

Appendix 4.1

Environmental Mitigation Implementation Schedule

**Environmental Mitigation Implementation Schedule
Ngau Tam Mei Water Treatment Works Extension**

Note: Sections 1 to 2 of the EIA report present the background information of the Project, identified concurrent projects, objectives and scope for various environmental aspects, and description on alternative options and construction description. Sections 3 to 12 of the EIA report present the EIA findings and mitigation measures are described below with cross-reference to the EIA report. Sections 13 to 15 describe the environmental monitoring requirements, summary of environmental outcomes and conclusion.

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Phase	Requirements and / or standards to be achieved
Construction Air Quality Impact							
S3.5.1	D1	<p>The following dust suppression measures/practices should be incorporated:</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 for 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 extended beyond the pedestrian barriers, fencing or traffic cones; • The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • The portion of any road leading only to the 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 	Minimise air quality 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 EIAO-TM

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		<p>breaking operation takes place should be sprayed with water or a dust suppression chemical continuously;</p> <ul style="list-style-type: none"> • 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; • 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, shotcrete or other suitable surface stabilisers within six months after the last construction activity on the 					

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		<p>construction site or part of the construction site where