tsuen Road	Construction phase	
S12.7	E15-DP2	<ul style="list-style-type: none"> Use noise/visual barriers to minimise disturbance. Construction activities should not be carried out before 0900h or after 1700h in order to minimise disturbance to the flight line corridor (and to mammals). 	Minimize impacts on flight line corridor from Western Connection Road	Contractor	Construction site for Western Connection Road	Construction phase	
S12.7	E16-DP2	<ul style="list-style-type: none"> Use of opaque visual/noise barriers and roadside planting of trees and shrubs to minimise disturbance impacts. 	Minimize impacts on flight line corridor from Western Connection Road	Project Proponent / Detailed design consultant/ Contractor / Operator	Western Connection Road	Detailed design, construction and Operational phase	
S12.9	EG2-DP2	All generic mitigation measures proposed in Tables 12.82a and 12.82b in the EIA report.	Avoid, minimize and mitigate overall ecological impact.	Project proponent / contractor / detailed design consultant / developer / operator	All areas.	All phases	• EIAO
Fisheries (Construction Phase)							
S13.7	F4-DP2	During the construction phase, a layer of sheet pile wall will be erected along the site boundary adjacent to fish ponds after commencement of site works. The sheet pile wall will be constructed by silent piling method (Press-in method) which induces minimal vibration. Therefore the stability of the fish pond bund will not be influenced by the construction of the sheet pile wall, subsequent construction works and the loading from the road during operational phase. In addition, the sheet pile wall will have grouting or a grout curtain to avoid water seepage from the fish pond to the excavation area. With these measures, significant impacts are not anticipated.	Bund stability	Contractor	Fish ponds	Construction phase	• TM-EIAO
S13.7	F5-DP2	Temporary traffic arrangements will be instigated to maintain or provide alternative access to fish ponds during construction phase.	Prevent Blockage of Access Roads to Fish Ponds	Contractor	Fish ponds	Construction phase	• TM-EIAO
S13.7	F6-DP2	Standard mitigation measures to control site runoff and other pollutants caused by construction activities and good site practices will be implemented during the construction phase of the Project. Excavated	Avoid water quality impact	Contractor	Fish ponds	Construction phase	• TM-EIAO

Project Implementation Schedule

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		material and other inert construction wastes produced will be transferred to proper recipients (i.e. landfill) (see Waste Management Section). Sewage from the proposed development will be dealt with via a sewerage system and will not be discharged directly to surrounding water bodies.					
S13.7	F7-DP2	<p>Dust Minimization</p> <ul style="list-style-type: none"> • During all excavation works, good site practice should be adopted to minimize impacts on fisheries. The below site practices should be adopted during this time. • 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; • 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; • Excavation profiles must be properly designed and executed with attention to the relevant requirements for environment, health and safety; • In case the soil to be excavated is situated beneath the groundwater table, it may be necessary to lower the groundwater table by installing well points or similar means; • Supply of suitable clean backfill material after excavation, if required; • Vehicles containing any excavated materials should be suitably covered to limit potential dust emissions or contaminated run-off, and truck bodies and tailgates should be sealed to prevent any discharge during transport or during wet season; • Speed control for the trucks carrying contaminated materials should be enforced; and • Vehicle wheel washing facilities at the site's exit points should be established and used. 	Dust minimization	Contractor	Fish ponds	Construction phase	<ul style="list-style-type: none"> • TM-EIAO
<i>Fisheries (both Construction and Operational Phase)</i>							
S13.7	F8-DP2	<p><u>Contingency plan</u></p> <p>The contractor should prepare an emergency contingency plan for</p>	Deal with any accidental spillage event	Contractor / Operator	Fish ponds	Construction and operational	<ul style="list-style-type: none"> • TM-EIAO

Project Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
		<p>actions to be taken if significant impacts, such as accidental spillage of chemicals, water seepage from fish ponds, damaged/ destabilized pond bunds, pond water contamination by site runoff, on fish ponds occur. The contractor should submit the emergency contingency plan dealing with, but not limited to, the aforementioned potential impacts to the engineer for review, comment and approval. The fish pond operators will also be consulted for the details of the contingency plan, which will also be submitted to AFCD for review and comment. The plan should include, but not limited to, the following:</p> <ul style="list-style-type: none"> • Potential emergency situations; • Chemicals or hazardous materials used on-site (and their location); • Emergency response team; • Emergency response procedures; • List of emergency telephone hotlines; • Locations and types of emergency response equipment; • Training plan and testing for effectiveness. 				phases	
Food Safety (Construction Phase)							
S15	F1-DP2	<p><u>Contingency plan</u> The contractor should have effective communication with Food and Environmental Hygiene Department (FEHD) / Centre of Food Safety (CFS), on food surveillance and food incidents. Food Surveillance Programme (http://www.cfs.gov.hk/english/programme/programme_fs/programme_fs.html). is undertaken by CFS to inspect food safety in Hong Kong, with a three-tier surveillance strategy (consisting of routine food surveillance, targeted food surveillance and seasonal food surveillance). Under this programme, aquatic products (including pond fish) at import, wholesale and retail levels are sampled for microbiological (i.e. bacteria and viruses), chemical (i.e. natural toxins, food additives and contaminants) and radiation testings. All food safety surveillance results of by a monthly "Food Safety Report" in press releases and also presented in CFS website. If pond fish samples do not comply with food safety standards and they are verified to be from fish ponds of concerned under this study through "food tracing", fish selling shall be stopped as instructed by CFS.</p>	Minimize significant impacts on fish ponds	Contractor	Fish pond within project site	Construction phase	• TM-EIAO
S15	F2-DP2	<p><u>Dust Minimization</u></p> <ul style="list-style-type: none"> • During all excavation works, good site practice should be adopted to minimize the release of TSP, impact of land contamination and the associated food safety implications. The below site practices should be adopted during excavation works. • Any excavated or stockpile of dusty material should be 	Dust minimization	Contractor	Fish pond within project site	Construction phase	• Food Adulteration (Metallic Contamination) Regulations

Project Implementation Schedule

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		<p>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;</p> <ul style="list-style-type: none"> • Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads; • 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; • Excavation profiles must be properly designed and executed with attention to the relevant requirements for environment, health and safety; • In case the soil to be excavated is situated beneath the groundwater table, it may be necessary to lower the groundwater table by installing well points or similar means; • Supply of suitable clean backfill material after excavation, if required; • Vehicles containing any excavated materials should be suitably covered to limit potential dust emissions or contaminated run-off, and truck bodies and tailgates should be sealed to prevent any discharge during transport or during wet season; • Speed control for the trucks carrying contaminated materials should be enforced; and • Vehicle wheel washing facilities at the site's exit points should be established and used. 					

Project Implementation Schedule

Note: Chapters 1 to 2 of the EIA report present the background information of the Project, identified designated project, concurrent projects, objectives and scope for various environmental aspects, and description on recommended outline development plan. Chapters 3 to 14 of the EIA report present the EIA findings and mitigation measures are described below with cross-reference to the EIA report. Chapters 16 to 18 summarize the environmental outcomes and describe the environmental monitoring requirements and conclusion.

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
<i>DP3-Direct Link to MTR Lok Ma Chau Station</i>							
<i>Construction Dust Impact</i>							
S3.8	D1-DP3	Mitigation measures in form of regular watering under a good site practice should be adopted. Watering once per hour on exposed worksites and haul road is proposed to achieve dust removal efficiency of 92.1%. While the above watering frequencies are to be followed, the extent of watering may vary depending on actual site conditions but should be sufficient to maintain an equivalent intensity of no less than 1.6 L/m ² to achieve the respective dust removal efficiencies	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> • APCO To control the dust impact to meet HKAQO and TM-EIAO
S3.8	D2-DP3	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> • APCO To control the dust impact to meet HKAQO and TM-EIAO
S3.8	D3-DP3	<p>Following dust suppression measures should also be incorporated by the Contractor to control the dust nuisance throughout the construction phase</p> <ul style="list-style-type: none"> • 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; • A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones; • The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores; • When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly 	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> • APCO To control the dust impact to meet HKAQO and TM-EIAO

Project Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
		<p>maintained throughout the construction period.</p> <ul style="list-style-type: none"> • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport should be totally enclosed by impervious sheeting; • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides; • Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed; • Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and • Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shortcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies. 					
S3.8	D4-DP3	Implement regular dust monitoring under EM&A programme during the construction phase.	Monitoring of dust impact	Contractor	Selected representative dust monitoring station	Construction phase	<ul style="list-style-type: none"> • TM-EIAO
Noise Impact (Construction Phase)							
S4.8	N-CP1-DP3	<p>Implement the following good site management practices:</p> <ul style="list-style-type: none"> • only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; • machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; 	Control construction airborne noise	Contractor	All construction sites where practicable	Construction phase	<ul style="list-style-type: none"> • Annex 5, TM-EIA

Project Implementation Schedule

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		<ul style="list-style-type: none"> plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; mobile plant should be sited as far away from NSRs as possible and practicable; material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities. 					
S4.8	N-CP2-DP3	Install temporary site hoarding (approx 2.4m high) located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period.	Reduce the construction noise levels at low-level zone of NSRs through partial screening.	Contractor	All construction sites where practicable	Construction phase	• Annex 5, TM-EIA
S4.8	N-CP3-DP3	Install movable noise barriers and full enclosure, screen the noisy plants including air compressor and generator.	Screen the noisy plant items to be used at all construction sites	Contractor	All construction sites where practicable	Construction phase	• Annex 5, TM-EIA
S4.8	N-CP4-DP3	Use of "Quiet" Plant and Working Methods	Reduce the noise levels of plant items	Contractor	All construction sites where practicable	Construction phase	• Annex 5, TM-EIA
S4.8	N-CP5-DP3	Sequencing operation of construction plants where practicable.	Operate sequentially within the same work site to reduce the construction airborne noise	Contractor	All construction sites where practicable	Construction phase	• Annex 5, TM-EIA
S4.8	N-CP6-DP3	Implement a noise monitoring under EM&A programme.	Monitor the construction noise levels at the selected representative locations	Contractor	Selected representative noise monitoring stations	Construction phase	• TM-EIA
• Noise Impact (Operational Phase)							
S4.8	N-OP1-DP3	Provide noise barrier where necessary before operation of the proposed project.	Control operational airborne noise due to road traffic	Project Proponent / Contractor	Refer to Figures 4.9, 4.9a to d in the EIA Report	Prior to operation of the Project	Noise Control Ordinance and its TM
Water Quality Impact (Construction Phase)							
S5.7	W1-CP-DP3	<u>Construction Runoff and Site Drainage</u> In accordance with the Practice Note for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN 1/94), construction phase mitigation measures, where appropriate, should include the following: <ul style="list-style-type: none"> Update and implementation of Stormwater Pollution Control Plan At the start of site establishment, perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works and erosion and sedimentation control facilities implemented. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities. The design of the temporary on-site drainage system will be undertaken by the contractor prior to the commencement of 	Minimize water quality impact from construction site runoff and general construction activities	Contractor	All construction sites where practicable	Construction phase	<ul style="list-style-type: none"> Water Pollution Control Ordinance ProPECC PN1/94 TM-EIAO TM-DSS

Project Implementation Schedule

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		<p>construction.</p> <ul style="list-style-type: none"> • Diversion of natural stormwater should be provided as far as possible. The design of temporary on-site drainage should prevent runoff going through site surface, construction machinery and equipments in order to avoid or minimize polluted runoff. Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m3 capacities, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity shall be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped. • The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a silt/sediment trap. The silt/sediment traps should be incorporated in the permanent drainage channels to enhance deposition rates. • The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94. The detailed design of the sand/silt traps should be undertaken by the contractor prior to the commencement of construction. • Construction works should be programmed to minimize surface excavation works during the rainy seasons (April to September). All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means. • All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas. • Measures should be taken to minimise the ingress of site drainage into excavations. If the excavation of trenches in wet periods is necessary, it should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities. • All open stockpiles of construction materials (for example, aggregates, sand and fill material) of should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system. 					

Project Implementation Schedule

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		<ul style="list-style-type: none"> • Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers. • Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarized in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events. • All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities should be provided at every construction site exit where practicable. Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains. • Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain. • Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts. • All fuel tanks and storage areas should be provided with locks and sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby. • Regular environmental audit on the construction site should be carried out in order to prevent any malpractices. Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the meander, wetlands and fish ponds. 					
SS.7	W2-CP-DP3	<p><u>Groundwater from Contaminated Area</u></p> <ul style="list-style-type: none"> • No mitigation measure is required for groundwater treatment in LMC Loop. • Additional investigation is required to identify if contaminated groundwater is found • If the investigation results indicated that the groundwater to be 	Minimize groundwater quality impact from contaminated area	Contractor	Areas where contamination is found.	Construction phase	<ul style="list-style-type: none"> • Water Pollution Control Ordinance • TM-DSS • TM-EIAO

Project Implementation Schedule

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		<p>generated from construction works would be contaminated, the contaminated groundwater should be either discharged into recharged wells, or properly treated in compliance with the requirements of Technical Memorandum on Standards for Effluents Discharged into Drainage on Sewerage Systems, Inland and Coastal Waters.</p> <ul style="list-style-type: none"> • If recharged well method were used, the groundwater quality in the recharged well should not be affected by recharging operation, i.e. the pollution levels of the recharged groundwater should not be higher than that in the recharging wells. • If treatment and discharge method were used, the design of wastewater treatment facilities, such as active carbon and petrol interceptor, should be submitted to the EPD and a discharge license should be obtained under the WPCO through the Regional Offices of EPD. 					
S5.7	W3-CP-DP3	<p><u>Sewage from Workforce</u></p> <ul style="list-style-type: none"> • Portable chemical toilets and sewage holding tanks should be provided for handling the construction sewage generated by the workforce. A licensed contractor should be employed to provide appropriate and adequate portable toilets to cater 0.15m³/day/employed populations and be responsible for appropriate disposal and maintenance. • Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment during the construction phase of the Project. Regular environmental audit on the construction site should be conducted in order to provide an effective control of any malpractices and achieve continual improvement of environmental performance on site. 	Minimize water quality from sewage effluent	Contractor	All construction sites where practicable	Construction phase	<ul style="list-style-type: none"> • Water Pollution Control Ordinance • TM-DSS
S5.7	W4-CP-DP3	<p><u>Construction of Viaduct across Reedbed in LMC Station</u></p> <p>As a precautionary measures, three options are recommended to ensure the compliance of No Net Increase in Pollution Load in Deep Bay for further consideration. They include:</p> <ul style="list-style-type: none"> • On-site compensate the same area of the occupied reedbed; • Provide pilot plant during construction; or • Increase the hydraulic retention time of the proposed Loop STW. <p>Details of these measures will be subject to further liaison with MTRC and a separate VEP application.</p>	Minimize water quality impact from of viaduct on reedbed	Contractor	Construction sites across reedbed in LMC Station	Construction phase	<ul style="list-style-type: none"> • Water Pollution Control Ordinance • ProPECC PN1/94 • TM-EIAO • TM-DSS
S5.7	W5-CP-DP3	<p><u>Construction of Bridge Crossing</u></p> <ul style="list-style-type: none"> • Good site management as stipulated in ProPECC PN1/94 should be fully implemented to avoid polluted liquid or solid wastes from falling into the WSRs. • All the fishponds will be drained and no fishpond will be affected by bridge crossing. 	Minimize water quality impact from construction of bridge crossing	Contractor	construction sites for bridge crossing where practicable	Construction phase	<ul style="list-style-type: none"> • Water Pollution Control Ordinance • ProPECC PN1/94 • TM-EIAO • TM-DSS

Project Implementation Schedule

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		<ul style="list-style-type: none"> In the meander, cofferdam or diaphragm walls should be deployed for protecting fish ponds or nearby rivers during bridge pier construction and or road widening work at fishponds. 					
Water Quality Impact (Operational Phase)							
S5.7	W4-OP-DP3	<u>Road Runoff during operational phase</u> <ul style="list-style-type: none"> Update and implementation of Stormwater Pollution Control Plan During operational phase, vehicle dust, tyre scraps and oils might be washed away from the road surface to the nearby water courses by surface runoff or road surface cleaning. Proper drainage systems with silt traps and oil interceptors should be installed. For runoff discharge to Ping Hang Stream, Ma Tso Lung Stream and the Meander, effective mitigation measure to remove the pollutants at source. The Project Proponent or the delegated operation parties should manage the road/open area cleaning prior to the occurrence of a storm. The operator should undertake the cleaning at an interval of twice a week. Each of the cleaning events should not be separated by more than four days and should be carried out during low traffic flow period using vacuum air sweeper/truck equipped with side broom, which is to sweep road sludge and debris into the suction nozzle to increase the removal efficiency of pollutants. The collected pollutants would be tankered away for off-site disposal at landfill sites. During the EM&A programme, it is recommend to verify the efficiency of silt traps and cleaning frequencies by water quality monitoring during typical rainstorm events. 	Minimize water quality from non point source pollutant	Operator	All area where practicable	Operational phase	<ul style="list-style-type: none"> Water Pollution Control Ordinance TM-DSS
Waste Management (Construction Phase)							
S7.6	WM1-DP3	<u>Waste Reduction Measures</u> Waste reduction is best achieved at the planning and design phase, as well as by ensuring the implementation of good site practices. The following recommendations are proposed to achieve reduction: <ul style="list-style-type: none"> segregate and store different types of waste in different containers, skip or stockpiles to enhance reuse or recycling of materials and their proper disposal; proper storage and site practices to minimize the potential for damage and contamination of construction materials; plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste; sort out demolition debris and excavated materials from demolition works to recover reusable/recyclable portions (i.e. 	Reduce waste generation	Contractor	All construction sites where practicable	Construction phase	<ul style="list-style-type: none"> Waste Disposal Ordinance

Project Implementation Schedule

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		<p>soil, broken concrete, metal etc.);</p> <ul style="list-style-type: none"> provide training to workers on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling. 					
S7.6	WM2-DP3	Prepare Waste Management Plan and submit to the Engineer for approval	Minimize waste generation during construction	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal Ordinance
S7.6	WM3-DP3	<p>Good Site Practice</p> <p>The following good site practices are recommended throughout the construction activities:</p> <ul style="list-style-type: none"> nomination of an approved personnel, such as a site manager, to be responsible for the implementation of good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site; training of site personnel in site cleanliness, appropriate waste management procedures and concepts of waste reduction, reuse and recycling; provision of sufficient waste disposal points and regular collection for disposal; appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; 	Minimize waste generation during construction	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal Ordinance
S7.6	WM4-DP3	<p>Storage of Waste</p> <p>The following recommendation should be implemented to minimize the impacts:</p> <ul style="list-style-type: none"> waste such as soil should be handled and stored well to ensure secure containment; stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; different locations should be designated to stockpile each material to enhance reuse; 	Minimize waste impacts from storage	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal Ordinance
S7.6	WM5-DP3	<p>Collection and Transportation of Waste</p> <p>The following recommendation should be implemented to minimize the impacts:</p> <ul style="list-style-type: none"> remove waste in timely manner; employ the trucks with cover or enclosed containers for waste transportation; obtain relevant waste disposal permits from the appropriate authorities; and disposal of waste should be done at licensed waste disposal facilities. 	Minimize waste impacts from storage	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal Ordinance
S7.6	WM6-DP3	Excavated and C&D Material	Minimize waste impacts from	Contractor	All construction sites	Construction	<ul style="list-style-type: none"> Land

Project Implementation Schedule

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		<p>Wherever practicable, C&D materials should be segregated from other wastes to avoid contamination and ensure acceptability at Public Fill Reception Facilities areas or reclamation sites. The following mitigation measures should be implemented in handling the excavated and C&D materials:</p> <ul style="list-style-type: none"> maintain temporary stockpiles and reuse excavated fill material for backfilling; carry out on-site sorting; make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; and implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified. <p>The recommended C&D materials handling should include:</p> <ul style="list-style-type: none"> On-site Sorting of C&D Materials Reuse of C&D Materials Use of Standard Formwork and Planning of Construction Materials Purchasing Provision of Wheel Wash Facilities <p>Details refer to Section 7.6.1.4 of the EIA report.</p>	excavated and C&D materials			phase	(Miscellaneous Provisions) Ordinance <ul style="list-style-type: none"> Waste Disposal Ordinance ETWB TCW No. 19/2005
S7.6	WM7-DP3	<p><u>Contaminated Soil</u></p> <p>As a precaution, it is recommended that standard good site practice should be implemented during the construction phase to minimize any potential exposure to contaminated soils or groundwater. The details of mitigation measures to minimize the potential environmental implications arising from the handling of contaminated materials refer to Land Contamination Section.</p>	Remediate contaminated soil	Contractor	All construction sites where applicable	Construction phase	<ul style="list-style-type: none"> Practice Guide for Investigation and Remediation of Contaminated Land
S7.6	WM8-DP3	<p><u>Chemical Waste</u></p> <ul style="list-style-type: none"> If chemical wastes are produced at the construction site, the Contractors should register with EPD as chemical waste producers. Chemical wastes should be stored in appropriate containers and collected by a licensed chemical waste contractor. Chemical wastes (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while the chemical waste that cannot be recycled should be disposed of at either the Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation. 	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal (Chemical Waste) (General) Regulation Code of Practice on the Packaging, Labelling and Storage of Chemical Waste
S7.6	WM9-DP3	<p><u>General Waste</u></p> <ul style="list-style-type: none"> General refuse should be stored in enclosed bins separately from construction and chemical wastes. Recycling bins should also be placed to encourage recycling. Preferably enclosed and covered areas should be provided for general refuse collection and routine cleaning for these areas 	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal Ordinance

Project Implementation Schedule

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		<p>should also be implemented to keep areas clean.</p> <ul style="list-style-type: none"> A reputable waste collector should be employed to remove general refuse on a daily basis. 					
Land Contamination							
S8.7	LC1-DP3	<p><u>Remediation of arsenic-contaminated soil</u></p> <ul style="list-style-type: none"> “Solidification/Stabilization” (S/S) treatment method was proposed for the remediation of arsenic-contaminated soil. Toxicity Characteristic Leaching Procedure (TCLP) test should be undertaken after S/S in order to ensure that the contaminant will not leach to the environment. Unconfined Compressive Strength (UCS) test should be conducted, and not less than 1MPa should be met prior to the backfilling or stockpiled for future reuse within the study area. Off-site disposal or reuse of the solidified material is not allowed. 	To remediate arsenic-contaminated soil	Project Proponent / Contractor	LMC Loop, contaminated area	Prior to commencement of construction works within the contaminated area	<ul style="list-style-type: none"> TM-EIAO Practice Guide (PG) for Investigation and Remediation of Contaminated Land Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management Guidance Notes for Contaminated Land Assessment and Remediation Practice Guide for Investigation and Remediation of Contaminated Land
S8.7	LC2-DP3	<p><u>Excavation and Transportation</u></p> <ul style="list-style-type: none"> Excavation profiles must be properly designed and executed with attention to the relevant requirements for environment, health and safety; In case the soil to be excavated is situated beneath the groundwater table, it may be necessary to lower the groundwater table by installing well points or similar means; Excavation should be carried out during dry season as far as possible to minimise contaminated runoff from contaminated soils; Stockpiling site(s) should be lined with impermeable sheeting and bunded. Stockpiles should be properly covered by impermeable sheeting to reduce dust emission during dry season or contaminated run-off during rainy season. Watering should be avoided on stockpiles of contaminated soil to minimise contaminated runoff; Supply of suitable clean backfill material after excavation, if required; Vehicles containing any excavated materials should be suitably covered to limit potential dust emissions or contaminated run-off. 	To minimise the potential environmental impacts arising from the handling of contaminated materials	Contractor	Contaminated area	Prior to commencement of construction works within the contaminated area	<ul style="list-style-type: none"> TM-EIAO Practice Guide (PG) for Investigation and Remediation of Contaminated Land Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management Guidance Notes for Contaminated Land Assessment and Remediation Practice Guide for Investigation and Remediation of Contaminated Land

Project Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
		<p>and truck bodies and tailgates should be sealed to prevent any discharge during transport or during wet season;</p> <ul style="list-style-type: none"> • Speed control for the trucks carrying contaminated materials should be enforced; and • Vehicle wheel washing facilities at the site's exit points should be established and used. 					
S8.7	LC3-DP3	<p><u>Solidification/Stabilization</u></p> <ul style="list-style-type: none"> • The loading, unloading, handling, transfer or storage of cement should be carried out in an enclosed system; • Mixing process and other associated material handling activities should be properly scheduled to minimise potential noise impact and dust emission; • The mixing facilities should be sited as far apart as practicable from the nearby noise sensitive receivers; • Mixing of contaminated soil and cement / water / other additive(s) should be undertaken at a solidification plant to minimise the potential for leaching; • Runoff from the solidification / stabilization area should be prevented by constructing a concrete bund along the perimeter of the solidification / stabilization area; • The run-off contained in the concrete bund area along the perimeter of the paved solidification / stabilization area, if any, will be collected, stored and used for the mixing process of cement / contaminated soil; • If stockpile of treated soil is required, the stockpiling site(s) should be lined with impermeable sheeting and banded. Stockpiles should be properly covered by impermeable sheeting to reduce dust emission during dry season or site run-off during rainy season; and • If necessary, there should be clear and separated areas for stockpiling of untreated and treated materials. 	To minimise the potential environmental impacts arising from the handling of contaminated materials	Contractor	Contaminated area	The course of remediation	<ul style="list-style-type: none"> • TM-EIAO • Practice Guide (PG) for Investigation and Remediation of Contaminated Land • Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management • Guidance Notes for Contaminated Land Assessment and Remediation • Practice Guide for Investigation and Remediation of Contaminated Land
S8.7	LC4-DP3	<p><u>Safety Measures</u></p> <ul style="list-style-type: none"> • Set up a list of safety measures for site workers; • Provide written information and training on safety for site workers; • Keep a log-book and plan showing the contaminated zones and clean zones; • Maintain a hygienic working environment; • Avoid dust generation; • Provide face and respiratory protection gear to site workers if necessary; • Provide personal protective clothing (e.g. chemical resistant jackboot, liquid tight gloves) to site workers, if necessary; • Provide first aid training and materials to site worker; • Bulk earth moving equipment should be utilized as much as 	To minimize the potential adverse effects on health and safety of construction workers	Contractor	Contaminated area	The course of remediation	<ul style="list-style-type: none"> • Occupation Safety and Health Ordinance (OSHO) (Charter 509)

Project Implementation Schedule

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		<p>possible to minimize workers' handling and contact of the contaminated materials; and</p> <ul style="list-style-type: none"> Eating, drinking and smoking should not be allowed in contaminated areas to avoid inadvertent ingestion of contaminant. 					
S8.8	LC5-DP3	Re-appraisal on the entire contamination assessment area for associated infrastructure in the adjacent areas in Hong Kong outside LMC Loop.	Ensure any potential contamination activities from land use changes after the approval of this land contamination assessment study	Project Proponent /Detailed design consultant	Entire contamination assessment area for associated infrastructure in the adjacent areas in Hong Kong outside LMC Loop	After land resumption	<ul style="list-style-type: none"> TM-EIAO Practice Guide (PG) for Investigation and Remediation of Contaminated Land Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management Guidance Notes for Contaminated Land Assessment and Remediation Practice Guide for Investigation and Remediation of Contaminated Land
Landscape and Visual Impact (Construction Phase)							
S11.5.4 Table 11.5.9	L-CP1-DP3	<p><u>Preservation and Protection of Existing Trees (Good Site Practice)</u></p> <ul style="list-style-type: none"> The proposed works should avoid disturbance to the existing trees within and close to the works areas. The tree preservation proposals shall be coordinated with the layout and design of the engineering and architectural works at detailed design phase for further retention of individual trees. It is recommended that a full detailed tree survey and felling application will be undertaken and submitted for approval by the relevant government departments in accordance with ETWB TCW No. 3/2006, 'Tree Preservation'. This will be conducted during the detailed design phase of the project and submitted to DLO for approval. The methodology and scope including the programme for the tree survey and felling application are also subject to the approval of the relevant authorities. Trees which are not in conflict with the proposals would be retained and shall be protected by means of fencing during construction phase to prevent damage to tree canopies and root zones from vehicles and storage of materials. 	Avoid disturbance and protection of the existing trees	Detailed design consultant / Contractor	Within project site	Detailed design and construction phase	<ul style="list-style-type: none"> EIAO – TM ETWB TCW 2/2004 ETWB TCW 3/2006

Project Implementation Schedule

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		<ul style="list-style-type: none"> Specifications for the protection of existing trees will be provided during the preparation of the detailed tree survey by Detailed Design consultants at detailed design and construction phase. 					
S11.5 .4 Table 11.5.9	L-CP2-DP3	<p><u>Works Area and Temporary Works Areas (Good Site Practice)</u></p> <ul style="list-style-type: none"> The construction sequence and construction programme shall be optimized in order to minimize the duration of impact. Construction site controls shall be enforced including the storage of materials, the location and appearance of site accommodation and site storage; and the careful design of site lighting to prevent light spillage. The temporary works areas shall be restored to its original condition or enhanced through the introduction of new amenity areas or planting areas following the completion of the construction phase. 	Minimize landscape impacts	Contractor	The whole project area where applicable	Construction phase	<ul style="list-style-type: none"> TM-EIAO
S11.5 .4 Table 11.5.9	L-CP3-DP3	<p><u>Advance Implementation of Mitigation Planting</u></p> <ul style="list-style-type: none"> Replanting of existing / disturbed vegetation shall be undertaken at the earliest possible stage of the construction phase of the project using predominantly native plant species although ornamental species may be used for roadside planting and amenity areas. 	Minimize landscape impacts	Detailed design consultant/ Contractor	The whole project area where applicable	Detailed design and construction phases	<ul style="list-style-type: none"> TM-EIAO
S11.5 .4 Table 11.5.9	L-CP4-DP3	<p><u>Transplantation of Existing Trees</u></p> <ul style="list-style-type: none"> Some specimens have relatively higher amenity value which are in conflict with the proposals shall be considered for transplantation. For trees affected by the proposed infrastructure works the final receptor sites shall be preferably adjacent to their current locations alongside of the alignment to retain their contribution to the local landscape context. For the LMC Loop the receptor locations will be selected to allow the trees to be moved directly to their final locations in accordance with the detailed landscape proposals. The transplanting proposals are subject to review at the detailed design phase and to agreement-in-principle with the relevant management and maintenance agents and/or government departments. The implementation programme for the proposed works shall reserve sufficient time for the advanced tree transplanting preparation works to enhance the survival of the transplanted trees. The transplanting proposals will be subject to the findings of the detailed tree survey and felling application to be undertaken by the detailed design consultants and following approval by the relevant departments. 	Minimize landscape impacts and retention of landscape resources	Detailed design consultant/ Contractor	The whole project area where applicable	Detailed design and construction phases	<ul style="list-style-type: none"> TM-EIAO ETWB TCW 3/2006 LAO PN 7/2007
S11.5 .4	L-CP5-	<u>Coordination with Concurrent Projects</u>	Minimize landscape impacts	Contractor	The whole project area	Construction	<ul style="list-style-type: none"> TM-EIAO

Project Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
Table 11.5.9	DP3	<ul style="list-style-type: none"> Coordinated implementation programme with concurrent projects to minimise impacts and where possible reduce the period of disturbance. 			where applicable	phase	
S11.6.5 Table 11.6.3	V-CP1- DP3	<p><u>Preservation and Protection of Existing Trees (Good Site Practice)</u></p> <ul style="list-style-type: none"> The proposed works should avoid disturbance to the existing trees within and close to the works areas. The tree preservation proposals shall be coordinated with the layout and design of the engineering and architectural works at detailed design phase for further retention of individual trees. The preservation of existing tree shall provide instant greening and screening effect for proposed works. 	Minimise visual impact	Detailed design consultant / Contractor	The whole project area where applicable	Detailed design and construction phase	• TM-EIAO
	V-CP2- DP3	<p><u>Works Area and Temporary Works Areas (Good Site Practice)</u></p> <ul style="list-style-type: none"> The construction sequence and construction programme shall be optimized in order to minimize the duration of impact. Construction site controls shall be enforced including the storage of materials, the location and appearance of site accommodation and site storage; and the careful design of site lighting to prevent light spillage. Hoarding designed with recessive colour shall be set up around the construction site providing screening effect for the construction works. The site office or temporary above-ground structures shall be sited at less visual prominent locations. 	Minimise visual impact	Contractor	The whole project area where applicable	Construction phase	• TM-EIAO
	V-CP3- DP3	<p><u>Advance Implementation of Mitigation Planting</u></p> <ul style="list-style-type: none"> Replanting of existing / disturbed vegetation shall be undertaken at the earliest possible stage of the construction phase of the project using predominantly native plant species although ornamental species may be used for roadside planting and amenity areas. 	Minimise visual impact and advance mitigation planting for screening purpose.	Detailed design consultant / Contractor	The whole project area where applicable	Detailed design and construction phases	• TM-EIAO
	V-CP5- DP3	<p><u>Coordination with Concurrent Projects</u></p> <ul style="list-style-type: none"> Coordinated implementation programme with concurrent projects to minimise impacts and where possible reduce the period of disturbance. 	Minimize visual impacts	Contractor	The whole project area where applicable	Construction phase	• TM-EIAO
Landscape and Visual Impact (Operational Phase)							
S11.5 Table 11.5.10	L-OP1- DP3	<p><u>Roadside and Amenity Planting</u></p> <ul style="list-style-type: none"> The planting proposals will utilise both native and ornamental species which suitable for roadside planting to soften the built structures and enhance visual amenity of existing and proposed road corridors. The implementation of new planting shall be undertaken as soon as technically feasible using a sectional completion approach during construction phase to ensure the effectiveness of this mitigation during operational phase and as early as possible during the operational phase. 	Enhance local landscape value	Detailed design consultant/ Contractor / Operator	The whole project area where applicable	Detailed design, construction and operational phase	• TM-EIAO

Project Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
S11.5 Table 11.5.10	L-OP2- DP3	<p><u>Compensatory Planting Proposals</u></p> <ul style="list-style-type: none"> • As the works are largely located within rural areas and alongside existing roads the planting proposals have sought to utilise all of the available space for new tree and shrub planting to create comprehensive landscape framework which is connected to areas of retained and preserved vegetation and designed to integrate the proposals within their future landscape setting. • The planting proposals shall be maintained in accordance with good horticultural practice in order to realise the objectives of the mitigation measures. This includes the replacement of defective plant species on the new planting areas to enhance the aesthetic, landscape and ecological quality of the proposals. • Both on-site and off-site opportunities for compensatory planting shall be considered. • The preliminary compensatory planting proposal will follow the Technical Circular ETWB TCW No. 3/2006 except for felling of trees for slope works which are exempted from the compensation planting ratio requirement. New tree planting in general roadside planting areas and planting areas within the LMC Loop and above ground structures will utilise a combination of semi-mature to light standard sized stock as shown in Figures 11.9a and 11.9h to 11.9zi in the EIA report to create an instant greening effect at local level. • New planting areas within the LMC Loop including tree planting in the landscape buffers, open spaces and roadside planting areas will accommodate approximately 5,000 new trees. Planting of more broad-leaf tree species will be considered where space allows and location is suitable for tree establishment. This planting concept would create comfortable shaded area for pedestrians and visitors in open spaces. • New planting areas along the road alignment of WCR (DP2), ECR (DP6) and access road to Flushing Water Service Reservoir (DP7) will accommodate approximately 2,600 new trees. • For the affected tree on the sloping areas, due to constrained growing conditions, whip planting will be proposed on slopes which have gentler gradient at a planting distance of about 1500mm. Slopes that have a gradient more than 30 degree, hydroseeding will be applied instead. Upon full establishment of whip planting and hydroseeding, greening coverage on affected sloping areas will be reinstated. Following the above planting principles, the newly formed and remnant sloping 	Enhance local landscape value	Detailed design consultant/ Contractor	The whole project area where applicable	Detailed design and construction phases	<ul style="list-style-type: none"> • TM-EIAO

Project Implementation Schedule

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		<p>areas along the road alignment would accommodate approximately 500 whips.</p> <ul style="list-style-type: none"> Based on a preliminary estimation, the above planting proposal would achieve a replanting ratio of minimum 1:1 in terms of quantity and quality except for slope works according to ETWB TCW No. 3/2006. This tree replanting ratio would compensate the total girth and number of tree loss as well as the total number of tree loss on sloping area. Given the constraints of growing condition and safety reasons of planting larger size tree stock on sloping areas, greening measures on new formed and remnant slopes, including extensive hydroseeding and whips planting, would restore the quality of these greenback drop in rural area. The species selection for planting areas within the LMC Loop will utilise a range of native, ornamental and amenity tree species. These proposals will be subject to further development during the detailed design phase of the project.. Proposed planting on slopes will utilise woodland mix with majority of native species on new or disturbed slopes along the WCR and ECR. 					
S11.5 Table 11.5.10	L-OP7-DP3	<p><u>Reinstatement of Affected Fishponds</u></p> <ul style="list-style-type: none"> Enhancement of 11.72 Ha. of wetland/fishponds at Sham Po Shue and Hoo Hok Wai with ecological function for the off-site compensation of the permanent loss of fishponds. Off-site fishponds enhancement proposal refer to Figure 11.9zh, Chapter 2 Project description and Chapter 12 Ecology Impact Assessment of this EIA. Temporary loss of fishponds along WCR (DP2), Direct Link to LMC Station (DP4) and ECR (DP6) by the road widening and improvement works will be largely reinstated to fishponds with tree planting at selected locations. Reinstatement of affected fishponds refer to Figure 11.9j,k,l,m,r, t and u in the EIA report. These ponds will be used for both functional or amenity purposes to enhance the existing landscape and visual context. 	Reinstate and enhance local landscape value	Project Proponent / Detailed design consultant/ Contractor / Operator	The whole project area where applicable	Detailed design, construction and operational phases	<ul style="list-style-type: none"> TM-EIAO
S11.6 Table 11.6.4	V-OP1-DP3	<p><u>Roadside and Amenity Planting</u></p> <ul style="list-style-type: none"> The planting proposals will utilise native species to soften the proposed structures. The implementation of new planting shall be undertaken as soon as technically feasible using a sectional completion approach during construction phase to ensure the effectiveness of this mitigation during operational phase and as early as possible during the operational phase. This measure will enhance the visual amenity along existing and proposed road corridor. 	Enhance visual amenity	Detailed design consultant/ Contractor / Operator	The whole project area where applicable	Detailed design, construction and operational phases	<ul style="list-style-type: none"> TM-EIAO ETWB TCW

Project Implementation Schedule

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S11.6 Table 11.6.4	V-OP2- DP3	<p><u>Compensatory Planting Proposals</u></p> <ul style="list-style-type: none"> • As the works are largely located within rural areas and alongside existing roads the planting proposals have sought to utilise all of the available space for new tree and shrub planting to create comprehensive landscape framework which is connected to areas of retained and preserved vegetation and designed to integrate the proposals within their future landscape setting. • Both on-site and off-site opportunities for compensatory planting shall be considered for enchantment of landscape and visual context. • Design of road layout and built environment shall accommodate enough planting areas for compensatory planting to restore the quality of these greenback drop in rural area. 	Minimise visual impact and enhance visual amenity	Detailed design consultant/ Contractor	The whole project area where applicable	Detailed design and construction phases	<ul style="list-style-type: none"> • TM-EIAO • ETWB TCW
S11.6 Table 11.6.4	V-OP3- DP3	<p><u>Responsive Design of Buildings and Structure</u></p> <ul style="list-style-type: none"> • The design of the proposed building structures and road connections networks will incorporate design features as part of visual mitigation measures including: <p><u>Integrated Design Approach</u></p> <ul style="list-style-type: none"> • Building massing - the proposed use of a responsive design for the disposition of the main elements of the proposed scheme including the locations of buildings and utility structures. Grouping of utilities and infrastructure components into proposed buildings as far as technically feasible to reduce the mass of development. The disposition and height profile of the developments and above ground utilities structures responds to the existing context, is designed to minimise the wall effects and create a subtle transition at the edges of the site where it meets the rural landscape. Measures may include the creation of setbacks, articulating the development frontage, maintenance of view corridors and the utilisation of gradation or articulated height profile to enhance the sense of visual integration with the existing context, avoid abrupt transitions between the existing and proposed built environment and reduce the apparent visual mass of the proposed developments. <p><u>Treatment of Built Structures</u></p> <ul style="list-style-type: none"> • The architectural design should seek to reduce the apparent visual mass of the structures further through the use of materials and finishes such as colour blocking, innovative surface treatments and vertical greening. <p><u>Responsive finishes for the Proposed Structures</u></p> <ul style="list-style-type: none"> • In terms of the building finishes natural tones should be considered for the colour palette and non-reflective finishes 	Minimise visual impact	Detailed design consultant	Development sites on the LMC Loop, STW, and Flushing Water Service Reservoir, PTI at LMC Station and other building where applicable.	Detailed design phase	<ul style="list-style-type: none"> • TM-EIAO • ETWB TCW

Project Implementation Schedule

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		<p>recommended for the outward facing building facades to reduce the glare effect.</p> <p><u>Innovative Architectural Design</u></p> <ul style="list-style-type: none"> Adoption of recessive colours for the buildings and engineered structures including the proposed viaducts and noise barrier finishes and colour blocking to reduce the collective visual mass of the development. 					
S11.6 Table 11.6.4	V-OP4-DP3	<p><u>Design of Noise Mitigation Structures</u></p> <ul style="list-style-type: none"> The design for the proposed noise barriers along the at-grade section of proposed ECR section for Planned Eco-lodge at Ma Tso Lung and along the section of road widening works for the WCR shall aim to reduce the visual prominence of the structure through the use of form, materials, texture and colour. Design of penals shall be opaque and with chromatic colours to break-up the visual mass and horizontal emphasis of the barriers. Where space allows barrier design shall incorporate planting such as trees or hedge planting. 	Minimise visual impact	Detailed design consultant	Noise Mitigation Measures in the LMC Loop and along WCR and ECR.	Detailed design phase	<ul style="list-style-type: none"> TM-EIAO ETWB TCW ACABAS
S11.6 Table 11.6.4	V-OP5-DP3	<p><u>Design of Engineering Structures</u></p> <p>The design of the proposed Engineering Structures such as the proposed viaducts elevated PTI, slip road and service reservoir should pay particular attention to the appearance and construction methods of the structures, these would include the following:</p> <ul style="list-style-type: none"> The detailed design landscape consultants shall work in unison with the engineers on the aesthetic aspects of the structures and their relationship with the landscape. Wherever light levels, the water regime and the requirements of the environmental mitigation measures permit, trees and vegetation would be reinstated below or adjacent to the structures. Irrigation may be required in some locations and hard landscape solutions considered where the clearance is low. Planting would be used wherever possible to minimise the apparent height of structures and to soften their appearance in medium and long distance views. The design of the viaduct should avoid unnecessary visual clutter; this would be achieved through the co-ordination of the various engineering disciplines involved to arrive at integrated design solutions. Such as the location of columns of viaduct should not block any views from VSRs in the proximity and the shape of column should be slim down as far as technically feasible to reduce the structural mass at street level, at where space is allowed planting area for shade tolerant tree, shrub and climber species would be provide at the base of the column to soften the vertical emphasis at street level. Fair faced concrete would not be used for viaduct parapets to 	Minimise visual impact	Detailed design consultant	The whole project area where applicable	Detailed design phase	<ul style="list-style-type: none"> TM-EIAO ETWB TCW ACABAS

Project Implementation Schedule

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		<p>minimise glare from the structure and to avoid the visually detracting effect of staining.</p> <ul style="list-style-type: none"> • Drainage and utilities to be concealed within the structures. 					
S11.6 Table 11.6.4	V-OP7-DP3	<p><u>Reinstatement of Affected Fishponds</u></p> <ul style="list-style-type: none"> • Temporary loss of fishponds along WCR (DP2), Direct Link to LMC Station (DP3) and ECR (DP6) by the road widening and improvement works will be largely reinstated to fishponds with tree planting at selected locations. Reinstatement of affected fishponds refer to Figure 11.9j,k,l,m,r, t and u in the EIA report. These ponds will be used for both functional or amenity purposes to enhance the existing landscape and visual context. 	Enhance visual amenity and integration of existing visual context	Contractor	The whole project area where applicable	Construction phase	<ul style="list-style-type: none"> • TM-EIAO • ETWB TCW
Ecology							
S12.7	E2-DP3	<p><u>Construction run-off</u></p> <ul style="list-style-type: none"> • Temporary sewerage and drainage will be designed and installed to collect wastewater and prevent it from entering nearby water bodies; • Proper locations well away from nearby water bodies will be used for temporary storage of materials (i.e. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction debris and spoil, and these will be identified before commencement of works; • To prevent muddy water entering nearby water bodies, work sites close to nearby water bodies will be isolated, using such items as sandbags or silt curtains with lead edge at bottom and properly supported props. Other protective measures will also be taken to ensure that no pollution or siltation occurs to the water gathering grounds of the work site; • If temporary access along a riverbed is unavoidable, this will be kept to the minimum in width and length. Temporary river crossings will be supported on stilts above the river bed; • Stockpiling of construction materials, if necessary, will be properly covered and located away from nearby water bodies; • Construction debris and spoil will be covered and/or properly disposed of as soon as possible to avoid being washed into nearby water bodies; • Construction effluent, site run-off and sewage will be properly collected and/or treated. Wastewater from any construction site will be minimised via the following in descending order: reuse, recycling and treatment; • Proper locations for discharge outlets of wastewater treatment facilities well away from sensitive receivers will be 	Minimize the indirect impact from the increasing suspended solids and pollutants in LMC Meander	Contractor	Within project construction site	Construction phase	

Project Implementation Schedule

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		<p>identified (i.e. treated wastewater will not be discharged into LMC Meander, natural streams, marsh, reedbed, active or abandoned fish ponds);</p> <ul style="list-style-type: none"> • Adequate lateral support will be erected where necessary in order to prevent soil/mud from slipping into the Ecological Area or LMC Meander; • Site boundary will be clearly marked and any works beyond the boundary strictly prohibited; • Regular water monitoring and site audit will be carried out at adequate points along LMC Meander, and at the outfalls of the natural streams around LMC Loop. If the monitoring and audit results show that pollution occurs, adequate measures including temporarily cessation of works will be considered. 					
S12.7	E3-DP3	<p><u>Pollutant Runoff to Downstream areas from Accidental Spillage</u></p> <ul style="list-style-type: none"> • Prepare an emergency contingency plan • The plan will include, but not be limited to, the following: <ul style="list-style-type: none"> - Potential emergency situations; - Chemicals or hazardous materials used on-site (and their location); - Emergency response team; - Emergency response procedures; - List of emergency telephone hotlines; - Locations and types of emergency response equipment; - Training plan and testing for effectiveness. 	Minimize indirect impact from pollutant runoff to downstream areas from accidental spillage	Contractor / Operator	Areas within project site near streams	Construction and operational phases	
S12.7	E4-DP3	<ul style="list-style-type: none"> • Use opaque, non-transparent, non-reflective noise barriers for all developments associated with the Project. 	Minimize the mortality impacts on birds	Project Proponent / Detailed design consultant/ Contractor/ Operator	Areas within project site	Detailed design, construction and operational phases	
S12.7	E5-DP3	<ul style="list-style-type: none"> • Minimize loss of natural vegetation along LMC Meander, and suitable replacement planting with possible installation of otter holts and the provision of potential feeding area and spraint locations for otters in the stabilized bank subject to detailed design. • No significant change to velocity of water flow, water level or water quality. • No direct lighting on Meander. • 3m high, dull green site boundary fence for all developments associated with the project. • Pre-construction surveys for otter holts or natal dens will be conducted in LMC Loop before the commencement of construction works. Work in the area of any otter holt found 	Minimize impacts on Eurasian Otter	Contractor	Construction site within the project	Construction phase	

Project Implementation Schedule

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		<p>to cease pending examination by experienced Ecologist. If in use for breeding, works in the area will temporarily stop until end of breeding activity.</p> <ul style="list-style-type: none"> No construction activities within 100m of LMC Meander between one hour prior to sunset and one hour after sunrise. Provision of compensatory reed marsh in the Ecological Area in LMC Loop, including open water channels and islands within the reed marsh, both of which features are considered to be used by the species. 					
S12.7	E12-DP3	<ul style="list-style-type: none"> Minimal night-time lighting No direct light on Meander 	Minimize impacts on LMC Meander	Contractor / operator	All	Construction and operational phases	
S12.7	E13-DP3	<ul style="list-style-type: none"> Use of viaduct alignment to minimize wetland loss. Compensatory wetland habitat elsewhere. 	Minimize wetland loss	Project Proponent / Detailed design consultant / Contractor /	Within project site	Detailed design and construction phases	
S12.9	EG2-DP3	All generic mitigation measures proposed in Tables 12.82a and 12.82b in the EIA report.	Avoid, minimize and mitigate overall ecological impact.	Project proponent / contractor / detailed design consultant / developer / operator	All areas.	All phases	• EIAO
<i>Fisheries (Construction Phase)</i>							
S13.7	F4-DP3	During the construction phase, a layer of sheet pile wall will be erected along the site boundary adjacent to fish ponds after commencement of site works. The sheet pile wall will be constructed by silent piling method (Press-in method) which induces minimal vibration. Therefore the stability of the fish pond bund will not be influenced by the construction of the sheet pile wall, subsequent construction works and the loading from the road during operational phase. In addition, the sheet pile wall will have grouting or a grout curtain to avoid water seepage from the fish pond to the excavation area. With these measures, significant impacts are not anticipated.	Bund stability	Contractor	Fish ponds	Construction phase	• TM-EIAO
S13.7	F5-DP3	Temporary traffic arrangements will be instigated to maintain or provide alternative access to fish ponds during construction phase.	Prevent Blockage of Access Roads to Fish Ponds	Contractor	Fish ponds	Construction phase	• TM-EIAO
S13.7	F6-DP3	Standard mitigation measures to control site runoff and other pollutants caused by construction activities and good site practices will be implemented during the construction phase of the Project. Excavated material and other inert construction wastes produced will be transferred to proper recipients (i.e. landfill) (see Waste Management Section). Sewage from the proposed development will be dealt with via a	Avoid water quality impact	Contractor	Fish ponds	Construction phase	• TM-EIAO

Project Implementation Schedule

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		sewerage system and will not be discharged directly to surrounding water bodies.					
S13.7	F7-DP3	Dust Minimization <ul style="list-style-type: none"> • During all excavation works, good site practice should be adopted to minimize impacts on fisheries. The below site practices should be adopted during this time. • 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; • Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete 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; • Excavation profiles must be properly designed and executed with attention to the relevant requirements for environment, health and safety; • In case the soil to be excavated is situated beneath the groundwater table, it may be necessary to lower the groundwater table by installing well points or similar means; • Supply of suitable clean backfill material after excavation, if required; • Vehicles containing any excavated materials should be suitably covered to limit potential dust emissions or contaminated run-off, and truck bodies and tailgates should be sealed to prevent any discharge during transport or during wet season; • Speed control for the trucks carrying contaminated materials should be enforced; and • Vehicle wheel washing facilities at the site's exit points should be established and used. 	Dust minimization	Contractor	Fish ponds	Construction phase	• TM-EIAO
Fisheries (both Construction and Operational Phase)							
S13.7	F8-DP3	<u>Contingency plan</u> The contractor should prepare an emergency contingency plan for actions to be taken if significant impacts, such as accidental spillage of chemicals, water seepage from fish ponds, damaged/ destabilized pond bunds, pond water contamination by site runoff, on fish ponds occur. The	Deal with any accidental spillage event	Contractor / Operator	Fish ponds	Construction and operational phases	• TM-EIAO

Project Implementation Schedule

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		<p>contractor should submit the emergency contingency plan dealing with, but not limited to, the aforementioned potential impacts to the engineer for review, comment and approval. The fish pond operators will also be consulted for the details of the contingency plan, which will also be submitted to AFCD for review and comment. The plan should include, but not limited to, the following:</p> <ul style="list-style-type: none"> • Potential emergency situations; • Chemicals or hazardous materials used on-site (and their location); • Emergency response team; • Emergency response procedures; • List of emergency telephone hotlines; • Locations and types of emergency response equipment; • Training plan and testing for effectiveness. 					
Food Safety (Construction Phase)							
S15	F1-DP3	<p><u>Contingency plan</u> The contractor should have effective communication with Food and Environmental Hygiene Department (FEHD) / Centre of Food Safety (CFS), on food surveillance and food incidents. Food Surveillance Programme (http://www.cfs.gov.hk/english/programme/programme_fs/programme_fs.html). is undertaken by CFS to inspect food safety in Hong Kong, with a three-tier surveillance strategy (consisting of routine food surveillance, targeted food surveillance and seasonal food surveillance). Under this programme, aquatic products (including pond fish) at import, wholesale and retail levels are sampled for microbiological (i.e. bacteria and viruses), chemical (i.e. natural toxins, food additives and contaminants) and radiation testings. All food safety surveillance results of by a monthly "Food Safety Report" in press releases and also presented in CFS website. If pond fish samples do not comply with food safety standards and they are verified to be from fish ponds of concerned under this study through "food tracing", fish selling shall be stopped as instructed by CFS.</p>	Minimize significant impacts on fish ponds	Contractor	Fish pond within project site	Construction phase	• TM-EIAO
S15	F2-DP3	<p><u>Dust Minimization</u></p> <ul style="list-style-type: none"> • During all excavation works, good site practice should be adopted to minimize the release of TSP, impact of land contamination and the associated food safety implications. The below site practices should be adopted during excavation works. • 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 	Dust minimization	Contractor	Fish pond within project site	Construction phase	• Food Adulteration (Metallic Contamination) Regulations

Project Implementation Schedule

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		<p>the excavation or unloading;</p> <ul style="list-style-type: none"> • Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads; • 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; • Excavation profiles must be properly designed and executed with attention to the relevant requirements for environment, health and safety; • In case the soil to be excavated is situated beneath the groundwater table, it may be necessary to lower the groundwater table by installing well points or similar means; • Supply of suitable clean backfill material after excavation, if required; • Vehicles containing any excavated materials should be suitably covered to limit potential dust emissions or contaminated run-off, and truck bodies and tailgates should be sealed to prevent any discharge during transport or during wet season; • Speed control for the trucks carrying contaminated materials should be enforced; and • Vehicle wheel washing facilities at the site's exit points should be established and used. 					

Project Implementation Schedule

Note: Chapters 1 to 2 of the EIA report present the background information of the Project, identified designated project, concurrent projects, objectives and scope for various environmental aspects, and description on recommended outline development plan. Chapters 3 to 14 of the EIA report present the EIA findings and mitigation measures are described below with cross-reference to the EIA report. Chapters 16 to 18 summarize the environmental outcomes and describe the environmental monitoring requirements and conclusion.

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
<i>DP4- Drainage System under Internal Transport Networks</i>							
<i>Construction Dust Impact</i>							
S3.8	D1-DP4	Mitigation measures in form of regular watering under a good site practice should be adopted. Watering once per hour on exposed worksites and haul road is proposed to achieve dust removal efficiency of 92.1%. While the above watering frequencies are to be followed, the extent of watering may vary depending on actual site conditions but should be sufficient to maintain an equivalent intensity of no less than 1.6 L/m ² to achieve the respective dust removal efficiencies	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> APCO To control the dust impact to meet HKAQO and TM-EIAO
S3.8	D2-DP4	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> APCO To control the dust impact to meet HKAQO and TM-EIAO
S3.8	D3-DP4	<p>Following dust suppression measures should also be incorporated by the Contractor to control the dust nuisance throughout the construction phase</p> <ul style="list-style-type: none"> 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; A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones; The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores; When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly 	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> APCO To control the dust impact to meet HKAQO and TM-EIAO

Project Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
		<p>maintained throughout the construction period.</p> <ul style="list-style-type: none"> • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport should be totally enclosed by impervious sheeting; • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides; • Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed; • Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and • Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shortcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies. 					
S3.8	D4-DP4	Implement regular dust monitoring under EM&A programme during the construction phase.	Monitoring of dust impact	Contractor	Selected representative dust monitoring station	Construction phase	<ul style="list-style-type: none"> • TM-EIAO
Noise Impact (Construction Phase)							
S4.8	N-CP1-DP4	<p>Implement the following good site management practices:</p> <ul style="list-style-type: none"> • only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; • machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; 	Control construction airborne noise	Contractor	All construction sites where practicable	Construction phase	<ul style="list-style-type: none"> • Annex 5, TM-EIA

Project Implementation Schedule

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		<ul style="list-style-type: none"> plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; mobile plant should be sited as far away from NSRs as possible and practicable; material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities. 					
S4.8	N-CP2-DP4	Install temporary site hoarding (approx 2.4m high) located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period.	Reduce the construction noise levels at low-level zone of NSRs through partial screening.	Contractor	All construction sites where practicable	Construction phase	• Annex 5, TM-EIA
S4.8	N-CP3-DP4	Install movable noise barriers and full enclosure, screen the noisy plants including air compressor and generator.	Screen the noisy plant items to be used at all construction sites	Contractor	All construction sites where practicable	Construction phase	• Annex 5, TM-EIA
S4.8	N-CP4-DP4	Use of "Quiet" Plant and Working Methods	Reduce the noise levels of plant items	Contractor	All construction sites where practicable	Construction phase	• Annex 5, TM-EIA
S4.8	N-CP5-DP4	Sequencing operation of construction plants where practicable.	Operate sequentially within the same work site to reduce the construction airborne noise	Contractor	All construction sites where practicable	Construction phase	• Annex 5, TM-EIA
S4.8	N-CP6-DP4	Implement a noise monitoring under EM&A programme.	Monitor the construction noise levels at the selected representative locations	Contractor	Selected representative noise monitoring stations	Construction phase	• TM-EIA
• Noise Impact (Operational Phase)							
S4.8	N-OP1-DP4	Provide noise barrier where necessary before operation of the proposed project.	Control operational airborne noise due to road traffic	Project Proponent / Contractor	Refer to Figures 4.9, 4.9a to d in the EIA Report	Prior to operation of the Project	Noise Control Ordinance and its TM
S4.8	N-OP2-DP4	Road traffic noise from internal roads <ul style="list-style-type: none"> Provision of central air conditioning for the first layer of noise sensitive receivers facing Road M1 Minimum 5m setback from planned sensitive uses inside LMC Loop. 	Control operational airborne noise due to road traffic	Developer / Detailed design consultant / Contractor / Operator	The first layer of NSRs facing Road M1 of LMC Loop	Prior to operation of relevant buildings	Noise Control Ordinance and its TM
Water Quality Impact (Construction Phase)							
S5.7	W1-CP-DP4	<u>Construction Runoff and Site Drainage</u> In accordance with the Practice Note for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN 1/94), construction phase mitigation measures, where appropriate, should include the following: <ul style="list-style-type: none"> Update and implementation of Stormwater Pollution Control Plan At the start of site establishment, perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works and erosion and sedimentation control facilities 	Minimize water quality impact from construction site runoff and general construction activities	Contractor	All construction sites where practicable	Construction phase	<ul style="list-style-type: none"> Water Pollution Control Ordinance ProPECC PN1/94 TM-EIAO TM-DSS

Project Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
		<p>implemented. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities. The design of the temporary on-site drainage system will be undertaken by the contractor prior to the commencement of construction.</p> <ul style="list-style-type: none"> • Diversion of natural stormwater should be provided as far as possible. The design of temporary on-site drainage should prevent runoff going through site surface, construction machinery and equipments in order to avoid or minimize polluted runoff. Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m3 capacities, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity shall be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped. • The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a silt/sediment trap. The silt/sediment traps should be incorporated in the permanent drainage channels to enhance deposition rates. • The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94. The detailed design of the sand/silt traps should be undertaken by the contractor prior to the commencement of construction. • Construction works should be programmed to minimize surface excavation works during the rainy seasons (April to September). All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means. • All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas. • Measures should be taken to minimise the ingress of site drainage into excavations. If the excavation of trenches in wet periods is necessary, it should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities. 					

Project Implementation Schedule

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		<ul style="list-style-type: none"> • All open stockpiles of construction materials (for example, aggregates, sand and fill material) of should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system. • Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers. • Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarized in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events. • All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities should be provided at every construction site exit where practicable. Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains. • Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain. • Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts. • All fuel tanks and storage areas should be provided with locks and sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby. • Regular environmental audit on the construction site should be carried out in order to prevent any malpractices. Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the meander, wetlands and fish ponds. 					
S5.7	W2-CP-	<u>Groundwater from Contaminated Area</u>	Minimize groundwater quality	Contractor	Areas where	Construction	• Water Pollution

Project Implementation Schedule

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	DP4	<ul style="list-style-type: none"> No mitigation measure is required for groundwater treatment in LMC Loop. Additional investigation is required to identify if contaminated groundwater is found If the investigation results indicated that the groundwater to be generated from construction works would be contaminated, the contaminated groundwater should be either discharged into recharged wells, or properly treated in compliance with the requirements of Technical Memorandum on Standards for Effluents Discharged into Drainage on Sewerage Systems, Inland and Coastal Waters. If recharged well method were used, the groundwater quality in the recharged well should not be affected by recharging operation, i.e. the pollution levels of the recharged groundwater should not be higher than that in the recharging wells. If treatment and discharge method were used, the design of wastewater treatment facilities, such as active carbon and petrol interceptor, should be submitted to the EPD and a discharge license should be obtained under the WPCO through the Regional Offices of EPD. 	impact from contaminated area		contamination is found.	phase	Control Ordinance <ul style="list-style-type: none"> TM-DSS TM-EIAO
S5.7	W3-CP-DP4	<u>Sewage from Workforce</u> <ul style="list-style-type: none"> Portable chemical toilets and sewage holding tanks should be provided for handling the construction sewage generated by the workforce. A licensed contractor should be employed to provide appropriate and adequate portable toilets to cater 0.15m³/day/employed populations and be responsible for appropriate disposal and maintenance. Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment during the construction phase of the Project. Regular environmental audit on the construction site should be conducted in order to provide an effective control of any malpractices and achieve continual improvement of environmental performance on site. 	Minimize water quality from sewage effluent	Contractor	All construction sites where practicable	Construction phase	<ul style="list-style-type: none"> Water Pollution Control Ordinance TM-DSS
S5.7	W1-BR-DP4	<u>Bio-remediation in Shenzhen River</u> <ul style="list-style-type: none"> Water quality monitoring and audit is recommended to ensure that the proposed bio-remediation operation would not result in adverse water quality impact. Details of the water quality monitoring programme are presented in the EM&A Manual. If unacceptable water quality impact in the receiving water is recorded, additional measures such as slowing down, or rescheduling of works should be implemented as necessary. 	Minimize water quality impact from bio-remediation of Shenzhen River	Contractor	Shenzhen River where practicable	Construction phase	<ul style="list-style-type: none"> Water Pollution Control Ordinance TM-EIAO
Water Quality Impact (Operational Phase)							

Project Implementation Schedule

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S5.7	W4-OP-DP4	<p><u>Non-point source discharges (surface runoff)</u></p> <ul style="list-style-type: none"> Update and implementation of Stormwater Pollution Control Plan During operational phase, vehicle dust, tyre scraps and oils might be washed away from the road surface to the nearby water courses by surface runoff or road surface cleaning. Proper drainage systems with silt traps and oil interceptors should be installed. For runoff discharge to Ping Hang Stream, Ma Tso Lung Stream and the Meander, effective mitigation measure to remove the pollutants at source. The Project Proponent or the delegated operation parties should manage the road/open area cleaning prior to the occurrence of a storm. The operator should undertake the cleaning at an interval of twice a week. Each of the cleaning events should not be separated by more than four days and should be carried out during low traffic flow period using vacuum air sweeper/truck equipped with side broom, which is to sweep road sludge and debris into the suction nozzle to increase the removal efficiency of pollutants. The collected pollutants would be tankered away for off-site disposal at landfill sites. During the EM&A programme, it is recommend to verify the efficiency of silt traps and cleaning frequencies by water quality monitoring during typical rainstorm events. 	Minimize water quality from non point source pollutant	Operator	All area where practicable	Operational phase	<ul style="list-style-type: none"> Water Pollution Control Ordinance TM-DSS
Waste Management (Construction Waste)							
S7.6	WM1-DP4	<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"> segregate and store different types of waste in different containers, skip or stockpiles to enhance reuse or recycling of materials and their proper disposal; proper storage and site practices to minimize the potential for damage and contamination of construction materials; plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste; sort out demolition debris and excavated materials from demolition works to recover reusable/recyclable portions (i.e. soil, broken concrete, metal etc.); provide training to workers on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling. 	Reduce waste generation	Contractor	All construction sites where practicable	Construction phase	<ul style="list-style-type: none"> Waste Disposal Ordinance
S7.6	WM2-DP4	Prepare Waste Management Plan and submit to the Engineer for approval	Minimize waste generation during construction	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal Ordinance

Project Implementation Schedule

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S7.6	WM3-DP4	<p><u>Good Site Practice</u> The following good site practices are recommended throughout the construction activities:</p> <ul style="list-style-type: none"> • nomination of an approved personnel, such as a site manager, to be responsible for the implementation of good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site; • training of site personnel in site cleanliness, appropriate waste management procedures and concepts of waste reduction, reuse and recycling; • provision of sufficient waste disposal points and regular collection for disposal; • appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; • regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; 	Minimize waste generation during construction	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> • Waste Disposal Ordinance
S7.6	WM4-DP4	<p><u>Storage of Waste</u> The following recommendation should be implemented to minimize the impacts:</p> <ul style="list-style-type: none"> • waste such as soil should be handled and stored well to ensure secure containment; • stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; • different locations should be designated to stockpile each material to enhance reuse; 	Minimize waste impacts from storage	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> • Waste Disposal Ordinance
S7.6	WM5-DP4	<p><u>Collection and Transportation of Waste</u> The following recommendation should be implemented to minimize the impacts:</p> <ul style="list-style-type: none"> • remove waste in timely manner; • employ the trucks with cover or enclosed containers for waste transportation; • obtain relevant waste disposal permits from the appropriate authorities; and • disposal of waste should be done at licensed waste disposal facilities. 	Minimize waste impacts from storage	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> • Waste Disposal Ordinance
S7.6	WM6-DP4	<p><u>Excavated and C&D Material</u> Wherever practicable, C&D materials should be segregated from other wastes to avoid contamination and ensure acceptability at Public Fill Reception Facilities areas or reclamation sites. The following mitigation measures should be implemented in handling the excavated and C&D materials:</p> <ul style="list-style-type: none"> • maintain temporary stockpiles and reuse excavated fill material for 	Minimize waste impacts from excavated and C&D materials	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> • Land (Miscellaneous Provisions) Ordinance • Waste Disposal Ordinance • ETWB TCW No.

Project Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
		backfilling; <ul style="list-style-type: none"> carry out on-site sorting; make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; and implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified. The recommended C&D materials handling should include: <ul style="list-style-type: none"> On-site Sorting of C&D Materials Reuse of C&D Materials Use of Standard Formwork and Planning of Construction Materials Purchasing Provision of Wheel Wash Facilities Details refer to Section 7.6.1.4 of the EIA report.					19/2005
S7.6	WM7-DP4	<u>Contaminated Soil</u> As a precaution, it is recommended that standard good site practice should be implemented during the construction phase to minimize any potential exposure to contaminated soils or groundwater. The details of mitigation measures to minimize the potential environmental implications arising from the handling of contaminated materials refer to Land Contamination Section.	Remediate contaminated soil	Contractor	All construction sites where applicable	Construction phase	<ul style="list-style-type: none"> Practice Guide for Investigation and Remediation of Contaminated Land
S7.6	WM8-DP4	<u>Chemical Waste</u> <ul style="list-style-type: none"> If chemical wastes are produced at the construction site, the Contractors should register with EPD as chemical waste producers. Chemical wastes should be stored in appropriate containers and collected by a licensed chemical waste contractor. Chemical wastes (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while the chemical waste that cannot be recycled should be disposed of at either the Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation. 	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal (Chemical Waste) (General) Regulation Code of Practice on the Packaging, Labelling and Storage of Chemical Waste
S7.6	WM9-DP4	<u>General Waste</u> <ul style="list-style-type: none"> General refuse should be stored in enclosed bins separately from construction and chemical wastes. Recycling bins should also be placed to encourage recycling. Preferably enclosed and covered areas should be provided for general refuse collection and routine cleaning for these areas should also be implemented to keep areas clean. A reputable waste collector should be employed to remove general refuse on a daily basis. 	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal Ordinance
S7.6	WM10-DP4	<u>Sewage</u> <ul style="list-style-type: none"> The WMP should document the locations and number of portable chemical toilets depending on the number of workers, land 	Minimize production of sewage impacts	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal Ordinance

Project Implementation Schedule

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		availability, site condition and activities. <ul style="list-style-type: none"> Regularly collection by licensed collectors should be arranged to minimize potential environmental impacts. 					
Land Contamination							
S8.7	LC1-DP4	<u>Remediation of arsenic-contaminated soil</u> <ul style="list-style-type: none"> “Solidification/Stabilization” (S/S) treatment method was proposed for the remediation of arsenic-contaminated soil. Toxicity Characteristic Leaching Procedure (TCLP) test should be undertaken after S/S in order to ensure that the contaminant will not leach to the environment. Unconfined Compressive Strength (UCS) test should be conducted, and not less than 1MPa should be met prior to the backfilling or stockpiled for future reuse within the study area. Off-site disposal or reuse of the solidified material is not allowed. 	To remediate arsenic-contaminated soil	Project Proponent / Contractor	LMC Loop, contaminated area	Prior to commencement of construction works within the contaminated area	<ul style="list-style-type: none"> TM-EIAO Practice Guide (PG) for Investigation and Remediation of Contaminated Land Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management Guidance Notes for Contaminated Land Assessment and Remediation Practice Guide for Investigation and Remediation of Contaminated Land
S8.7	LC2-DP4	<u>Excavation and Transportation</u> <ul style="list-style-type: none"> Excavation profiles must be properly designed and executed with attention to the relevant requirements for environment, health and safety; In case the soil to be excavated is situated beneath the groundwater table, it may be necessary to lower the groundwater table by installing well points or similar means; Excavation should be carried out during dry season as far as possible to minimise contaminated runoff from contaminated soils; Stockpiling site(s) should be lined with impermeable sheeting and bunded. Stockpiles should be properly covered by impermeable sheeting to reduce dust emission during dry season or contaminated run-off during rainy season. Watering should be avoided on stockpiles of contaminated soil to minimise contaminated runoff; Supply of suitable clean backfill material after excavation, if required; Vehicles containing any excavated materials should be suitably covered to limit potential dust emissions or contaminated run-off, 	To minimise the potential environmental impacts arising from the handling of contaminated materials	Contractor	Contaminated area	Prior to commencement of construction works within the contaminated area	<ul style="list-style-type: none"> TM-EIAO Practice Guide (PG) for Investigation and Remediation of Contaminated Land Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management Guidance Notes for Contaminated Land Assessment and Remediation Practice Guide for Investigation and Remediation of Contaminated Land

Project Implementation Schedule

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		<p>and truck bodies and tailgates should be sealed to prevent any discharge during transport or during wet season;</p> <ul style="list-style-type: none"> • Speed control for the trucks carrying contaminated materials should be enforced; and • Vehicle wheel washing facilities at the site's exit points should be established and used. 					
S8.7	LC3-DP4	<p><u>Solidification/Stabilization</u></p> <ul style="list-style-type: none"> • The loading, unloading, handling, transfer or storage of cement should be carried out in an enclosed system; • Mixing process and other associated material handling activities should be properly scheduled to minimise potential noise impact and dust emission; • The mixing facilities should be sited as far apart as practicable from the nearby noise sensitive receivers; • Mixing of contaminated soil and cement / water / other additive(s) should be undertaken at a solidification plant to minimise the potential for leaching; • Runoff from the solidification / stabilization area should be prevented by constructing a concrete bund along the perimeter of the solidification / stabilization area; • The run-off contained in the concrete bund area along the perimeter of the paved solidification / stabilization area, if any, will be collected, stored and used for the mixing process of cement / contaminated soil; • If stockpile of treated soil is required, the stockpiling site(s) should be lined with impermeable sheeting and banded. Stockpiles should be properly covered by impermeable sheeting to reduce dust emission during dry season or site run-off during rainy season; and • If necessary, there should be clear and separated areas for stockpiling of untreated and treated materials. 	To minimise the potential environmental impacts arising from the handling of contaminated materials	Contractor	Contaminated area	The course of remediation	<ul style="list-style-type: none"> • TM-EIAO • Practice Guide (PG) for Investigation and Remediation of Contaminated Land • Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management • Guidance Notes for Contaminated Land Assessment and Remediation • Practice Guide for Investigation and Remediation of Contaminated Land
S8.7	LC4-DP4	<p><u>Safety Measures</u></p> <ul style="list-style-type: none"> • Set up a list of safety measures for site workers; • Provide written information and training on safety for site workers; • Keep a log-book and plan showing the contaminated zones and clean zones; • Maintain a hygienic working environment; • Avoid dust generation; • Provide face and respiratory protection gear to site workers if necessary; • Provide personal protective clothing (e.g. chemical resistant jackboot, liquid tight gloves) to site workers, if necessary; • Provide first aid training and materials to site worker; 	To minimize the potential adverse effects on health and safety of construction workers	Contractor	Contaminated area	The course of remediation	<ul style="list-style-type: none"> • Occupation Safety and Health Ordinance (OSHO) (Charter 509)

Project Implementation Schedule

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		<ul style="list-style-type: none"> Bulk earth moving equipment should be utilized as much as possible to minimize workers' handling and contact of the contaminated materials; and Eating, drinking and smoking should not be allowed in contaminated areas to avoid inadvertent ingestion of contaminant. 					
S8.8	LC5-DP4	Re-appraisal on the entire contamination assessment area for associated infrastructure in the adjacent areas in Hong Kong outside LMC Loop.	Ensure any potential contamination activities from land use changes after the approval of this land contamination assessment study	Project Proponent / Detailed design consultant	Entire contamination assessment area for associated infrastructure in the adjacent areas in Hong Kong outside LMC Loop	After land resumption	<ul style="list-style-type: none"> TM-EIAO Practice Guide (PG) for Investigation and Remediation of Contaminated Land Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management Guidance Notes for Contaminated Land Assessment and Remediation Practice Guide for Investigation and Remediation of Contaminated Land
Landscape and Visual Impact (Construction Phase)							
S11.5.4 Table 11.5.9	L-CP1-DP4	<p><u>Preservation and Protection of Existing Trees (Good Site Practice)</u></p> <ul style="list-style-type: none"> The proposed works should avoid disturbance to the existing trees within and close to the works areas. The tree preservation proposals shall be coordinated with the layout and design of the engineering and architectural works at detailed design phase for further retention of individual trees. It is recommended that a full detailed tree survey and felling application will be undertaken and submitted for approval by the relevant government departments in accordance with ETWB TCW No. 3/2006, 'Tree Preservation'. This will be conducted during the detailed design phase of the project and submitted to DLO for approval. The methodology and scope including the programme for the tree survey and felling application are also subject to the approval of the relevant authorities. Trees which are not in conflict with the proposals would be retained and shall be protected by means of fencing during construction phase to prevent damage to tree canopies and 	Avoid disturbance and protection of the existing trees	Detailed design consultant / Contractor	Within project site	Detailed design and construction phases	<ul style="list-style-type: none"> EIAO – TM ETWB TCW 2/2004 ETWB TCW 3/2006

Project Implementation Schedule

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		<p>root zones from vehicles and storage of materials.</p> <ul style="list-style-type: none"> Specifications for the protection of existing trees will be provided during the preparation of the detailed tree survey by Detailed Design consultants at detailed design and construction phase. 					
S11.5 .4 Table 11.5.9	L-CP2-DP4	<p><u>Works Area and Temporary Works Areas (Good Site Practice)</u></p> <ul style="list-style-type: none"> The construction sequence and construction programme shall be optimized in order to minimize the duration of impact. Construction site controls shall be enforced including the storage of materials, the location and appearance of site accommodation and site storage; and the careful design of site lighting to prevent light spillage. The temporary works areas shall be restored to its original condition or enhanced through the introduction of new amenity areas or planting areas following the completion of the construction phase. 	Minimize landscape impacts	Contractor	The whole project area where applicable	Construction phase	<ul style="list-style-type: none"> TM-EIAO
S11.5 .4 Table 11.5.9	L-CP3-DP4	<p><u>Advance Implementation of Mitigation Planting</u></p> <ul style="list-style-type: none"> Replanting of existing / disturbed vegetation shall be undertaken at the earliest possible stage of the construction phase of the project using predominantly native plant species although ornamental species may be used for roadside planting and amenity areas. 	Minimize landscape impacts	Detailed design consultant/ Contractor	The whole project area where applicable	Detailed design and construction phases	<ul style="list-style-type: none"> TM-EIAO
S11.5 .4 Table 11.5.9	L-CP4-DP4	<p><u>Transplantation of Existing Trees</u></p> <ul style="list-style-type: none"> Some specimens have relatively higher amenity value which are in conflict with the proposals shall be considered for transplantation. For trees affected by the proposed infrastructure works the final receptor sites shall be preferably adjacent to their current locations alongside of the alignment to retain their contribution to the local landscape context. For the LMC Loop the receptor locations will be selected to allow the trees to be moved directly to their final locations in accordance with the detailed landscape proposals. The transplanting proposals are subject to review at the detailed design phase and to agreement-in-principle with the relevant management and maintenance agents and/or government departments. The implementation programme for the proposed works shall reserve sufficient time for the advanced tree transplanting preparation works to enhance the survival of the transplanted trees. The transplanting proposals will be subject to the findings of the detailed tree survey and felling application to be undertaken by the detailed design consultants and following approval by the relevant departments. 	Minimize landscape impacts and retention of landscape resources	Detailed design consultant/ Contractor	The whole project area where applicable	Detailed design and construction phases	<ul style="list-style-type: none"> TM-EIAO ETWB TCW 3/2006 LAO PN 7/2007

Project Implementation Schedule

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S11.5 .4 Table 11.5.9	L-CP5- DP4	<u>Coordination with Concurrent Projects</u> <ul style="list-style-type: none"> Coordinated implementation programme with concurrent projects to minimise impacts and where possible reduce the period of disturbance. 	Minimize landscape impacts	Contractor	The whole project area where applicable	Construction phase	• TM-EIAO
S11.5 .4 Table 11.5.9	L-CP6- DP4	<u>Creation of Wetland and Landscape Buffer</u> <ul style="list-style-type: none"> The existing reedbed acquired for development areas for the project will be reinstated as part of the Ecological Area. The reinstatement shall be undertaken at the earliest possible stage during the construction phase of the project. Creation of 12.78ha of Ecological Area (EA) containing reed marsh and marsh will be created at the southern portion of the LMC Loop, and a 50m width landscape buffer area will be set up in between the EA and the development area. Wetland creation concepts please refer to Figure 11.9zf and Chapter 12 Ecology Impact Assessment of this EIA. Native tree and shrub mix will be utilised for the creation of landscape buffer along northern edge of EA to support the creation of avifauna habitat from ecologist perspectives as well as enhance the aesthetic and landscape diversity within the LMC Loop Development. Creation of minimum 11.72 Ha. of permanent compensatory off-site wetland areas at Sam Po Shue and Hoo Hok Wai. For the potential locations for off-site wetlands please refer to Figure 11.9zf and 11.9zh, Chapter 2 Project Description and Chapter 12 Ecology Impact Assessment of this EIA. 	Compensation for the loss of landscape resources	Project Proponent / Detailed design consultant/ Contractor / Operator	The whole project area where applicable	Detailed design, construction and operational phases	• TM-EIAO
S11.5 .4 Table 11.5.9	L-CP7- DP4	<u>Design of Retaining Wall and Slopes</u> <ul style="list-style-type: none"> The proposed treatment of Retaining Wall and Slopes will be undertaken in accordance with GEO Publication No. 1/2011 "Technical Guidelines on Landscape Treatment and Bio-engineering for Slopes". These engineering structures will be aesthetically enhanced through the use of soft landscape works including tree and shrub planting to give man-made slopes a more natural appearance blending into the local rural landscape. Whip sized tree planting is preferred on the face of soil cut slopes and at the crest and toe of the slope, and within berm planters. The smaller, younger plant stock will adapt to their new growing conditions more quickly than larger sized stock and establish a naturalistic effect more rapidly. Hydroseeding will be applied on slope has a gradient more than 30 degree. 	Minimize landscape impacts	Detailed design consultant	The whole project area where applicable	Detailed design phase	• TM-EIAO •
S11.6.5 Table 11.6.3	V-CP1- DP4	<u>Preservation and Protection of Existing Trees (Good Site Practice)</u> <ul style="list-style-type: none"> The proposed works should avoid disturbance to the existing trees within and close to the works areas. The tree preservation proposals shall be coordinated with the layout and design of the engineering and architectural works at 	Minimise visual impact	Detailed design consultant / Contractor	The whole project area where applicable	Detailed design and construction phases	• TM-EIAO

Project Implementation Schedule

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		<p>detailed design phase for further retention of individual trees.</p> <ul style="list-style-type: none"> The preservation of existing tree shall provide instant greening and screening effect for proposed works. 					
	V-CP2-DP4	<p><u>Works Area and Temporary Works Areas (Good Site Practice)</u></p> <ul style="list-style-type: none"> The construction sequence and construction programme shall be optimized in order to minimize the duration of impact. Construction site controls shall be enforced including the storage of materials, the location and appearance of site accommodation and site storage; and the careful design of site lighting to prevent light spillage. Hoarding designed with recessive colour shall be set up around the construction site providing screening effect for the construction works. The site office or temporary above-ground structures shall be sited at less visual prominent locations. 	Minimise visual impact	Contractor	The whole project area where applicable	Construction phase	<ul style="list-style-type: none"> TM-EIAO
	V-CP3-DP4	<p><u>Advance Implementation of Mitigation Planting</u></p> <ul style="list-style-type: none"> Replanting of existing / disturbed vegetation shall be undertaken at the earliest possible stage of the construction phase of the project using predominantly native plant species although ornamental species may be used for roadside planting and amenity areas. 	Minimise visual impact and advance mitigation planting for screening purpose.	Detailed design consultant / Contractor	The whole project area where applicable	Detailed design and construction phases	<ul style="list-style-type: none"> TM-EIAO
	V-CP5-DP4	<p><u>Coordination with Concurrent Projects</u></p> <ul style="list-style-type: none"> Coordinated implementation programme with concurrent projects to minimise impacts and where possible reduce the period of disturbance. 	Minimize visual impacts	Contractor	The whole project area where applicable	Construction phase	<ul style="list-style-type: none"> TM-EIAO
	V-CP6-DP4	<p><u>Creation of Wetland and Landscape Buffer</u></p> <ul style="list-style-type: none"> The creation of EA and landscape buffer on the Loop shall provide screening effect for low level views towards the LMC Loop Development from the lowland plain surrounding the LMC Loop and soften the building mass and create a better visual integration with existing landscape context. 	Creation of screening buffer to alleviate the visual impact	Project Proponent / Detailed design consultant / Contractor / Operator	The whole project area where applicable	Detailed design, construction and operational phases	<ul style="list-style-type: none"> TM-EIAO
	V-CP7-DP4	<p><u>Design of Retaining Wall and Slopes</u></p> <ul style="list-style-type: none"> The proposed treatment of Retaining Wall and Slopes will be undertaken in accordance with GEO Publication No. 1/2011 "Technical Guidelines on Landscape Treatment and Bio-engineering for Man-made Slopes and Retaining Walls". These engineering structures will be aesthetically enhanced through the use of soft landscape works including tree and shrub planting to give man-made slopes a more natural appearance blending into the local rural landscape. Whip sized tree planting is preferred on the face of soil cut slopes and at the crest and toe of the slope, and within berm planters. The smaller, younger plant stock will adapt to their new growing conditions more quickly than larger sized stock and 	Minimize visual impacts and maximise greening opportunities for visual enhancement.	Detailed design consultant	The whole project area where applicable	Detailed design phase	<ul style="list-style-type: none"> TM-EIAO

Project Implementation Schedule

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		establish a naturalistic effect more rapidly. Hydroseeding will be applied on slope has a gradient more than 30 degree.					
<i>Landscape and Visual Impact (Operational Phase)</i>							
S11.5 Table 11.5.10	L-OP1-DP4	<u><i>Roadside and Amenity Planting</i></u> <ul style="list-style-type: none"> The planting proposals will utilise both native and ornamental species which suitable for roadside planting to soften the built structures and enhance visual amenity of existing and proposed road corridors. The implementation of new planting shall be undertaken as soon as technically feasible using a sectional completion approach during construction phase to ensure the effectiveness of this mitigation during operational phase and as early as possible during the operational phase. 	Enhance local landscape value	Detailed design consultant/ Contractor / Operator	The whole project area where applicable	Detailed design, construction and operational phases	• TM-EIAO
S11.5 Table 11.5.10	L-OP2-DP4	<u><i>Compensatory Planting Proposals</i></u> <ul style="list-style-type: none"> As the works are largely located within rural areas and alongside existing roads the planting proposals have sought to utilise all of the available space for new tree and shrub planting to create comprehensive landscape framework which is connected to areas of retained and preserved vegetation and designed to integrate the proposals within their future landscape setting. The planting proposals shall be maintained in accordance with good horticultural practice in order to realise the objectives of the mitigation measures. This includes the replacement of defective plant species on the new planting areas to enhance the aesthetic, landscape and ecological quality of the proposals. Both on-site and off-site opportunities for compensatory planting shall be considered. The preliminary compensatory planting proposal will follow the Technical Circular ETWB TCW No. 3/2006 except for felling of trees for slope works which are exempted from the compensation planting ratio requirement. New tree planting in general roadside planting areas and planting areas within the LMC Loop and above ground structures will utilise a combination of semi-mature to light standard sized stock as shown in Figures 11.9a and 11.9h to 11.9zi in the EIA report to create an instant greening effect at local level. New planting areas within the LMC Loop including tree planting in the landscape buffers, open spaces and roadside planting areas will accommodate approximately 5,000 new trees. Planting of more broad-leaf tree species will be considered where space allows and location is suitable for tree establishment. This planting concept would create 	Enhance local landscape value	Detailed design consultant/ Contractor	The whole project area where applicable	Detailed design and construction phases	• TM-EIAO

Project Implementation Schedule

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		<p>comfortable shaded area for pedestrians and visitors in open spaces.</p> <ul style="list-style-type: none"> • New planting areas along the road alignment of WCR (DP2), ECR (DP6) and access road to Flushing Water Service Reservoir (DP7) will accommodate approximately 2,600 new trees. • For the affected tree on the sloping areas, due to constrained growing conditions, whip planting will be proposed on slopes which have gentler gradient at a planting distance of about 1500mm. Slopes that have a gradient more than 30 degree, hydroseeding will be applied instead. Upon full establishment of whip planting and hydroseeding, greening coverage on affected sloping areas will be reinstated. Following the above planting principles, the newly formed and remnant sloping areas along the road alignment would accommodate approximately 500 whips. • Based on a preliminary estimation, the above planting proposal would achieve a replanting ratio of minimum 1:1 in terms of quantity and quality except for slope works according to ETWB TCW No. 3/2006. This tree replanting ratio would compensate the total girth and number of tree loss as well as the total number of tree loss on sloping area. Given the constraints of growing condition and safety reasons of planting larger size tree stock on sloping areas, greening measures on new formed and remnant slopes, including extensive hydroseeding and whips planting, would restore the quality of these greenback drop in rural area. • The species selection for planting areas within the LMC Loop will utilise a range of native, ornamental and amenity tree species. These proposals will be subject to further development during the detailed design phase of the project.. • Proposed planting on slopes will utilise woodland mix with majority of native species on new or disturbed slopes along the WCR and ECR. 					
S11.5 Table 11.5.10	L-OP7-DP4	<p><u>Reinstatement of Affected Fishponds</u></p> <ul style="list-style-type: none"> • Enhancement of 11.72 Ha. of wetland/fishponds at Sham Po Shue and Hoo Hok Wai with ecological function for the off-site compensation of the permanent loss of fishponds. Off-site fishponds enhancement proposal refer to Figure 11.9zh, Chapter 2 Project description and Chapter 12 Ecology Impact Assessment of this EIA. • Temporary loss of fishponds along WCR (DP2), Direct Link to LMC Station (DP4) and ECR (DP6) by the road widening and improvement works will be largely reinstated to fishponds with tree planting at selected locations. 	Reinstate and enhance local landscape value	Project Proponent / Detailed design consultant/ Contractor / Operator	The whole project area where applicable	Detailed design, construction and operational phases	• TM-EIAO

Project Implementation Schedule

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		Reinstatement of affected fishponds refer to Figure 11.9j,k,l,m,r, t and u in the EIA report. These ponds will be used for both functional or amenity purposes to enhance the existing landscape and visual context.					
S11.5 Table 11.5.10	L-OP8-DP4	<p><u>Application of Terraced Podium Landscape, Vertical Greening and Green Roof</u></p> <ul style="list-style-type: none"> Terraced podium design shall be incorporated into the building design of the LMC Loop Development to maximise the greening opportunities on upper level of the development, reduce the apparent visual mass of the structure and provide visual amenity for views looking from street level as well as in distance at elevated levels as to create better integration with existing landscape and visual context. Incorporation of alternative greening measures including vertical and roof greening on building or built structures where condition allow particularly those fronting the public realm to reduce the apparent visual mass of the structure. 	Enhance local landscape value	Developer / Detailed design consultant/ Contractor Operator	The whole project area where applicable	Detailed design, construction and operational phase	<ul style="list-style-type: none"> TM-EIAO
S11.6 Table 11.6.4	V-OP1-DP4	<p><u>Roadside and Amenity Planting</u></p> <ul style="list-style-type: none"> The planting proposals will utilise native species to soften the proposed structures. The implementation of new planting shall be undertaken as soon as technically feasible using a sectional completion approach during construction phase to ensure the effectiveness of this mitigation during operational phase and as early as possible during the operational phase. This measure will enhance the visual amenity along existing and proposed road corridor. 	Enhance visual amenity	Detailed design consultant/ Contractor / Operator	The whole project area where applicable	Detailed design, construction and operational phases	<ul style="list-style-type: none"> TM-EIAO ETWB TCW
S11.6 Table 11.6.4	V-OP2-DP4	<p><u>Compensatory Planting Proposals</u></p> <ul style="list-style-type: none"> As the works are largely located within rural areas and alongside existing roads the planting proposals have sought to utilise all of the available space for new tree and shrub planting to create comprehensive landscape framework which is connected to areas of retained and preserved vegetation and designed to integrate the proposals within their future landscape setting. Both on-site and off-site opportunities for compensatory planting shall be considered for enchantment of landscape and visual context. Design of road layout and built environment shall accommodate enough planting areas for compensatory planting to restore the quality of these greenback drop in rural area. 	Minimise visual impact and enhance visual amenity	Detailed design consultant/ Contractor /	The whole project area where applicable	Detailed design and construction phases	<ul style="list-style-type: none"> TM-EIAO ETWB TCW
S11.6 Table 11.6.4	V-OP3-DP4	<p><u>Responsive Design of Buildings and Structure</u></p> <ul style="list-style-type: none"> The design of the proposed building structures and road connections networks will incorporate design features as part of visual mitigation measures including: 	Minimise visual impact	Detailed design consultant	Development sites on the LMC Loop, STW, and Flushing Water Service Reservoir, PTI	Detailed design phase	<ul style="list-style-type: none"> TM-EIAO ETWB TCW

Project Implementation Schedule

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		<p><u>Integrated Design Approach</u></p> <ul style="list-style-type: none"> Building massing - the proposed use of a responsive design for the disposition of the main elements of the proposed scheme including the locations of buildings and utility structures. Grouping of utilities and infrastructure components into proposed buildings as far as technically feasible to reduce the mass of development. The disposition and height profile of the developments and above ground utilities structures responds to the existing context, is designed to minimise the wall effects and create a subtle transition at the edges of the site where it meets the rural landscape. Measures may include the creation of setbacks, articulating the development frontage, maintenance of view corridors and the utilisation of gradation or articulated height profile to enhance the sense of visual integration with the existing context, avoid abrupt transitions between the existing and proposed built environment and reduce the apparent visual mass of the proposed developments. <p><u>Treatment of Built Structures</u></p> <ul style="list-style-type: none"> The architectural design should seek to reduce the apparent visual mass of the structures further through the use of materials and finishes such as colour blocking, innovative surface treatments and vertical greening. Responsive finishes for the Proposed Structures In terms of the building finishes natural tones should be considered for the colour palette and non-reflective finishes recommended for the outward facing building facades to reduce the glare effect. <p><u>Innovative Architectural Design</u></p> <ul style="list-style-type: none"> Adoption of recessive colours for the buildings and engineered structures including the proposed viaducts and noise barrier finishes and colour blocking to reduce the collective visual mass of the development. 			at LMC Station and other building where applicable.		
S11.6 Table 11.6.4	V-OP5-DP4	<p><u>Design of Engineering Structures</u></p> <p>The design of the proposed Engineering Structures such as the proposed viaducts elevated PTI, slip road and service reservoir should pay particular attention to the appearance and construction methods of the structures, these would include the following:</p> <ul style="list-style-type: none"> The detailed design landscape consultants shall work in unison with the engineers on the aesthetic aspects of the structures and their relationship with the landscape. Wherever light levels, the water regime and the requirements of the environmental mitigation measures permit, trees and vegetation would be reinstated below or adjacent to the structures. Irrigation may be required in some locations and 	Minimise visual impact	Detailed design consultant	The whole project area where applicable	Detailed design phase	<ul style="list-style-type: none"> • TM-EIAO • ETWB TCW • ACABAS

Project Implementation Schedule

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		<p>hard landscape solutions considered where the clearance is low. Planting would be used wherever possible to minimise the apparent height of structures and to soften their appearance in medium and long distance views.</p> <ul style="list-style-type: none"> The design of the viaduct should avoid unnecessary visual clutter; this would be achieved through the co-ordination of the various engineering disciplines involved to arrive at integrated design solutions. Such as the location of columns of viaduct should not block any views from VSRs in the proximity and the shape of column should be slim down as far as technically feasible to reduce the structural mass at street level, at where space is allowed planting area for shade tolerant tree, shrub and climber species would be provide at the base of the column to soften the vertical emphasis at street level. Fair faced concrete would not be used for viaduct parapets to minimise glare from the structure and to avoid the visually detracting effect of staining. Drainage and utilities to be concealed within the structures. 					
S11.6 Table 11.6.4	V-OP7-DP4	<p><u>Reinstatement of Affected Fishponds</u></p> <ul style="list-style-type: none"> Temporary loss of fishponds along WCR (DP2), Direct Link to LMC Station (DP3) and ECR (DP6) by the road widening and improvement works will be largely reinstated to fishponds with tree planting at selected locations. Reinstatement of affected fishponds refer to Figure 11.9j,k,l,m,r, t and u in the EIA report. These ponds will be used for both functional or amenity purposes to enhance the existing landscape and visual context. 	Enhance visual amenity and integration of existing visual context	Contractor	The whole project area where applicable	Construction phase	<ul style="list-style-type: none"> TM-EIAO ETWB TCW
S11.6 Table 11.6.4	V-OP8-DP4	<p><u>Application of Terraced Podium Landscape, Vertical Greening and Green Roof</u></p> <ul style="list-style-type: none"> Terraced podium design shall be incorporated into the building design of the LMC Loop Development to maximise the greening opportunities on upper level of the development, reduce the apparent visual mass of the structure and provide visual amenity for views looking from street level as well as in distance at elevated levels as to create better integration with existing landscape and visual context. Incorporation of alternative greening measures including vertical and roof greening on building or built structures where condition allow particularly those fronting the public realm to reduce the apparent visual mass of the structure. 	Enhance visual amenity and integration of existing visual context	Developer / Detailed design consultant/ Contractor // Operator	The whole project area where applicable	Detailed design, construction and operation phases	<ul style="list-style-type: none"> TM-EIAO ETWB TCW
Ecology							
S12.7	E1-DP4	<u>Disturbance to Fish Ponds at HHW</u>	Minimize the indirect impact	Detailed design	Fish ponds at HHW	Detailed design,	<ul style="list-style-type: none"> Species targets to be

Project Implementation Schedule

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		<ul style="list-style-type: none"> • Development set back a minimum of 23m from the edge of Meander. • Management of fish pond habitat to enhance ecological value to twice existing value, in order to compensate for disturbance to large waterbirds. • Creation and establishment will occur prior to commencement of substantive works associated with any element of the project for which fish pond compensation is required. <p><u>Construction phase</u></p> <ul style="list-style-type: none"> • Erection of a 3m high, dull green site boundary fence to minimise disturbance to wetland habitats caused by human activity in LMC Loop. <p><u>Operation phase</u></p> <ul style="list-style-type: none"> • Creation of a vegetated setback of minimum 23m from the edge of LMC Loop. 	from LMC Loop development on the disturbance to fish ponds at HHW	consultant/ contractor/ operator	and LMC	construction and operational phases	provided in HCMP.
S12.7	E2-DP4	<p><u>Construction run-off</u></p> <ul style="list-style-type: none"> • Temporary sewerage and drainage will be designed and installed to collect wastewater and prevent it from entering nearby water bodies; • Proper locations well away from nearby water bodies will be used for temporary storage of materials (i.e. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction debris and spoil, and these will be identified before commencement of works; • To prevent muddy water entering nearby water bodies, work sites close to nearby water bodies will be isolated, using such items as sandbags or silt curtains with lead edge at bottom and properly supported props. Other protective measures will also be taken to ensure that no pollution or siltation occurs to the water gathering grounds of the work site; • If temporary access along a riverbed is unavoidable, this will be kept to the minimum in width and length. Temporary river crossings will be supported on stilts above the river bed; • Stockpiling of construction materials, if necessary, will be properly covered and located away from nearby water bodies; • Construction debris and spoil will be covered and/or properly disposed of as soon as possible to avoid being washed into nearby water bodies; • Construction effluent, site run-off and sewage will be properly collected and/or treated. Wastewater from any construction site will be minimised via the following in descending order: reuse, recycling and treatment; 	Minimize the indirect impact from the increasing suspended solids and pollutants in LMC Meander	Contractor	Within project construction site	Construction phase	

Project Implementation Schedule

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		<ul style="list-style-type: none"> • Proper locations for discharge outlets of wastewater treatment facilities well away from sensitive receivers will be identified (i.e. treated wastewater will not be discharged into LMC Meander, natural streams, marsh, reedbed, active or abandoned fish ponds); • Adequate lateral support will be erected where necessary in order to prevent soil/mud from slipping into the Ecological Area or LMC Meander; • Site boundary will be clearly marked and any works beyond the boundary strictly prohibited; • Regular water monitoring and site audit will be carried out at adequate points along LMC Meander, and at the outfalls of the natural streams around LMC Loop. If the monitoring and audit results show that pollution occurs, adequate measures including temporarily cessation of works will be considered. 					
S12.7	E3-DP4	<p><u>Pollutant Runoff to Downstream areas from Accidental Spillage</u></p> <ul style="list-style-type: none"> • Prepare an emergency contingency plan • The plan will include, but not be limited to, the following: <ul style="list-style-type: none"> - Potential emergency situations; - Chemicals or hazardous materials used on-site (and their location); - Emergency response team; - Emergency response procedures; - List of emergency telephone hotlines; - Locations and types of emergency response equipment; - Training plan and testing for effectiveness. 	Minimize indirect impact from pollutant runoff to downstream areas from accidental spillage	Contractor / Operator	Areas within project site near streams	Construction and operational phases	
S12.7	E4-DP4	<ul style="list-style-type: none"> • Use opaque, non-transparent, non-reflective noise barriers for all developments associated with the Project. • Design of buildings should not incorporate use of night-time lighting at or near top of buildings, highly reflective materials should not be used where vegetation is adjacent and glass surfaces should not be angled upwards in a way that reflects the sky. Unnecessary lighting should be eliminated. Appropriate glass and façade treatments should be used where required to minimise impact. Unnecessary lighting should be avoided. <p>These include the following:</p> <ul style="list-style-type: none"> • Fritting, or the placement of ceramic lines or dots on glass, has little effect on the human-perceived transparency of the window but creates a visual barrier to birds outside. This treatment also has the advantage of reducing air conditioning loads by lowering heat gain, while still allowing light transmission for interior spaces. It is most successful when 	Minimize the mortality impacts on birds	Developer / Detailed design consultant/ Contractor/ Operator	Areas within project site	Detailed design, construction and operational phases	

Project Implementation Schedule

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		<p>the frits are applied on the outside surface. Frosted glass has similar effects.</p> <ul style="list-style-type: none"> • Angled glass may be used only for smaller panes in buildings with a limited amount of glass. • The use of glass that reflects UV light (primarily visible to birds, but not to humans) acts to reduce collision. • Film and art treatment allow glass surfaces to be used a medium of expression, often related to the nature and use of the building, as well indicating to birds their impenetrability. • Lightweight external screens can be added to windows or become a façade element of larger buildings, and are suitable where non-operable windows are prevalent, which is often the case in modern buildings in HK. <p>In terms of reducing night-time mortality impacts, eliminating unnecessary lighting is one of the easiest methods, and has the added advantage of saving energy and expense. Potential impacts of nocturnal avian collision with buildings should be minimised by not creating sky glow from the use of night-time lighting at or near the top of buildings or other structures. In addition to avoiding uplighting, light spillage should be minimised, while green and blue lights should be used where possible. As far as possible, lights should be controlled by motion sensors, and building operations should be managed in such a way as reduce or eliminate night lighting near windows. The potential advantages of removing unnecessary lighting in terms of reducing the carbon footprint of the LMC Loop development are obvious.</p>					
S12.7	E5-DP4	<ul style="list-style-type: none"> • Minimize loss of natural vegetation along LMC Meander, and suitable replacement planting with possible installation of otter holts and the provision of potential feeding area and spraint locations for otters in the stabilized bank subject to detailed design. • No significant change to velocity of water flow, water level or water quality. • No direct lighting on Meander. • 3m high, dull green site boundary fence for all developments associated with the project. • Pre-construction surveys for otter holts or natal dens will be conducted in LMC Loop before the commencement of construction works. Work in the area of any otter holt found to cease pending examination by experienced Ecologist. If in use for breeding, works in the area will temporarily stop until end of breeding activity. • No construction activities within 100m of LMC Meander between one hour prior to sunset and one hour after sunrise. • Provision of compensatory reed marsh in the Ecological 	Minimize impacts on Eurasian Otter	Contractor	Construction site within the project	Construction phase	

Project Implementation Schedule

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		Area in LMC Loop, including open water channels and islands within the reed marsh, both of which features are considered to be used by the species.					
S12.7	E10-DP4	<ul style="list-style-type: none"> Preserve undisturbed, semi-natural habitat conditions of LMC Meander and adjacent areas of LMC Loop up to approximately 150m in width in order to avoid disturbance to core part of flight line corridor. This area to comprise an Ecological Area largely constituting reed marsh and a 50m wide buffer zone densely planted with shrubs and trees. Small number of low buildings (max 14mPD high, except the building height of on-site STW and electricity substation are 15mPD and 25mPD high respectively) allowed in inner 25m of this area at a plot ratio of 0.1. At Ha Wan Tsuen entry point for many birds to LMC Loop area provide a wider Ecological Area to minimise disturbance from nearby buildings. Further minimisation of impact by maintaining a lower building height in areas adjacent to the buffer zone for the EA. In addition, the sewage treatment works, which is located near the point where many birds cross from the Meander to HHW, should not exceed 15mPD. 	Minimize impacts on flight line corridor from LMC Loop development	Developer / Detailed design consultant / Contractor / Operator	Within project site	Detailed design, construction and operational phases	
S12.7	E11-DP4	<ul style="list-style-type: none"> Employ site boundary fence as long as possible. Use of movable barrier for more intense site formation activity. Provision of fencing with 30cm gap between the existing reed marsh and LMC Meander during the establishment period of Ecological Area and the gap will be closed once established. Restrict work to period from 0900h to 1700h. All major works along the edge of LMC Meander and in the Ecological Area will be conducted in the wet season. 	Minimize disturbance impacts of mitigation provisions	Contractor	Within project site	Construction phase	
S12.7	E12-DP4	<ul style="list-style-type: none"> Minimal night-time lighting No direct light on Meander 	Minimize impacts on LMC Meander	Contractor / Operator	All	Construction and operational phases	
S12.9	EG2-DP4	All generic mitigation measures proposed in Tables 12.82a and 12.82b in the EIA report.	Avoid, minimize and mitigate overall ecological impact.	Project proponent / contractor / detailed design consultant / developer / operator	All areas.	All phases	• EIAO
Fisheries (Construction Phase)							
S13.7	F4-DP4	During the construction phase, a layer of sheet pile wall will be erected	Bund stability	Contractor	Fish ponds	Construction	• TM-EIAO

Project Implementation Schedule

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		along the site boundary adjacent to fish ponds after commencement of site works. The sheet pile wall will be constructed by silent piling method (Press-in method) which induces minimal vibration. Therefore the stability of the fish pond bund will not be influenced by the construction of the sheet pile wall, subsequent construction works and the loading from the road during operational phase. In addition, the sheet pile wall will have grouting or a grout curtain to avoid water seepage from the fish pond to the excavation area. With these measures, significant impacts are not anticipated.				phase	
S13.7	F5-DP4	Temporary traffic arrangements will be instigated to maintain or provide alternative access to fish ponds during construction phase.	Prevent Blockage of Access Roads to Fish Ponds	Contractor	Fish ponds	Construction phase	• TM-EIAO
S13.7	F6-DP4	Standard mitigation measures to control site runoff and other pollutants caused by construction activities and good site practices will be implemented during the construction phase of the Project. Excavated material and other inert construction wastes produced will be transferred to proper recipients (i.e. landfill) (see Waste Management Section). Sewage from the proposed development will be dealt with via a sewerage system and will not be discharged directly to surrounding water bodies.	Avoid water quality impact	Contractor	Fish ponds	Construction phase	• TM-EIAO
S13.7	F7-DP4	<p>Dust Minimization</p> <ul style="list-style-type: none"> • During all excavation works, good site practice should be adopted to minimize impacts on fisheries. The below site practices should be adopted during this time. • 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; • 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; • Excavation profiles must be properly designed and executed with attention to the relevant requirements for environment, health and safety; • In case the soil to be excavated is situated beneath the groundwater table, it may be necessary to lower the groundwater table by installing well points or similar means; • Supply of suitable clean backfill material after excavation, if required; 	Dust minimization	Contractor	Fish ponds	Construction phase	• TM-EIAO

Project Implementation Schedule

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		<ul style="list-style-type: none"> • Vehicles containing any excavated materials should be suitably covered to limit potential dust emissions or contaminated run-off, and truck bodies and tailgates should be sealed to prevent any discharge during transport or during wet season; • Speed control for the trucks carrying contaminated materials should be enforced; and • Vehicle wheel washing facilities at the site's exit points should be established and used. 					
<i>Fisheries (both Construction and Operational Phase)</i>							
S13.7	F8-DP4	<p><u>Contingency plan</u> The contractor should prepare an emergency contingency plan for actions to be taken if significant impacts, such as accidental spillage of chemicals, water seepage from fish ponds, damaged/ destabilized pond bunds, pond water contamination by site runoff, on fish ponds occur. The contractor should submit the emergency contingency plan dealing with, but not limited to, the aforementioned potential impacts to the engineer for review, comment and approval. The fish pond operators will also be consulted for the details of the contingency plan, which will also be submitted to AFCD for review and comment. The plan should include, but not limited to, the following:</p> <ul style="list-style-type: none"> • Potential emergency situations; • Chemicals or hazardous materials used on-site (and their location); • Emergency response team; • Emergency response procedures; • List of emergency telephone hotlines; • Locations and types of emergency response equipment; • Training plan and testing for effectiveness. 	Deal with any accidental spillage event	Contractor / Operator	Fish ponds	Construction and operational phases	• TM-EIAO
<i>Food Safety (Construction Phase)</i>							
S15	F1-DP4	<p><u>Contingency plan</u> The contractor should have effective communication with Food and Environmental Hygiene Department (FEHD) / Centre of Food Safety (CFS), on food surveillance and food incidents. Food Surveillance Programme (http://www.cfs.gov.hk/english/programme/programme_fs/programme_fs.html). is undertaken by CFS to inspect food safety in Hong Kong, with a three-tier surveillance strategy (consisting of routine food surveillance, targeted food surveillance and seasonal food surveillance). Under this programme, aquatic products (including pond fish) at import, wholesale and retail levels are sampled for microbiological (i.e. bacteria and viruses), chemical (i.e. natural toxins, food additives and</p>	Minimize significant impacts on fish ponds	Contractor	Fish pond within project site	Construction phase	• TM-EIAO

Project Implementation Schedule

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		contaminants) and radiation testings. All food safety surveillance results of by a monthly "Food Safety Report" in press releases and also presented in CFS website. If pond fish samples do not comply with food safety standards and they are verified to be from fish ponds of concerned under this study through "food tracing", fish selling shall be stopped as instructed by CFS.					
S15	F2-DP4	<p><u>Dust Minimization</u></p> <ul style="list-style-type: none"> • During all excavation works, good site practice should be adopted to minimize the release of TSP, impact of land contamination and the associated food safety implications. The below site practices should be adopted during excavation works. • 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; • 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; • Excavation profiles must be properly designed and executed with attention to the relevant requirements for environment, health and safety; • In case the soil to be excavated is situated beneath the groundwater table, it may be necessary to lower the groundwater table by installing well points or similar means; • Supply of suitable clean backfill material after excavation, if required; • Vehicles containing any excavated materials should be suitably covered to limit potential dust emissions or contaminated run-off, and truck bodies and tailgates should be sealed to prevent any discharge during transport or during wet season; • Speed control for the trucks carrying contaminated materials should be enforced; and • Vehicle wheel washing facilities at the site's exit points should be established and used. 	Dust minimization	Contractor	Fish pond within project site	Construction phase	<ul style="list-style-type: none"> • Food Adulteration (Metallic Contamination) Regulations

Project Implementation Schedule

Note: Chapters 1 to 2 of the EIA report present the background information of the Project, identified designated project, concurrent projects, objectives and scope for various environmental aspects, and description on recommended outline development plan. Chapters 3 to 14 of the EIA report present the EIA findings and mitigation measures are described below with cross-reference to the EIA report. Chapters 16 to 18 summarize the environmental outcomes and describe the environmental monitoring requirements and conclusion.

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<i>DP5-Sewage Treatment Works</i>							
<i>Construction Dust Impact</i>							
S3.8	D1-DP5	Mitigation measures in form of regular watering under a good site practice should be adopted. Watering once per hour on exposed worksites and haul road is proposed to achieve dust removal efficiency of 92.1%. While the above watering frequencies are to be followed, the extent of watering may vary depending on actual site conditions but should be sufficient to maintain an equivalent intensity of no less than 1.6 L/m ² to achieve the respective dust removal efficiencies	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> • APCO To control the dust impact to meet HKAQO and TM-EIAO
S3.8	D2-DP5	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> • APCO To control the dust impact to meet HKAQO and TM-EIAO
S3.8	D3-DP5	<p>Following dust suppression measures should also be incorporated by the Contractor to control the dust nuisance throughout the construction phase</p> <ul style="list-style-type: none"> • 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; • A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones; • The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores; • When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period. • The portion of any road leading only to construction site that is within 30m 	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> • APCO To control the dust impact to meet HKAQO and TM-EIAO

Project Implementation Schedule

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		<p>of a vehicle entrance or exit should be kept clear of dusty materials;</p> <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; • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport should be totally enclosed by impervious sheeting; • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides; • Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed; • Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and • Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shortcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies. 					
S3.8	D4-DP5	Implement regular dust monitoring under EM&A programme during the construction phase.	Monitoring of dust impact	Contractor	Selected representative dust monitoring station	Construction phase	• TM-EIAO
<i>Air Quality Impact (Operational Phase)</i>							
S3.8	D5-DP5	The on-site STW will incorporate odour control design of 95% odour removal efficiency.	Control odour problem	Detailed design consultants / Contractor / Operator	On-site STW	Detailed design, construction and operational phases	• TM-EIAO
S3.8	D6-DP5	The project proponent will undertake to implement bioremediation of 98% odour removal efficiency along a section of Shenzhen River in about 4.2 km.	Control cumulative odour problem	Project proponent/ detailed design consultants /	Shenzhen River	Prior to operation of the Project and	• TM-EIAO

Project Implementation Schedule

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				Contractor / Operator		operational phase	
S3.8	Od1-DP5	An in-situ trial test to assess the effectiveness on AVS and odour removal of bioremediation works will be conducted. The relationship between odour emission and other major odour indicator in-term of AVS and Redox potential will be established. The established AVS versus odour relationship will be made use for implementation of Shenzhen River bioremediation work committed by the project proponent.	Control cumulative odour problem	Project proponent / detailed design consultants / operator	Shenzhen River	Detailed design stage, construction phase and operational phases	• TM-EIAO
S3.8	Od2-DP5	As a short-term enhancement and contingency measure for reduction of indoor odour level before the completion of mitigation measures on Shenzhen River, the developers could consider to install odour removal system (i.e. activated carbon filter or selective catalytic filter etc.) capable of 95% removal efficiency in buildings with central air conditioning in the development.	Control cumulative odour problem	Developer / detailed design consultants / operator	All buildings	Detailed design stage, construction phase and operational phases	• TM-EIAO
Noise Impact (Construction Phase)							
S4.8	N-CP1-DP5	Implement the following good site management practices: <ul style="list-style-type: none"> only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; mobile plant should be sited as far away from NSRs as possible and practicable; material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities. 	Control construction airborne noise	Contractor	All construction sites where practicable	Construction phase	• Annex 5, TM-EIA
S4.8	N-CP2-DP5	Install temporary site hoarding (approx 2.4m high) located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period.	Reduce the construction noise levels at low-level zone of NSRs through partial screening.	Contractor	All construction sites where practicable	Construction phase	• Annex 5, TM-EIA
S4.8	N-CP3-DP5	Install movable noise barriers and full enclosure, screen the noisy plants including air compressor and generator.	Screen the noisy plant items to be used at all construction sites	Contractor	All construction sites where practicable	Construction phase	• Annex 5, TM-EIA
S4.8	N-CP4-DP5	Use of "Quiet" Plant and Working Methods	Reduce the noise levels of plant items	Contractor	All construction sites where practicable	Construction phase	• Annex 5, TM-EIA
S4.8	N-CP5-DP5	Sequencing operation of construction plants where practicable.	Operate sequentially within the same work site to reduce the construction airborne	Contractor	All construction sites where practicable	Construction phase	• Annex 5, TM-EIA

Project Implementation Schedule

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			noise				
S4.8	N-CP6-DP5	Implement a noise monitoring under EM&A programme.	Monitor the construction noise levels at the selected representative locations	Contractor	Selected representative noise monitoring stations	Construction phase	• TM-EIA
• Noise Impact (Operational Phase)							
S4.8	N-OP1-DP5	<ul style="list-style-type: none"> The detailed design should incorporate the following good practices in order to minimize the nuisance on the nearby NSRs. Direct noise mitigation measures including silencers, acoustic louvers and acoustic enclosures should be allowed for in the design for the Sewage Treatment Works. The maximum allowable sound power level for Sewage Treatment Works shall not exceed 84 dB(A) or 75 dB(A) subject to the approval of development of Comprehensive Development and Wetland Enhancement Area near Hoo Hok Wai. 	Control operational airborne noise due to the operation of fixed plant	Detailed design consultants / Contractor / Operator	All plantrooms where practicable	Prior to operation of the Project	Noise Control Ordinance and its TM
Water Quality Impact (Construction Phase)							
S5.7	W1-CP-DP5	<p><u>Construction Runoff and Site Drainage</u></p> <p>In accordance with the Practice Note for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN 1/94), construction phase mitigation measures, where appropriate, should include the following:</p> <ul style="list-style-type: none"> Update and implementation of Stormwater Pollution Control Plan At the start of site establishment, perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works and erosion and sedimentation control facilities implemented. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities. The design of the temporary on-site drainage system will be undertaken by the contractor prior to the commencement of construction. Diversion of natural stormwater should be provided as far as possible. The design of temporary on-site drainage should prevent runoff going through site surface, construction machinery and equipments in order to avoid or minimize polluted runoff. Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m³ capacities, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity shall be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped. The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a silt/sediment trap. The silt/sediment traps should be incorporated 	Minimize water quality impact from construction site runoff and general construction activities	Contractor	All construction sites where practicable	Construction phase	<ul style="list-style-type: none"> Water Pollution Control Ordinance ProPECC PN1/94 TM-EIAO TM-DSS

Project Implementation Schedule

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		<p>in the permanent drainage channels to enhance deposition rates.</p> <ul style="list-style-type: none"> • The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94. The detailed design of the sand/silt traps should be undertaken by the contractor prior to the commencement of construction. • Construction works should be programmed to minimize surface excavation works during the rainy seasons (April to September). All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means. • All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas. • Measures should be taken to minimise the ingress of site drainage into excavations. If the excavation of trenches in wet periods is necessary, it should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities. • All open stockpiles of construction materials (for example, aggregates, sand and fill material) of should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system. • Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers. • Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarized in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events. • All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities should be provided at every construction site exit where practicable. Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and 					

Project Implementation Schedule

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		<p>drains.</p> <ul style="list-style-type: none"> Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain. Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts. All fuel tanks and storage areas should be provided with locks and sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby. Regular environmental audit on the construction site should be carried out in order to prevent any malpractices. Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the meander, wetlands and fish ponds. 					
S5.7	W2-CP-DP5	<p><u>Groundwater from Contaminated Area</u></p> <ul style="list-style-type: none"> No mitigation measure is required for groundwater treatment in LMC Loop. Additional investigation is required to identify if contaminated groundwater is found If the investigation results indicated that the groundwater to be generated from construction works would be contaminated, the contaminated groundwater should be either discharged into recharged wells, or properly treated in compliance with the requirements of Technical Memorandum on Standards for Effluents Discharged into Drainage on Sewerage Systems, Inland and Coastal Waters. If recharged well method were used, the groundwater quality in the recharged well should not be affected by recharging operation, i.e. the pollution levels of the recharged groundwater should not be higher than that in the recharging wells. If treatment and discharge method were used, the design of wastewater treatment facilities, such as active carbon and petrol interceptor, should be submitted to the EPD and a discharge license should be obtained under the WPCO through the Regional Offices of EPD. 	Minimize groundwater quality impact from contaminated area	Contractor	Areas where contamination is found.	Construction phase	<ul style="list-style-type: none"> Water Pollution Control Ordinance TM-DSS TM-EIAO
S5.7	W3-CP-DP5	<p><u>Sewage from Workforce</u></p> <ul style="list-style-type: none"> Portable chemical toilets and sewage holding tanks should be provided for handling the construction sewage generated by the workforce. A licensed contractor should be employed to provide appropriate and adequate portable toilets to cater 0.15m³/day/employed populations and be responsible for appropriate disposal and maintenance. Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment 	Minimize water quality from sewage effluent	Contractor	All construction sites where practicable	Construction phase	<ul style="list-style-type: none"> Water Pollution Control Ordinance TM-DSS

Project Implementation Schedule

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		during the construction phase of the Project. Regular environmental audit on the construction site should be conducted in order to provide an effective control of any malpractices and achieve continual improvement of environmental performance on site.					
S5.7	W1-BR-DP5	<p><u>Bio-remediation in Shenzhen River</u></p> <ul style="list-style-type: none"> Water quality monitoring and audit is recommended to ensure that the proposed bio-remediation operation would not result in adverse water quality impact. Details of the water quality monitoring programme are presented in the EM&A Manual. If unacceptable water quality impact in the receiving water is recorded, additional measures such as slowing down, or rescheduling of works should be implemented as necessary. 	Minimize water quality impact from bio-remediation of Shenzhen River	Contractor	Shenzhen River where practicable	Construction phase	<ul style="list-style-type: none"> Water Pollution Control Ordinance TM-EIAO
<i>Water Quality Impact (Operational Phase)</i>							
S5.7	W8-OP-DP5	<p><u>Sewage and Sewage System</u></p> <p>All the sewage generated from the LMC Loop will be collected and treated in the proposed new STW to achieve compliance with the “No Net Increase in Pollution Loads” policy.</p> <p>Membrane bio-reactor wastewater treatment technology will be adopted in the STW. The effluent discharge from the proposed STW will comply with the requirement of no net increase in pollution load by compensating the river quality in Deep Bay catchment. Onsite treatment and offsite compensation is proposed to achieve the no net increase in pollution load policy. A STW is proposed in LMC Loop and the effluent will be discharged to the Shenzhen River. Compensation of pollution loading will be achieved by upgrading the existing Shek Wu Hui such that a higher effluent quality level and capacity would be reached.</p> <p>Emergency discharge may be required due to failure of on-site STW. In order to prevent and minimise the impact due to emergency discharge, the following precautions measures shall be included in the STW design:</p> <ul style="list-style-type: none"> Standby unit should be provided to facilitate maintenance and repairing of equipment; Dual power supply, or back-up power, should be provided, perfectly in the format of ring main or automatic-operated emergency generator with sufficient capacity to cope with the demand loading of the essential plant equipment; Telemetry system should be provided to the closest manned plant for unmanned facilities, such that swift actions could be taken in case of malfunction of unmanned facilities; and Manually cleaned screens should be provided at the overflow bypass to prevent the discharge of floating solids. 	Minimize the water quality impact from sewage	Detailed design consultants / Contractor / Operator	Proposed sewage treatment works	Detailed design, construction and operational phases	<ul style="list-style-type: none"> Water Pollution Control Ordinance TM-DSS
S5.7	W7-DP5	Emergency discharge for Flushing Water Service Reservoir is not required. However, during regular cleaning, waste water will be generated. These wastewater should be delivered to STWs or diverted back to influent pipes of	Control of emergency discharge.	Detailed design consultants / Contractor / Operator	On-site STW and flushing water service reservoir	Detailed design, construction	<ul style="list-style-type: none"> Water Pollution Control Ordinance TM-DSS

Project Implementation Schedule

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		on-site STW.				and operational phases	
S5.7	W4-OP-DP5	<u>Road Runoff during operational phase</u> <ul style="list-style-type: none"> Update and implementation of Stormwater Pollution Control Plan During operational phase, vehicle dust, tyre scraps and oils might be washed away from the road surface to the nearby water courses by surface runoff or road surface cleaning. Proper drainage systems with silt traps and oil interceptors should be installed. For runoff discharge to Ping Hang Stream, Ma Tso Lung Stream and the Meander, effective mitigation measure to remove the pollutants at source. The Project Proponent or the delegated operation parties should manage the road/open area cleaning prior to the occurrence of a storm. The operator should undertake the cleaning at an interval of twice a week. Each of the cleaning events should not be separated by more than four days and should be carried out during low traffic flow period using vacuum air sweeper/truck equipped with side broom, which is to sweep road sludge and debris into the suction nozzle to increase the removal efficiency of pollutants. The collected pollutants would be tankered away for off-site disposal at landfill sites. During the EM&A programme, it is recommend to verify the efficiency of silt traps and cleaning frequencies by water quality monitoring during typical rainstorm events. 	Minimize water quality from non point source pollutant	Operator	All area where practicable	Operational phase	<ul style="list-style-type: none"> Water Pollution Control Ordinance TM-DSS
Sewerage and Sewage Treatment Implications							
S6.6	S1-DP5	The discharge standard for the proposed on-site STW should comply with Table 6.7 of the EIA report.	Minimize the water quality impact from sewage	Detailed design consultants / Operator	On-site STW	Detailed design and operational phases	<ul style="list-style-type: none"> Water Pollution Control Ordinance TM-DSS
S6.6	S2-DP5	The proposed water quality standards of TSE reuse should comply with Table 6.11 of the EIA report.	Control the water quality of TSE	Detailed design consultants / Operator	On-site STW and Flushing Water Service Reservoir	Detailed design and operational phases	<ul style="list-style-type: none"> Water Pollution Control Ordinance TM-DSS
S6.6	S2a-DP5	Membrane Bio-Reactor system is proposed and the design capacity is 18,000 m ³ /day.	Control the water quality of TSE	Detailed design consultants / Operator	On-site STW and Flushing Water Service Reservoir	Detailed design and operational phases	<ul style="list-style-type: none"> Water Pollution Control Ordinance TM-DSS
S6.6	S3-DP5	The following precautionary measures for TSE reuse should be adopted:- <ul style="list-style-type: none"> To avoid cross connection and hence contamination, all pipes and fittings used for the TSE water supply and distribution system should be purple in colour for distinguishing them from the pipes and fittings used for the fresh water supply and distribution systems. Regular checking/inspections of the TSE supply and distribution systems for possible cross connection to the fresh water supply and distribution system should be carried out. The use of non-toxic dye may be adopted in the checking/inspections. Warning signs should be permanently displayed where public access to 	Avoid affecting public health due to TSE reuse	Detailed design consultants / Contractor / Operator	Areas with TSE reuse	Detailed design, construction and operational phases	<ul style="list-style-type: none"> Water Pollution Control Ordinance TM-DSS

Project Implementation Schedule

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		<p>TSE is possible (except for toilets) notifying the employees, visitors and the public at large that treated effluent is being used and is not suitable for drinking.</p> <ul style="list-style-type: none"> Storage of sodium hypochlorite solution will be required and this is not a hazardous material. Thus, the storage is not considered as Potentially Hazardous Installation (PHI). <p>Apart from that, proper signage, promotion and education to the general public especially potential local users of reclaimed water for landscape irrigation shall be considered and implemented.</p>					
Waste Management (Construction Waste)							
S7.6	WM1-DP5	<p><u>Waste Reduction Measures</u> Waste reduction is best achieved at the planning and design phase, as well as by ensuring the implementation of good site practices. The following recommendations are proposed to achieve reduction:</p> <ul style="list-style-type: none"> segregate and store different types of waste in different containers, skip or stockpiles to enhance reuse or recycling of materials and their proper disposal; proper storage and site practices to minimize the potential for damage and contamination of construction materials; plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste; sort out demolition debris and excavated materials from demolition works to recover reusable/recyclable portions (i.e. soil, broken concrete, metal etc.); provide training to workers on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling. 	Reduce waste generation	Contractor	All construction sites where practicable	Construction phase	<ul style="list-style-type: none"> Waste Disposal Ordinance
S7.6	WM2-DP5	Prepare Waste Management Plan and submit to the Engineer for approval	Minimize waste generation during construction	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal Ordinance
S7.6	WM3-DP5	<p><u>Good Site Practice</u> The following good site practices are recommended throughout the construction activities:</p> <ul style="list-style-type: none"> nomination of an approved personnel, such as a site manager, to be responsible for the implementation of good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site; training of site personnel in site cleanliness, appropriate waste management procedures and concepts of waste reduction, reuse and recycling; provision of sufficient waste disposal points and regular collection for disposal; appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes 	Minimize waste generation during construction	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal Ordinance

Project Implementation Schedule

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		<p>in enclosed containers;</p> <ul style="list-style-type: none"> regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; 					
S7.6	WM4-DP5	<p><u>Storage of Waste</u> The following recommendation should be implemented to minimize the impacts:</p> <ul style="list-style-type: none"> waste such as soil should be handled and stored well to ensure secure containment; stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; different locations should be designated to stockpile each material to enhance reuse; 	Minimize waste impacts from storage	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal Ordinance
S7.6	WM5-DP5	<p><u>Collection and Transportation of Waste</u> The following recommendation should be implemented to minimize the impacts:</p> <ul style="list-style-type: none"> remove waste in timely manner; employ the trucks with cover or enclosed containers for waste transportation; obtain relevant waste disposal permits from the appropriate authorities; and disposal of waste should be done at licensed waste disposal facilities. 	Minimize waste impacts from storage	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal Ordinance
S7.6	WM6-DP5	<p><u>Excavated and C&D Material</u> Wherever practicable, C&D materials should be segregated from other wastes to avoid contamination and ensure acceptability at Public Fill Reception Facilities areas or reclamation sites. The following mitigation measures should be implemented in handling the excavated and C&D materials:</p> <ul style="list-style-type: none"> maintain temporary stockpiles and reuse excavated fill material for backfilling; carry out on-site sorting; make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; and implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified. <p>The recommended C&D materials handling should include:</p> <ul style="list-style-type: none"> On-site Sorting of C&D Materials Reuse of C&D Materials Use of Standard Formwork and Planning of Construction Materials Purchasing Provision of Wheel Wash Facilities <p>Details refer to Section 7.6.1.4 of the EIA report.</p>	Minimize waste impacts from excavated and C&D materials	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Land (Miscellaneous Provisions) Ordinance Waste Disposal Ordinance ETWB TCW No. 19/2005
S7.6	WM7-DP5	<p><u>Contaminated Soil</u> As a precaution, it is recommended that standard good site practice should be implemented during the construction phase to minimize any potential exposure</p>	Remediate contaminated soil	Contractor	All construction sites where applicable	Construction phase	<ul style="list-style-type: none"> Practice Guide for Investigation and Remediation

Project Implementation Schedule

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		to contaminated soils or groundwater. The details of mitigation measures to minimize the potential environmental implications arising from the handling of contaminated materials refer to Land Contamination Section.					of Contaminated Land
S7.6	WM8-DP5	<u>Chemical Waste</u> <ul style="list-style-type: none"> If chemical wastes are produced at the construction site, the Contractors should register with EPD as chemical waste producers. Chemical wastes should be stored in appropriate containers and collected by a licensed chemical waste contractor. Chemical wastes (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while the chemical waste that cannot be recycled should be disposed of at either the Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation. 	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal (Chemical Waste) General Regulation Code of Practice on the Packaging, Labelling and Storage of Chemical Waste
S7.6	WM9-DP5	<u>General Waste</u> <ul style="list-style-type: none"> General refuse should be stored in enclosed bins separately from construction and chemical wastes. Recycling bins should also be placed to encourage recycling. Preferably enclosed and covered areas should be provided for general refuse collection and routine cleaning for these areas should also be implemented to keep areas clean. A reputable waste collector should be employed to remove general refuse on a daily basis. 	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal Ordinance
S7.6	WM10-DP5	<u>Sewage</u> <ul style="list-style-type: none"> The WMP should document the locations and number of portable chemical toilets depending on the number of workers, land availability, site condition and activities. Regularly collection by licensed collectors should be arranged to minimize potential environmental impacts. 	Minimize production of sewage impacts	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal Ordinance
Waste Management (Operational Phase)							
S7.6	WM11-DP5	<u>Sewage Sludge</u> <ul style="list-style-type: none"> Sewage sludge generated from STW is suggested to be treated at the proposed STF at Nim Wan and transported by road in water tight containers or skips. Unloading process would be operated in the designated room inside STW which should be enclosed and served by negative pressure by extracting odorous gas to deodorizing unit. The low emission trucks, such as EURO V or later model would be used for transportation to minimize traffic emission and the potential air quality impacts. The above recommendations are proposed as technical guidelines for future developers' consideration and will be subject to detailed design. 	Minimize impacts from sewage sludge	Operator	Proposed STW	Operational phase	<ul style="list-style-type: none"> Waste Disposal Ordinance
S7.6	WM3-B	<u>Recommendation on Chemical Waste (Operation)</u> Plant / equipment maintenance schedule as well as laboratory testing should be designed to optimise effectiveness and to minimize the generation of chemical	Prevent health hazards to operators	Operator	The whole project area where applicable	Operational phase	<ul style="list-style-type: none"> Waste Disposal Ordinance Waste Disposal

Project Implementation Schedule

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		waste. The operators should register with EPD as chemical waste producers. Chemical wastes should be stored in appropriate containers and collected by a licensed chemical waste contractor All chemical wastes generated from laboratories as well as from machinery maintenance and servicing 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.					(Chemical Waste) (General) Regulation <ul style="list-style-type: none"> • Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes
Land Contamination							
S8.7	LC1-DP5	<u>Remediation of arsenic-contaminated soil</u> <ul style="list-style-type: none"> • “Solidification/Stabilization” (S/S) treatment method was proposed for the remediation of arsenic-contaminated soil. Toxicity Characteristic Leaching Procedure (TCLP) test should be undertaken after S/S in order to ensure that the contaminant will not leach to the environment. Unconfined Compressive Strength (UCS) test should be conducted, and not less than 1MPa should be met prior to the backfilling or stockpiled for future reuse within the study area. Off-site disposal or reuse of the solidified material is not allowed. 	To remediate arsenic-contaminated soil	Project Proponent / Contractor	LMC Loop, contaminated area	Prior to commencement of construction works within the contaminated area	<ul style="list-style-type: none"> • TM-EIAO • Practice Guide (PG) for Investigation and Remediation of Contaminated Land • Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management • Guidance Notes for Contaminated Land Assessment and Remediation • Practice Guide for Investigation and Remediation of Contaminated Land
S8.7	LC2-DP5	<u>Excavation and Transportation</u> <ul style="list-style-type: none"> • Excavation profiles must be properly designed and executed with attention to the relevant requirements for environment, health and safety; • In case the soil to be excavated is situated beneath the groundwater table, it may be necessary to lower the groundwater table by installing well points or similar means; • Excavation should be carried out during dry season as far as possible to minimise contaminated runoff from contaminated soils; • Stockpiling site(s) should be lined with impermeable sheeting and banded. Stockpiles should be properly covered by impermeable sheeting to reduce dust emission during dry season or contaminated run-off during rainy 	To minimise the potential environmental impacts arising from the handling of contaminated materials	Contractor	Contaminated area	Prior to commencement of construction works within the contaminated area	<ul style="list-style-type: none"> • TM-EIAO • Practice Guide (PG) for Investigation and Remediation of Contaminated Land • Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for

Project Implementation Schedule

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		<p>season. Watering should be avoided on stockpiles of contaminated soil to minimise contaminated runoff;</p> <ul style="list-style-type: none"> • Supply of suitable clean backfill material after excavation, if required; • Vehicles containing any excavated materials should be suitably covered to limit potential dust emissions or contaminated run-off, and truck bodies and tailgates should be sealed to prevent any discharge during transport or during wet season; • Speed control for the trucks carrying contaminated materials should be enforced; and • Vehicle wheel washing facilities at the site's exit points should be established and used. 					<p>Contaminated Land Management</p> <ul style="list-style-type: none"> • Guidance Notes for Contaminated Land Assessment and Remediation • Practice Guide for Investigation and Remediation of Contaminated Land
S8.7	LC3-DP5	<p><u>Solidification/Stabilization</u></p> <ul style="list-style-type: none"> • The loading, unloading, handling, transfer or storage of cement should be carried out in an enclosed system; • Mixing process and other associated material handling activities should be properly scheduled to minimise potential noise impact and dust emission; • The mixing facilities should be sited as far apart as practicable from the nearby noise sensitive receivers; • Mixing of contaminated soil and cement / water / other additive(s) should be undertaken at a solidification plant to minimise the potential for leaching; • Runoff from the solidification / stabilization area should be prevented by constructing a concrete bund along the perimeter of the solidification / stabilization area; • The run-off contained in the concrete bund area along the perimeter of the paved solidification / stabilization area, if any, will be collected, stored and used for the mixing process of cement / contaminated soil; • If stockpile of treated soil is required, the stockpiling site(s) should be lined with impermeable sheeting and bunded. Stockpiles should be properly covered by impermeable sheeting to reduce dust emission during dry season or site run-off during rainy season; and • If necessary, there should be clear and separated areas for stockpiling of untreated and treated materials. 	To minimise the potential environmental impacts arising from the handling of contaminated materials	Contractor	Contaminated area	The course of remediation	<ul style="list-style-type: none"> • TM-EIAO • Practice Guide (PG) for Investigation and Remediation of Contaminated Land • Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management • Guidance Notes for Contaminated Land Assessment and Remediation • Practice Guide for Investigation and Remediation of Contaminated Land
S8.7	LC4-DP5	<p><u>Safety Measures</u></p> <ul style="list-style-type: none"> • Set up a list of safety measures for site workers; • Provide written information and training on safety for site workers; • Keep a log-book and plan showing the contaminated zones and clean zones; • Maintain a hygienic working environment; • Avoid dust generation; • Provide face and respiratory protection gear to site workers if necessary; • Provide personal protective clothing (e.g. chemical resistant jackboot, liquid tight gloves) to site workers, if necessary; 	To minimize the potential adverse effects on health and safety of construction workers	Contractor	Contaminated area	The course of remediation	<ul style="list-style-type: none"> • Occupation Safety and Health Ordinance (OSHO) (Charter 509)

Project Implementation Schedule

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		<ul style="list-style-type: none"> Provide first aid training and materials to site worker; Bulk earth moving equipment should be utilized as much as possible to minimize workers' handling and contact of the contaminated materials; and Eating, drinking and smoking should not be allowed in contaminated areas to avoid inadvertent ingestion of contaminant. 					
S8.8	LC5-DP5	Re-appraisal on the entire contamination assessment area for associated infrastructure in the adjacent areas in Hong Kong outside LMC Loop.	Ensure any potential contamination activities from land use changes after the approval of this land contamination assessment study	Project Proponent / Detailed design consultants	Entire contamination assessment area for associated infrastructure in the adjacent areas in Hong Kong outside LMC Loop	After land resumption	<ul style="list-style-type: none"> TM-EIAO Practice Guide (PG) for Investigation and Remediation of Contaminated Land Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management Guidance Notes for Contaminated Land Assessment and Remediation Practice Guide for Investigation and Remediation of Contaminated Land
Landscape and Visual Impact (Construction Phase)							
S11.5 .4 Table 11.5.9	L-CP1-DP5	<p><u>Preservation and Protection of Existing Trees (Good Site Practice)</u></p> <ul style="list-style-type: none"> The proposed works should avoid disturbance to the existing trees within and close to the works areas. The tree preservation proposals shall be coordinated with the layout and design of the engineering and architectural works at detailed design phase for further retention of individual trees. It is recommended that a full detailed tree survey and felling application will be undertaken and submitted for approval by the relevant government departments in accordance with ETWB TCW No. 3/2006, 'Tree Preservation'. This will be conducted during the detailed design phase of the project and submitted to DLO for approval. The methodology and scope including the programme for the tree survey and felling application are also subject to the approval 	Avoid disturbance and protection of the existing trees	Detailed design consultants / Contractor	Within project site	Detailed design and construction phase	<ul style="list-style-type: none"> EIAO – TM ETWB TCW 2/2004 ETWB TCW 3/2006

Project Implementation Schedule

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		<p>of the relevant authorities.</p> <ul style="list-style-type: none"> Trees which are not in conflict with the proposals would be retained and shall be protected by means of fencing during construction phase to prevent damage to tree canopies and root zones from vehicles and storage of materials. Specifications for the protection of existing trees will be provided during the preparation of the detailed tree survey by Detailed Design consultants at detailed design and construction phase. 					
S11.5 .4 Table 11.5.9	L-CP2-DP5	<p><u>Works Area and Temporary Works Areas (Good Site Practice)</u></p> <ul style="list-style-type: none"> The construction sequence and construction programme shall be optimized in order to minimize the duration of impact. Construction site controls shall be enforced including the storage of materials, the location and appearance of site accommodation and site storage; and the careful design of site lighting to prevent light spillage. The temporary works areas shall be restored to its original condition or enhanced through the introduction of new amenity areas or planting areas following the completion of the construction phase. 	Minimize landscape impacts	Contractor	The whole project area where applicable	Construction phase	• TM-EIAO
S11.5 .4 Table 11.5.9	L-CP3-DP5	<p><u>Advance Implementation of Mitigation Planting</u></p> <ul style="list-style-type: none"> Replanting of existing / disturbed vegetation shall be undertaken at the earliest possible stage of the construction phase of the project using predominantly native plant species although ornamental species may be used for roadside planting and amenity areas. 	Minimize landscape impacts	Detailed design consultants/ Contractor	The whole project area where applicable	Detailed design and construction phase	• TM-EIAO
S11.5 .4 Table 11.5.9	L-CP4-DP5	<p><u>Transplantation of Existing Trees</u></p> <ul style="list-style-type: none"> Some specimens have relatively higher amenity value which are in conflict with the proposals shall be considered for transplantation. For trees affected by the proposed infrastructure works the final receptor sites shall be preferably adjacent to their current locations alongside of the alignment to retain their contribution to the local landscape context. For the LMC Loop the receptor locations will be selected to allow the trees to be moved directly to their final locations in accordance with the detailed landscape proposals. The transplanting proposals are subject to review at the detailed design phase and to agreement-in-principle with the relevant management and maintenance agents and/or government departments. The implementation programme for the proposed works shall reserve sufficient time for the advanced tree transplanting preparation works to enhance the survival of the transplanted trees. The transplanting proposals will be subject to the findings of the detailed tree survey and felling application to be undertaken by the detailed design consultants and following approval by the relevant departments. 	Minimize landscape impacts and retention of landscape resources	Detailed design consultants/ Contractor	The whole project area where applicable	Detailed design and construction phase	<ul style="list-style-type: none"> • TM-EIAO • ETWB TCW 3/2006 • LAO PN 7/2007
S11.5 .4	L-CP5-	<u>Coordination with Concurrent Projects</u>	Minimize landscape impacts	Contractor	The whole project	Construction	• TM-EIAO

Project Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
Table 11.5.9	DP5	<ul style="list-style-type: none"> Coordinated implementation programme with concurrent projects to minimise impacts and where possible reduce the period of disturbance. 			area where applicable	phase	
S11.5.4 Table 11.5.9	L-CP6- DP5	<p><u>Creation of Wetland and Landscape Buffer</u></p> <ul style="list-style-type: none"> The existing reedbed acquired for development areas for the project will be reinstated as part of the Ecological Area. The reinstatement shall be undertaken at the earliest possible phase during the construction phase of the project. Creation of 12.78ha of Ecological Area (EA) containing reed marsh and marsh will be created at the southern portion of the LMC Loop, and a 50m width landscape buffer area will be set up in between the EA and the development area. Wetland creation concepts please refer to Figure 11.9zf and Chapter 12 Ecology Impact Assessment of this EIA. Native tree and shrub mix will be utilised for the creation of landscape buffer along northern edge of EA to support the creation of avifauna habitat from ecologist perspectives as well as enhance the aesthetic and landscape diversity within the LMC Loop Development. Creation of minimum 11.72 Ha. of permanent compensatory off-site wetland areas at Sam Po Shue and Hoo Hok Wai. For the potential locations for off-site wetlands please refer to Figure 11.9zf and 11.9zh, Chapter 2 Project Description and Chapter 12 Ecology Impact Assessment of this EIA. 	Compensation for the loss of landscape resources	Project Proponent / Detailed design consultants/ Contractor / Operator	The whole project area where applicable	Detailed design, construction and operational phases	<ul style="list-style-type: none"> TM-EIAO
S11.5.4 Table 11.5.9	L-CP7- DP5	<p><u>Design of Retaining Wall and Slopes</u></p> <ul style="list-style-type: none"> The proposed treatment of Retaining Wall and Slopes will be undertaken in accordance with GEO Publication No. 1/2011 "Technical Guidelines on Landscape Treatment and Bio-engineering for Slopes". These engineering structures will be aesthetically enhanced through the use of soft landscape works including tree and shrub planting to give man-made slopes a more natural appearance blending into the local rural landscape. Whip sized tree planting is preferred on the face of soil cut slopes and at the crest and toe of the slope, and within berm planters. The smaller, younger plant stock will adapt to their new growing conditions more quickly than larger sized stock and establish a naturalistic effect more rapidly. Hydroseeding will be applied on slope has a gradient more than 30 degree. 	Minimize landscape impacts	Detailed design consultants	The whole project area where applicable	Detailed design phase	<ul style="list-style-type: none"> TM-EIAO
S11.6.5 Table 11.6.3	V-CP1- DP5	<p><u>Preservation and Protection of Existing Trees (Good Site Practice)</u></p> <ul style="list-style-type: none"> The proposed works should avoid disturbance to the existing trees within and close to the works areas. The tree preservation proposals shall be coordinated with the layout and design of the engineering and architectural works at detailed design phase for further retention of individual trees. The preservation of existing tree shall provide instant greening and 	Minimise visual impact	Detailed design consultants / Contractor	The whole project area where applicable	Detailed design and construction phases	<ul style="list-style-type: none"> TM-EIAO

Project Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
		screening effect for proposed works.					
	V-CP2-DP5	<p><u>Works Area and Temporary Works Areas (Good Site Practice)</u></p> <ul style="list-style-type: none"> The construction sequence and construction programme shall be optimized in order to minimize the duration of impact. Construction site controls shall be enforced including the storage of materials, the location and appearance of site accommodation and site storage; and the careful design of site lighting to prevent light spillage. Hoarding designed with recessive colour shall be set up around the construction site providing screening effect for the construction works. The site office or temporary above-ground structures shall be sited at less visual prominent locations. 	Minimise visual impact	Contractor	The whole project area where applicable	Construction phase	• TM-EIAO
	V-CP3-DP5	<p><u>Advance Implementation of Mitigation Planting</u></p> <ul style="list-style-type: none"> Replanting of existing / disturbed vegetation shall be undertaken at the earliest possible stage of the construction phase of the project using predominantly native plant species although ornamental species may be used for roadside planting and amenity areas. 	Minimise visual impact and advance mitigation planting for screening purpose.	Detailed design consultants / Contractor	The whole project area where applicable	Detailed design and construction phases	• TM-EIAO
	V-CP5-DP5	<p><u>Coordination with Concurrent Projects</u></p> <ul style="list-style-type: none"> Coordinated implementation programme with concurrent projects to minimise impacts and where possible reduce the period of disturbance. 	Minimize visual impacts	Contractor	The whole project area where applicable	Construction phase	• TM-EIAO
	V-CP6-DP5	<p><u>Creation of Wetland and Landscape Buffer</u></p> <ul style="list-style-type: none"> The creation of EA and landscape buffer on the Loop shall provide screening effect for low level views towards the LMC Loop Development from the lowland plain surrounding the LMC Loop and soften the building mass and create a better visual integration with existing landscape context. 	Creation of screening buffer to alleviate the visual impact	Project Proponent / Detailed design consultants / Contractor / Operator	The whole project area where applicable	Detailed design, construction and operational phases	• TM-EIAO
	V-CP7-DP5	<p><u>Design of Retaining Wall and Slopes</u></p> <ul style="list-style-type: none"> The proposed treatment of Retaining Wall and Slopes will be undertaken in accordance with GEO Publication No. 1/2011 "Technical Guidelines on Landscape Treatment and Bio-engineering for Man-made Slopes and Retaining Walls". These engineering structures will be aesthetically enhanced through the use of soft landscape works including tree and shrub planting to give man-made slopes a more natural appearance blending into the local rural landscape. Whip sized tree planting is preferred on the face of soil cut slopes and at the crest and toe of the slope, and within berm planters. The smaller, younger plant stock will adapt to their new growing conditions more quickly than larger sized stock and establish a naturalistic effect more rapidly. Hydroseeding will be applied on slope has a gradient more than 30 degree. 	Minimize visual impacts and maximise greening opportunities for visual enhancement.	Detailed design consultants	The whole project area where applicable	Detailed design phase	• TM-EIAO

Project Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
<i>Landscape and Visual Impact (Operational Phase)</i>							
S11.5 Table 11.5.10	L-OP1-DP5	<u>Roadside and Amenity Planting</u> <ul style="list-style-type: none"> The planting proposals will utilise both native and ornamental species which suitable for roadside planting to soften the built structures and enhance visual amenity of existing and proposed road corridors. The implementation of new planting shall be undertaken as soon as technically feasible using a sectional completion approach during construction phase to ensure the effectiveness of this mitigation during operational phase and as early as possible during the operational phase. 	Enhance local landscape value	Detailed design consultant/ Contractor / Operator	The whole project area where applicable	Detailed design, construction and operational phases	• TM-EIAO
S11.5 Table 11.5.10	L-OP2-DP5	<u>Compensatory Planting Proposals</u> <ul style="list-style-type: none"> As the works are largely located within rural areas and alongside existing roads the planting proposals have sought to utilise all of the available space for new tree and shrub planting to create comprehensive landscape framework which is connected to areas of retained and preserved vegetation and designed to integrate the proposals within their future landscape setting. The planting proposals shall be maintained in accordance with good horticultural practice in order to realise the objectives of the mitigation measures. This includes the replacement of defective plant species on the new planting areas to enhance the aesthetic, landscape and ecological quality of the proposals. Both on-site and off-site opportunities for compensatory planting shall be considered. The preliminary compensatory planting proposal will follow the Technical Circular ETWB TCW No. 3/2006 except for felling of trees for slope works which are exempted from the compensation planting ratio requirement. New tree planting in general roadside planting areas and planting areas within the LMC Loop and above ground structures will utilise a combination of semi-mature to light standard sized stock as shown in Figures 11.9a and 11.9h to 11.9zi in the EIA report to create an instant greening effect at local level. New planting areas within the LMC Loop including tree planting in the landscape buffers, open spaces and roadside planting areas will accommodate approximately 5,000 new trees. Planting of more broad-leaf tree species will be considered where space allows and location is suitable for tree establishment. This planting concept would create comfortable shaded area for pedestrians and visitors in open spaces. New planting areas along the road alignment of WCR (DP2), ECR (DP6) and access road to Flushing Water Service Reservoir (DP7) will accommodate approximately 2,600 new trees. 	Enhance local landscape value	Detailed design consultants/ Contractor	The whole project area where applicable	Detailed design and construction phases	• TM-EIAO

Project Implementation Schedule

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		<ul style="list-style-type: none"> For the affected tree on the sloping areas, due to constrained growing conditions, whip planting will be proposed on slopes which have gentler gradient at a planting distance of about 1500mm. Slopes that have a gradient more than 30 degree, hydroseeding will be applied instead. Upon full establishment of whip planting and hydroseeding, greening coverage on affected sloping areas will be reinstated. Following the above planting principles, the newly formed and remnant sloping areas along the road alignment would accommodate approximately 500 whips. Based on a preliminary estimation, the above planting proposal would achieve a replanting ratio of minimum 1:1 in terms of quantity and quality except for slope works according to ETWB TCW No. 3/2006. This tree replanting ratio would compensate the total girth and number of tree loss as well as the total number of tree loss on sloping area. Given the constraints of growing condition and safety reasons of planting larger size tree stock on sloping areas, greening measures on new formed and remnant slopes, including extensive hydroseeding and whips planting, would restore the quality of these greenback drop in rural area. The species selection for planting areas within the LMC Loop will utilise a range of native, ornamental and amenity tree species. These proposals will be subject to further development during the detailed design phase of the project. Proposed planting on slopes will utilise woodland mix with majority of native species on new or disturbed slopes along the WCR and ECR. 					
S11.5 Table 11.5.10	L-OP7-DP5	<p><u>Reinstatement of Affected Fishponds</u></p> <ul style="list-style-type: none"> Enhancement of 11.72 Ha. of wetland/fishponds at Sham Po Shue and Hoo Hok Wai with ecological function for the off-site compensation of the permanent loss of fishponds. Off-site fishponds enhancement proposal refer to Figure 11.9zh, Chapter 2 Project description and Chapter 12 Ecology Impact Assessment of this EIA. Temporary loss of fishponds along WCR (DP2), Direct Link to LMC Station (DP4) and ECR (DP6) by the road widening and improvement works will be largely reinstated to fishponds with tree planting at selected locations. Reinstatement of affected fishponds refer to Figure 11.9j,k,l,m,r, t and u in the EIA report. These ponds will be used for both functional or amenity purposes to enhance the existing landscape and visual context. 	Reinstate and enhance local landscape value	Project Proponent / Detailed design consultant/ Contractor / Operator	The whole project area where applicable	Detailed design, construction and operational phases	• TM-EIAO
S11.5 Table 11.5.10	L-OP8-DP5	<p><u>Application of Terraced Podium Landscape, Vertical Greening and Green Roof</u></p> <ul style="list-style-type: none"> Terraced podium design shall be incorporated into the building design of the LMC Loop Development to maximise the greening opportunities on upper level of the development, reduce the apparent 	Enhance local landscape value	Project Proponent / Detailed design consultants/ / Operator	The whole project area where applicable	Detailed design and operational phases	• TM-EIAO

Project Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
		<p>visual mass of the structure and provide visual amenity for views looking from street level as well as in distance at elevated levels as to create better integration with existing landscape and visual context.</p> <ul style="list-style-type: none"> Incorporation of alternative greening measures including vertical and roof greening on building or built structures where condition allow particularly those fronting the public realm to reduce the apparent visual mass of the structure. 					
S11.6 Table 11.6.4	V-OP1-DP5	<p><u>Roadside and Amenity Planting</u></p> <ul style="list-style-type: none"> The planting proposals will utilise native species to soften the proposed structures. The implementation of new planting shall be undertaken as soon as technically feasible using a sectional completion approach during construction phase to ensure the effectiveness of this mitigation during operational phase and as early as possible during the operational phase. This measure will enhance the visual amenity along existing and proposed road corridor. 	Enhance visual amenity	Detailed design consultants/ Contractor / Operator	The whole project area where applicable	Detailed design, construction and operational phases	<ul style="list-style-type: none"> TM-EIAO ETWB TCW
S11.6 Table 11.6.4	V-OP2-DP5	<p><u>Compensatory Planting Proposals</u></p> <ul style="list-style-type: none"> As the works are largely located within rural areas and alongside existing roads the planting proposals have sought to utilise all of the available space for new tree and shrub planting to create comprehensive landscape framework which is connected to areas of retained and preserved vegetation and designed to integrate the proposals within their future landscape setting. Both on-site and off-site opportunities for compensatory planting shall be considered for enchantment of landscape and visual context. Design of road layout and built environment shall accommodate enough planting areas for compensatory planting to restore the quality of these greenback drop in rural area. 	Minimise visual impact and enhance visual amenity	Detailed design consultants/ Contractor	The whole project area where applicable	Detailed design and construction phases	<ul style="list-style-type: none"> TM-EIAO ETWB TCW
S11.6 Table 11.6.4	V-OP3-DP5	<p><u>Responsive Design of Buildings and Structure</u></p> <ul style="list-style-type: none"> The design of the proposed building structures and road connections networks will incorporate design features as part of visual mitigation measures including: <p><u>Integrated Design Approach</u></p> <ul style="list-style-type: none"> Building massing - the proposed use of a responsive design for the disposition of the main elements of the proposed scheme including the locations of buildings and utility structures. Grouping of utilities and infrastructure components into proposed buildings as far as technically feasible to reduce the mass of development. The disposition and height profile of the developments and above ground utilities structures responds to the existing context, is designed to minimise the wall effects and create a subtle transition at the edges of the site where it meets the rural landscape. Measures may include the creation of setbacks, articulating the development frontage, maintenance of view corridors and the utilisation of gradation or articulated height profile to enhance the sense of visual integration 	Minimise visual impact	Detailed design consultants	Development sites on the LMC Loop, STW, and Flushing Water Service Reservoir, PTI at LMC Station and other building where applicable.	Detailed design phase	<ul style="list-style-type: none"> TM-EIAO ETWB TCW

Project Implementation Schedule

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		<p>with the existing context, avoid abrupt transitions between the existing and proposed built environment and reduce the apparent visual mass of the proposed developments.</p> <p><u>Treatment of Built Structures</u></p> <ul style="list-style-type: none"> The architectural design should seek to reduce the apparent visual mass of the structures further through the use of materials and finishes such as colour blocking, innovative surface treatments and vertical greening. <p><u>Responsive finishes for the Proposed Structures</u></p> <ul style="list-style-type: none"> In terms of the building finishes natural tones should be considered for the colour palette and non-reflective finishes recommended for the outward facing building facades to reduce the glare effect. <p><u>Innovative Architectural Design</u></p> <ul style="list-style-type: none"> Adoption of recessive colours for the buildings and engineered structures including the proposed viaducts and noise barrier finishes and colour blocking to reduce the collective visual mass of the development. 					
S11.6 Table 11.6.4	V-OP4-DP5	<p><u>Design of Noise Mitigation Structures</u></p> <ul style="list-style-type: none"> The design for the proposed noise barriers along the at-grade section of proposed ECR section for Planned Eco-lodge at Ma Tso Lung and along the section of road widening works for the WCR shall aim to reduce the visual prominence of the structure through the use of form, materials, texture and colour. Design of panels shall be opaque and with chromatic colours to break-up the visual mass and horizontal emphasis of the barriers. Where space allows barrier design shall incorporate planting such as trees or hedge planting. 	Minimise visual impact	Detailed design consultants	Noise Mitigation Measures in the LMC Loop and along WCR and ECR.	Detailed design phase	<ul style="list-style-type: none"> TM-EIAO ETWB TCW ACABAS
S11.6 Table 11.6.4	V-OP5-DP5	<p><u>Design of Engineering Structures</u></p> <p>The design of the proposed Engineering Structures such as the proposed viaducts elevated PTI, slip road and service reservoir should pay particular attention to the appearance and construction methods of the structures, these would include the following:</p> <ul style="list-style-type: none"> The detailed design landscape consultants shall work in unison with the engineers on the aesthetic aspects of the structures and their relationship with the landscape. Wherever light levels, the water regime and the requirements of the environmental mitigation measures permit, trees and vegetation would be reinstated below or adjacent to the structures. Irrigation may be required in some locations and hard landscape solutions considered where the clearance is low. Planting would be used wherever possible to minimise the apparent height of structures and to soften their appearance in medium and long distance views. The design of the viaduct should avoid unnecessary visual clutter; this would be achieved through the co-ordination of the various engineering disciplines involved to arrive at integrated design 	Minimise visual impact	Detailed design consultant	The whole project area where applicable	Detailed design phase	<ul style="list-style-type: none"> TM-EIAO ETWB TCW ACABAS

Project Implementation Schedule

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		<p>solutions. Such as the location of columns of viaduct should not block any views from VSRs in the proximity and the shape of column should be slim down as far as technically feasible to reduce the structural mass at street level, at where space is allowed planting area for shade tolerant tree, shrub and climber species would be provide at the base of the column to soften the vertical emphasis at street level.</p> <ul style="list-style-type: none"> Fair faced concrete would not be used for viaduct parapets to minimise glare from the structure and to avoid the visually detracting effect of staining. Drainage and utilities to be concealed within the structures. 					
S11.6 Table 11.6.4	V-OP7-DP5	<p><u>Reinstatement of Affected Fishponds</u></p> <ul style="list-style-type: none"> Temporary loss of fishponds along WCR (DP2), Direct Link to LMC Station (DP3) and ECR (DP6) by the road widening and improvement works will be largely reinstated to fishponds with tree planting at selected locations. Reinstatement of affected fishponds refer to Figure 11.9j,k,l,m,r, t and u in the EIA report. These ponds will be used for both functional or amenity purposes to enhance the existing landscape and visual context. 	Enhance visual amenity and integration of existing visual context	Contractor	The whole project area where applicable	Operation Phase	<ul style="list-style-type: none"> TM-EIAO ETWB TCW
S11.6 Table 11.6.4	V-OP8-DP5	<p><u>Application of Terraced Podium Landscape, Vertical Greening and Green Roof</u></p> <ul style="list-style-type: none"> Terraced podium design shall be incorporated into the building design of the LMC Loop Development to maximise the greening opportunities on upper level of the development, reduce the apparent visual mass of the structure and provide visual amenity for views looking from street level as well as in distance at elevated levels as to create better integration with existing landscape and visual context. Incorporation of alternative greening measures including vertical and roof greening on building or built structures where condition allow particularly those fronting the public realm to reduce the apparent visual mass of the structure. 	Enhance visual amenity and integration of existing visual context	Project Proponent / Detailed design consultants/ Contractor / Operator	The whole project area where applicable	Detailed design, construction and operational phases	<ul style="list-style-type: none"> TM-EIAO ETWB TCW
Ecology							
S12.7	E1-DP5	<p><u>Disturbance to Fish Ponds at HHW</u></p> <ul style="list-style-type: none"> Development set back a minimum of 23m from the edge of Meander. Management of fish pond habitat to enhance ecological value to twice existing value, in order to compensate for disturbance to large waterbirds. Creation and establishment will occur prior to commencement of substantive works associated with any element of the project for which fish pond compensation is required. <p><u>Construction phase</u></p> <ul style="list-style-type: none"> Erection of a 3m high, dull green site boundary fence to minimise disturbance to wetland habitats caused by human activity in LMC Loop. 	Minimize the indirect impact from LMC Loop development on the disturbance to fish ponds at HHW	Detailed design consultants/ Contractor/ Operator	Fish ponds at HHW and LMC	Detailed design, construction and operational phases	<ul style="list-style-type: none"> Species targets to be provided in HCMP.

Project Implementation Schedule

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		<p style="text-align: center;"><u>Operation phase</u></p> <ul style="list-style-type: none"> • Creation of a vegetated setback of minimum 23m from the edge of LMC Loop. 					
S12.7	E2-DP5	<p><u>Construction run-off</u></p> <ul style="list-style-type: none"> • Temporary sewerage and drainage will be designed and installed to collect wastewater and prevent it from entering nearby water bodies; • Proper locations well away from nearby water bodies will be used for temporary storage of materials (i.e. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction debris and spoil, and these will be identified before commencement of works; • To prevent muddy water entering nearby water bodies, work sites close to nearby water bodies will be isolated, using such items as sandbags or silt curtains with lead edge at bottom and properly supported props. Other protective measures will also be taken to ensure that no pollution or siltation occurs to the water gathering grounds of the work site; • If temporary access along a riverbed is unavoidable, this will be kept to the minimum in width and length. Temporary river crossings will be supported on stilts above the river bed; • Stockpiling of construction materials, if necessary, will be properly covered and located away from nearby water bodies; • Construction debris and spoil will be covered and/or properly disposed of as soon as possible to avoid being washed into nearby water bodies; • Construction effluent, site run-off and sewage will be properly collected and/or treated. Wastewater from any construction site will be minimised via the following in descending order: reuse, recycling and treatment; • Proper locations for discharge outlets of wastewater treatment facilities well away from sensitive receivers will be identified (i.e. treated wastewater will not be discharged into LMC Meander, natural streams, marsh, reedbed, active or abandoned fish ponds); • Adequate lateral support will be erected where necessary in order to prevent soil/mud from slipping into the Ecological Area or LMC Meander; • Site boundary will be clearly marked and any works beyond the boundary strictly prohibited; • Regular water monitoring and site audit will be carried out at adequate points along LMC Meander, and at the outfalls of the natural streams around LMC Loop. If the monitoring and audit results show that pollution occurs, adequate measures including temporarily cessation of works will be considered. 	Minimize the indirect impact from the increasing suspended solids and pollutants in LMC Meander	Contractor	Within project construction site	Construction phase	

Project Implementation Schedule

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S12.7	E3-DP5	<p><u>Pollutant Runoff to Downstream areas from Accidental Spillage</u></p> <ul style="list-style-type: none"> • Prepare an emergency contingency plan • The plan will include, but not be limited to, the following: <ul style="list-style-type: none"> - Potential emergency situations; - Chemicals or hazardous materials used on-site (and their location); - Emergency response team; - Emergency response procedures; - List of emergency telephone hotlines; - Locations and types of emergency response equipment; - Training plan and testing for effectiveness. 	Minimize indirect impact from pollutant runoff to downstream areas from accidental spillage	Contractor / Operator	Areas within project site near streams	Construction and operational phases	
S12.7	E4-DP5	<ul style="list-style-type: none"> • Use opaque, non-transparent, non-reflective noise barriers for all developments associated with the Project. • Design of buildings should not incorporate use of night-time lighting at or near top of buildings, highly reflective materials should not be used where vegetation is adjacent and glass surfaces should not be angled upwards in a way that reflects the sky. Unnecessary lighting should be eliminated. Appropriate glass and façade treatments should be used where required to minimise impact. Unnecessary lighting should be avoided. <p>These include the following:</p> <ul style="list-style-type: none"> • Fritting, or the placement of ceramic lines or dots on glass, has little effect on the human-perceived transparency of the window but creates a visual barrier to birds outside. This treatment also has the advantage of reducing air conditioning loads by lowering heat gain, while still allowing light transmission for interior spaces. It is most successful when the frits are applied on the outside surface. Frosted glass has similar effects. • Angled glass may be used only for smaller panes in buildings with a limited amount of glass. • The use of glass that reflects UV light (primarily visible to birds, but not to humans) acts to reduce collision. • Film and art treatment allow glass surfaces to be used a medium of expression, often related to the nature and use of the building, as well indicating to birds their impenetrability. • Lightweight external screens can be added to windows or become a façade element of larger buildings, and are suitable where non-operable windows are prevalent, which is often the case in modern buildings in HK. <p>In terms of reducing night-time mortality impacts, eliminating unnecessary lighting is one of the easiest methods, and has the added advantage of saving energy and expense. Potential impacts of nocturnal avian collision with buildings should be minimised by not creating sky glow from the use of night-time lighting at or near the top of buildings or other structures. In addition to</p>	Minimize the mortality impacts on birds	Developer / Detailed design consultant/ contractor/ operator	Areas within project site	Detailed design, construction and operational phases	

Project Implementation Schedule

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		avoiding uplighting, light spillage should be minimised, while green and blue lights should be used where possible. As far as possible, lights should be controlled by motion sensors, and building operations should be managed in such a way as reduce or eliminate night lighting near windows. The potential advantages of removing unnecessary lighting in terms of reducing the carbon footprint of the LMC Loop development are obvious.					
S12.7	E5-DP5	<ul style="list-style-type: none"> • Minimize loss of natural vegetation along LMC Meander, and suitable replacement planting with possible installation of otter holts and the provision of potential feeding area and spraint locations for otters in the stabilized bank subject to detailed design. • No significant change to velocity of water flow, water level or water quality. • No direct lighting on Meander. • 3m high, dull green site boundary fence for all developments associated with the project. • Pre-construction surveys for otter holts or natal dens will be conducted in LMC Loop before the commencement of construction works. Work in the area of any otter holt found to cease pending examination by experienced Ecologist. If in use for breeding, works in the area will temporarily stop until end of breeding activity. • No construction activities within 100m of LMC Meander between one hour prior to sunset and one hour after sunrise. • Provision of compensatory reed marsh in the Ecological Area in LMC Loop, including open water channels and islands within the reed marsh, both of which features are considered to be used by the species. 	Minimize impacts on Eurasian Otter	Contractor	Construction site within the project	Construction phase	
S12.7	E10-DP5	<ul style="list-style-type: none"> • Preserve undisturbed, semi-natural habitat conditions of LMC Meander and adjacent areas of LMC Loop up to approximately 150m in width in order to avoid disturbance to core part of flight line corridor. • This area to comprise an Ecological Area largely constituting reed marsh and a 50m wide buffer zone densely planted with shrubs and trees. Small number of low buildings (max 14mPD high, except the building height of on-site STW and electricity sub-station are 15mPD and 25mPD high respectively) allowed in inner 25m of this area at a plot ratio of 0.1. • At Ha Wan Tsuen entry point for many birds to LMC Loop area provide a wider Ecological Area to minimise disturbance from nearby buildings. • Further minimisation of impact by maintaining a lower building height in areas adjacent to the buffer zone for the EA. In addition, the sewage treatment works, which is located near the point where many birds cross from the Meander to HHW, should not exceed 15mPD. 	Minimize impacts on flight line corridor from LMC Loop development	Developer / Detailed design consultant / Contractor / Operator	Within project site	Detailed design, construction, operational phases	

Project Implementation Schedule

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S12.7	E11-DP5	<ul style="list-style-type: none"> Employ site boundary fence as long as possible. Use of movable barrier for more intense site formation activity. Provision of fencing with 30cm gap between the existing reed marsh and LMC Meander during the establishment period of Ecological Area and the gap will be closed once established. Restrict work to period from 0900h to 1700h. All major works along the edge of LMC Meander and in the Ecological Area will be conducted in the wet season. 	Minimize disturbance impacts of mitigation provisions	Contractor	Within project site	Construction phase	
S12.7	E12-DP5	<ul style="list-style-type: none"> Minimal night-time lighting No direct light on Meander 	Minimize impacts on LMC Meander	Contractor / operator	All	Construction and operational phases	
S12.9	EG2-DP5	All generic mitigation measures proposed in Tables 12.82a and 12.82b in the EIA report.	Avoid, minimize and mitigate overall ecological impact.	Project proponent / contractor / detailed design consultant / developer / operator	All areas.	All phases	• EIAO
Fisheries (Construction Phase)							
S13.7	F4-DP5	During the construction phase, a layer of sheet pile wall will be erected along the site boundary adjacent to fish ponds after commencement of site works. The sheet pile wall will be constructed by silent piling method (Press-in method) which induces minimal vibration. Therefore the stability of the fish pond bund will not be influenced by the construction of the sheet pile wall, subsequent construction works and the loading from the road during operational phase. In addition, the sheet pile wall will have grouting or a grout curtain to avoid water seepage from the fish pond to the excavation area. With these measures, significant impacts are not anticipated.	Bund stability	Contractor	Fish ponds	Construction phase	• TM-EIAO
S13.7	F5-DP5	Temporary traffic arrangements will be instigated to maintain or provide alternative access to fish ponds during construction phase.	Prevent Blockage of Access Roads to Fish Ponds	Contractor	Fish ponds	Construction phase	• TM-EIAO
S13.7	F6-DP5	Standard mitigation measures to control site runoff and other pollutants caused by construction activities and good site practices will be implemented during the construction phase of the Project. Excavated material and other inert construction wastes produced will be transferred to proper recipients (i.e. landfill) (see Waste Management Section). Sewage from the proposed development will be dealt with via a sewerage system and will not be discharged directly to surrounding water bodies.	Avoid water quality impact	Contractor	Fish ponds	Construction phase	• TM-EIAO
S13.7	F7-DP5	<p>Dust Minimization</p> <ul style="list-style-type: none"> During all excavation works, good site practice should be adopted to minimize impacts on fisheries. The below site practices should be adopted during this time. 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; 	Dust minimization	Contractor	Fish ponds	Construction phase	• TM-EIAO

Project Implementation Schedule

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		<ul style="list-style-type: none"> • Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads; • 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; • Excavation profiles must be properly designed and executed with attention to the relevant requirements for environment, health and safety; • In case the soil to be excavated is situated beneath the groundwater table, it may be necessary to lower the groundwater table by installing well points or similar means; • Supply of suitable clean backfill material after excavation, if required; • Vehicles containing any excavated materials should be suitably covered to limit potential dust emissions or contaminated run-off, and truck bodies and tailgates should be sealed to prevent any discharge during transport or during wet season; • Speed control for the trucks carrying contaminated materials should be enforced; and • Vehicle wheel washing facilities at the site's exit points should be established and used. 					
<i>Fisheries (both Construction and Operational Phase)</i>							
S13.7	F8-DP5	<p><u>Contingency plan</u></p> <p>The contractor should prepare an emergency contingency plan for actions to be taken if significant impacts, such as accidental spillage of chemicals, water seepage from fish ponds, damaged/ destabilized pond bunds, pond water contamination by site runoff, on fish ponds occur. The contractor should submit the emergency contingency plan dealing with, but not limited to, the aforementioned potential impacts to the engineer for review, comment and approval. The fish pond operators will also be consulted for the details of the contingency plan, which will also be submitted to AFCD for review and comment. The plan should include, but not limited to, the following:</p> <ul style="list-style-type: none"> • Potential emergency situations; • Chemicals or hazardous materials used on-site (and their location); • Emergency response team; • Emergency response procedures; • List of emergency telephone hotlines; • Locations and types of emergency response equipment; • Training plan and testing for effectiveness. 	Deal with any accidental spillage event	Contractor / Operator	Fish ponds	Construction and operational phases	<ul style="list-style-type: none"> • TM-EIAO

Project Implementation Schedule

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<i>Food Safety (Construction Phase)</i>							
S15	F1-DP5	<u>Contingency Plan</u> The contractor should have effective communication with Food and Environmental Hygiene Department (FEHD) / Centre of Food Safety (CFS), on food surveillance and food incidents. Food Surveillance Programme (http://www.cfs.gov.hk/english/programme/programme_fs/programme_fs.html). is undertaken by CFS to inspect food safety in Hong Kong, with a three-tier surveillance strategy (consisting of routine food surveillance, targeted food surveillance and seasonal food surveillance). Under this programme, aquatic products (including pond fish) at import, wholesale and retail levels are sampled for microbiological (i.e. bacteria and viruses), chemical (i.e. natural toxins, food additives and contaminants) and radiation testings. All food safety surveillance results of by a monthly “Food Safety Report” in press releases and also presented in CFS website. If pond fish samples do not comply with food safety standards and they are verified to be from fish ponds of concerned under this study through “food tracing”, fish selling shall be stopped as instructed by CFS.	Minimize significant impacts on fish ponds	Contractor	Fish pond within project site	Construction phase	• TM-EIAO
S15	F2-DP5	<u>Dust Minimization</u> <ul style="list-style-type: none"> • During all excavation works, good site practice should be adopted to minimize the release of TSP, impact of land contamination and the associated food safety implications. The below site practices should be adopted during excavation works. • 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; • 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; • Excavation profiles must be properly designed and executed with attention to the relevant requirements for environment, health and safety; • In case the soil to be excavated is situated beneath the groundwater table, it may be necessary to lower the groundwater table by installing well points or similar means; • Supply of suitable clean backfill material after excavation, if required; • Vehicles containing any excavated materials should be suitably covered to limit potential dust emissions or contaminated run-off, and 	Dust minimization	Contractor	Fish pond within project site	Construction phase	• Food Adulteration (Metallic Contamination) Regulations

Project Implementation Schedule

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		truck bodies and tailgates should be sealed to prevent any discharge during transport or during wet season; <ul style="list-style-type: none"> • Speed control for the trucks carrying contaminated materials should be enforced; and • Vehicle wheel washing facilities at the site's exit points should be established and used. 					

Project Implementation Schedule

Note: Chapters 1 to 2 of the EIA report present the background information of the Project, identified designated project, concurrent projects, objectives and scope for various environmental aspects, and description on recommended outline development plan. Chapters 3 to 14 of the EIA report present the EIA findings and mitigation measures are described below with cross-reference to the EIA report. Chapters 16 to 18 summarize the environmental outcomes and describe the environmental monitoring requirements and conclusion.

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<i>DP-6-Eastern Connection Road</i>							
<i>Construction Dust Impact</i>							
S3.8	D1-DP6	Mitigation measures in form of regular watering under a good site practice should be adopted. Watering once per hour on exposed worksites and haul road is proposed to achieve dust removal efficiency of 92.1%. While the above watering frequencies are to be followed, the extent of watering may vary depending on actual site conditions but should be sufficient to maintain an equivalent intensity of no less than 1.6 L/m ² to achieve the respective dust removal efficiencies	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> • APCO To control the dust impact to meet HKAQO and TM-EIAO
S3.8	D2-DP6	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> • APCO To control the dust impact to meet HKAQO and TM-EIAO
S3.8	D3-DP6	<p>Following dust suppression measures should also be incorporated by the Contractor to control the dust nuisance throughout the construction phase</p> <ul style="list-style-type: none"> • 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; • A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones; • The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores; • When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly 	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> • APCO To control the dust impact to meet HKAQO and TM-EIAO

Project Implementation Schedule

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		<p>maintained throughout the construction period.</p> <ul style="list-style-type: none"> • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport should be totally enclosed by impervious sheeting; • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides; • Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed; • Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and • Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shortcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies. 					
S3.8	D4-DP6	Implement regular dust monitoring under EM&A programme during the construction phase.	Monitoring of dust impact	Contractor	Selected representative dust monitoring station	Construction phase	• TM-EIAO
Noise Impact (Construction Phase)							
S4.8	N-CP1-DP6	<p>Implement the following good site management practices:</p> <ul style="list-style-type: none"> • only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; • machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; 	Control construction airborne noise	Contractor	All construction sites where practicable	Construction phase	• Annex 5, TM-EIA

Project Implementation Schedule

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		<ul style="list-style-type: none"> plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; mobile plant should be sited as far away from NSRs as possible and practicable; material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities. 					
S4.8	N-CP2-DP6	Install temporary site hoarding (approx 2.4m high) located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period.	Reduce the construction noise levels at low-level zone of NSRs through partial screening.	Contractor	All construction sites where practicable	Construction phase	• Annex 5, TM-EIA
S4.8	N-CP3-DP6	Install movable noise barriers and full enclosure, screen the noisy plants including air compressor and generator.	Screen the noisy plant items to be used at all construction sites	Contractor	All construction sites where practicable	Construction phase	• Annex 5, TM-EIA
S4.8	N-CP4-DP6	Use of "Quiet" Plant and Working Methods	Reduce the noise levels of plant items	Contractor	All construction sites where practicable	Construction phase	• Annex 5, TM-EIA
S4.8	N-CP5-DP6	Sequencing operation of construction plants where practicable.	Operate sequentially within the same work site to reduce the construction airborne noise	Contractor	All construction sites where practicable	Construction phase	• Annex 5, TM-EIA
S4.8	N-CP6-DP6	Setting the concrete lorry mixer at around 25m away from the planned NSRs at eco-lodge along Border Road	Reduce the noise levels from concrete lorry mixer	Contractor	Sections with planned NSRs at eco-lodge along Border Road	Construction phase	• Annex 5, TM-EIA
S4.8	N-CP7-DP6	Implement a noise monitoring under EM&A programme.	Monitor the construction noise levels at the selected representative locations	Contractor	Selected representative noise monitoring stations	Construction phase	• TM-EIA
• Noise Impact (Operational Phase)							
S4.8	N-OP1-DP6	Provide noise barrier where necessary before operation of the proposed project.	Control operational airborne noise due to road traffic	Project Proponent / Contractor	Refer to Figures 4.9, 4.9a to d in the EIA Report	Prior to operation of the Project	Noise Control Ordinance and its TM
S4.8	N-OP2-DP6	Road traffic noise from Eastern Connection Road <ul style="list-style-type: none"> Minimum 13m setback from planned sensitive uses at Eco-lodge to Eastern Connection Road 	Control operational airborne noise due to road traffic	Detailed design consultant	Sections with planned NSRs at eco-lodge along Eastern Connection Road	Prior to operation of relevant buildings	Noise Control Ordinance and its TM
Water Quality Impact (Construction Phase)							
S5.7	W1-CP-DP6	<u>Construction Runoff and Site Drainage</u> In accordance with the Practice Note for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN 1/94), construction phase mitigation measures, where appropriate, should include the following: <ul style="list-style-type: none"> Update and implementation of Stormwater Pollution Control Plan At the start of site establishment, perimeter cut-off drains to direct 	Minimize water quality impact from construction site runoff and general construction activities	Contractor	All construction sites where practicable	Construction phase	<ul style="list-style-type: none"> Water Pollution Control Ordinance ProPECC PN1/94 TM-EIAO TM-DSS

Project Implementation Schedule

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		<p>off-site water around the site should be constructed with internal drainage works and erosion and sedimentation control facilities implemented. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities. The design of the temporary on-site drainage system will be undertaken by the contractor prior to the commencement of construction.</p> <ul style="list-style-type: none"> • Diversion of natural stormwater should be provided as far as possible. The design of temporary on-site drainage should prevent runoff going through site surface, construction machinery and equipments in order to avoid or minimize polluted runoff. Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m³ capacities, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity shall be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped. • The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a silt/sediment trap. The silt/sediment traps should be incorporated in the permanent drainage channels to enhance deposition rates. • The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94. The detailed design of the sand/silt traps should be undertaken by the contractor prior to the commencement of construction. • Construction works should be programmed to minimize surface excavation works during the rainy seasons (April to September). All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means. • All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas. • Measures should be taken to minimise the ingress of site drainage into excavations. If the excavation of trenches in wet periods is necessary, it should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or 					

Project Implementation Schedule

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		<p>foundation excavations should be discharged into storm drains via silt removal facilities.</p> <ul style="list-style-type: none"> • All open stockpiles of construction materials (for example, aggregates, sand and fill material) of should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system. • Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers. • Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarized in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events. • All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities should be provided at every construction site exit where practicable. Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains. • Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain. • Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts. • All fuel tanks and storage areas should be provided with locks and sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby. • Regular environmental audit on the construction site should be carried out in order to prevent any malpractices. Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the meander, wetlands 					

Project Implementation Schedule

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		<p>and fish ponds.</p> <ul style="list-style-type: none"> During the construction of ECR, proper site drainage system with adequate silt removal facilities should be deployed in order to prevent polluted runoff discharged to the Ma Tso Lung Nullah and the meander. A discharge license should be obtained from EPD prior to any site runoff discharge. The construction works of underpass (the section underneath the LMC meander) should be conducted during dry season (October to March) to prevent excess stormwater runoff to the meander. Cofferdams or diaphragm walls should be deployed to fully separate the works area and the river waters. 					
S5.7	W2-CP-DP6	<p><u>Groundwater from Contaminated Area</u></p> <ul style="list-style-type: none"> No mitigation measure is required for groundwater treatment in LMC Loop. Additional investigation is required to identify if contaminated groundwater is found If the investigation results indicated that the groundwater to be generated from construction works would be contaminated, the contaminated groundwater should be either discharged into recharged wells, or properly treated in compliance with the requirements of Technical Memorandum on Standards for Effluents Discharged into Drainage on Sewerage Systems, Inland and Coastal Waters. If recharged well method were used, the groundwater quality in the recharged well should not be affected by recharging operation, i.e. the pollution levels of the recharged groundwater should not be higher than that in the recharging wells. If treatment and discharge method were used, the design of wastewater treatment facilities, such as active carbon and petrol interceptor, should be submitted to the EPD and a discharge license should be obtained under the WPCO through the Regional Offices of EPD. 	Minimize groundwater quality impact from contaminated area	Contractor	Areas where contamination is found.	Construction phase	<ul style="list-style-type: none"> Water Pollution Control Ordinance TM-DSS TM-EIAO
S5.7	W3-CP-DP6	<p><u>Sewage from Workforce</u></p> <ul style="list-style-type: none"> Portable chemical toilets and sewage holding tanks should be provided for handling the construction sewage generated by the workforce. A licensed contractor should be employed to provide appropriate and adequate portable toilets to cater 0.15m³/day/employed populations and be responsible for appropriate disposal and maintenance. Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment during the construction phase of the Project. Regular environmental audit on the construction site should be conducted in order to provide an effective control of any 	Minimize water quality from sewage effluent	Contractor	All construction sites where practicable	Construction Lphase	<ul style="list-style-type: none"> Water Pollution Control Ordinance TM-DSS

Project Implementation Schedule

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		malpractices and achieve continual improvement of environmental performance on site.					
S5.7	W5-CP-DP6	<u>Construction of Bridge Crossing</u> <ul style="list-style-type: none"> • Good site management as stipulated in ProPECC PN1/94 should be fully implemented to avoid polluted liquid or solid wastes from falling into the WSRs. • All the fishponds will be drained and no fishpond will be affected by bridge crossing. • In the meander, cofferdam or diaphragm walls should be deployed for protecting fish ponds or nearby rivers during bridge pier construction and or road widening work at fishponds. 	Minimize water quality impact from construction of bridge crossing	Contractor	construction sites for bridge crossing where practicable	Construction phase	<ul style="list-style-type: none"> • Water Pollution Control Ordinance • ProPECC PN1/94 • TM-EIAO • TM-DSS
S5.7	W6-CP-DP6	<u>Construction of Underpass / Depressed Road</u> <ul style="list-style-type: none"> • Good site management as stipulated in ProPECC PN1/94 should be fully implemented to avoid polluted liquid or solid wastes from falling into the WSRs. • Cofferdam or diaphragm walls should be deployed for protecting fish ponds or the meander during excavation activities such that the construction works will be separated from the meander and nearby fishpond waters. As a precaution measures, silt curtain/screen could be deployed to cover the cofferdam/diaphragm walls. • For ECR underpass, subject to further engineering review, the sequence of flow contraction will be divided into two batches (half year per each batch) and all the works will be conducted in dry season (October to March) in order to avoid and minimize the impact to flow regimes. 50% (around 30m) of the width of the Meander (total width around 60m) will be occupied by the erected cofferdams or diaphragm walls. 	Minimize water quality impact from construction of underpass / depressed road	Contractor	construction sites for underpass / depressed road where practicable	Construction phase	<ul style="list-style-type: none"> • Water Pollution Control Ordinance • ProPECC PN1/94 • TM-EIAO • TM-DSS
Water Quality Impact (Operational Phase)							
S5.7	W4-OP-DP2	<u>Road Runoff during operational phase</u> <ul style="list-style-type: none"> • Update and implementation of Stormwater Pollution Control Plan • During operational phase, vehicle dust, tyre scraps and oils might be washed away from the road surface to the nearby water courses by surface runoff or road surface cleaning. Proper drainage systems with silt traps and oil interceptors should be installed. • For runoff discharge to Ping Hang Stream, Ma Tso Lung Stream and the Meander, effective mitigation measure to remove the pollutants at source. The Project Proponent or the delegated operation parties should manage the road/open area cleaning prior to the occurrence of a storm. • The operator should undertake the cleaning at an interval of twice 	Minimize water quality from non point source pollutant	Operator	All area where practicable	Operational phase	<ul style="list-style-type: none"> • Water Pollution Control Ordinance • TM-DSS

Project Implementation Schedule

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		<p>a week. Each of the cleaning events should not be separated by more than four days and should be carried out during low traffic flow period using vacuum air sweeper/truck equipped with side broom, which is to sweep road sludge and debris into the suction nozzle to increase the removal efficiency of pollutants. The collected pollutants would be tankered away for off-site disposal at landfill sites.</p> <ul style="list-style-type: none"> During the EM&A programme, it is recommend to verify the efficiency of silt traps and cleaning frequencies by water quality monitoring during typical rainstorm events. 					
Waste Management (Construction Phase)							
S7.6	WM1-DP6	<p><u>Waste Reduction Measures</u> Waste reduction is best achieved at the planning and design phase, as well as by ensuring the implementation of good site practices. The following recommendations are proposed to achieve reduction:</p> <ul style="list-style-type: none"> segregate and store different types of waste in different containers, skip or stockpiles to enhance reuse or recycling of materials and their proper disposal; proper storage and site practices to minimize the potential for damage and contamination of construction materials; plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste; sort out demolition debris and excavated materials from demolition works to recover reusable/recyclable portions (i.e. soil, broken concrete, metal etc.); provide training to workers on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling. 	Reduce waste generation	Contractor	All construction sites where practicable	Construction phase	<ul style="list-style-type: none"> Waste Disposal Ordinance
S7.6	WM2-DP6	Prepare Waste Management Plan and submit to the Engineer for approval	Minimize waste generation during construction	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal Ordinance
S7.6	WM3-DP6	<p><u>Good Site Practice</u> The following good site practices are recommended throughout the construction activities:</p> <ul style="list-style-type: none"> nomination of an approved personnel, such as a site manager, to be responsible for the implementation of good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site; training of site personnel in site cleanliness, appropriate waste management procedures and concepts of waste reduction, reuse and recycling; provision of sufficient waste disposal points and regular collection for disposal; 	Minimize waste generation during construction	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal Ordinance

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		<ul style="list-style-type: none"> 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; 					
S7.6	WM4-DP6	<p><u>Storage of Waste</u> The following recommendation should be implemented to minimize the impacts:</p> <ul style="list-style-type: none"> waste such as soil should be handled and stored well to ensure secure containment; stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; different locations should be designated to stockpile each material to enhance reuse; 	Minimize waste impacts from storage	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal Ordinance
S7.6	WM5-DP6	<p><u>Collection and Transportation of Waste</u> The following recommendation should be implemented to minimize the impacts:</p> <ul style="list-style-type: none"> remove waste in timely manner; employ the trucks with cover or enclosed containers for waste transportation; obtain relevant waste disposal permits from the appropriate authorities; and disposal of waste should be done at licensed waste disposal facilities. 	Minimize waste impacts from storage	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal Ordinance
S7.6	WM6-DP6	<p><u>Excavated and C&D Material</u> Wherever practicable, C&D materials should be segregated from other wastes to avoid contamination and ensure acceptability at Public Fill Reception Facilities areas or reclamation sites. The following mitigation measures should be implemented in handling the excavated and C&D materials:</p> <ul style="list-style-type: none"> maintain temporary stockpiles and reuse excavated fill material for backfilling; carry out on-site sorting; make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; and implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified. <p>The recommended C&D materials handling should include:</p> <ul style="list-style-type: none"> On-site Sorting of C&D Materials Reuse of C&D Materials Use of Standard Formwork and Planning of Construction Materials Purchasing 	Minimize waste impacts from excavated and C&D materials	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Land (Miscellaneous Provisions) Ordinance Waste Disposal Ordinance ETWB TCW No. 19/2005

Project Implementation Schedule

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		<ul style="list-style-type: none"> Provision of Wheel Wash Facilities Details refer to Section 7.6.1.4 of the EIA report					
S7.6	WM7-DP6	<u>Contaminated Soil</u> As a precaution, it is recommended that standard good site practice should be implemented during the construction phase to minimize any potential exposure to contaminated soils or groundwater. The details of mitigation measures to minimize the potential environmental implications arising from the handling of contaminated materials refer to Land Contamination Section.	Remediate contaminated soil	Contractor	All construction sites where applicable	Construction phase	<ul style="list-style-type: none"> Practice Guide for Investigation and Remediation of Contaminated Land
S7.6	WM8-DP6	<u>Chemical Waste</u> <ul style="list-style-type: none"> If chemical wastes are produced at the construction site, the Contractors should register with EPD as chemical waste producers. Chemical wastes should be stored in appropriate containers and collected by a licensed chemical waste contractor. Chemical wastes (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while the chemical waste that cannot be recycled should be disposed of at either the Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation. 	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal (Chemical Waste) (General) Regulation Code of Practice on the Packaging, Labelling and Storage of Chemical Waste
S7.6	WM9-DP6	<u>General Waste</u> <ul style="list-style-type: none"> General refuse should be stored in enclosed bins separately from construction and chemical wastes. Recycling bins should also be placed to encourage recycling. Preferably enclosed and covered areas should be provided for general refuse collection and routine cleaning for these areas should also be implemented to keep areas clean. A reputable waste collector should be employed to remove general refuse on a daily basis. 	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal Ordinance
S7.6	WM10-DP6	<u>Sewage</u> <ul style="list-style-type: none"> The WMP should document the locations and number of portable chemical toilets depending on the number of workers, land availability, site condition and activities. Regularly collection by licensed collectors should be arranged to minimize potential environmental impacts. 	Minimize production of sewage impacts	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal Ordinance
S7.6	WM11-DP6	<u>Sediment</u> The following mitigation measures are recommended during transportation and stockpiling: <ul style="list-style-type: none"> stockpiling area(s) must be properly designed and closed to the dredging locations as far as possible; stockpiling area(s) should be lined with impermeable sheeting and bunded; stockpiles should be properly covered by impermeable sheeting; vehicles delivering the sediments should be covered, and truck 	Minimize waste impacts from sediment	Contractor	All construction sites where applicable	Construction phase	<ul style="list-style-type: none"> Waste Disposal Ordinance

Project Implementation Schedule

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		<p>bodies and tailgates should be sealed to prevent any discharge during transportation;</p> <ul style="list-style-type: none"> • bulk earth moving equipments should be utilized as much as possible to minimize workers' handling and contact of the excavated materials; and • personal protective clothing should be provided to site workers. <p>In case contamination of excavated materials is confirmed after testing, the mitigation measures described in Land Contamination Impacts section should also be implemented to minimize potential environmental impacts.</p>					
Land Contamination							
S8.7	LC1-DP6	<p><u>Remediation of arsenic-contaminated soil</u></p> <ul style="list-style-type: none"> • "Solidification/Stabilization" (S/S) treatment method was proposed for the remediation of arsenic-contaminated soil. Toxicity Characteristic Leaching Procedure (TCLP) test should be undertaken after S/S in order to ensure that the contaminant will not leach to the environment. Unconfined Compressive Strength (UCS) test should be conducted, and not less than 1MPa should be met prior to the backfilling or stockpiled for future reuse within the study area. Off-site disposal or reuse of the solidified material is not allowed. 	To remediate arsenic-contaminated soil	Project Proponent / Contractor	LMC Loop, contaminated area	Prior to commencement of construction works within the contaminated area	<ul style="list-style-type: none"> • TM-EIAO • Practice Guide (PG) for Investigation and Remediation of Contaminated Land • Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management • Guidance Notes for Contaminated Land Assessment and Remediation • Practice Guide for Investigation and Remediation of Contaminated Land
S8.7	LC2-DP6	<p><u>Excavation and Transportation</u></p> <ul style="list-style-type: none"> • Excavation profiles must be properly designed and executed with attention to the relevant requirements for environment, health and safety; • In case the soil to be excavated is situated beneath the groundwater table, it may be necessary to lower the groundwater table by installing well points or similar means; • Excavation should be carried out during dry season as far as possible to minimise contaminated runoff from contaminated soils; • Stockpiling site(s) should be lined with impermeable sheeting and bunded. Stockpiles should be properly covered by impermeable sheeting to reduce dust emission during dry season or 	To minimise the potential environmental impacts arising from the handling of contaminated materials	Contractor	Contaminated area	Prior to commencement of construction works within the contaminated area	<ul style="list-style-type: none"> • TM-EIAO • Practice Guide (PG) for Investigation and Remediation of Contaminated Land • Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management • Guidance Notes for Contaminated Land

Project Implementation Schedule

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		<p>contaminated run-off during rainy season. Watering should be avoided on stockpiles of contaminated soil to minimise contaminated runoff;</p> <ul style="list-style-type: none"> • Supply of suitable clean backfill material after excavation, if required; • Vehicles containing any excavated materials should be suitably covered to limit potential dust emissions or contaminated run-off, and truck bodies and tailgates should be sealed to prevent any discharge during transport or during wet season; • Speed control for the trucks carrying contaminated materials should be enforced; and • Vehicle wheel washing facilities at the site's exit points should be established and used. 					<p>Assessment and Remediation</p> <ul style="list-style-type: none"> • Practice Guide for Investigation and Remediation of Contaminated Land
S8.7	LC3-DP6	<p><u>Solidification/Stabilization</u></p> <ul style="list-style-type: none"> • The loading, unloading, handling, transfer or storage of cement should be carried out in an enclosed system; • Mixing process and other associated material handling activities should be properly scheduled to minimise potential noise impact and dust emission; • The mixing facilities should be sited as far apart as practicable from the nearby noise sensitive receivers; • Mixing of contaminated soil and cement / water / other additive(s) should be undertaken at a solidification plant to minimise the potential for leaching; • Runoff from the solidification / stabilization area should be prevented by constructing a concrete bund along the perimeter of the solidification / stabilization area; • The run-off contained in the concrete bund area along the perimeter of the paved solidification / stabilization area, if any, will be collected, stored and used for the mixing process of cement / contaminated soil; • If stockpile of treated soil is required, the stockpiling site(s) should be lined with impermeable sheeting and banded. Stockpiles should be properly covered by impermeable sheeting to reduce dust emission during dry season or site run-off during rainy season; and • If necessary, there should be clear and separated areas for stockpiling of untreated and treated materials. 	To minimise the potential environmental impacts arising from the handling of contaminated materials	Contractor	Contaminated area	The course of remediation	<ul style="list-style-type: none"> • TM-EIAO • Practice Guide (PG) for Investigation and Remediation of Contaminated Land • Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management • Guidance Notes for Contaminated Land Assessment and Remediation • Practice Guide for Investigation and Remediation of Contaminated Land
S8.7	LC4-DP6	<p><u>Safety Measures</u></p> <ul style="list-style-type: none"> • Set up a list of safety measures for site workers; • Provide written information and training on safety for site workers; • Keep a log-book and plan showing the contaminated zones and clean zones; 	To minimize the potential adverse effects on health and safety of construction workers	Contractor	Contaminated area	The course of remediation	<ul style="list-style-type: none"> • Occupation Safety and Health Ordinance (OSHO) (Charter 509)

Project Implementation Schedule

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		<ul style="list-style-type: none"> • Maintain a hygienic working environment; • Avoid dust generation; • Provide face and respiratory protection gear to site workers if necessary; • Provide personal protective clothing (e.g. chemical resistant jackboot, liquid tight gloves) to site workers, if necessary; • Provide first aid training and materials to site worker; • Bulk earth moving equipment should be utilized as much as possible to minimize workers' handling and contact of the contaminated materials; and • Eating, drinking and smoking should not be allowed in contaminated areas to avoid inadvertent ingestion of contaminant. 					
S8.8	LC5-DP6	Re-appraisal on the entire contamination assessment area for associated infrastructure in the adjacent areas in Hong Kong outside LMC Loop.	Ensure any potential contamination activities from land use changes after the approval of this land contamination assessment study	Project Proponent / Detailed design consultant	Entire contamination assessment area for associated infrastructure in the adjacent areas in Hong Kong outside LMC Loop	After land resumption	<ul style="list-style-type: none"> • TM-EIAO • Practice Guide (PG) for Investigation and Remediation of Contaminated Land • Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management • Guidance Notes for Contaminated Land Assessment and Remediation • Practice Guide for Investigation and Remediation of Contaminated Land
<i>Landscape and Visual Impact (Construction Phase)</i>							
S11.5.4 Table 11.5.9	L-CP1-DP6	<p><u><i>Preservation and Protection of Existing Trees (Good Site Practice)</i></u></p> <ul style="list-style-type: none"> • The proposed works should avoid disturbance to the existing trees within and close to the works areas. The tree preservation proposals shall be coordinated with the layout and design of the engineering and architectural works at detailed design phase for further retention of individual trees. • It is recommended that a full detailed tree survey and felling application will be undertaken and submitted for approval by the relevant government departments in accordance with ETWB TCW No. 3/2006, 'Tree Preservation'. This will be conducted during the detailed design stage of the project and 	Avoid disturbance and protection of the existing trees	Detailed design consultant / Contractor	Within project site	Detailed design and construction phases	<ul style="list-style-type: none"> • EIAO – TM • ETWB TCW 2/2004 • ETWB TCW 3/2006

Project Implementation Schedule

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		<p>submitted to DLO for approval. The methodology and scope including the programme for the tree survey and felling application are also subject to the approval of the relevant authorities.</p> <ul style="list-style-type: none"> Trees which are not in conflict with the proposals would be retained and shall be protected by means of fencing during construction stage to prevent damage to tree canopies and root zones from vehicles and storage of materials. Specifications for the protection of existing trees will be provided during the preparation of the detailed tree survey by Detailed Design consultants at detailed design and construction phase. 					
S11.5 .4 Table 11.5.9	L-CP2- DP6	<p><u>Works Area and Temporary Works Areas (Good Site Practice)</u></p> <ul style="list-style-type: none"> The construction sequence and construction programme shall be optimized in order to minimize the duration of impact. Construction site controls shall be enforced including the storage of materials, the location and appearance of site accommodation and site storage; and the careful design of site lighting to prevent light spillage. The temporary works areas shall be restored to its original condition or enhanced through the introduction of new amenity areas or planting areas following the completion of the construction phase. 	Minimize landscape impacts	Contractor	The whole project area where applicable	Construction phase	<ul style="list-style-type: none"> TM-EIAO
S11.5 .4 Table 11.5.9	L-CP3- DP6	<p><u>Advance Implementation of Mitigation Planting</u></p> <ul style="list-style-type: none"> Replanting of existing / disturbed vegetation shall be undertaken at the earliest possible stage of the construction phase of the project using predominantly native plant species although ornamental species may be used for roadside planting and amenity areas. 	Minimize landscape impacts	Detailed design consultant/ Contractor	The whole project area where applicable	Detailed design and construction phases	<ul style="list-style-type: none"> TM-EIAO
S11.5 .4 Table 11.5.9	L-CP4- DP6	<p><u>Transplantation of Existing Trees</u></p> <ul style="list-style-type: none"> Some specimens have relatively higher amenity value which are in conflict with the proposals shall be considered for transplantation. For trees affected by the proposed infrastructure works the final receptor sites shall be preferably adjacent to their current locations alongside of the alignment to retain their contribution to the local landscape context. For the LMC Loop the receptor locations will be selected to allow the trees to be moved directly to their final locations in accordance with the detailed landscape proposals. The transplanting proposals are subject to review at the detailed design phase and to agreement-in-principle with the relevant management and maintenance agents and/or government departments. The implementation programme for the proposed works shall reserve sufficient time for the 	Minimize landscape impacts and retention of landscape resources	Detailed design consultant/ Contractor	The whole project area where applicable	Detailed design and construction phases	<ul style="list-style-type: none"> TM-EIAO ETWB TCW 3/2006 LAO PN 7/2007

Project Implementation Schedule

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		<p>advanced tree transplanting preparation works to enhance the survival of the transplanted trees.</p> <ul style="list-style-type: none"> The transplanting proposals will be subject to the findings of the detailed tree survey and felling application to be undertaken by the detailed design consultants and following approval by the relevant departments. 					
S11.5 .4 Table 11.5.9	L-CP5-DP6	<p><u>Coordination with Concurrent Projects</u></p> <ul style="list-style-type: none"> Coordinated implementation programme with concurrent projects to minimise impacts and where possible reduce the period of disturbance. 	Minimize landscape impacts	Contractor	The whole project area where applicable	Construction phase	• TM-EIAO
S11.5 .4 Table 11.5.9	L-CP7-DP6	<p><u>Design of Retaining Wall and Slopes</u></p> <ul style="list-style-type: none"> The proposed treatment of Retaining Wall and Slopes will be undertaken in accordance with GEO Publication No. 1/2011 "Technical Guidelines on Landscape Treatment and Bio-engineering for Slopes". These engineering structures will be aesthetically enhanced through the use of soft landscape works including tree and shrub planting to give man-made slopes a more natural appearance blending into the local rural landscape. Whip sized tree planting is preferred on the face of soil cut slopes and at the crest and toe of the slope, and within berm planters. The smaller, younger plant stock will adapt to their new growing conditions more quickly than larger sized stock and establish a naturalistic effect more rapidly. Hydroseeding will be applied on slope has a gradient more than 30 degree. 	Minimize landscape impacts	Detailed design consultant	The whole project area where applicable	Detailed design phase	• TM-EIAO •
S11.6.5 Table 11.6.3	V-CP1-DP6	<p><u>Preservation and Protection of Existing Trees (Good Site Practice)</u></p> <ul style="list-style-type: none"> The proposed works should avoid disturbance to the existing trees within and close to the works areas. The tree preservation proposals shall be coordinated with the layout and design of the engineering and architectural works at detailed design phase for further retention of individual trees. The preservation of existing tree shall provide instant greening and screening effect for proposed works. 	Minimise visual impact	Detailed design consultant / Contractor	The whole project area where applicable	Detailed design and construction phases	• TM-EIAO
	V-CP2-DP6	<p><u>Works Area and Temporary Works Areas (Good Site Practice)</u></p> <ul style="list-style-type: none"> The construction sequence and construction programme shall be optimized in order to minimize the duration of impact. Construction site controls shall be enforced including the storage of materials, the location and appearance of site accommodation and site storage; and the careful design of site lighting to prevent light spillage. Hoarding designed with recessive colour shall be set up around the construction site providing screening effect for the construction works. The site office or temporary above-ground structures shall be 	Minimise visual impact	Contractor	The whole project area where applicable	Construction phase	• TM-EIAO

Project Implementation Schedule

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		sited at less visual prominent locations.					
	V-CP3-DP6	<u>Advance Implementation of Mitigation Planting</u> <ul style="list-style-type: none"> Replanting of existing / disturbed vegetation shall be undertaken at the earliest possible stage of the construction phase of the project using predominantly native plant species although ornamental species may be used for roadside planting and amenity areas. 	Minimise visual impact and advance mitigation planting for screening purpose.	Detailed design consultant / Contractor	The whole project area where applicable	Detailed design and construction phases	• TM-EIAO
	V-CP5-DP6	<u>Coordination with Concurrent Projects</u> <ul style="list-style-type: none"> Coordinated implementation programme with concurrent projects to minimise impacts and where possible reduce the period of disturbance. 	Minimize visual impacts	Contractor	The whole project area where applicable	Construction phase	• TM-EIAO
	V-CP6-DP6	<u>Creation of Wetland and Landscape Buffer</u> <ul style="list-style-type: none"> The creation of EA and landscape buffer on the Loop shall provide screening effect for low level views towards the LMC Loop Development from the lowland plain surrounding the LMC Loop and soften the building mass and create a better visual integration with existing landscape context. 	Creation of screening buffer to alleviate the visual impact	Project Proponent / Detailed design consultant/ Contractor / Operator	The whole project area where applicable	Detailed design and construction and operational phases	• TM-EIAO
	V-CP7-DP6	<u>Design of Retaining Wall and Slopes</u> <ul style="list-style-type: none"> The proposed treatment of Retaining Wall and Slopes will be undertaken in accordance with GEO Publication No. 1/2011 "Technical Guidelines on Landscape Treatment and Bio-engineering for Man-made Slopes and Retaining Walls". These engineering structures will be aesthetically enhanced through the use of soft landscape works including tree and shrub planting to give man-made slopes a more natural appearance blending into the local rural landscape. Whip sized tree planting is preferred on the face of soil cut slopes and at the crest and toe of the slope, and within berm planters. The smaller, younger plant stock will adapt to their new growing conditions more quickly than larger sized stock and establish a naturalistic effect more rapidly. Hydroseeding will be applied on slope has a gradient more than 30 degree. 	Minimize visual impacts and maximise greening opportunities for visual enhancement.	Detailed design consultant	The whole project area where applicable	Detailed design phase	• TM-EIAO •
Landscape and Visual Impact (Operational Phase)							
S11.5 Table 11.5.10	L-OP1-DP6	<u>Roadside and Amenity Planting</u> <ul style="list-style-type: none"> The planting proposals will utilise both native and ornamental species which suitable for roadside planting to soften the built structures and enhance visual amenity of existing and proposed road corridors. The implementation of new planting shall be undertaken as soon as technically feasible using a sectional completion approach during construction phase to ensure the effectiveness of this mitigation during operational phase and as early as possible during the operational phase. 	Enhance local landscape value	Detailed design consultant/ Contractor / Operator	The whole project area where applicable	Detailed design, construction and operational phases	• TM-EIAO

Project Implementation Schedule

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S11.5 Table 11.5.10	L-OP2- DP6	<p><u>Compensatory Planting Proposals</u></p> <ul style="list-style-type: none"> • As the works are largely located within rural areas and alongside existing roads the planting proposals have sought to utilise all of the available space for new tree and shrub planting to create comprehensive landscape framework which is connected to areas of retained and preserved vegetation and designed to integrate the proposals within their future landscape setting. • The planting proposals shall be maintained in accordance with good horticultural practice in order to realise the objectives of the mitigation measures. This includes the replacement of defective plant species on the new planting areas to enhance the aesthetic, landscape and ecological quality of the proposals. • Both on-site and off-site opportunities for compensatory planting shall be considered. • The preliminary compensatory planting proposal will follow the Technical Circular ETWB TCW No. 3/2006 except for felling of trees for slope works which are exempted from the compensation planting ratio requirement. New tree planting in general roadside planting areas and planting areas within the LMC Loop and above ground structures will utilise a combination of semi-mature to light standard sized stock as shown in Figures 11.9a and 11.9h to 11.9zi in the EIA report to create an instant greening effect at local level. • New planting areas within the LMC Loop including tree planting in the landscape buffers, open spaces and roadside planting areas will accommodate approximately 5,000 new trees. Planting of more broad-leaf tree species will be considered where space allows and location is suitable for tree establishment. This planting concept would create comfortable shaded area for pedestrians and visitors in open spaces. • New planting areas along the road alignment of WCR (DP2), ECR (DP6) and access road to Flushing Water Service Reservoir (DP7) will accommodate approximately 2,600 new trees. • For the affected tree on the sloping areas, due to constrained growing conditions, whip planting will be proposed on slopes which have gentler gradient at a planting distance of about 1500mm. Slopes that have a gradient more than 30 degree, hydroseeding will be applied instead. Upon full establishment of whip planting and hydroseeding, greening coverage on affected sloping areas will be reinstated. Following the above planting principles, the newly formed 	Enhance local landscape value	Detailed design consultant/ Contractor	The whole project area where applicable	Detailed design and construction phases	<ul style="list-style-type: none"> • TM-EIAO

Project Implementation Schedule

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		<p>and remnant sloping areas along the road alignment would accommodate approximately 500 whips.</p> <ul style="list-style-type: none"> Based on a preliminary estimation, the above planting proposal would achieve a replanting ratio of minimum 1:1 in terms of quantity and quality except for slope works according to ETWB TCW No. 3/2006. This tree replanting ratio would compensate the total girth and number of tree loss as well as the total number of tree loss on sloping area. Given the constraints of growing condition and safety reasons of planting larger size tree stock on sloping areas, greening measures on new formed and remnant slopes, including extensive hydroseeding and whips planting, would restore the quality of these greenback drop in rural area. The species selection for planting areas within the LMC Loop will utilise a range of native, ornamental and amenity tree species. These proposals will be subject to further development during the detailed design phase of the project.. Proposed planting on slopes will utilise woodland mix with majority of native species on new or disturbed slopes along the WCR and ECR. 					
S11.5 Table 11.5.10	L-OP6-DP6	<p><u>Creation of Woodland</u></p> <ul style="list-style-type: none"> 1.1 Ha. of woodland areas will be created off-site as <u>ecological mitigation measures for the loss of woodland</u>. The creation of a woodland compensation area will involve <u>planting of woodland and shrubland species in grassland areas currently of low ecological value along the existing Boundary Patrol Road near Horn Hill at Ping Hang</u>. For details of the off-site woodland compensation please refer to <u>Figure 11.9zi, Chapter 2 Project Description and Chapter 12 Ecology Impact Assessment of this EIA</u>. In addition to the above, disturbed wooded slopes along WCR (DP2) and ECR (DP6) by the road widening and improvement works will be infilled with woodland planting of light standard size trees or whips where space allows to restore and enhance the ecological and landscape value of the remnant woodland areas. 	Enhance local landscape value	Project Proponent / Detailed design consultant/ Contractor /Operator	The whole project area where applicable	Detailed design, construction and operational phases	• TM-EIAO
S11.5 Table 11.5.10	L-OP7-DP6	<p><u>Reinstatement of Affected Fishponds</u></p> <ul style="list-style-type: none"> <u>Enhancement of 11.72 Ha. of wetland/fishponds at Sham Po Shue and Hoo Hok Wai with ecological function for the off-site compensation of the permanent loss of fishponds</u>. <u>Off-site fishponds enhancement proposal refer to Figure 11.9zh, Chapter 2 Project description and Chapter 12 Ecology Impact Assessment of this EIA</u>. 	Reinstate and enhance local landscape value	Project Proponent / Detailed design consultant/ Contractor / Operator	The whole project area where applicable	Construction and operational phase	• TM-EIAO

Project Implementation Schedule

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		<ul style="list-style-type: none"> Temporary loss of fishponds along WCR (DP2), Direct Link to LMC Station (DP4) and ECR (DP6) by the road widening and improvement works will be largely reinstated to fishponds with tree planting at selected locations. Reinstatement of affected fishponds refer to Figure 11.9j,k,l,m,r, t and u in the EIA report. These ponds will be used for both functional or amenity purposes to enhance the existing landscape and visual context. 					
S11.5 Table 11.5.10	L-OP8-DP6	<p><u>Application of Terraced Podium Landscape, Vertical Greening and Green Roof</u></p> <ul style="list-style-type: none"> Incorporation of alternative greening measures including vertical and roof greening on building or built structures where condition allow particularly those fronting the public realm to reduce the apparent visual mass of the structure. 	Enhance local landscape value	Project Proponent / Detailed design consultant/ Contractor / Operator	The whole project area where applicable	Detailed design, construction and operational phases	<ul style="list-style-type: none"> TM-EIAO
S11.6 Table 11.6.4	V-OP1-DP6	<p><u>Roadside and Amenity Planting</u></p> <ul style="list-style-type: none"> The planting proposals will utilise native species to soften the proposed structures. The implementation of new planting shall be undertaken as soon as technically feasible using a sectional completion approach during construction phase to ensure the effectiveness of this mitigation during operational phase and as early as possible during the operational phase. This measure will enhance the visual amenity along existing and proposed road corridor. 	Enhance visual amenity	Detailed design consultant/ Contractor / Operator	The whole project area where applicable	Detailed design, construction and operational phases	<ul style="list-style-type: none"> TM-EIAO ETWB TCW
S11.6 Table 11.6.4	V-OP2-DP6	<p><u>Compensatory Planting Proposals</u></p> <ul style="list-style-type: none"> As the works are largely located within rural areas and alongside existing roads the planting proposals have sought to utilise all of the available space for new tree and shrub planting to create comprehensive landscape framework which is connected to areas of retained and preserved vegetation and designed to integrate the proposals within their future landscape setting. Both on-site and off-site opportunities for compensatory planting shall be considered for enchantment of landscape and visual context. Design of road layout and built environment shall accommodate enough planting areas for compensatory planting to restore the quality of these greenback drop in rural area. 	Minimise visual impact and enhance visual amenity	Detailed design consultant/ Contractor	The whole project area where applicable	Detailed design and construction phases	<ul style="list-style-type: none"> TM-EIAO ETWB TCW
S11.6 Table 11.6.4	V-OP3-DP6	<p><u>Responsive Design of Buildings and Structure</u></p> <ul style="list-style-type: none"> The design of the proposed building structures and road connections networks will incorporate design features as part of visual mitigation measures including: <p><u>Integrated Design Approach</u></p> <ul style="list-style-type: none"> Building massing - the proposed use of a responsive design 	Minimise visual impact	Detailed design consultant	Development sites on the LMC Loop, STW, and Flushing Water Service Reservoir, PTI at LMC Station and other building where	Detailed design phase	<ul style="list-style-type: none"> TM-EIAO ETWB TCW

Project Implementation Schedule

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		<p>for the disposition of the main elements of the proposed scheme including the locations of buildings and utility structures. Grouping of utilities and infrastructure components into proposed buildings as far as technically feasible to reduce the mass of development. The disposition and height profile of the developments and above ground utilities structures responds to the existing context, is designed to minimise the wall effects and create a subtle transition at the edges of the site where it meets the rural landscape. Measures may include the creation of setbacks, articulating the development frontage, maintenance of view corridors and the utilisation of gradation or articulated height profile to enhance the sense of visual integration with the existing context, avoid abrupt transitions between the existing and proposed built environment and reduce the apparent visual mass of the proposed developments.</p> <p><u>Treatment of Built Structures</u></p> <ul style="list-style-type: none"> The architectural design should seek to reduce the apparent visual mass of the structures further through the use of materials and finishes such as colour blocking, innovative surface treatments and vertical greening. <p><u>Responsive finishes for the Proposed Structures</u></p> <ul style="list-style-type: none"> In terms of the building finishes natural tones should be considered for the colour palette and non-reflective finishes recommended for the outward facing building facades to reduce the glare effect. <p><u>Innovative Architectural Design</u></p> <ul style="list-style-type: none"> Adoption of recessive colours for the buildings and engineered structures including the proposed viaducts and noise barrier finishes and colour blocking to reduce the collective visual mass of the development. 			applicable.		
S11.6 Table 11.6.4	V-OP4-DP6	<p><u>Design of Noise Mitigation Structures</u></p> <ul style="list-style-type: none"> The design for the proposed noise barriers along the at-grade section of proposed ECR section for Planned Eco-lodge at Ma Tso Lung and along the section of road widening works for the WCR shall aim to reduce the visual prominence of the structure through the use of form, materials, texture and colour. Design of penals shall be opaque and with chromatic colours to break-up the visual mass and horizontal emphasis of the barriers. Where space allows barrier design shall incorporate planting such as trees or hedge planting. 	Minimise visual impact	Detailed design consultant	Noise Mitigation Measures in the LMC Loop and along WCR and ECR.	Detailed design phase	<ul style="list-style-type: none"> • TM-EIAO • ETWB TCW • ACABAS
S11.6 Table 11.6.4	V-OP6-DP6	<p><u>Creation of Woodland</u></p> <ul style="list-style-type: none"> Creation of woodland along the existing Boundary Patrol Road near Horn Hill at Ping Hang will enhance the local landscape and visual context. Off-site woodland 	Enhance visual amenity and integration of existing visual context	Project Proponent / Detailed design consultant/	The whole project area where applicable	Detailed design, construction and operational Phase	<ul style="list-style-type: none"> • TM-EIAO • ETWB TCW

Project Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
		<p>compensation refers to Figure 11.9zi, Chapters 2 project description and 12 ecology impact assessment of this EIA.</p> <ul style="list-style-type: none"> In addition to the above, disturbed wooded slopes along WCR (DP2) and ECR (DP6) by the road widening and improvement works will be infilled with woodland planting of light standard size trees or whips where space allows to restore and enhance the landscape and visual context along LMC Road. 		Contractor / Operator			
S11.6 Table 11.6.4	V-OP7-DP6	<p><u>Reinstatement of Affected Fishponds</u></p> <ul style="list-style-type: none"> Temporary loss of fishponds along WCR (DP2), Direct Link to LMC Station (DP3) and ECR (DP6) by the road widening and improvement works will be largely reinstated to fishponds with tree planting at selected locations. Reinstatement of affected fishponds refer to Figure 11.9j,k,l,m,r, t and u in the EIA report. These ponds will be used for both functional or amenity purposes to enhance the existing landscape and visual context. 	Enhance visual amenity and integration of existing visual context	Contractor	The whole project area where applicable	Construction phase	<ul style="list-style-type: none"> TM-EIAO ETWB TCW
S11.6 Table 11.6.4	V-OP8-DP6	<p><u>Application of Terraced Podium Landscape, Vertical Greening and Green Roof</u></p> <ul style="list-style-type: none"> Incorporation of alternative greening measures including vertical and roof greening on building or built structures where condition allow particularly those fronting the public realm to reduce the apparent visual mass of the structure. 	Enhance visual amenity and integration of existing visual context	Project Proponent / Detailed design consultant/ Contractor / Operator	The whole project area where applicable	Detailed design, construction and operational Phase	<ul style="list-style-type: none"> TM-EIAO ETWB TCW
Ecology							
S12.7	E2-DP6	<p><u>Construction run-off</u></p> <ul style="list-style-type: none"> Temporary sewerage and drainage will be designed and installed to collect wastewater and prevent it from entering nearby water bodies; Proper locations well away from nearby water bodies will be used for temporary storage of materials (i.e. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction debris and spoil, and these will be identified before commencement of works; To prevent muddy water entering nearby water bodies, work sites close to nearby water bodies will be isolated, using such items as sandbags or silt curtains with lead edge at bottom and properly supported props. Other protective measures will also be taken to ensure that no pollution or siltation occurs to the water gathering grounds of the work site; If temporary access along a riverbed is unavoidable, this will be kept to the minimum in width and length. Temporary river crossings will be supported on stilts above the river 	Minimize the indirect impact from the increasing suspended solids and pollutants in LMC Meander	Contractor	Within project construction site	Construction phase	

Project Implementation Schedule

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		<p>bed;</p> <ul style="list-style-type: none"> • Stockpiling of construction materials, if necessary, will be properly covered and located away from nearby water bodies; • Construction debris and spoil will be covered and/or properly disposed of as soon as possible to avoid being washed into nearby water bodies; • Construction effluent, site run-off and sewage will be properly collected and/or treated. Wastewater from any construction site will be minimised via the following in descending order: reuse, recycling and treatment; • Proper locations for discharge outlets of wastewater treatment facilities well away from sensitive receivers will be identified (i.e. treated wastewater will not be discharged into LMC Meander, natural streams, marsh, reedbed, active or abandoned fish ponds); • Adequate lateral support will be erected where necessary in order to prevent soil/mud from slipping into the Ecological Area or LMC Meander; • Site boundary will be clearly marked and any works beyond the boundary strictly prohibited; • Regular water monitoring and site audit will be carried out at adequate points along LMC Meander, and at the outfalls of the natural streams around LMC Loop. If the monitoring and audit results show that pollution occurs, adequate measures including temporarily cessation of works will be considered. 					
S12.7	E3-DP6	<p><u>Pollutant Runoff to Downstream areas from Accidental Spillage</u></p> <ul style="list-style-type: none"> • Prepare an emergency contingency plan • The plan will include, but not be limited to, the following: <ul style="list-style-type: none"> - Potential emergency situations; - Chemicals or hazardous materials used on-site (and their location); - Emergency response team; - Emergency response procedures; - List of emergency telephone hotlines; - Locations and types of emergency response equipment; - Training plan and testing for effectiveness. 	Minimize indirect impact from pollutant runoff to downstream areas from accidental spillage	Contractor / Operator	Areas within project site near streams	Construction and operational phases	
S12.7	E4-DP6	<ul style="list-style-type: none"> • Use opaque, non-transparent, non-reflective noise barriers for all developments associated with the Project. • Design of buildings should not incorporate use of night-time lighting at or near top of buildings, highly reflective materials should not be used where vegetation is adjacent and glass surfaces should not be angled upwards in a way 	Minimize the mortality impacts on birds	Developer / Detailed design consultant/ Contractor/ Operator	Areas within project site	Detailed design, construction and operational phases	

Project Implementation Schedule

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		<p>that reflects the sky. Unnecessary lighting should be eliminated. Appropriate glass and façade treatments should be used where required to minimise impact. Unnecessary lighting should be avoided.</p> <p>These include the following:</p> <ul style="list-style-type: none"> • Fritting, or the placement of ceramic lines or dots on glass, has little effect on the human-perceived transparency of the window but creates a visual barrier to birds outside. This treatment also has the advantage of reducing air conditioning loads by lowering heat gain, while still allowing light transmission for interior spaces. It is most successful when the frits are applied on the outside surface. Frosted glass has similar effects. • Angled glass may be used only for smaller panes in buildings with a limited amount of glass. • The use of glass that reflects UV light (primarily visible to birds, but not to humans) acts to reduce collision. • Film and art treatment allow glass surfaces to be used a medium of expression, often related to the nature and use of the building, as well indicating to birds their impenetrability. • Lightweight external screens can be added to windows or become a façade element of larger buildings, and are suitable where non-operable windows are prevalent, which is often the case in modern buildings in HK. <p>In terms of reducing night-time mortality impacts, eliminating unnecessary lighting is one of the easiest methods, and has the added advantage of saving energy and expense. Potential impacts of nocturnal avian collision with buildings should be minimised by not creating sky glow from the use of night-time lighting at or near the top of buildings or other structures. In addition to avoiding uplighting, light spillage should be minimised, while green and blue lights should be used where possible. As far as possible, lights should be controlled by motion sensors, and building operations should be managed in such a way as reduce or eliminate night lighting near windows. The potential advantages of removing unnecessary lighting in terms of reducing the carbon footprint of the LMC Loop development are obvious.</p>					
S12.7	E5-DP6	<ul style="list-style-type: none"> • Minimize loss of natural vegetation along LMC Meander, and suitable replacement planting where needed. Use of grassed cellular concrete where slopes require engineering. • No significant change to velocity of water flow, water level or water quality. • No direct lighting on Meander. • 3m high, dull green site boundary fence for all developments associated with the project. • Work in the area of any otter holt found to cease pending 	Minimize impacts on Eurasian Otter	Contractor	Construction site within the project	Construction phase	

Project Implementation Schedule

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		<p>examination by experienced Ecologist. If in use for breeding, works in the area will temporarily stop until end of breeding activity.</p> <ul style="list-style-type: none"> No construction activities within 100m of LMC Meander between one hour prior to sunset and one hour after sunrise. Provision of compensatory reed marsh in the Ecological Area in LMC Loop, including open water channels and islands within the reed marsh, both of which features are considered to be used by the species. 					
S12.7	E6-DP6	<ul style="list-style-type: none"> Mitigation measures for Eurasian Otter generally also apply. Eight wildlife underpasses (four at Ma Tso Lung, four along boundary fence road) and a vegetated, 70m-wide overpass over the depressed section of the Eastern Connection Road with barrier fence along at-grade section to avoid road kill. In addition, section above the underpass as it enters below the Meander will also allow mammal passage. Fencing around construction areas of Eastern Connection Road should be designed so as to not block the passage of larger, non-flying mammals. 	Minimize impacts on other mammals	Detailed design consultant/ Contractor	Within project site	Detailed design and construction phase	
S12.7	E7-DP6	<ul style="list-style-type: none"> Mitigation for other fauna, such as compensatory reed marsh and ecological enhancement of fish pond habitat will also provide habitat suitable for herpetofauna. Survey and translocation, if required and if feasible, of individuals present in areas of the Ma Tso Lung stream network in advance of construction will be carried out. Site boundary fencing of construction areas should be designed to prevent entry by herpetofauna. 	Minimize impacts on herpetofauna	Project Proponent / Detailed design consultant/ Contractor	Within project site	Detailed design, construction phase	
S12.7	E8-DP6	<ul style="list-style-type: none"> Refer to E2 and E3 	Prevent impacts on Rose Bitterling, small snakehead and <i>Somaniathelphus zanklon</i>	Contractor	Within project site	Construction phase	
S12.7	E9-DP6	<ul style="list-style-type: none"> Refer to E2 and E3 Effective measures to prevent access to the stream by site staff should be implemented, include site boundary fencing 	Protect Paradise Fish	Contractor	Within project site	Construction phase	
S12.7	E12-DP6	<ul style="list-style-type: none"> Minimal night-time lighting No direct light on Meander 	Minimize impacts on LMC Meander	Contractor / Operator	All	Construction and operational phases	
S12.7	E13-DP6	<ul style="list-style-type: none"> Alignment minimises overall impacts to fish ponds. Design (underpass and tunnel) minimises impacts to wetlands. Ecological enhancement of area of fish pond and reed marsh habitat elsewhere to compensate for habitat loss and disturbance impacts. 	Minimize the ecological impacts from the loss of pond/marsh	Project Proponent / Detailed design consultant/Contractor	Eastern Connection Road	Detailed design/construction phase	

Project Implementation Schedule

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S12.7	E14-DP6	<ul style="list-style-type: none"> A 3m high, dull green site boundary fence that blends with the surrounding environment will minimise disturbance impacts. Construction only in the wet season from 1st April to 30th October between 9.00am and 5.00pm. 	Minimize the ecological impacts from the loss of pond/marsh	Contractor	Construction site for Eastern Connection Road	Construction phase	
S12.7	E15-DP6	<ul style="list-style-type: none"> Noise and visual barriers, including shrubs and trees either native or of ecological value, to be planted at ground level along the alignment in this area, installed prior to commencement of construction. 	Minimize ecological impacts from the loss of pond/marsh	Detailed design Consultant/Contractor / Operator	Alignment of Eastern Connection Road	Detailed design, construction and operational phases	
S12.7	E16-DP6	<ul style="list-style-type: none"> Planting of native tree species that typically occur in the Deep Bay to ultimately form a woodland area on adjacent hills. 	Minimize ecological impacts from the loss of secondary woodland	Detailed design consultant / Contractor	Deep bay adjacent hills	Detailed design and construction phase	
S12.7	E17-DP6	<ul style="list-style-type: none"> Use of underpass avoids loss of natural vegetation and riverbed. 	Minimize direct impacts on LMC Meander from the loss of natural vegetation and riverbed	Detailed design consultant	Eastern Connection Road at LMC Meander	Detailed design phase	
S12.7	E18-DP6	<ul style="list-style-type: none"> Use of viaduct over stream to avoid habitat loss. 	Minimize direct impacts on Ping Hang Stream from the habitat loss	Detailed design consultant	Eastern Connection Road at Ping Hang Stream	Detailed design phase	
S12.7	E19-DP6	<ul style="list-style-type: none"> Compensatory planting before or after construction, depending on feasibility. Details to be devised once details finalised. 	Minimize the loss of riparian corridor and stream habitat at Ma Tso Lung	Detailed design consultant/contractor	Eastern Connection Road at Ma Tso Lung	Detailed design and construction phases	
S12.7	E20-DP6	<ul style="list-style-type: none"> Use noise/visual barriers to minimise disturbance from construction of Eastern Connection Road. The EA and associated buffer zone should be established before construction of the Eastern Connection Road commences. Construction works for the Eastern Connection Road should only occur in the wet season period from 1st April to 30th October. Construction activities for the Eastern Connection Road should not be carried out before 0900h or after 1700h in order to minimise disturbance to the flight line corridor (and to mammals). Prior to detailed design and construction, baseline ecological profile of area should be renewed via a 12-month survey of flora and fauna. Phasing of construction programme to avoid working simultaneously in two or more of the sections traversing the EA, LMC Meander and ponds 36-38. 	Minimize the impacts on flight line from Eastern Connection Road	Detailed design consultant / Contractor	Construction site for Eastern Connection Road	Detailed design and construction phases	

Project Implementation Schedule

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S12.7	E21-DP6	<ul style="list-style-type: none"> Place Eastern Connection Road below ground level near Horn Hill (Ngau Kok Shan), and traverse LMC Meander via a underpass that emerges on the far side of the EA in LMC Loop. Use noise/visual barriers and plant trees/shrubs alongside above ground sections to minimise disturbance impacts. 	Minimize the impacts on flight line from Eastern Connection Road	Detailed design consultant/Contractor / Operator	Eastern Connection Road	Detailed design, construction and operational phases	
S12.7	E22-DP6	<ul style="list-style-type: none"> Provision of appropriate road markings to ensure that vehicles do not stop (except in emergency) on the road, and that there is no possibility of access to adjacent areas. 	Minimize illegal flytipping activities to ecological sensitive areas	Detailed design consultant /Contractor / Operator	Eastern Connection Road	Detailed design, construction and operational phase	
S12.9	EG2-DP6	All generic mitigation measures proposed in Tables 12.82a and 12.82b in the EIA report.	Avoid, minimize and mitigate overall ecological impact.	Project proponent / contractor / detailed design consultant / developer / operator	All areas.	All phases	• EIAO
Fisheries (Construction Phase)							
S13.7	F4-DP6	During the construction phase, a layer of sheet pile wall will be erected along the site boundary adjacent to fish ponds after commencement of site works. The sheet pile wall will be constructed by silent piling method (Press-in method) which induces minimal vibration. Therefore the stability of the fish pond bund will not be influenced by the construction of the sheet pile wall, subsequent construction works and the loading from the road during operational phase. In addition, the sheet pile wall will have grouting or a grout curtain to avoid water seepage from the fish pond to the excavation area. With these measures, significant impacts are not anticipated.	Bund stability	Contractor	Fish ponds	Construction phase	• TM-EIAO
S13.7	F5-DP6	Temporary traffic arrangements will be instigated to maintain or provide alternative access to fish ponds during construction phase.	Prevent Blockage of Access Roads to Fish Ponds	Contractor	Fish ponds	Construction phase	• TM-EIAO
S13.7	F6-DP6	Standard mitigation measures to control site runoff and other pollutants caused by construction activities and good site practices will be implemented during the construction phase of the Project. Excavated material and other inert construction wastes produced will be transferred to proper recipients (i.e. landfill) (see Waste Management Section). Sewage from the proposed development will be dealt with via a sewerage system and will not be discharged directly to surrounding water bodies.	Avoid water quality impact	Contractor	Fish ponds	Construction phase	• TM-EIAO
S13.7	F7-DP6	Dust Minimization <ul style="list-style-type: none"> During all excavation works, good site practice should be adopted to minimize impacts on fisheries. The below site practices should be adopted during this time. Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with 	Dust minimization	Contractor	Fish ponds	Construction phase	• TM-EIAO

Project Implementation Schedule

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		<p>water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading;</p> <ul style="list-style-type: none"> • Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads; • 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; • Excavation profiles must be properly designed and executed with attention to the relevant requirements for environment, health and safety; • In case the soil to be excavated is situated beneath the groundwater table, it may be necessary to lower the groundwater table by installing well points or similar means; • Supply of suitable clean backfill material after excavation, if required; • Vehicles containing any excavated materials should be suitably covered to limit potential dust emissions or contaminated run-off, and truck bodies and tailgates should be sealed to prevent any discharge during transport or during wet season; • Speed control for the trucks carrying contaminated materials should be enforced; and • Vehicle wheel washing facilities at the site's exit points should be established and used. 					
<i>Fisheries (both Construction and Operational Phase)</i>							
S13.7	F8-DP6	<p><u>Contingency plan</u> The contractor should prepare an emergency contingency plan for actions to be taken if significant impacts, such as accidental spillage of chemicals, water seepage from fish ponds, damaged/ destabilized pond bunds, pond water contamination by site runoff, on fish ponds occur. The contractor should submit the emergency contingency plan dealing with, but not limited to, the aforementioned potential impacts to the engineer for review, comment and approval. The fish pond operators will also be consulted for the details of the contingency plan, which will also be submitted to AFCD for review and comment. The plan should include, but not limited to, the following:</p> <ul style="list-style-type: none"> • Potential emergency situations; • Chemicals or hazardous materials used on-site (and their 	Deal with any accidental spillage event	Contractor / Operator	Fish ponds	Construction and operational phases	• TM-EIAO

Project Implementation Schedule

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		location); <ul style="list-style-type: none"> • Emergency response team; • Emergency response procedures; • List of emergency telephone hotlines; • Locations and types of emergency response equipment; • Training plan and testing for effectiveness. 					
Food Safety (Construction Phase)							
S15	F1-DP6	<u>Contingency Plan</u> The contractor should have effective communication with Food and Environmental Hygiene Department (FEHD) / Centre of Food Safety (CFS), on food surveillance and food incidents. Food Surveillance Programme (http://www.cfs.gov.hk/english/programme/programme_fs/programme_fs.html). is undertaken by CFS to inspect food safety in Hong Kong, with a three-tier surveillance strategy (consisting of routine food surveillance, targeted food surveillance and seasonal food surveillance). Under this programme, aquatic products (including pond fish) at import, wholesale and retail levels are sampled for microbiological (i.e. bacteria and viruses), chemical (i.e. natural toxins, food additives and contaminants) and radiation testings. All food safety surveillance results of by a monthly “Food Safety Report” in press releases and also presented in CFS website. If pond fish samples do not comply with food safety standards and they are verified to be from fish ponds of concerned under this study through “food tracing”, fish selling shall be stopped as instructed by CFS.	Minimize significant impacts on fish ponds	Contractor	Fish pond within project site	Construction phase	• TM-EIAO
S15	F2-DP6	<u>Dust Minimization</u> <ul style="list-style-type: none"> • During all excavation works, good site practice should be adopted to minimize the release of TSP, impact of land contamination and the associated food safety implications. The below site practices should be adopted during excavation works. • 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; • 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 	Dust minimization	Contractor	Fish pond within project site	Construction phase	• Food Adulteration (Metallic Contamination) Regulations

Project Implementation Schedule

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		<p>on the construction site or part of the construction site where the exposed earth lies;</p> <ul style="list-style-type: none"> • Excavation profiles must be properly designed and executed with attention to the relevant requirements for environment, health and safety; • In case the soil to be excavated is situated beneath the groundwater table, it may be necessary to lower the groundwater table by installing well points or similar means; • Supply of suitable clean backfill material after excavation, if required; • Vehicles containing any excavated materials should be suitably covered to limit potential dust emissions or contaminated run-off, and truck bodies and tailgates should be sealed to prevent any discharge during transport or during wet season; • Speed control for the trucks carrying contaminated materials should be enforced; and • Vehicle wheel washing facilities at the site's exit points should be established and used. 					

Project Implementation Schedule

Note: Chapters 1 to 2 of the EIA report present the background information of the Project, identified designated project, concurrent projects, objectives and scope for various environmental aspects, and description on recommended outline development plan. Chapters 3 to 14 of the EIA report present the EIA findings and mitigation measures are described below with cross-reference to the EIA report. Chapters 16 to 18 summarize the environmental outcomes and describe the environmental monitoring requirements and conclusion.

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
<i>DP7 – Flushing Water Service Reservoir</i>							
<i>Construction Dust Impact</i>							
S3.8	D1-DP7	Mitigation measures in form of regular watering under a good site practice should be adopted. Watering once per hour on exposed worksites and haul road is proposed to achieve dust removal efficiency of 92.1%. While the above watering frequencies are to be followed, the extent of watering may vary depending on actual site conditions but should be sufficient to maintain an equivalent intensity of no less than 1.6 L/m ² to achieve the respective dust removal efficiencies	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> • APCO To control the dust impact to meet HKAQO and TM-EIAO
S3.8	D2-DP7	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> • APCO To control the dust impact to meet HKAQO and TM-EIAO
S3.8	D3-DP7	<p>Following dust suppression measures should also be incorporated by the Contractor to control the dust nuisance throughout the construction phase</p> <ul style="list-style-type: none"> • 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; • A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones; • The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores; • When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly 	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> • APCO To control the dust impact to meet HKAQO and TM-EIAO

Project Implementation Schedule

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		<p>maintained throughout the construction period.</p> <ul style="list-style-type: none"> • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport should be totally enclosed by impervious sheeting; • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides; • Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed; • Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and • Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shortcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies. 					
S3.8	D4-DP7	Implement regular dust monitoring under EM&A programme during the construction phase.	Monitoring of dust impact	Contractor	Selected representative dust monitoring station	Construction phase	<ul style="list-style-type: none"> • TM-EIAO
Noise Impact (Construction Phase)							
S4.8	N-CP1-DP7	<p>Implement the following good site management practices:</p> <ul style="list-style-type: none"> • only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; • machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; 	Control construction airborne noise	Contractor	All construction sites where practicable	Construction phase	<ul style="list-style-type: none"> • Annex 5, TM-EIA

Project Implementation Schedule

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		<ul style="list-style-type: none"> plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; mobile plant should be sited as far away from NSRs as possible and practicable; material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities. 					
S4.8	N-CP2-DP7	Install temporary site hoarding (approx 2.4m high) located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period.	Reduce the construction noise levels at low-level zone of NSRs through partial screening.	Contractor	All construction sites where practicable	Construction phase	• Annex 5, TM-EIA
S4.8	N-CP3-DP7	Install movable noise barriers and full enclosure, screen the noisy plants including air compressor and generator.	Screen the noisy plant items to be used at all construction sites	Contractor	All construction sites where practicable	Construction phase	• Annex 5, TM-EIA
S4.8	N-CP4-DP7	Use of "Quiet" Plant and Working Methods	Reduce the noise levels of plant items	Contractor	All construction sites where practicable	Construction phase	• Annex 5, TM-EIA
S4.8	N-CP5-DP7	Sequencing operation of construction plants where practicable.	Operate sequentially within the same work site to reduce the construction airborne noise	Contractor	All construction sites where practicable	Construction phase	• Annex 5, TM-EIA
S4.8	N-CP6-DP7	Implement a noise monitoring under EM&A programme.	Monitor the construction noise levels at the selected representative locations	Contractor	Selected representative noise monitoring stations	Construction phase	• TM-EIA
Water Quality Impact (Construction Phase)							
S5.7	W1-DP7	<p><u>Construction Runoff and Site Drainage</u></p> <p>In accordance with the Practice Note for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN 1/94), construction phase mitigation measures, where appropriate, should include the following:</p> <ul style="list-style-type: none"> Update and implementation of Stormwater Pollution Control Plan At the start of site establishment, perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works and erosion and sedimentation control facilities implemented. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities. The design of the temporary on-site drainage system will be undertaken by the contractor prior to the commencement of construction. Diversion of natural stormwater should be provided as far as possible. The design of temporary on-site drainage should prevent runoff going through site surface, construction machinery and 	Minimize water quality impact from construction site runoff and general construction activities	Contractor	All construction sites where practicable	Construction phase	<ul style="list-style-type: none"> Water Pollution Control Ordinance ProPECC PN1/94 TM-EIAO TM-DSS

Project Implementation Schedule

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		<p>equipments in order to avoid or minimize polluted runoff. Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m3 capacities, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity shall be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped.</p> <ul style="list-style-type: none"> • The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a silt/sediment trap. The silt/sediment traps should be incorporated in the permanent drainage channels to enhance deposition rates. • The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94. The detailed design of the sand/silt traps should be undertaken by the contractor prior to the commencement of construction. • Construction works should be programmed to minimize surface excavation works during the rainy seasons (April to September). All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means. • All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas. • Measures should be taken to minimise the ingress of site drainage into excavations. If the excavation of trenches in wet periods is necessary, it should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities. • All open stockpiles of construction materials (for example, aggregates, sand and fill material) of should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system. • Manholes (including newly constructed ones) should 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. 					

Project Implementation Schedule

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		<ul style="list-style-type: none"> • Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarized in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events. • All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities should be provided at every construction site exit where practicable. Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains. • Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain. • Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts. • All fuel tanks and storage areas should be provided with locks and sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby. • Regular environmental audit on the construction site should be carried out in order to prevent any malpractices. Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the meander, wetlands and fish ponds. 					
S5.7	W2-DP7	<p><u>Groundwater from Contaminated Area</u></p> <ul style="list-style-type: none"> • No mitigation measure is required for groundwater treatment in LMC Loop. • Additional investigation is required to identify if contaminated groundwater is found • If the investigation results indicated that the groundwater to be generated from construction works would be contaminated, the contaminated groundwater should be either discharged into recharged wells, or properly treated in compliance with the requirements of Technical Memorandum on Standards for 	Minimize groundwater quality impact from contaminated area	Contractor	Areas where contamination is found.	Construction phase	<ul style="list-style-type: none"> • Water Pollution Control Ordinance • TM-DSS • TM-EIAO

Project Implementation Schedule

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		<p>Effluents Discharged into Drainage on Sewerage Systems, Inland and Coastal Waters.</p> <ul style="list-style-type: none"> If recharged well method were used, the groundwater quality in the recharged well should not be affected by recharging operation, i.e. the pollution levels of the recharged groundwater should not be higher than that in the recharging wells. If treatment and discharge method were used, the design of wastewater treatment facilities, such as active carbon and petrol interceptor, should be submitted to the EPD and a discharge license should be obtained under the WPCO through the Regional Offices of EPD. 					
S5.7	W3-DP7	<p><u>Sewage from Workforce</u></p> <ul style="list-style-type: none"> Portable chemical toilets and sewage holding tanks should be provided for handling the construction sewage generated by the workforce. A licensed contractor should be employed to provide appropriate and adequate portable toilets to cater 0.15m³/day/employed populations and be responsible for appropriate disposal and maintenance. Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment during the construction phase of the Project. Regular environmental audit on the construction site should be conducted in order to provide an effective control of any malpractices and achieve continual improvement of environmental performance on site. 	Minimize water quality from sewage effluent	Contractor	All construction sites where practicable	Construction phase	<ul style="list-style-type: none"> Water Pollution Control Ordinance TM-DSS
Water quality impact (Operational Phase)							
S5.7	W7-DP7	Emergency discharge for Flushing Water Service Reservoir is not required. However, during regular cleaning, waste water will be generated. These wastewater should be delivered to STWs or diverted back to influent pipes of on-site STW.	Control of emergency discharge.	Detailed design consultant /Contractor /Operator	On-site STW and flushing water service reservoir	Detail design, construction and operational phase	<ul style="list-style-type: none"> Water Pollution Control Ordinance TM-DSS
Sewerage and Sewage Treatment Implications							
S6.6	S2-DP7	The proposed water quality standards of TSE reuse should comply with Table 6.11 of the EIA report.	Control the water quality of TSE	Detailed design consultant / Operator	On-site STW and Flushing Water Service Reservoir	Detailed design and operational phases	<ul style="list-style-type: none"> Water Pollution Control Ordinance TM-DSS
S6.6	S3-DP7	<p>The following precautionary measures for TSE reuse should be adopted:-</p> <ul style="list-style-type: none"> To avoid cross connection and hence contamination, all pipes and fittings used for the TSE water supply and distribution system should be purple in colour for distinguishing them from the pipes and fittings used for the fresh water supply and distribution systems. Regular checking/inspections of the TSE supply and distribution 	Avoid affecting public health due to TSE reuse	Detailed design consultant / Contractor / Operator	Areas with TSE reuse	Detailed design, construction and operational phases	<ul style="list-style-type: none"> Water Pollution Control Ordinance TM-DSS

Project Implementation Schedule

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		<p>systems for possible cross connection to the fresh water supply and distribution system should be carried out. The use of non-toxic dye may be adopted in the checking/inspections.</p> <ul style="list-style-type: none"> Warning signs should be permanently displayed where public access to TSE is possible (except for toilets) notifying the employees, visitors and the public at large that treated effluent is being used and is not suitable for drinking. Storage of sodium hypochlorite solution will be required and this is not a hazardous material. Thus, the storage is not considered as Potentially Hazardous Installation (PHI). <p>Apart from that, proper signage, promotion and education to the general public especially potential local users of reclaimed water for landscape irrigation shall be considered and implemented.</p>					
Waste Management (Construction Waste)							
S7.6	WM1-DP7	<p><u>Waste Reduction Measures</u> Waste reduction is best achieved at the planning and design phase, as well as by ensuring the implementation of good site practices. The following recommendations are proposed to achieve reduction:</p> <ul style="list-style-type: none"> segregate and store different types of waste in different containers, skip or stockpiles to enhance reuse or recycling of materials and their proper disposal; proper storage and site practices to minimize the potential for damage and contamination of construction materials; plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste; sort out demolition debris and excavated materials from demolition works to recover reusable/recyclable portions (i.e. soil, broken concrete, metal etc.); provide training to workers on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling. 	Reduce waste generation	Contractor	All construction sites where practicable	Construction phase	<ul style="list-style-type: none"> Waste Disposal Ordinance
S7.6	WM2-DP7	Prepare Waste Management Plan and submit to the Engineer for approval	Minimize waste generation during construction	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal Ordinance
S7.6	WM3-DP7	<p><u>Good Site Practice</u> The following good site practices are recommended throughout the construction activities:</p> <ul style="list-style-type: none"> nomination of an approved personnel, such as a site manager, to be responsible for the implementation of good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site; training of site personnel in site cleanliness, appropriate waste management procedures and concepts of waste reduction, reuse 	Minimize waste generation during construction	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal Ordinance

Project Implementation Schedule

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		and recycling; <ul style="list-style-type: none"> • 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; 					
S7.6	WM4-DP7	<u>Storage of Waste</u> The following recommendation should be implemented to minimize the impacts: <ul style="list-style-type: none"> • waste such as soil should be handled and stored well to ensure secure containment; • stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; • different locations should be designated to stockpile each material to enhance reuse; 	Minimize waste impacts from storage	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> • Waste Disposal Ordinance
S7.6	WM5-DP7	<u>Collection and Transportation of Waste</u> The following recommendation should be implemented to minimize the impacts: <ul style="list-style-type: none"> • remove waste in timely manner; • employ the trucks with cover or enclosed containers for waste transportation; • obtain relevant waste disposal permits from the appropriate authorities; and • disposal of waste should be done at licensed waste disposal facilities. 	Minimize waste impacts from storage	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> • Waste Disposal Ordinance
S7.6	WM6-DP7	<u>Excavated and C&D Material</u> Wherever practicable, C&D materials should be segregated from other wastes to avoid contamination and ensure acceptability at Public Fill Reception Facilities areas or reclamation sites. The following mitigation measures should be implemented in handling the excavated and C&D materials: <ul style="list-style-type: none"> • maintain temporary stockpiles and reuse excavated fill material for backfilling; • carry out on-site sorting; • make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; and • implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified. The recommended C&D materials handling should include: <ul style="list-style-type: none"> • On-site Sorting of C&D Materials 	Minimize waste impacts from excavated and C&D materials	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> • Land (Miscellaneous Provisions) Ordinance • Waste Disposal Ordinance • ETWB TCW No. 19/2005

Project Implementation Schedule

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		<ul style="list-style-type: none"> Reuse of C&D Materials Use of Standard Formwork and Planning of Construction Materials Purchasing Provision of Wheel Wash Facilities Details refer to Section 7.6.1.4 of the EIA report					
S7.6	WM7-DP7	<u>Contaminated Soil</u> As a precaution, it is recommended that standard good site practice should be implemented during the construction phase to minimize any potential exposure to contaminated soils or groundwater. The details of mitigation measures to minimize the potential environmental implications arising from the handling of contaminated materials refer to Land Contamination Section.	Remediate contaminated soil	Contractor	All construction sites where applicable	Construction phase	<ul style="list-style-type: none"> Practice Guide for Investigation and Remediation of Contaminated Land
S7.6	WM8-DP7	<u>Chemical Waste</u> <ul style="list-style-type: none"> If chemical wastes are produced at the construction site, the Contractors should register with EPD as chemical waste producers. Chemical wastes should be stored in appropriate containers and collected by a licensed chemical waste contractor. Chemical wastes (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while the chemical waste that cannot be recycled should be disposed of at either the Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation. 	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal (Chemical Waste) Regulation Code of Practice on the Packaging, Labelling and Storage of Chemical Waste
S7.6	WM9-DP7	<u>General Waste</u> <ul style="list-style-type: none"> General refuse should be stored in enclosed bins separately from construction and chemical wastes. Recycling bins should also be placed to encourage recycling. Preferably enclosed and covered areas should be provided for general refuse collection and routine cleaning for these areas should also be implemented to keep areas clean. A reputable waste collector should be employed to remove general refuse on a daily basis. 	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal Ordinance
S7.6	WM10-DP7	<u>Sewage</u> <ul style="list-style-type: none"> The WMP should document the locations and number of portable chemical toilets depending on the number of workers, land availability, site condition and activities. Regularly collection by licensed collectors should be arranged to minimize potential environmental impacts. 	Minimize production of sewage impacts	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal Ordinance
Land Contamination							
S8.7	LC1	<u>Remediation of arsenic-contaminated soil</u> <ul style="list-style-type: none"> "Solidification/Stabilization" (S/S) treatment method was proposed for the remediation of arsenic-contaminated soil. Toxicity Characteristic Leaching Procedure (TCLP) test should be 	To remediate arsenic-contaminated soil	Project proponent / Contractor	LMC Loop, contaminated area	Prior to commencement of construction works within	<ul style="list-style-type: none"> TM-EIAO Practice Guide (PG) for Investigation and Remediation of

Project Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
		<p>undertaken after S/S in order to ensure that the contaminant will not leach to the environment. Unconfined Compressive Strength (UCS) test should be conducted, and not less than 1MPa should be met prior to the backfilling or stockpiled for future reuse within the study area. Off-site disposal or reuse of the solidified material is not allowed.</p>				the contaminated area	<p>Contaminated Land</p> <ul style="list-style-type: none"> • Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management • Guidance Notes for Contaminated Land Assessment and Remediation • Practice Guide for Investigation and Remediation of Contaminated Land
S8.7	LC2-DP7	<p><u>Excavation and Transportation</u></p> <ul style="list-style-type: none"> • Excavation profiles must be properly designed and executed with attention to the relevant requirements for environment, health and safety; • In case the soil to be excavated is situated beneath the groundwater table, it may be necessary to lower the groundwater table by installing well points or similar means; • Excavation should be carried out during dry season as far as possible to minimise contaminated runoff from contaminated soils; • Stockpiling site(s) should be lined with impermeable sheeting and bunded. Stockpiles should be properly covered by impermeable sheeting to reduce dust emission during dry season or contaminated run-off during rainy season. Watering should be avoided on stockpiles of contaminated soil to minimise contaminated runoff; • Supply of suitable clean backfill material after excavation, if required; • Vehicles containing any excavated materials should be suitably covered to limit potential dust emissions or contaminated run-off, and truck bodies and tailgates should be sealed to prevent any discharge during transport or during wet season; • Speed control for the trucks carrying contaminated materials should be enforced; and • Vehicle wheel washing facilities at the site's exit points should be established and used. 	To minimise the potential environmental impacts arising from the handling of contaminated materials	Contractor	Contaminated area	Prior to commencement of construction works within the contaminated area	<ul style="list-style-type: none"> • TM-EIAO • Practice Guide (PG) for Investigation and Remediation of Contaminated Land • Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management • Guidance Notes for Contaminated Land Assessment and Remediation • Practice Guide for Investigation and Remediation of Contaminated Land
S8.7	LC3-DP7	<p><u>Solidification/Stabilization</u></p> <ul style="list-style-type: none"> • The loading, unloading, handling, transfer or storage of cement should be carried out in an enclosed system; 	To minimise the potential environmental impacts arising from the handling of	Contractor	Contaminated area	The course of remediation	<ul style="list-style-type: none"> • TM-EIAO • Practice Guide (PG) for Investigation and

Project Implementation Schedule

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		<ul style="list-style-type: none"> Mixing process and other associated material handling activities should be properly scheduled to minimise potential noise impact and dust emission; The mixing facilities should be sited as far apart as practicable from the nearby noise sensitive receivers; Mixing of contaminated soil and cement / water / other additive(s) should be undertaken at a solidification plant to minimise the potential for leaching; Runoff from the solidification / stabilization area should be prevented by constructing a concrete bund along the perimeter of the solidification / stabilization area; The run-off contained in the concrete bund area along the perimeter of the paved solidification / stabilization area, if any, will be collected, stored and used for the mixing process of cement / contaminated soil; If stockpile of treated soil is required, the stockpiling site(s) should be lined with impermeable sheeting and banded. Stockpiles should be properly covered by impermeable sheeting to reduce dust emission during dry season or site run-off during rainy season; and If necessary, there should be clear and separated areas for stockpiling of untreated and treated materials. 	contaminated materials				Remediation of Contaminated Land <ul style="list-style-type: none"> Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management Guidance Notes for Contaminated Land Assessment and Remediation Practice Guide for Investigation and Remediation of Contaminated Land
S8.7	LC4-DP7	<u>Safety Measures</u> <ul style="list-style-type: none"> Set up a list of safety measures for site workers; Provide written information and training on safety for site workers; Keep a log-book and plan showing the contaminated zones and clean zones; Maintain a hygienic working environment; Avoid dust generation; Provide face and respiratory protection gear to site workers if necessary; Provide personal protective clothing (e.g. chemical resistant jackboot, liquid tight gloves) to site workers, if necessary; Provide first aid training and materials to site worker; Bulk earth moving equipment should be utilized as much as possible to minimize workers' handling and contact of the contaminated materials; and Eating, drinking and smoking should not be allowed in contaminated areas to avoid inadvertent ingestion of contaminant. 	To minimize the potential adverse effects on health and safety of construction workers	Contractor	Contaminated area	The course of remediation	<ul style="list-style-type: none"> Occupation Safety and Health Ordinance (OSHO) (Charter 509)
S8.8	LC5-DP7	Re-appraisal on the entire contamination assessment area for associated infrastructure in the adjacent areas in Hong Kong outside LMC Loop.	Ensure any potential contamination activities from land use changes after the approval of this land contamination assessment study	Project Proponent / Detailed design consultant	Entire contamination assessment area for associated infrastructure in the adjacent areas in Hong Kong outside	After land resumption	<ul style="list-style-type: none"> TM-EIAO Practice Guide (PG) for Investigation and Remediation of Contaminated Land

Project Implementation Schedule

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					LMC Loop		<ul style="list-style-type: none"> • Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management • Guidance Notes for Contaminated Land Assessment and Remediation • Practice Guide for Investigation and Remediation of Contaminated Land
<i>Landscape and Visual Impact (Construction Phase)</i>							
S11.5 .4 Table 11.5.9	L-CP1-DP7	<u><i>Preservation and Protection of Existing Trees (Good Site Practice)</i></u> <ul style="list-style-type: none"> • The proposed works should avoid disturbance to the existing trees within and close to the works areas. The tree preservation proposals shall be coordinated with the layout and design of the engineering and architectural works at detailed design phase for further retention of individual trees. • It is recommended that a full detailed tree survey and felling application will be undertaken and submitted for approval by the relevant government departments in accordance with ETWB TCW No. 3/2006, 'Tree Preservation'. This will be conducted during the detailed design phase of the project and submitted to DLO for approval. The methodology and scope including the programme for the tree survey and felling application are also subject to the approval of the relevant authorities. • Trees which are not in conflict with the proposals would be retained and shall be protected by means of fencing during construction phase to prevent damage to tree canopies and root zones from vehicles and storage of materials. • Specifications for the protection of existing trees will be provided during the preparation of the detailed tree survey by Detailed Design consultants at detailed design and construction phase. 	Avoid disturbance and protection of the existing trees	Detailed design consultant / Contractor	Within project site	Detailed design and construction phases	<ul style="list-style-type: none"> • EIAO – TM • ETWB TCW 2/2004 • ETWB TCW 3/2006
S11.5 .4 Table 11.5.9	L-CP2-DP7	<u><i>Works Area and Temporary Works Areas (Good Site Practice)</i></u> <ul style="list-style-type: none"> • The construction sequence and construction programme shall be optimized in order to minimize the duration of impact. • Construction site controls shall be enforced including the 	Minimize landscape impacts	Contractor	The whole project area where applicable	Construction phase	<ul style="list-style-type: none"> • TM-EIAO

Project Implementation Schedule

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		<p>storage of materials, the location and appearance of site accommodation and site storage; and the careful design of site lighting to prevent light spillage.</p> <ul style="list-style-type: none"> The temporary works areas shall be restored to its original condition or enhanced through the introduction of new amenity areas or planting areas following the completion of the construction phase. 					
S11.5 .4 Table 11.5.9	L-CP3-DP7	<p><u>Advance Implementation of Mitigation Planting</u></p> <ul style="list-style-type: none"> Replanting of existing / disturbed vegetation shall be undertaken at the earliest possible stage of the construction phase of the project using predominantly native plant species although ornamental species may be used for roadside planting and amenity areas. 	Minimize landscape impacts	Detailed design consultant/ Contractor	The whole project area where applicable	Detailed design and construction phases	<ul style="list-style-type: none"> TM-EIAO
S11.5 .4 Table 11.5.9	L-CP4-DP7	<p><u>Transplantation of Existing Trees</u></p> <ul style="list-style-type: none"> Some specimens have relatively higher amenity value which are in conflict with the proposals shall be considered for transplantation. For trees affected by the proposed infrastructure works the final receptor sites shall be preferably adjacent to their current locations alongside of the alignment to retain their contribution to the local landscape context. For the LMC Loop the receptor locations will be selected to allow the trees to be moved directly to their final locations in accordance with the detailed landscape proposals. The transplanting proposals are subject to review at the detailed design phase and to agreement-in-principle with the relevant management and maintenance agents and/or government departments. The implementation programme for the proposed works shall reserve sufficient time for the advanced tree transplanting preparation works to enhance the survival of the transplanted trees. The transplanting proposals will be subject to the findings of the detailed tree survey and felling application to be undertaken by the detailed design consultants and following approval by the relevant departments. 	Minimize landscape impacts and retention of landscape resources	Detailed design consultant/ Contractor	The whole project area where applicable	Detailed design and construction phases	<ul style="list-style-type: none"> TM-EIAO ETWB TCW 3/2006 LAO PN 7/2007
S11.5 .4 Table 11.5.9	L-CP5-DP7	<p><u>Coordination with Concurrent Projects</u></p> <ul style="list-style-type: none"> Coordinated implementation programme with concurrent projects to minimise impacts and where possible reduce the period of disturbance. 	Minimize landscape impacts	Contractor	The whole project area where applicable	Construction phase	<ul style="list-style-type: none"> TM-EIAO
S11.5 .4 Table 11.5.9	L-CP7-DP7	<p><u>Design of Retaining Wall and Slopes</u></p> <ul style="list-style-type: none"> The proposed treatment of Retaining Wall and Slopes will be undertaken in accordance with GEO Publication No. 1/2011 "Technical Guidelines on Landscape Treatment and Bio-engineering for Slopes". These engineering structures will be aesthetically enhanced through the use of soft landscape works including tree and shrub planting to give man-made 	Minimize landscape impacts	Detailed design consultant	The whole project area where applicable	Detailed design phase	<ul style="list-style-type: none"> TM-EIAO

Project Implementation Schedule

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		<p>slopes a more natural appearance blending into the local rural landscape. Whip sized tree planting is preferred on the face of soil cut slopes and at the crest and toe of the slope, and within berm planters. The smaller, younger plant stock will adapt to their new growing conditions more quickly than larger sized stock and establish a naturalistic effect more rapidly. Hydroseeding will be applied on slope has a gradient more than 30 degree.</p>					
S11.6.5 Table 11.6.3	V-CP1-DP7	<p><u>Preservation and Protection of Existing Trees (Good Site Practice)</u></p> <ul style="list-style-type: none"> The proposed works should avoid disturbance to the existing trees within and close to the works areas. The tree preservation proposals shall be coordinated with the layout and design of the engineering and architectural works at detailed design phase for further retention of individual trees. The preservation of existing tree shall provide instant greening and screening effect for proposed works. 	Minimise visual impact	Detailed design consultant / Contractor	The whole project area where applicable	Detailed design and construction phases	• TM-EIAO
	V-CP2-DP7	<p><u>Works Area and Temporary Works Areas (Good Site Practice)</u></p> <ul style="list-style-type: none"> The construction sequence and construction programme shall be optimized in order to minimize the duration of impact. Construction site controls shall be enforced including the storage of materials, the location and appearance of site accommodation and site storage; and the careful design of site lighting to prevent light spillage. Hoarding designed with recessive colour shall be set up around the construction site providing screening effect for the construction works. The site office or temporary above-ground structures shall be sited at less visual prominent locations. 	Minimise visual impact	Contractor	The whole project area where applicable	Construction phase	• TM-EIAO
	V-CP3-DP7	<p><u>Advance Implementation of Mitigation Planting</u></p> <ul style="list-style-type: none"> Replanting of existing / disturbed vegetation shall be undertaken at the earliest possible stage of the construction phase of the project using predominantly native plant species although ornamental species may be used for roadside planting and amenity areas. 	Minimise visual impact and advance mitigation planting for screening purpose.	Detailed design consultant / Contractor	The whole project area where applicable	Detailed design and construction phases	• TM-EIAO
	V-CP5-DP7	<p><u>Coordination with Concurrent Projects</u></p> <ul style="list-style-type: none"> Coordinated implementation programme with concurrent projects to minimise impacts and where possible reduce the period of disturbance. 	Minimize visual impacts	Contractor	The whole project area where applicable	Construction phase	• TM-EIAO
	V-CP7-DP7	<p><u>Design of Retaining Wall and Slopes</u></p> <ul style="list-style-type: none"> The proposed treatment of Retaining Wall and Slopes will be undertaken in accordance with GEO Publication No. 1/2011 "Technical Guidelines on Landscape Treatment and Bio-engineering for Man-made Slopes and Retaining Walls". These engineering structures will be aesthetically enhanced 	Minimize visual impacts and maximise greening opportunities for visual enhancement.	Detailed design consultants	The whole project area where applicable	Detailed design phase	• TM-EIAO

Project Implementation Schedule

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		through the use of soft landscape works including tree and shrub planting to give man-made slopes a more natural appearance blending into the local rural landscape. Whip sized tree planting is preferred on the face of soil cut slopes and at the crest and toe of the slope, and within berm planters. The smaller, younger plant stock will adapt to their new growing conditions more quickly than larger sized stock and establish a naturalistic effect more rapidly. Hydroseeding will be applied on slope has a gradient more than 30 degree.					
<i>Landscape and Visual Impact (Operational Phase)</i>							
S11.5 Table 11.5.10	L-OP1-DP7	<u><i>Roadside and Amenity Planting</i></u> <ul style="list-style-type: none"> The planting proposals will utilise both native and ornamental species which suitable for roadside planting to soften the built structures and enhance visual amenity of existing and proposed road corridors. The implementation of new planting shall be undertaken as soon as technically feasible using a sectional completion approach during construction phase to ensure the effectiveness of this mitigation during operational phase and as early as possible during the operational phase. 	Enhance local landscape value	Detailed design consultant/Contractor / Operator	The whole project area where applicable	Detailed design, construction and operational phases	• TM-EIAO
S11.5 Table 11.5.10	L-OP2-DP7	<u><i>Compensatory Planting Proposals</i></u> <ul style="list-style-type: none"> As the works are largely located within rural areas and alongside existing roads the planting proposals have sought to utilise all of the available space for new tree and shrub planting to create comprehensive landscape framework which is connected to areas of retained and preserved vegetation and designed to integrate the proposals within their future landscape setting. The planting proposals shall be maintained in accordance with good horticultural practice in order to realise the objectives of the mitigation measures. This includes the replacement of defective plant species on the new planting areas to enhance the aesthetic, landscape and ecological quality of the proposals. Both on-site and off-site opportunities for compensatory planting shall be considered. The preliminary compensatory planting proposal will follow the Technical Circular ETWB TCW No. 3/2006 except for felling of trees for slope works which are exempted from the compensation planting ratio requirement. New tree planting in general roadside planting areas and planting areas within the LMC Loop and above ground structures will utilise a combination of semi-mature to light standard sized stock as shown in Figures 11.9a and 11.9h to 11.9zi in the EIA report to create an instant greening effect at local level. 	Enhance local landscape value	Detailed design consultant/ Contractor	The whole project area where applicable	Detailed design and contraction phases	• TM-EIAO

Project Implementation Schedule

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		<ul style="list-style-type: none"> • New planting areas within the LMC Loop including tree planting in the landscape buffers, open spaces and roadside planting areas will accommodate approximately 5,000 new trees. Planting of more broad-leaf tree species will be considered where space allows and location is suitable for tree establishment. This planting concept would create comfortable shaded area for pedestrians and visitors in open spaces. • New planting areas along the road alignment of WCR (DP2), ECR (DP6) and access road to Flushing Water Service Reservoir (DP7) will accommodate approximately 2,600 new trees. • For the affected tree on the sloping areas, due to constrained growing conditions, whip planting will be proposed on slopes which have gentler gradient at a planting distance of about 1500mm. Slopes that have a gradient more than 30 degree, hydroseeding will be applied instead. Upon full establishment of whip planting and hydroseeding, greening coverage on affected sloping areas will be reinstated. Following the above planting principles, the newly formed and remnant sloping areas along the road alignment would accommodate approximately 500 whips. • Based on a preliminary estimation, the above planting proposal would achieve a replanting ratio of minimum 1:1 in terms of quantity and quality except for slope works according to ETWB TCW No. 3/2006. This tree replanting ratio would compensate the total girth and number of tree loss as well as the total number of tree loss on sloping area. Given the constraints of growing condition and safety reasons of planting larger size tree stock on sloping areas, greening measures on new formed and remnant slopes, including extensive hydroseeding and whips planting, would restore the quality of these greenback drop in rural area. • The species selection for planting areas within the LMC Loop will utilise a range of native, ornamental and amenity tree species. These proposals will be subject to further development during the detailed design phase of the project.. • Proposed planting on slopes will utilise woodland mix with majority of native species on new or disturbed slopes along the WCR and ECR. 					
S11.5 Table 11.5.10	L-OP8-DP7	<p><u>Application of Terraced Podium Landscape, Vertical Greening and Green Roof</u></p> <ul style="list-style-type: none"> • Terraced podium design shall be incorporated into the building design of the LMC Loop Development to maximise the greening opportunities on upper level of the development, 	Enhance local landscape value	Project Proponent / Detailed design consultant/ Contractor /	The whole project area where applicable	Detailed design, construction and operational phases	• TM-EIAO

Project Implementation Schedule

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		<p>reduce the apparent visual mass of the structure and provide visual amenity for views looking from street level as well as in distance at elevated levels as to create better integration with existing landscape and visual context.</p> <ul style="list-style-type: none"> Incorporation of alternative greening measures including vertical and roof greening on building or built structures where condition allow particularly those fronting the public realm to reduce the apparent visual mass of the structure. 		Operator			
S11.6 Table 11.6.4	V-OP1-DP7	<p><u>Roadside and Amenity Planting</u></p> <ul style="list-style-type: none"> The planting proposals will utilise native species to soften the proposed structures. The implementation of new planting shall be undertaken as soon as technically feasible using a sectional completion approach during construction phase to ensure the effectiveness of this mitigation during operational phase and as early as possible during the operational phase. This measure will enhance the visual amenity along existing and proposed road corridor. 	Enhance visual amenity	Detailed design consultant/ Contractor/ Operator	The whole project area where applicable	Detailed design, construction and operational phase	<ul style="list-style-type: none"> TM-EIAO ETWB TCW
S11.6 Table 11.6.4	V-OP2-DP7	<p><u>Compensatory Planting Proposals</u></p> <ul style="list-style-type: none"> As the works are largely located within rural areas and alongside existing roads the planting proposals have sought to utilise all of the available space for new tree and shrub planting to create comprehensive landscape framework which is connected to areas of retained and preserved vegetation and designed to integrate the proposals within their future landscape setting. Both on-site and off-site opportunities for compensatory planting shall be considered for enchantment of landscape and visual context. Design of road layout and built environment shall accommodate enough planting areas for compensatory planting to restore the quality of these greenback drop in rural area. 	Minimise visual impact and enhance visual amenity	Detailed design consultant/ Contractor	The whole project area where applicable	Detailed design and construction phases	<ul style="list-style-type: none"> TM-EIAO ETWB TCW
S11.6 Table 11.6.4	V-OP3-DP7	<p><u>Responsive Design of Buildings and Structure</u></p> <ul style="list-style-type: none"> The design of the proposed building structures and road connections networks will incorporate design features as part of visual mitigation measures including: <u>Integrated Design Approach</u> Building massing - the proposed use of a responsive design for the disposition of the main elements of the proposed scheme including the locations of buildings and utility structures. Grouping of utilities and infrastructure components into proposed buildings as far as technically feasible to reduce the mass of development. The disposition and height profile of the developments and above ground utilities structures responds to the existing context, is 	Minimise visual impact	Detailed design consultant	Development sites on the LMC Loop, STW, and Flushing Water Service Reservoir, PTI at LMC Station and other building where applicable.	Detailed design phase	<ul style="list-style-type: none"> TM-EIAO ETWB TCW

Project Implementation Schedule

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		<p>designed to minimise the wall effects and create a subtle transition at the edges of the site where it meets the rural landscape. Measures may include the creation of setbacks, articulating the development frontage, maintenance of view corridors and the utilisation of gradation or articulated height profile to enhance the sense of visual integration with the existing context, avoid abrupt transitions between the existing and proposed built environment and reduce the apparent visual mass of the proposed developments.</p> <p><u>Treatment of Built Structures</u></p> <ul style="list-style-type: none"> The architectural design should seek to reduce the apparent visual mass of the structures further through the use of materials and finishes such as colour blocking, innovative surface treatments and vertical greening. <p><u>Responsive finishes for the Proposed Structures</u></p> <ul style="list-style-type: none"> In terms of the building finishes natural tones should be considered for the colour palette and non-reflective finishes recommended for the outward facing building facades to reduce the glare effect. <p><u>Innovative Architectural Design</u></p> <ul style="list-style-type: none"> Adoption of recessive colours for the buildings and engineered structures including the proposed viaducts and noise barrier finishes and colour blocking to reduce the collective visual mass of the development. 					
S11.6 Table 11.6.4	V-OP5-DP7	<p><u>Design of Engineering Structures</u></p> <p>The design of the proposed Engineering Structures such as the proposed viaducts elevated PTI, slip road and service reservoir should pay particular attention to the appearance and construction methods of the structures, these would include the following:</p> <ul style="list-style-type: none"> The detailed design landscape consultants shall work in unison with the engineers on the aesthetic aspects of the structures and their relationship with the landscape. Wherever light levels, the water regime and the requirements of the environmental mitigation measures permit, trees and vegetation would be reinstated below or adjacent to the structures. Irrigation may be required in some locations and hard landscape solutions considered where the clearance is low. Planting would be used wherever possible to minimise the apparent height of structures and to soften their appearance in medium and long distance views. The design of the viaduct should avoid unnecessary visual clutter; this would be achieved through the co-ordination of the various engineering disciplines involved to arrive at integrated design solutions. Such as the location of columns of viaduct should not block any views from VSRs in the 	Minimise visual impact	Detailed design consultant	The whole project area where applicable	Detailed design phase	<ul style="list-style-type: none"> TM-EIAO ETWB TCW ACABAS

Project Implementation Schedule

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		<p>proximity and the shape of column should be slim down as far as technically feasible to reduce the structural mass at street level, at where space is allowed planting area for shade tolerant tree, shrub and climber species would be provide at the base of the column to soften the vertical emphasis at street level.</p> <ul style="list-style-type: none"> Fair faced concrete would not be used for viaduct parapets to minimise glare from the structure and to avoid the visually detracting effect of staining. Drainage and utilities to be concealed within the structures. 					
S11.6 Table 11.6.4	V-OP8-DP7	<p><u>Application of Terraced Podium Landscape, Vertical Greening and Green Roof</u></p> <ul style="list-style-type: none"> Terraced podium design shall be incorporated into the building design of the LMC Loop Development to maximise the greening opportunities on upper level of the development, reduce the apparent visual mass of the structure and provide visual amenity for views looking from street level as well as in distance at elevated levels as to create better integration with existing landscape and visual context. Incorporation of alternative greening measures including vertical and roof greening on building or built structures where condition allow particularly those fronting the public realm to reduce the apparent visual mass of the structure. 	Enhance visual amenity and integration of existing visual context	Project Proponent / Detailed design consultant/ Contractor / Operator	The whole project area where applicable	Detailed design, construction and operational Phase	<ul style="list-style-type: none"> TM-EIAO ETWB TCW
Ecology							
S12.7	E1-DP7	<p><u>Construction run-off</u></p> <ul style="list-style-type: none"> Temporary sewerage and drainage will be designed and installed to collect wastewater and prevent it from entering nearby water bodies; Proper locations well away from nearby water bodies will be used for temporary storage of materials (i.e. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction debris and spoil, and these will be identified before commencement of works; To prevent muddy water entering nearby water bodies, work sites close to nearby water bodies will be isolated, using such items as sandbags or silt curtains with lead edge at bottom and properly supported props. Other protective measures will also be taken to ensure that no pollution or siltation occurs to the water gathering grounds of the work site; If temporary access along a riverbed is unavoidable, this will be kept to the minimum in width and length. Temporary river crossings will be supported on stilts above the river bed; Stockpiling of construction materials, if necessary, will be 	Minimize the indirect impact from the increasing suspended solids and pollutants in LMC Meander	Contractor	Within project construction site	Construction phase	

Project Implementation Schedule

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		<p>properly covered and located away from nearby water bodies;</p> <ul style="list-style-type: none"> • Construction debris and spoil will be covered and/or properly disposed of as soon as possible to avoid being washed into nearby water bodies; • Construction effluent, site run-off and sewage will be properly collected and/or treated. Wastewater from any construction site will be minimised via the following in descending order: reuse, recycling and treatment; • Proper locations for discharge outlets of wastewater treatment facilities well away from sensitive receivers will be identified (i.e. treated wastewater will not be discharged into LMC Meander, natural streams, marsh, reedbed, active or abandoned fish ponds); • Adequate lateral support will be erected where necessary in order to prevent soil/mud from slipping into the Ecological Area or LMC Meander; • Site boundary will be clearly marked and any works beyond the boundary strictly prohibited; • Regular water monitoring and site audit will be carried out at adequate points along LMC Meander, and at the outfalls of the natural streams around LMC Loop. If the monitoring and audit results show that pollution occurs, adequate measures including temporarily cessation of works will be considered. 					
S12.7	E2-DP7	<p><u>Pollutant Runoff to Downstream areas from Accidental Spillage</u></p> <ul style="list-style-type: none"> • Prepare an emergency contingency plan • The plan will include, but not be limited to, the following: <ul style="list-style-type: none"> - Potential emergency situations; - Chemicals or hazardous materials used on-site (and their location); - Emergency response team; - Emergency response procedures; - List of emergency telephone hotlines; - Locations and types of emergency response equipment; - Training plan and testing for effectiveness. 	Minimize indirect impact from pollutant runoff to downstream areas from accidental spillage	Contractor / Operator	Areas within project site near streams	Construction and operational phases	
S12.7	E3-DP7	<ul style="list-style-type: none"> • Use opaque, non-transparent, non-reflective noise barriers for all developments associated with the Project. 	Minimize the mortality impacts on birds	Project Proponent / Detailed design consultant/ Contractor/ Operator	Areas within project site	Detailed design, construction and operational phases	
S12.7	E4-DP7	<ul style="list-style-type: none"> • Minimize loss of natural vegetation along LMC Meander, and suitable replacement planting with possible installation 	Minimize impacts on Eurasian Otter	Detailed design	Construction site within the project	Detailed design and	

Project Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
		<p>of otter holts and the provision of potential feeding area and spraint locations for otters in the stabilized bank subject to detailed design.</p> <ul style="list-style-type: none"> No significant change to velocity of water flow, water level or water quality. No direct lighting on Meander. 3m high, dull green site boundary fence for all developments associated with the project. Pre-construction surveys for otter holts or natal dens will be conducted in LMC Loop before the commencement of construction works. Work in the area of any otter holt found to cease pending examination by experienced Ecologist. If in use for breeding, works in the area will temporarily stop until end of breeding activity. No construction activities within 100m of LMC Meander between one hour prior to sunset and one hour after sunrise. Provision of compensatory reed marsh in the Ecological Area in LMC Loop, including open water channels and islands within the reed marsh, both of which features are considered to be used by the species. 		consultant / Contractor		construction phases	
S12.7	E5-DP7	<ul style="list-style-type: none"> Mitigation measures for Eurasian Otter generally also apply. Eight wildlife underpasses (four at Ma Tso Lung, four along boundary fence road) and a vegetated, 70m-wide overpass over the depressed section of the Eastern Connection Road with barrier fence along at-grade section to avoid road kill. In addition, section above the underpass as it enters below the Meander will also allow mammal passage. Fencing around construction areas of Eastern Connection Road should be designed so as to not block the passage of larger, non-flying mammals. 	Minimize impacts on other mammals	Detailed design consultant/ Contractor	Within project site	Detailed design and construction phases	
S12.7	E6-DP7	<ul style="list-style-type: none"> Mitigation for other fauna, such as compensatory reed marsh and ecological enhancement of fish pond habitat will also provide habitat suitable for herpetofauna. Survey and translocation, if required and if feasible, of individuals present in areas of the Ma Tso Lung stream network in advance of construction will be carried out. Site boundary fencing of construction areas should be designed to prevent entry by herpetofauna. 	Minimize impacts on herpeto fauna	Detailed design consultant/ Contractor	Within project site	Detailed design, construction phases	
S12.7	E7-DP7	<ul style="list-style-type: none"> Refer to E2 and E3 	Prevent impacts on Rose Bitterling, small snakehead and <i>Somanniathelphus zanklon</i>	Contractor	Within project site	Construction phase	
S12.7	E8-DP7	<ul style="list-style-type: none"> Refer to E2 and E3 Effective measures to prevent access to the stream by site staff should be implemented, include site boundary fencing 	Protect Paradise Fish	Contractor	Within project site	Construction phase	

Project Implementation Schedule

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S12.7	E9-DP7	<ul style="list-style-type: none"> Minimal night-time lighting No direct light on Meander 	Minimize impacts on LMC Meander	Contractor / Operator	All	Construction and operational phases	
S12.9	EG2-DP7	All generic mitigation measures proposed in Tables 12.82a and 12.82b in the EIA report.	Avoid, minimize and mitigate overall ecological impact.	Project proponent / contractor / detailed design consultant / developer / operator	All areas.	All phases	• EIAO
Fisheries (Construction Phase)							
S13.7	F4-DP7	During the construction phase, a layer of sheet pile wall will be erected along the site boundary adjacent to fish ponds after commencement of site works. The sheet pile wall will be constructed by silent piling method (Press-in method) which induces minimal vibration. Therefore the stability of the fish pond bund will not be influenced by the construction of the sheet pile wall, subsequent construction works and the loading from the road during operational phase. In addition, the sheet pile wall will have grouting or a grout curtain to avoid water seepage from the fish pond to the excavation area. With these measures, significant impacts are not anticipated.	Bund stability	Contractor	Fish ponds	Construction phase	• TM-EIAO
S13.7	F5-DP7	Temporary traffic arrangements will be instigated to maintain or provide alternative access to fish ponds during construction phase.	Prevent Blockage of Access Roads to Fish Ponds	Contractor	Fish ponds	Construction phase	• TM-EIAO
S13.7	F6-DP7	Standard mitigation measures to control site runoff and other pollutants caused by construction activities and good site practices will be implemented during the construction phase of the Project. Excavated material and other inert construction wastes produced will be transferred to proper recipients (i.e. landfill) (see Waste Management Section). Sewage from the proposed development will be dealt with via a sewerage system and will not be discharged directly to surrounding water bodies.	Avoid water quality impact	Contractor	Fish ponds	Construction phase	• TM-EIAO
S13.7	F7-DP7	<p>Dust Minimization</p> <ul style="list-style-type: none"> During all excavation works, good site practice should be adopted to minimize impacts on fisheries. The below site practices should be adopted during this time. 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; 	Dust minimization	Contractor	Fish ponds	Construction phase	• TM-EIAO

Project Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
		<ul style="list-style-type: none"> • 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; • Excavation profiles must be properly designed and executed with attention to the relevant requirements for environment, health and safety; • In case the soil to be excavated is situated beneath the groundwater table, it may be necessary to lower the groundwater table by installing well points or similar means; • Supply of suitable clean backfill material after excavation, if required; • Vehicles containing any excavated materials should be suitably covered to limit potential dust emissions or contaminated run-off, and truck bodies and tailgates should be sealed to prevent any discharge during transport or during wet season; • Speed control for the trucks carrying contaminated materials should be enforced; and • Vehicle wheel washing facilities at the site's exit points should be established and used. 					
Fisheries (both Construction and Operational Phase)							
S13.7	F8-DP7	<p><u>Contingency plan</u> The contractor should prepare an emergency contingency plan for actions to be taken if significant impacts, such as accidental spillage of chemicals, water seepage from fish ponds, damaged/ destabilized pond bunds, pond water contamination by site runoff, on fish ponds occur. The contractor should submit the emergency contingency plan dealing with, but not limited to, the aforementioned potential impacts to the engineer for review, comment and approval. The fish pond operators will also be consulted for the details of the contingency plan, which will also be submitted to AFCD for review and comment. The plan should include, but not limited to, the following:</p> <ul style="list-style-type: none"> • Potential emergency situations; • Chemicals or hazardous materials used on-site (and their location); • Emergency response team; • Emergency response procedures; • List of emergency telephone hotlines; • Locations and types of emergency response equipment; • Training plan and testing for effectiveness. 	Deal with any accidental spillage event	Contractor / Operator	Fish ponds	Construction and operational phases	• TM-EIAO

Project Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
<i>Food Safety (Construction Phase)</i>							
S15	F1-DP7	<p><u>Contingency Plan</u> The contractor should have effective communication with Food and Environmental Hygiene Department (FEHD) / Centre of Food Safety (CFS), on food surveillance and food incidents. Food Surveillance Programme (http://www.cfs.gov.hk/english/programme/programme_fs/programme_fs.html). is undertaken by CFS to inspect food safety in Hong Kong, with a three-tier surveillance strategy (consisting of routine food surveillance, targeted food surveillance and seasonal food surveillance). Under this programme, aquatic products (including pond fish) at import, wholesale and retail levels are sampled for microbiological (i.e. bacteria and viruses), chemical (i.e. natural toxins, food additives and contaminants) and radiation testings. All food safety surveillance results of by a monthly “Food Safety Report” in press releases and also presented in CFS website. If pond fish samples do not comply with food safety standards and they are verified to be from fish ponds of concerned under this study through “food tracing”, fish selling shall be stopped as instructed by CFS.</p>	Minimize significant impacts on fish ponds	Contractor	Fish pond within project site	Construction phase	• TM-EIAO
S15	F2-DP7	<p><u>Dust Minimization</u></p> <ul style="list-style-type: none"> • During all excavation works, good site practice should be adopted to minimize the release of TSP, impact of land contamination and the associated food safety implications. The below site practices should be adopted during excavation works. • 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; • 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; • Excavation profiles must be properly designed and executed with attention to the relevant requirements for environment, health and safety; • In case the soil to be excavated is situated beneath the 	Dust minimization	Contractor	Fish pond within project site	Construction phase	• Food Adulteration (Metallic Contamination) Regulations

Project Implementation Schedule

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		<p>groundwater table, it may be necessary to lower the groundwater table by installing well points or similar means;</p> <ul style="list-style-type: none"> • Supply of suitable clean backfill material after excavation, if required; • Vehicles containing any excavated materials should be suitably covered to limit potential dust emissions or contaminated run-off, and truck bodies and tailgates should be sealed to prevent any discharge during transport or during wet season; • Speed control for the trucks carrying contaminated materials should be enforced; and • Vehicle wheel washing facilities at the site's exit points should be established and used. 					

Project Implementation Schedule

Note: Chapters 1 to 2 of the EIA report present the background information of the Project, identified designated project, concurrent projects, objectives and scope for various environmental aspects, and description on recommended outline development plan. Chapters 3 to 14 of the EIA report present the EIA findings and mitigation measures are described below with cross-reference to the EIA report. Chapters 16 to 18 summarize the environmental outcomes and describe the environmental monitoring requirements and conclusion.

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
<i>Project components other than Schedule 2 Designated Projects.</i>							
<i>Construction Dust Impact</i>							
S3.8	D1	Mitigation measures in form of regular watering under a good site practice should be adopted. Watering once per hour on exposed worksites and haul road is proposed to achieve dust removal efficiency of 92.1%. While the above watering frequencies are to be followed, the extent of watering may vary depending on actual site conditions but should be sufficient to maintain an equivalent intensity of no less than 1.6 L/m ² to achieve the respective dust removal efficiencies	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> • APCO To control the dust impact to meet HKAQO and TM-EIAO
S3.8	D2	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> • APCO To control the dust impact to meet HKAQO and TM-EIAO
S3.8	D3	<p>Following dust suppression measures should also be incorporated by the Contractor to control the dust nuisance throughout the construction phase</p> <ul style="list-style-type: none"> • 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; • A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones; • The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores; • When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly 	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> • APCO To control the dust impact to meet HKAQO and TM-EIAO

Project Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
		<p>maintained throughout the construction period.</p> <ul style="list-style-type: none"> • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport should be totally enclosed by impervious sheeting; • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides; • Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed; • Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and • Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shortcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies. 					
S3.8	D4	Implement regular dust monitoring under EM&A programme during the construction phase.	Monitoring of dust impact	Contractor	Selected representative dust monitoring station	Construction phase	• TM-EIAO
<i>Air Quality Impact (Operational Phase)</i>							
S3.8	D6	The project proponent will undertake to implement bioremediation of 98% odour removal efficiency along a section of Shenzhen River in about 4.2 km.	Control cumulative odour problem	Project proponent / Detailed design consultants / operator	Shenzhen River	Prior to operation of the Project and operational phase	• TM-EIAO
S3.8	Od1	An in-situ trial test to assess the effectiveness on AVS and odour	Control cumulative odour	Project	Shenzhen River	Detailed	• TM-EIAO

Project Implementation Schedule

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		removal of bioremediation works will be conducted. The relationship between odour emission and other major odour indicator in-term of AVS and Redox potential will be established. The established AVS versus odour relationship will be made use for implementation of Shenzhen River bioremediation work committed by the project proponent.	problem	proponent / detailed design consultants / operator		design stage, construction phase and operational phase	
S3.8	Od2	As a short-term enhancement and contingency measure for reduction of indoor odour level before the completion of mitigation measures on Shenzhen River, the developers could consider to install odour removal system (i.e. activated carbon filter or selective catalytic filter etc.) capable of 95% removal efficiency in buildings with central air conditioning in the development.	Control cumulative odour problem	Developer/ detailed design consultants / operator	All buildings	Detailed design stage, construction phase and operational phase	• TM-EIAO
Noise Impact (Construction Phase)							
S4.8	N-CP1	Implement the following good site management practices: <ul style="list-style-type: none"> only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; mobile plant should be sited as far away from NSRs as possible and practicable; material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities. 	Control construction airborne noise	Contractor	All construction sites where practicable	Construction phase	• Annex 5, TM-EIA
S4.8	N-CP2	Install temporary site hoarding (approx 2.4m high) located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period.	Reduce the construction noise levels at low-level zone of NSRs through partial screening.	Contractor	All construction sites where practicable	Construction phase	• Annex 5, TM-EIA
S4.8	N-CP3	Install movable noise barriers and full enclosure, screen the noisy plants including air compressor and generator.	Screen the noisy plant items to be used at all construction sites	Contractor	All construction sites where practicable	Construction phase	• Annex 5, TM-EIA
S4.8	N-CP4	Use of "Quiet" Plant and Working Methods	Reduce the noise levels of plant items	Contractor	All construction sites where practicable	Construction phase	• Annex 5, TM-EIA
S4.8	N-CP5	Sequencing operation of construction plants where practicable.	Operate sequentially within the same work site to reduce the construction airborne noise	Contractor	All construction sites where practicable	Construction phase	• Annex 5, TM-EIA
S4.8	N-CP6	Implement a noise monitoring under EM&A programme.	Monitor the construction noise levels at the selected representative locations	Contractor	Selected representative noise monitoring stations	Construction phase	• TM-EIA

Project Implementation Schedule

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S4.8	N-CP8	Provide temporary noise barrier during construction phase.	Control airborne noise from construction access road traffic	Contractor	Refer to Figure 4-8 of the EIA report	Construction phase	• Noise Control Ordinance and its TM
Noise Impact (Operational Phase)							
S4.8	N-OP1	Provide noise barrier where necessary before operation of the proposed project.	Control operational airborne noise due to road traffic	Project Proponent / Contractor	Refer to Figures 4.9, 4.9a to d in the EIA Report	Prior to operation of the Project	Noise Control Ordinance and its TM
S4.8	N-OP2	Road traffic noise from internal roads <ul style="list-style-type: none"> Provision of central air conditioning for the first layer of noise sensitive receivers facing Road M1 Minimum 5m setback from planned sensitive uses inside LMC Loop. 	Control operational airborne noise due to road traffic	Developer / Detailed design consultants / Contractor /	The first layer of NSRs facing Road M1 of LMC Loop	Prior to operation of relevant buildings	Noise Control Ordinance and its TM
S4.8	N-OP3	DCS (provisional) – North The maximum allowable sound power level of 75 dB(A) is specified to control impact on noise sensitive uses at Hoo Hok Wai to acceptable noise level, while 84 dB(A) is specified for the scenario with no sensitive uses at HHW. DCS (provisional) – South The maximum allowable sound power level of 78 dB(A) is specified to control impact on noise sensitive uses at Ha Wan Tsuen to acceptable noise level	Control operational airborne noise due to DCS	Detailed design consultant / Contractor / Operator	DCS	Detailed design, construction and operational phases (Prior to operation of relevant facilities)	Noise Control Ordinance and its TM
Water Quality Impact (Construction Phase)							
S5.7	W1-CP1	<u>Construction Runoff and Site Drainage</u> In accordance with the Practice Note for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN 1/94), construction phase mitigation measures, where appropriate, should include the following: <ul style="list-style-type: none"> Update and implementation of Stormwater Pollution Control Plan At the start of site establishment, perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works and erosion and sedimentation control facilities implemented. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities. The design of the temporary on-site drainage system will be undertaken by the contractor prior to the commencement of construction. Diversion of natural stormwater should be provided as far as possible. The design of temporary on-site drainage should prevent runoff going through site surface, construction machinery and equipments in order to avoid or minimize polluted runoff. Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m³ capacities, are recommended as a general mitigation measure which can be 	Minimize water quality impact from construction site runoff and general construction activities	Contractor	All construction sites where practicable	Construction phase	• Water Pollution Control Ordinance • ProPECC PN1/94 • TM-EIAO • TM-DSS

Project Implementation Schedule

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		<p>used for settling surface runoff prior to disposal. The system capacity shall be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped.</p> <ul style="list-style-type: none"> • The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a silt/sediment trap. The silt/sediment traps should be incorporated in the permanent drainage channels to enhance deposition rates. • The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94. The detailed design of the sand/silt traps should be undertaken by the contractor prior to the commencement of construction. • Construction works should be programmed to minimize surface excavation works during the rainy seasons (April to September). All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means. • All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas. • Measures should be taken to minimise the ingress of site drainage into excavations. If the excavation of trenches in wet periods is necessary, it should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities. • All open stockpiles of construction materials (for example, aggregates, sand and fill material) of should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system. • Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers. • Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarized in Appendix A2 of ProPECC PN 1/94. Particular 					

Project Implementation Schedule

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		<p>attention should be paid to the control of silty surface runoff during storm events.</p> <ul style="list-style-type: none"> • All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities should be provided at every construction site exit where practicable. Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains. • Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain. • Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts. • All fuel tanks and storage areas should be provided with locks and sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby. • Regular environmental audit on the construction site should be carried out in order to prevent any malpractices. Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the meander, wetlands and fish ponds. 					
S5.7	W2-CP	<p><u>Groundwater from Contaminated Area</u></p> <ul style="list-style-type: none"> • No mitigation measure is required for groundwater treatment in LMC Loop. • Additional investigation is required to identify if contaminated groundwater is found • If the investigation results indicated that the groundwater to be generated from construction works would be contaminated, the contaminated groundwater should be either discharged into recharged wells, or properly treated in compliance with the requirements of Technical Memorandum on Standards for Effluents Discharged into Drainage on Sewerage Systems, Inland and Coastal Waters. • If recharged well method were used, the groundwater quality in the recharged well should not be affected by recharging operation, 	Minimize groundwater quality impact from contaminated area	Contractor	Areas where contamination is found.	Construction phase	<ul style="list-style-type: none"> • Water Pollution Control Ordinance • TM-DSS • TM-EIAO

Project Implementation Schedule

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		<p>i.e. the pollution levels of the recharged groundwater should not be higher than that in the recharging wells.</p> <ul style="list-style-type: none"> If treatment and discharge method were used, the design of wastewater treatment facilities, such as active carbon and petrol interceptor, should be submitted to the EPD and a discharge license should be obtained under the WPCO through the Regional Offices of EPD. 					
S5.7	W3-CP	<p><u>Sewage from Workforce</u></p> <ul style="list-style-type: none"> Portable chemical toilets and sewage holding tanks should be provided for handling the construction sewage generated by the workforce. A licensed contractor should be employed to provide appropriate and adequate portable toilets to cater 0.15m³/day/employed populations and be responsible for appropriate disposal and maintenance. Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment during the construction phase of the Project. Regular environmental audit on the construction site should be conducted in order to provide an effective control of any malpractices and achieve continual improvement of environmental performance on site. 	Minimize water quality from sewage effluent	Contractor	All construction sites where practicable	Construction phase	<ul style="list-style-type: none"> Water Pollution Control Ordinance TM-DSS
S5.7	W4-CP	<p><u>Riverbanks Formation</u></p> <ul style="list-style-type: none"> In order to prevent sediment transport during riverbank works, deployment of silt curtain should be implemented, especially when construction works encroach or occur in close distance to water body. It is recommended to carry out all the riverbank works within a cofferdam or diaphragm wall. Water quality of the Shenzhen River and the meander would be monitored to ensure effectiveness of the implemented mitigation measures. 	Minimize water quality impact from riverbank works	Contractor	Riverbank works	Construction phase	<ul style="list-style-type: none"> Water Pollution Control Ordinance TM-DSS TM-EIAO
S5.7	W1-CP-BR	<p><u>Bio-remediation in Shenzhen River</u></p> <ul style="list-style-type: none"> Water quality monitoring and audit is recommended to ensure that the proposed bio-remediation operation would not result in adverse water quality impact. Details of the water quality monitoring programme are presented in the EM&A Manual. If unacceptable water quality impact in the receiving water is recorded, additional measures such as slowing down, or rescheduling of works should be implemented as necessary. 	Minimize water quality impact from bio-remediation of Shenzhen River	Contractor	Shenzhen River where practicable	Construction phase	<ul style="list-style-type: none"> Water Pollution Control Ordinance TM-EIAO
Water Quality Impact (Operational Phase)							
S5.7	W1-OP-D1	<p><u>Non-point sources runoff (surface runoff)</u></p> <ul style="list-style-type: none"> Runoff will be controlled by management practices and will be intercepted by silt traps before discharged into ecological area. 	Minimize water quality from non point source pollutant	Operator	All area where practicable	Operational stage	<ul style="list-style-type: none"> Water Pollution Control Ordinance TM-DSS

Project Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
		<ul style="list-style-type: none"> Regular cleaning should be undertaken twice a week and it is recommended each of the cleaning events should not be separated by more than four days, preferably using either manually or vacuum air sweeper/truck equipped with side broom. The collected pollutants would be tankered away for off-site disposal at landfill sites. During the EM&A programme, it is recommend to verify the efficiency of silt traps and cleaning frequencies by water quality monitoring during typical rainstorm events. 					
S5.7	W1-OP-DCS	Effluent discharge from district cooling system would only occur during emergency or maintenance condition. All the effluent will be discharged to the proposed STW for treatment and adverse water quality impact is not anticipated.	Avoid adverse water quality impact from DCS.	Detailed design consultant / Operator	District cooling system	Detailed design and operational stage	<ul style="list-style-type: none"> Water Pollution Control Ordinance TM-DSS
Waste Management (Construction phase)							
S7.6	WM1	<p><u>Waste Reduction Measures</u> Waste reduction is best achieved at the planning and design phase, as well as by ensuring the implementation of good site practices. The following recommendations are proposed to achieve reduction:</p> <ul style="list-style-type: none"> segregate and store different types of waste in different containers, skip or stockpiles to enhance reuse or recycling of materials and their proper disposal; proper storage and site practices to minimize the potential for damage and contamination of construction materials; plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste; sort out demolition debris and excavated materials from demolition works to recover reusable/recyclable portions (i.e. soil, broken concrete, metal etc.); provide training to workers on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling. 	Reduce waste generation	Contractor	All construction sites where practicable	Prior to the commencement of construction	<ul style="list-style-type: none"> Waste Disposal Ordinance
S7.6	WM2	Prepare Waste Management Plan and submit to the Engineer for approval	Minimize waste generation during construction	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal Ordinance
S7.6	WM3	<p><u>Good Site Practice</u> The following good site practices are recommended throughout the construction activities:</p> <ul style="list-style-type: none"> nomination of an approved personnel, such as a site manager, to be responsible for the implementation of good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site; training of site personnel in site cleanliness, appropriate waste management procedures and concepts of waste reduction, reuse 	Minimize waste generation during construction	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal Ordinance

Project Implementation Schedule

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		<ul style="list-style-type: none"> and recycling; provision of sufficient waste disposal points and regular collection for disposal; appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; 					
S7.6	WM4	<p><u>Storage of Waste</u> The following recommendation should be implemented to minimize the impacts:</p> <ul style="list-style-type: none"> waste such as soil should be handled and stored well to ensure secure containment; stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; different locations should be designated to stockpile each material to enhance reuse; 	Minimize waste impacts from storage	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal Ordinance
S7.6	WM5	<p><u>Collection and Transportation of Waste</u> The following recommendation should be implemented to minimize the impacts:</p> <ul style="list-style-type: none"> remove waste in timely manner; employ the trucks with cover or enclosed containers for waste transportation; obtain relevant waste disposal permits from the appropriate authorities; and disposal of waste should be done at licensed waste disposal facilities. 	Minimize waste impacts from storage	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal Ordinance
S7.6	WM6	<p><u>Excavated and C&D Material</u> Wherever practicable, C&D materials should be segregated from other wastes to avoid contamination and ensure acceptability at Public Fill Reception Facilities areas or reclamation sites. The following mitigation measures should be implemented in handling the excavated and C&D materials:</p> <ul style="list-style-type: none"> maintain temporary stockpiles and reuse excavated fill material for backfilling; carry out on-site sorting; make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; and implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified. <p>The recommended C&D materials handling should include:</p> <ul style="list-style-type: none"> On-site Sorting of C&D Materials 	Minimize waste impacts from excavated and C&D materials	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Land (Miscellaneous Provisions) Ordinance Waste Disposal Ordinance ETWB TCW No. 19/2005

Project Implementation Schedule

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		<ul style="list-style-type: none"> Reuse of C&D Materials Use of Standard Formwork and Planning of Construction Materials Purchasing Provision of Wheel Wash Facilities Details refer to Section 7.6.1.4 of the EIA report					
S7.6	WM7	<u>Contaminated Soil</u> As a precaution, it is recommended that standard good site practice should be implemented during the construction phase to minimize any potential exposure to contaminated soils or groundwater. The details of mitigation measures to minimize the potential environmental implications arising from the handling of contaminated materials refer to Land Contamination Section.	Remediate contaminated soil	Contractor	All construction sites where applicable	Construction phase	<ul style="list-style-type: none"> Practice Guide for Investigation and Remediation of Contaminated Land
S7.6	WM8	<u>Chemical Waste (Construction)</u> <ul style="list-style-type: none"> If chemical wastes are produced at the construction site, the Contractors should register with EPD as chemical waste producers. Chemical wastes should be stored in appropriate containers and collected by a licensed chemical waste contractor. Chemical wastes (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while the chemical waste that cannot be recycled should be disposed of at either the Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation. 	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal (Chemical Waste) (General) Regulation Code of Practice on the Packaging, Labelling and Storage of Chemical Waste
S7.6	WM9	<u>General Waste</u> <ul style="list-style-type: none"> General refuse should be stored in enclosed bins separately from construction and chemical wastes. Recycling bins should also be placed to encourage recycling. Preferably enclosed and covered areas should be provided for general refuse collection and routine cleaning for these areas should also be implemented to keep areas clean. A reputable waste collector should be employed to remove general refuse on a daily basis. 	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal Ordinance
S7.6	WM10	<u>Sewage</u> <ul style="list-style-type: none"> The WMP should document the locations and number of portable chemical toilets depending on the number of workers, land availability, site condition and activities. Regularly collection by licensed collectors should be arranged to minimize potential environmental impacts. 	Minimize production of sewage impacts	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Waste Disposal Ordinance
Waste Management (Operational Phase)							
S7.6	WM2-B	<u>Recommendation on Municipal Solid Waste</u> Implementation of a waste prevention programme as well as materials recovery and recycling programme are recommended in order to minimize the production of waste. The programmes should consist of the	Minimize the production of municipal solid waste	Developer/ Operator	The whole project area where applicable	Operational phase	<ul style="list-style-type: none"> Waste Disposal Ordinance

Project Implementation Schedule

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		<p>following components:</p> <ul style="list-style-type: none"> • electronic communication and double-sided copying should be used as far as practical to reduce the quantities of paper; • green products purchasing as far as possible; • using durable tableware; • recycling bins such as paper, metals, plastics, fluorescent lamps etc. should be placed at prominent locations to encourage recycling; • banner should be erected at the recycling bins area; • operator should make arrangements with the recycler to collect and recycle used toner cartridges as well as the scrap electronic equipments, such as computer to avoid disposal at landfills as far as practicable; • staff awareness training should be provided on waste management procedures, including waste reduction and recycling; • operator should set up waste reduction and recycled target ; and • operator should participate in the Wastewise Label scheme to facilitate waste reduction. <p>General refuse from buildings should be collected with lidded bins and delivered to a central collection point and stored in enclosed containers to prevent windblown, vermin, water pollution and visual impact. At least daily collection should be arranged by the waste collector. Odour removal installations are also recommended to treat the exhaust air.</p> <p>Wastewater generated should be diverted to the proposed STW through sewerage connections for treatment prior to discharge. Such arrangements would minimize potential environmental impacts.</p> <p>Furthermore, the low emission trucks, such as EURO V or later model would be used for waste transportation to minimize traffic emission and the potential air quality impacts.</p> <p>The above recommendations are proposed as technical guidelines for future developers' consideration and will be subject to detailed design.</p>					
S7.6	WM3-B	<p><u>Recommendation on Chemical Waste (Operation)</u></p> <p>Plant / equipment maintenance schedule as well as laboratory testing should be designed to optimise effectiveness and to minimize the generation of chemical waste. The operators should register with EPD as chemical waste producers. Chemical wastes should be stored in appropriate containers and collected by a licensed chemical waste contractor All chemical wastes generated from laboratories as well as from machinery maintenance and servicing 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.</p>	Prevent health hazards to operators	Developer/ Operator	The whole project area where applicable	Operational phase	<ul style="list-style-type: none"> • Waste Disposal Ordinance • Waste Disposal (Chemical Waste) (General) Regulation • Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes
S7.6	WM4-B	<p><u>Recommendation on Food Waste</u></p> <p>Food waste should be collected separately with using enclosed containers and treated by on-site composting in an enclosed area. The above recommendations are proposed as technical guidelines for future</p>	Minimize impacts from food waste	Developer/ Operator	The whole project area where applicable	Operational phase	<ul style="list-style-type: none"> • Waste Disposal Ordinance

Project Implementation Schedule

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		developers' consideration and will be subject to detailed design. Since there is no sufficient information at present, the future developers shall also observe the EIAO requirements when the green initiative of "on-site composting" or any other relevant proposal(s) is/are considered by the future developers.					
Land Contamination							
S8.7	LC1	<u>Remediation of arsenic-contaminated soil</u> <ul style="list-style-type: none"> • "Solidification/Stabilization" (S/S) treatment method was proposed for the remediation of arsenic-contaminated soil. Toxicity Characteristic Leaching Procedure (TCLP) test should be undertaken after S/S in order to ensure that the contaminant will not leach to the environment. Unconfined Compressive Strength (UCS) test should be conducted, and not less than 1MPa should be met prior to the backfilling or stockpiled for future reuse within the study area. Off-site disposal or reuse of the solidified material is not allowed. 	To remediate arsenic-contaminated soil	Project Proponent / Contractor	LMC Loop, contaminated area	Prior to commencement of construction works within the contaminated area	<ul style="list-style-type: none"> • TM-EIAO • Practice Guide (PG) for Investigation and Remediation of Contaminated Land • Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management • Guidance Notes for Contaminated Land Assessment and Remediation • Practice Guide for Investigation and Remediation of Contaminated Land
S8.7	LC2	<u>Excavation and Transportation</u> <ul style="list-style-type: none"> • Excavation profiles must be properly designed and executed with attention to the relevant requirements for environment, health and safety; • In case the soil to be excavated is situated beneath the groundwater table, it may be necessary to lower the groundwater table by installing well points or similar means; • Excavation should be carried out during dry season as far as possible to minimise contaminated runoff from contaminated soils; • Stockpiling site(s) should be lined with impermeable sheeting and bunded. Stockpiles should be properly covered by impermeable sheeting to reduce dust emission during dry season or contaminated run-off during rainy season. Watering should be avoided on stockpiles of contaminated soil to minimise contaminated runoff; • Supply of suitable clean backfill material after excavation, if required; • Vehicles containing any excavated materials should be suitably 	To minimise the potential environmental impacts arising from the handling of contaminated materials	Contractor	Contaminated area	Prior to commencement of construction works within the contaminated area	<ul style="list-style-type: none"> • TM-EIAO • Practice Guide (PG) for Investigation and Remediation of Contaminated Land • Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management • Guidance Notes for Contaminated Land Assessment and Remediation • Practice Guide for Investigation and Remediation of

Project Implementation Schedule

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		<p>covered to limit potential dust emissions or contaminated run-off, and truck bodies and tailgates should be sealed to prevent any discharge during transport or during wet season;</p> <ul style="list-style-type: none"> • Speed control for the trucks carrying contaminated materials should be enforced; and • Vehicle wheel washing facilities at the site's exit points should be established and used. 					Contaminated Land
S8.7	LC3	<p><u>Solidification/Stabilization</u></p> <ul style="list-style-type: none"> • The loading, unloading, handling, transfer or storage of cement should be carried out in an enclosed system; • Mixing process and other associated material handling activities should be properly scheduled to minimise potential noise impact and dust emission; • The mixing facilities should be sited as far apart as practicable from the nearby noise sensitive receivers; • Mixing of contaminated soil and cement / water / other additive(s) should be undertaken at a solidification plant to minimise the potential for leaching; • Runoff from the solidification / stabilization area should be prevented by constructing a concrete bund along the perimeter of the solidification / stabilization area; • The run-off contained in the concrete bund area along the perimeter of the paved solidification / stabilization area, if any, will be collected, stored and used for the mixing process of cement / contaminated soil; • If stockpile of treated soil is required, the stockpiling site(s) should be lined with impermeable sheeting and banded. Stockpiles should be properly covered by impermeable sheeting to reduce dust emission during dry season or site run-off during rainy season; and • If necessary, there should be clear and separated areas for stockpiling of untreated and treated materials. 	To minimise the potential environmental impacts arising from the handling of contaminated materials	Contractor	Contaminated area	The course of remediation	<ul style="list-style-type: none"> • TM-EIAO • Practice Guide (PG) for Investigation and Remediation of Contaminated Land • Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management • Guidance Notes for Contaminated Land Assessment and Remediation • Practice Guide for Investigation and Remediation of Contaminated Land
S8.7	LC4	<p><u>Safety Measures</u></p> <ul style="list-style-type: none"> • Set up a list of safety measures for site workers; • Provide written information and training on safety for site workers; • Keep a log-book and plan showing the contaminated zones and clean zones; • Maintain a hygienic working environment; • Avoid dust generation; • Provide face and respiratory protection gear to site workers if necessary; • Provide personal protective clothing (e.g. chemical resistant jackboot, liquid tight gloves) to site workers, if necessary; • Provide first aid training and materials to site worker; 	To minimize the potential adverse effects on health and safety of construction workers	Contractor	Contaminated area	The course of remediation	<ul style="list-style-type: none"> • Occupation Safety and Health Ordinance (OSHO) (Charter 509)

Project Implementation Schedule

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		<ul style="list-style-type: none"> Bulk earth moving equipment should be utilized as much as possible to minimize workers' handling and contact of the contaminated materials; and Eating, drinking and smoking should not be allowed in contaminated areas to avoid inadvertent ingestion of contaminant. 					
S8.8	LC5	Re-appraisal on the entire contamination assessment area for associated infrastructure in the adjacent areas in Hong Kong outside LMC Loop.	Ensure any potential contamination activities from land use changes after the approval of this land contamination assessment study	Project Proponent / Detailed design consultant	Entire contamination assessment area for associated infrastructure in the adjacent areas in Hong Kong outside LMC Loop	After land resumption	<ul style="list-style-type: none"> TM-EIAO Practice Guide (PG) for Investigation and Remediation of Contaminated Land Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management Guidance Notes for Contaminated Land Assessment and Remediation Practice Guide for Investigation and Remediation of Contaminated Land
Cultural Heritage (Operational Phase)							
S10.6	CH1	<ul style="list-style-type: none"> Tree belts could be planted to screen visual impacts to LMC Tsuen, Pun Uk Tsuen, Chau Tau Tsuen, LMC Police Station, Mi Tak Study Hall 	To mitigate the visual impact from the project	Project Proponent / Detailed design consultant / Contractor	LMC Loop	Prior to operation of the Project	<ul style="list-style-type: none"> TM-EIAO
Landscape and Visual Impact (Construction Phase)							
S11.5.4 Table 11.5.9	L-CP1	<p><u>Preservation and Protection of Existing Trees (Good Site Practice)</u></p> <ul style="list-style-type: none"> The proposed works should avoid disturbance to the existing trees within and close to the works areas. The tree preservation proposals shall be coordinated with the layout and design of the engineering and architectural works at detailed design phase for further retention of individual trees. It is recommended that a full detailed tree survey and felling application will be undertaken and submitted for approval by the relevant government departments in accordance with ETWB TCW No. 3/2006, 'Tree Preservation'. This will be conducted during the detailed design phase of the project and 	Avoid disturbance and protection of the existing trees	Detailed design consultants / Contractor	Within project site	Detailed design and construction phase	<ul style="list-style-type: none"> EIAO – TM ETWB TCW 2/2004 ETWB TCW 3/2006

Project Implementation Schedule

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		<p>submitted to DLO for approval. The methodology and scope including the programme for the tree survey and felling application are also subject to the approval of the relevant authorities.</p> <ul style="list-style-type: none"> Trees which are not in conflict with the proposals would be retained and shall be protected by means of fencing during construction phase to prevent damage to tree canopies and root zones from vehicles and storage of materials. Specifications for the protection of existing trees will be provided during the preparation of the detailed tree survey by Detailed Design consultants at detailed design and construction phase. 					
S11.5 .4 Table 11.5.9	L-CP2	<p><u>Works Area and Temporary Works Areas (Good Site Practice)</u></p> <ul style="list-style-type: none"> The construction sequence and construction programme shall be optimized in order to minimize the duration of impact. Construction site controls shall be enforced including the storage of materials, the location and appearance of site accommodation and site storage; and the careful design of site lighting to prevent light spillage. The temporary works areas shall be restored to its original condition or enhanced through the introduction of new amenity areas or planting areas following the completion of the construction phase. 	Minimize landscape impacts	Contractor	The whole project area where applicable	Construction phase	<ul style="list-style-type: none"> TM-EIAO
S11.5 .4 Table 11.5.9	L-CP3	<p><u>Advance Implementation of Mitigation Planting</u></p> <ul style="list-style-type: none"> Replanting of existing / disturbed vegetation shall be undertaken at the earliest possible stage of the construction phase of the project using predominantly native plant species although ornamental species may be used for roadside planting and amenity areas. 	Minimize landscape impacts	Detailed design consultant/ Contractor	The whole project area where applicable	Detailed design and construction phase	<ul style="list-style-type: none"> TM-EIAO
S11.5 .4 Table 11.5.9	L-CP4	<p><u>Transplantation of Existing Trees</u></p> <ul style="list-style-type: none"> Some specimens have relatively higher amenity value which are in conflict with the proposals shall be considered for transplantation. For trees affected by the proposed infrastructure works the final receptor sites shall be preferably adjacent to their current locations alongside of the alignment to retain their contribution to the local landscape context. For the LMC Loop the receptor locations will be selected to allow the trees to be moved directly to their final locations in accordance with the detailed landscape proposals. The transplanting proposals are subject to review at the detailed design phase and to agreement-in-principle with the relevant management and maintenance agents and/or government departments. The implementation programme for the proposed works shall reserve sufficient time for the 	Minimize landscape impacts and retention of landscape resources	Detailed design consultant/ Contractor	The whole project area where applicable	Detailed design and construction phase	<ul style="list-style-type: none"> TM-EIAO ETWB TCW 3/2006 LAO PN 7/2007

Project Implementation Schedule

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		<p>advanced tree transplanting preparation works to enhance the survival of the transplanted trees.</p> <ul style="list-style-type: none"> The transplanting proposals will be subject to the findings of the detailed tree survey and felling application to be undertaken by the detailed design consultants and following approval by the relevant departments. 					
S11.5 .4 Table 11.5.9	L-CP5	<p><u>Coordination with Concurrent Projects</u></p> <ul style="list-style-type: none"> Coordinated implementation programme with concurrent projects to minimise impacts and where possible reduce the period of disturbance. 	Minimize landscape impacts	Contractor	The whole project area where applicable	Construction phase	• TM-EIAO
S11.5 .4 Table 11.5.9	L-CP6	<p><u>Creation of Wetland and Landscape Buffer</u></p> <ul style="list-style-type: none"> The existing reedbed acquired for development areas for the project will be reinstated as part of the Ecological Area. The reinstatement shall be undertaken at the earliest possible stage during the construction phase of the project. Creation of 12.78ha of Ecological Area (EA) containing reed marsh and marsh will be created at the southern portion of the LMC Loop, and a 50m width landscape buffer area will be set up in between the EA and the development area. Wetland creation concepts please refer to Figure 11.9zf and Chapter 12 Ecology Impact Assessment of this EIA. Native tree and shrub mix will be utilised for the creation of landscape buffer along northern edge of EA to support the creation of avifauna habitat from ecologist perspectives as well as enhance the aesthetic and landscape diversity within the LMC Loop Development. Creation of minimum 11.72 Ha. of permanent compensatory off-site wetland areas at Sam Po Shue and Hoo Hok Wai. For the potential locations for off-site wetlands please refer to Figure 11.9zf and 11.9zh, Chapter 2 Project Description and Chapter 12 Ecology Impact Assessment of this EIA. 	Compensation for the loss of landscape resources	Project Proponent / Detailed design consultant/ Contractor/Operator	The whole project area where applicable	Detailed design, construction and operational phases	• TM-EIAO
S11.5 .4 Table 11.5.9	L-CP7	<p><u>Design of Retaining Wall and Slopes</u></p> <ul style="list-style-type: none"> The proposed treatment of Retaining Wall and Slopes will be undertaken in accordance with GEO Publication No. 1/2011 "Technical Guidelines on Landscape Treatment and Bio-engineering for Slopes". These engineering structures will be aesthetically enhanced through the use of soft landscape works including tree and shrub planting to give man-made slopes a more natural appearance blending into the local rural landscape. Whip sized tree planting is preferred on the face of soil cut slopes and at the crest and toe of the slope, and within berm planters. The smaller, younger plant stock will adapt to their new growing conditions more quickly than larger sized stock and establish a naturalistic effect more rapidly. Hydroseeding will be applied on slope has a gradient 	Minimize landscape impacts	Detailed design consultant/ Contractor	The whole project area where applicable	Detailed design phase/ Construction phase	• TM-EIAO

Project Implementation Schedule

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		more than 30 degree.					
S11.6.5 Table 11.6.3	V-CP1	<p><u>Preservation and Protection of Existing Trees (Good Site Practice)</u></p> <ul style="list-style-type: none"> The proposed works should avoid disturbance to the existing trees within and close to the works areas. The tree preservation proposals shall be coordinated with the layout and design of the engineering and architectural works at detailed design phase for further retention of individual trees. The preservation of existing tree shall provide instant greening and screening effect for proposed works. 	Minimise visual impact	Detailed design consultant / Contractor	The whole project area where applicable	Detailed design and construction phases	• TM-EIAO
	V-CP2	<p><u>Works Area and Temporary Works Areas (Good Site Practice)</u></p> <ul style="list-style-type: none"> The construction sequence and construction programme shall be optimized in order to minimize the duration of impact. Construction site controls shall be enforced including the storage of materials, the location and appearance of site accommodation and site storage; and the careful design of site lighting to prevent light spillage. Hoarding designed with recessive colour shall be set up around the construction site providing screening effect for the construction works. The site office or temporary above-ground structures shall be sited at less visual prominent locations. 	Minimise visual impact	Contractor	The whole project area where applicable	Construction phase	• TM-EIAO
	V-CP3	<p><u>Advance Implementation of Mitigation Planting</u></p> <ul style="list-style-type: none"> Replanting of existing / disturbed vegetation shall be undertaken at the earliest possible stage of the construction phase of the project using predominantly native plant species although ornamental species may be used for roadside planting and amenity areas. 	Minimise visual impact and advance mitigation planting for screening purpose.	Detailed design consultant / Contractor	The whole project area where applicable	Detailed design and construction phases	• TM-EIAO
	V-CP5	<p><u>Coordination with Concurrent Projects</u></p> <ul style="list-style-type: none"> Coordinated implementation programme with concurrent projects to minimise impacts and where possible reduce the period of disturbance. 	Minimize visual impacts	Contractor	The whole project area where applicable	Construction phase	• TM-EIAO
	V-CP6	<p><u>Creation of Wetland and Landscape Buffer</u></p> <ul style="list-style-type: none"> The creation of EA and landscape buffer on the Loop shall provide screening effect for low level views towards the LMC Loop Development from the lowland plain surrounding the LMC Loop and soften the building mass and create a better visual integration with existing landscape context. 	Creation of screening buffer to alleviate the visual impact	Project Proponent / Detailed design consultant/ Contractor/ Operator	The whole project area where applicable	Detailed design, construction and operational phase	• TM-EIAO
	V-CP7	<p><u>Design of Retaining Wall and Slopes</u></p> <ul style="list-style-type: none"> The proposed treatment of Retaining Wall and Slopes will be undertaken in accordance with GEO Publication No. 1/2011 "Technical Guidelines on Landscape Treatment and Bio-engineering for Man-made Slopes and Retaining Walls". These engineering structures will be aesthetically enhanced through the use of soft landscape works including tree and 	Minimize visual impacts and maximise greening opportunities for visual enhancement.	Detailed design consultant	The whole project area where applicable	Detailed design phase	• TM-EIAO •

Project Implementation Schedule

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		<p>shrub planting to give man-made slopes a more natural appearance blending into the local rural landscape. Whip sized tree planting is preferred on the face of soil cut slopes and at the crest and toe of the slope, and within berm planters. The smaller, younger plant stock will adapt to their new growing conditions more quickly than larger sized stock and establish a naturalistic effect more rapidly. Hydroseeding will be applied on slope has a gradient more than 30 degree.</p>					
<i>Landscape and Visual Impact (Operational Phase)</i>							
S11.5 Table 11.5.10	L-OP1	<p><u>Roadside and Amenity Planting</u></p> <ul style="list-style-type: none"> The planting proposals will utilise both native and ornamental species which suitable for roadside planting to soften the built structures and enhance visual amenity of existing and proposed road corridors. The implementation of new planting shall be undertaken as soon as technically feasible using a sectional completion approach during construction phase to ensure the effectiveness of this mitigation during operational phase and as early as possible during the operational phase. 	Enhance local landscape value	Detailed design consultant/ Contractor/ Operator	The whole project area where applicable	Detailed design, construction and operational phases	• TM-EIAO
S11.5 Table 11.5.10	L-OP2	<p><u>Compensatory Planting Proposals</u></p> <ul style="list-style-type: none"> As the works are largely located within rural areas and alongside existing roads the planting proposals have sought to utilise all of the available space for new tree and shrub planting to create comprehensive landscape framework which is connected to areas of retained and preserved vegetation and designed to integrate the proposals within their future landscape setting. The planting proposals shall be maintained in accordance with good horticultural practice in order to realise the objectives of the mitigation measures. This includes the replacement of defective plant species on the new planting areas to enhance the aesthetic, landscape and ecological quality of the proposals. Both on-site and off-site opportunities for compensatory planting shall be considered. The preliminary compensatory planting proposal will follow the Technical Circular ETWB TCW No. 3/2006 except for felling of trees for slope works which are exempted from the compensation planting ratio requirement. New tree planting in general roadside planting areas and planting areas within the LMC Loop and above ground structures will utilise a combination of semi-mature to light standard sized stock as shown in Figures 11.9a and 11.9h to 11.9zi of the EIA report to create an instant greening effect at local level. 	Enhance local landscape value	Project Proponent and Detailed design consultant/ Contractor	The whole project area where applicable	Detailed design, and construction phases	• TM-EIAO

Project Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
		<ul style="list-style-type: none"> • New planting areas within the LMC Loop including tree planting in the landscape buffers, open spaces and roadside planting areas will accommodate approximately 5,000 new trees. Planting of more broad-leaf tree species will be considered where space allows and location is suitable for tree establishment. This planting concept would create comfortable shaded area for pedestrians and visitors in open spaces. • New planting areas along the road alignment of WCR (DP2), ECR (DP6) and access road to Flushing Water Service Reservoir (DP7) will accommodate approximately 2,600 new trees. • For the affected tree on the sloping areas, due to constrained growing conditions, whip planting will be proposed on slopes which have gentler gradient at a planting distance of about 1500mm. Slopes that have a gradient more than 30 degree, hydroseeding will be applied instead. Upon full establishment of whip planting and hydroseeding, greening coverage on affected sloping areas will be reinstated. Following the above planting principles, the newly formed and remnant sloping areas along the road alignment would accommodate approximately 500 whips. • Based on a preliminary estimation, the above planting proposal would achieve a replanting ratio of minimum 1:1 in terms of quantity and quality except for slope works according to ETWB TCW No. 3/2006. This tree replanting ratio would compensate the total girth and number of tree loss as well as the total number of tree loss on sloping area. Given the constraints of growing condition and safety reasons of planting larger size tree stock on sloping areas, greening measures on new formed and remnant slopes, including extensive hydroseeding and whips planting, would restore the quality of these greenback drop in rural area. • The species selection for planting areas within the LMC Loop will utilise a range of native, ornamental and amenity tree species. These proposals will be subject to further development during the detailed design phase of the project.. • Proposed planting on slopes will utilise woodland mix with majority of native species on new or disturbed slopes along the WCR and ECR. 					
S11.5 Table 11.5.10	L-OP7	<p><u>Reinstatement of Affected Fishponds</u></p> <ul style="list-style-type: none"> • Enhancement of 11.72 Ha. of wetland/fishponds at Sham Po Shue and Hoo Hok Wai with ecological function for the off-site compensation of the permanent loss of fishponds. Off-site fishponds enhancement proposal refer to Figure 11.9zh, 	Reinstate and enhance local landscape value	Project Proponent / Detailed design consultant/ Contractor /	The whole project area where applicable	Detailed design, construction and operational phases	• TM-EIAO

Project Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
		<p>Chapter 2 Project description and Chapter 12 Ecology Impact Assessment of this EIA.</p> <ul style="list-style-type: none"> Temporary loss of fishponds along WCR (DP2), Direct Link to LMC Station (DP4) and ECR (DP6) by the road widening and improvement works will be largely reinstated to fishponds with tree planting at selected locations. Reinstatement of affected fishponds refer to Figure 11.9j,k,l,m,r, t and u of the EIA report. These ponds will be used for both functional or amenity purposes to enhance the existing landscape and visual context. 		Operator			
S11.5 Table 11.5.10	L-OP8	<p><u>Application of Terraced Podium Landscape, Vertical Greening and Green Roof</u></p> <ul style="list-style-type: none"> Terraced podium design shall be incorporated into the building design of the LMC Loop Development to maximise the greening opportunities on upper level of the development, reduce the apparent visual mass of the structure and provide visual amenity for views looking from street level as well as in distance at elevated levels as to create better integration with existing landscape and visual context. Incorporation of alternative greening measures including vertical and roof greening on building or built structures where condition allow particularly those fronting the public realm to reduce the apparent visual mass of the structure. 	Enhance local landscape value	Detailed design consultant/ Contractor / Developer / Operator	The whole project area where applicable	Detailed design, construction and operational phases	<ul style="list-style-type: none"> TM-EIAO
S11.6 Table 11.6.4	V-OP1	<p><u>Roadside and Amenity Planting</u></p> <ul style="list-style-type: none"> The planting proposals will utilise native species to soften the proposed structures. The implementation of new planting shall be undertaken as soon as technically feasible using a sectional completion approach during construction phase to ensure the effectiveness of this mitigation during operational phase and as early as possible during the operational phase. This measure will enhance the visual amenity along existing and proposed road corridor. 	Enhance visual amenity	Detailed design consultant/ Contractor/ Operator	The whole project area where applicable	Detailed design, construction and operational phases	<ul style="list-style-type: none"> TM-EIAO ETWB TCW
S11.6 Table 11.6.4	V-OP2	<p><u>Compensatory Planting Proposals</u></p> <ul style="list-style-type: none"> As the works are largely located within rural areas and alongside existing roads the planting proposals have sought to utilise all of the available space for new tree and shrub planting to create comprehensive landscape framework which is connected to areas of retained and preserved vegetation and designed to integrate the proposals within their future landscape setting. Both on-site and off-site opportunities for compensatory planting shall be considered for enchantment of landscape and visual context. Design of road layout and built environment shall 	Minimise visual impact and enhance visual amenity	Detailed design consultant/ Contractor	The whole project area where applicable	Detailed design and construction phases	<ul style="list-style-type: none"> TM-EIAO ETWB TCW

Project Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
		<p>accommodate enough planting areas for compensatory planting to restore the quality of these greenback drop in rural area.</p>					
S11.6 Table 11.6.4	V-OP3	<p><u>Responsive Design of Buildings and Structure</u></p> <ul style="list-style-type: none"> The design of the proposed building structures and road connections networks will incorporate design features as part of visual mitigation measures including: <p><u>Integrated Design Approach</u></p> <ul style="list-style-type: none"> Building massing - the proposed use of a responsive design for the disposition of the main elements of the proposed scheme including the locations of buildings and utility structures. Grouping of utilities and infrastructure components into proposed buildings as far as technically feasible to reduce the mass of development. The disposition and height profile of the developments and above ground utilities structures responds to the existing context, is designed to minimise the wall effects and create a subtle transition at the edges of the site where it meets the rural landscape. Measures may include the creation of setbacks, articulating the development frontage, maintenance of view corridors and the utilisation of gradation or articulated height profile to enhance the sense of visual integration with the existing context, avoid abrupt transitions between the existing and proposed built environment and reduce the apparent visual mass of the proposed developments. <p><u>Treatment of Built Structures</u></p> <ul style="list-style-type: none"> The architectural design should seek to reduce the apparent visual mass of the structures further through the use of materials and finishes such as colour blocking, innovative surface treatments and vertical greening. <p><u>Responsive finishes for the Proposed Structures</u></p> <ul style="list-style-type: none"> In terms of the building finishes natural tones should be considered for the colour palette and non-reflective finishes recommended for the outward facing building facades to reduce the glare effect. <p><u>Innovative Architectural Design</u></p> <ul style="list-style-type: none"> Adoption of recessive colours for the buildings and engineered structures including the proposed viaducts and noise barrier finishes and colour blocking to reduce the collective visual mass of the development. 	Minimise visual impact	Detailed design consultant	Development sites on the LMC Loop, STW, and Flushing Water Service Reservoir, PTI at LMC Station and other building where applicable.	Detailed design phase	<ul style="list-style-type: none"> TM-EIAO ETWB TCW
S11.6 Table 11.6.4	V-OP4	<p><u>Design of Noise Mitigation Structures</u></p> <ul style="list-style-type: none"> The design for the proposed noise barriers along the at-grade section of proposed ECR section for Planned Eco-lodge at Ma Tso Lung and along the section of road widening works for the WCR shall aim to reduce the visual prominence of the 	Minimise visual impact	Detailed design consultants	Noise Mitigation Measures in the LMC Loop and along WCR and ECR.	Detailed design phase	<ul style="list-style-type: none"> TM-EIAO ETWB TCW ACABAS

Project Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
		structure through the use of form, materials, texture and colour. Design of panels shall be opaque and with chromatic colours to break-up the visual mass and horizontal emphasis of the barriers. Where space allows barrier design shall incorporate planting such as trees or hedge planting.					
S11.6 Table 11.6.4	V-OP5	<p><u>Design of Engineering Structures</u></p> <p>The design of the proposed Engineering Structures such as the proposed viaducts elevated PTI, slip road and service reservoir should pay particular attention to the appearance and construction methods of the structures, these would include the following:</p> <ul style="list-style-type: none"> • The detailed design landscape consultants shall work in unison with the engineers on the aesthetic aspects of the structures and their relationship with the landscape. • Wherever light levels, the water regime and the requirements of the environmental mitigation measures permit, trees and vegetation would be reinstated below or adjacent to the structures. Irrigation may be required in some locations and hard landscape solutions considered where the clearance is low. Planting would be used wherever possible to minimise the apparent height of structures and to soften their appearance in medium and long distance views. • The design of the viaduct should avoid unnecessary visual clutter; this would be achieved through the co-ordination of the various engineering disciplines involved to arrive at integrated design solutions. Such as the location of columns of viaduct should not block any views from VSRs in the proximity and the shape of column should be slim down as far as technically feasible to reduce the structural mass at street level, at where space is allowed planting area for shade tolerant tree, shrub and climber species would be provide at the base of the column to soften the vertical emphasis at street level. • Fair faced concrete would not be used for viaduct parapets to minimise glare from the structure and to avoid the visually detracting effect of staining. • Drainage and utilities to be concealed within the structures. 	Minimise visual impact	Detailed design consultant	The whole project area where applicable	Detailed design phase	<ul style="list-style-type: none"> • TM-EIAO • ETWB TCW • ACABAS
S11.6 Table 11.6.4	V-OP7	<p><u>Reinstatement of Affected Fishponds</u></p> <ul style="list-style-type: none"> • Temporary loss of fishponds along WCR (DP2), Direct Link to LMC Station (DP3) and ECR (DP6) by the road widening and improvement works will be largely reinstated to fishponds with tree planting at selected locations. Reinstatement of affected fishponds refer to Figure 11.9j,k,l,m,r, t and u of the EIA report. These ponds will be used for both functional or amenity purposes to enhance the existing landscape and visual context. 	Enhance visual amenity and integration of existing visual context	Contractor	The whole project area where applicable	Operation Phase	<ul style="list-style-type: none"> • TM-EIAO • ETWB TCW

Project Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
S11.6 Table 11.6.4	V-OP8	<p><u>Application of Terraced Podium Landscape, Vertical Greening and Green Roof</u></p> <ul style="list-style-type: none"> Terraced podium design shall be incorporated into the building design of the LMC Loop Development to maximise the greening opportunities on upper level of the development, reduce the apparent visual mass of the structure and provide visual amenity for views looking from street level as well as in distance at elevated levels as to create better integration with existing landscape and visual context. Incorporation of alternative greening measures including vertical and roof greening on building or built structures where condition allow particularly those fronting the public realm to reduce the apparent visual mass of the structure. 	Enhance visual amenity and integration of existing visual context	Developer / Detailed design consultant/ Contractor / Operator	The whole project area where applicable	Detailed design, construction and operational Phases	<ul style="list-style-type: none"> TM-EIAO ETWB TCW
Ecology							
S12.7	E1	<p><u>Disturbance to Fish Ponds at HHW</u></p> <ul style="list-style-type: none"> Development set back a minimum of 23m from the edge of Meander. Management of fish pond habitat to enhance ecological value to twice existing value, in order to compensate for disturbance to large waterbirds. Creation and establishment will occur prior to commencement of substantive works associated with any element of the project for which fish pond compensation is required. <p><u>Construction phase</u></p> <ul style="list-style-type: none"> Erection of a 3m high, dull green site boundary fence to minimise disturbance to wetland habitats caused by human activity in LMC Loop. <p><u>Operation phase</u></p> <ul style="list-style-type: none"> Creation of a vegetated setback of minimum 23m from the edge of LMC Loop. 	Minimize the indirect impact from LMC Loop development on the disturbance to fish ponds at HHW	Detailed design consultants/ Contractor/ Operator	Fish ponds at HHW and LMC	Detailed design, construction and operational phases	<ul style="list-style-type: none"> Species targets to be provided in HCMP.
S12.7	E2	<p><u>Construction run-off</u></p> <ul style="list-style-type: none"> Temporary sewerage and drainage will be designed and installed to collect wastewater and prevent it from entering nearby water bodies; Proper locations well away from nearby water bodies will be used for temporary storage of materials (i.e. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction debris and spoil, and these will be identified before commencement of works; To prevent muddy water entering nearby water bodies, work sites close to nearby water bodies will be isolated, using such items as sandbags or silt curtains with lead edge at bottom 	Minimize the indirect impact from the increasing suspended solids and pollutants in LMC Meander	Contractor	Within project construction site	Construction phase	

Project Implementation Schedule

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		<p>and properly supported props. Other protective measures will also be taken to ensure that no pollution or siltation occurs to the water gathering grounds of the work site;</p> <ul style="list-style-type: none"> • If temporary access along a riverbed is unavoidable, this will be kept to the minimum in width and length. Temporary river crossings will be supported on stilts above the river bed; • Stockpiling of construction materials, if necessary, will be properly covered and located away from nearby water bodies; • Construction debris and spoil will be covered and/or properly disposed of as soon as possible to avoid being washed into nearby water bodies; • Construction effluent, site run-off and sewage will be properly collected and/or treated. Wastewater from any construction site will be minimised via the following in descending order: reuse, recycling and treatment; • Proper locations for discharge outlets of wastewater treatment facilities well away from sensitive receivers will be identified (i.e. treated wastewater will not be discharged into LMC Meander, natural streams, marsh, reedbed, active or abandoned fish ponds); • Adequate lateral support will be erected where necessary in order to prevent soil/mud from slipping into the Ecological Area or LMC Meander; • Site boundary will be clearly marked and any works beyond the boundary strictly prohibited; • Regular water monitoring and site audit will be carried out at adequate points along LMC Meander, and at the outfalls of the natural streams around LMC Loop. If the monitoring and audit results show that pollution occurs, adequate measures including temporarily cessation of works will be considered. 					
S12.7	E3	<p><u>Pollutant Runoff to Downstream areas from Accidental Spillage</u></p> <ul style="list-style-type: none"> • Prepare an emergency contingency plan • The plan will include, but not be limited to, the following: <ul style="list-style-type: none"> - Potential emergency situations; - Chemicals or hazardous materials used on-site (and their location); - Emergency response team; - Emergency response procedures; - List of emergency telephone hotlines; - Locations and types of emergency response equipment; - Training plan and testing for effectiveness. 	Minimize indirect impact from pollutant runoff to downstream areas from accidental spillage	Contractor / Operator	Areas within project site near streams	Construction and operational phases	
S12.7	E4	<ul style="list-style-type: none"> • Use opaque, non-transparent, non-reflective noise barriers for 	Minimize the mortality impacts	Detailed design	Areas within project	Detailed design,	

Project Implementation Schedule

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		<p>all developments associated with the Project.</p> <ul style="list-style-type: none"> • Design of buildings should not incorporate use of night-time lighting at or near top of buildings, highly reflective materials should not be used where vegetation is adjacent and glass surfaces should not be angled upwards in a way that reflects the sky. Unnecessary lighting should be eliminated. Appropriate glass and façade treatments should be used where required to minimise impact. Unnecessary lighting should be avoided. <p>These include the following:</p> <ul style="list-style-type: none"> • Fritting, or the placement of ceramic lines or dots on glass, has little effect on the human-perceived transparency of the window but creates a visual barrier to birds outside. This treatment also has the advantage of reducing air conditioning loads by lowering heat gain, while still allowing light transmission for interior spaces. It is most successful when the frits are applied on the outside surface. Frosted glass has similar effects. • Angled glass may be used only for smaller panes in buildings with a limited amount of glass. • The use of glass that reflects UV light (primarily visible to birds, but not to humans) acts to reduce collision. • Film and art treatment allow glass surfaces to be used a medium of expression, often related to the nature and use of the building, as well indicating to birds their impenetrability. • Lightweight external screens can be added to windows or become a façade element of larger buildings, and are suitable where non-operable windows are prevalent, which is often the case in modern buildings in HK. <p>In terms of reducing night-time mortality impacts, eliminating unnecessary lighting is one of the easiest methods, and has the added advantage of saving energy and expense. Potential impacts of nocturnal avian collision with buildings should be minimised by not creating sky glow from the use of night-time lighting at or near the top of buildings or other structures. In addition to avoiding uplighting, light spillage should be minimised, while green and blue lights should be used where possible. As far as possible, lights should be controlled by motion sensors, and building operations should be managed in such a way as reduce or eliminate night lighting near windows. The potential advantages of removing unnecessary lighting in terms of reducing the carbon footprint of the LMC Loop development are obvious.</p>	on birds	consultants/ Contractor/ Operator	site	construction and operational phases	
S12.7	E5	<ul style="list-style-type: none"> • Minimize loss of natural vegetation along LMC Meander, and suitable replacement planting with possible installation of otter holts and the provision of potential feeding area and spraint locations for otters in the stabilized bank subject to 	Minimize impacts on Eurasian Otter	Detailed design consultants / Contractor	Construction site within the project	Detailed design and Construction phases	

Project Implementation Schedule

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		<p>detailed design.</p> <ul style="list-style-type: none"> • No significant change to velocity of water flow, water level or water quality. • No direct lighting on Meander. • 3m high, dull green site boundary fence for all developments associated with the project. • Pre-construction surveys for otter holts or natal dens will be conducted in LMC Loop before the commencement of construction works. Work in the area of any otter holt found to cease pending examination by experienced Ecologist. If in use for breeding, works in the area will temporarily stop until end of breeding activity. • No construction activities within 100m of LMC Meander between one hour prior to sunset and one hour after sunrise. • Provision of compensatory reed marsh in the Ecological Area in LMC Loop, including open water channels and islands within the reed marsh, both of which features are considered to be used by the species. 					
S12.7	E10	<ul style="list-style-type: none"> • Preserve undisturbed, semi-natural habitat conditions of LMC Meander and adjacent areas of LMC Loop up to approximately 150m in width in order to avoid disturbance to core part of flight line corridor. • This area to comprise an Ecological Area largely constituting reed marsh and a 50m wide buffer zone densely planted with shrubs and trees. Small number of low buildings (max 14mPD high, except the maximum height of on-site STW and electricity substation are 15 and 25mPD respectively) allowed in inner 25m of this area at a plot ratio of 0.1. • At Ha Wan Tsuen entry point for many birds to LMC Loop area provide a wider Ecological Area to minimise disturbance from nearby buildings. • Further minimisation of impact by maintaining a lower building height in areas adjacent to the buffer zone for the EA. In addition, the sewage treatment works, which is located near the point where many birds cross from the Meander to HHW, should not exceed 15mPD. 	Minimize impacts on flight line corridor from LMC Loop development	Detailed design consultants / Contractor / Developer / Operator	Within project site	Detailed design, construction and operational phase	
S12.7	E11	<ul style="list-style-type: none"> • Employ site boundary fence as long as possible. Use of movable barrier for more intense site formation activity. Provision of fencing with 30cm gap between the existing reed marsh and LMC Meander during the establishment period of Ecological Area and the gap will be closed once established. • Restrict work to period from 0900h to 1700h. All major works along the edge of LMC Meander and in the Ecological 	Minimize disturbance impacts of mitigation provisions	Contractor	Within project site	Construction phase	

Project Implementation Schedule

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		Area will be conducted in the wet season.					
S12.7	E12	<ul style="list-style-type: none"> Minimal night-time lighting No direct light on Meander 	Minimize impacts on LMC Meander	Contractor / Operator	All	Construction and operational phases	
S12.7	E13	<u>Loss of 10.96ha of Reed Marsh</u> <ul style="list-style-type: none"> Provide unfragmented, managed and undisturbed reed marsh in a 12.78ha 'Ecological Area' (EA) to compensate for the loss of ecological function of the existing reedbed. Creation and establishment will occur prior to total clearance of the reedbed in LMC Loop, though initial removal of 2.26 ha will be required to allow site formation of the EA. This will constitute a temporary residual impact that cannot be entirely resolved for 2-3 years, by which time the reed marsh in the EA will be fully established. Reed marsh in EA to be established prior to clearance of remainder of reeds. Implement a 50m wide buffer zone to buffer disturbance to the EA from the developed area. Although an area of passive recreational activity, the buffer zone will be planted with trees and shrubs of ecological value to screen and minimise disturbance to the EA and add ecological value to the site. Any buildings in the buffer zone will be of no more than 14mPD in height (except the building height of on-site STW is 15mPD) and placed in the internal 25m of the 50m wide strip, as part of a plot ratio of 0.1. Appropriate planting of taller and denser trees will be carried out around individual buildings in this zone in order to further shroud them from both the EA and the air. The use of green roofs, where feasible, should also be considered. 	Minimize direct impact on the loss of 10.96ha of reed marsh from LMC Loop development	Project Proponent / Detailed design consultants/ Contractor/ Operator	Ecological area	EA established prior to construction and manage at all phases	<ul style="list-style-type: none"> Species targets that require to be determined via fieldwork and as part of HCMP creation process.
S12.7	E14	<u>Loss of 0.5ha of Marsh</u> <ul style="list-style-type: none"> The EA should include a marsh area and small areas of open water to enhance micro-habitat diversity, and this will also attract species currently using the pond areas in LMC Loop. The marsh habitat should include emergent vegetation such as lilies. Not only will this attract species that currently use the pond area in LMC Loop, but will also provide an attractive focal point for users of LMC Loop. 	Minimize direct impact on the loss of 0.5ha of marsh from LMC Loop development	Project Proponent / Detailed design consultant/ Contractor/ Operator	Ecological area	EA established prior to construction and manage at all phases	<ul style="list-style-type: none"> Species targets that require to be determined via fieldwork and as part of HCMP creation process.
S12.7	E15	<ul style="list-style-type: none"> Create Ecological Area before wider development of LMC Loop to ensure suitable conditions exist in core area of corridor. 	Minimize impacts on flight line corridor from LMC Loop development	Project Proponent / Detailed design consultant/ Contractor/ Operator	Ecological area	EA established prior to construction and manage at all phases	
S12.7	E16	<ul style="list-style-type: none"> Provision of compensatory reed marsh in the Ecological Area 	Protect Odonata	Project	Ecological area	EA established	

Project Implementation Schedule

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		<p>will provide habitat suitable for Common Evening Hawker.</p> <ul style="list-style-type: none"> Measures designed to protect other fauna and water quality will generally benefit odonata. 		Proponent / Detailed design consultant/ Contractor/ Operator		prior to construction and manage at all phases	
S12.7	EG	The maximum building heights for education use, high-tech R&D/C&C industries and commercial use will be about 46mPD, 54mPD and 42 mPD respectively. The maximum building height will be about 14mPD (except the maximum height of on-site STW and electricity substation are 15 and 25mPD respectively) along a 50m wide buffer zone in the north of EA.	Minimize impacts on flight line corridor from LMC Loop Development	Developer / Detailed design consultant	LMC Loop	All phases	• -EIAO
S12.9	EG2	All generic mitigation measures proposed in Tables 12.82a and 12.82b in the EIA report.	Avoid, minimize and mitigate overall ecological impact.	Project proponent / contractor / detailed design consultant / developer / operator	All areas.	All phases	• EIAO
Fisheries (Construction Phase)							
S13.7	F4	During the construction phase, a layer of sheet pile wall will be erected along the site boundary adjacent to fish ponds after commencement of site works. The sheet pile wall will be constructed by silent piling method (Press-in method) which induces minimal vibration. Therefore the stability of the fish pond bund will not be influenced by the construction of the sheet pile wall, subsequent construction works and the loading from the road during operational phase. In addition, the sheet pile wall will have grouting or a grout curtain to avoid water seepage from the fish pond to the excavation area. With these measures, significant impacts are not anticipated.	Bund stability	Contractor	Fish ponds	Construction phase	• TM-EIAO
S13.7	F5	Temporary traffic arrangements will be instigated to maintain or provide alternative access to fish ponds during construction phase.	Prevent Blockage of Access Roads to Fish Ponds	Contractor	Fish ponds	Construction phase	• TM-EIAO
S13.7	F6	Standard mitigation measures to control site runoff and other pollutants caused by construction activities and good site practices will be implemented during the construction phase of the Project. Excavated material and other inert construction wastes produced will be transferred to proper recipients (i.e. landfill) (see Waste Management Section). Sewage from the proposed development will be dealt with via a sewerage system and will not be discharged directly to surrounding water bodies.	Avoid water quality impact	Contractor	Fish ponds	Construction phase	• TM-EIAO
S13.7	F7	<p>Dust Minimization</p> <ul style="list-style-type: none"> During all excavation works, good site practice should be adopted to minimize impacts on fisheries. The below site practices should be adopted during this time. Any excavated or stockpile of dusty material should be 	Dust minimization	Contractor	Fish ponds	Construction phase	• TM-EIAO

Project Implementation Schedule

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?
		<p>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;</p> <ul style="list-style-type: none"> • Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads; • 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; • Excavation profiles must be properly designed and executed with attention to the relevant requirements for environment, health and safety; • In case the soil to be excavated is situated beneath the groundwater table, it may be necessary to lower the groundwater table by installing well points or similar means; • Supply of suitable clean backfill material after excavation, if required; • Vehicles containing any excavated materials should be suitably covered to limit potential dust emissions or contaminated run-off, and truck bodies and tailgates should be sealed to prevent any discharge during transport or during wet season; • Speed control for the trucks carrying contaminated materials should be enforced; and • Vehicle wheel washing facilities at the site's exit points should be established and used. 					
<i>Fisheries (both Construction and Operational Phase)</i>							
S13.7	F8	<p><u>Contingency plan</u> The contractor should prepare an emergency contingency plan for actions to be taken if significant impacts, such as accidental spillage of chemicals, water seepage from fish ponds, damaged/ destabilized pond bunds, pond water contamination by site runoff, on fish ponds occur. The contractor should submit the emergency contingency plan dealing with, but not limited to, the aforementioned potential impacts to the engineer for review, comment and approval. The fish pond operators will also be consulted for the details of the contingency plan, which will also be submitted to AFCD for review and comment. The plan should include, but not limited to, the following:</p> <ul style="list-style-type: none"> • Potential emergency situations; 	Deal with any accidental spillage event	Contractor / Operator	Fish ponds	Construction and operational phases	• TM-EIAO

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		<ul style="list-style-type: none"> • Chemicals or hazardous materials used on-site (and their location); • Emergency response team; • Emergency response procedures; • List of emergency telephone hotlines; • Locations and types of emergency response equipment; • Training plan and testing for effectiveness. 					
Food Safety (Construction Phase)							
S15	F1	<p><u>Contingency plan</u> The contractor should have effective communication with Food and Environmental Hygiene Department (FEHD) / Centre of Food Safety (CFS), on food surveillance and food incidents. Food Surveillance Programme (http://www.cfs.gov.hk/english/programme/programme_fs/programme_fs.html). is undertaken by CFS to inspect food safety in Hong Kong, with a three-tier surveillance strategy (consisting of routine food surveillance, targeted food surveillance and seasonal food surveillance). Under this programme, aquatic products (including pond fish) at import, wholesale and retail levels are sampled for microbiological (i.e. bacteria and viruses), chemical (i.e. natural toxins, food additives and contaminants) and radiation testings. All food safety surveillance results of by a monthly “Food Safety Report” in press releases and also presented in CFS website. If pond fish samples do not comply with food safety standards and they are verified to be from fish ponds of concerned under this study through “food tracing”, fish selling shall be stopped as instructed by CFS.</p>	Minimize significant impacts on fish ponds	Contractor	Fish pond within project site	Construction phase	• TM-EIAO
S15	F2	<p><u>Dust Minimization</u></p> <ul style="list-style-type: none"> • During all excavation works, good site practice should be adopted to minimize the release of TSP, impact of land contamination and the associated food safety implications. The below site practices should be adopted during excavation works. • 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; • Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shortcrete or other suitable surface 	Dust minimization	Contractor	Fish pond within project site	Construction phase	• Food Adulteration (Metallic Contamination) Regulations

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		<p style="text-align: center;">stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies;</p> <ul style="list-style-type: none"> • Excavation profiles must be properly designed and executed with attention to the relevant requirements for environment, health and safety; • In case the soil to be excavated is situated beneath the groundwater table, it may be necessary to lower the groundwater table by installing well points or similar means; • Supply of suitable clean backfill material after excavation, if required; • Vehicles containing any excavated materials should be suitably covered to limit potential dust emissions or contaminated run-off, and truck bodies and tailgates should be sealed to prevent any discharge during transport or during wet season; • Speed control for the trucks carrying contaminated materials should be enforced; and • Vehicle wheel washing facilities at the site's exit points should be established and used. 					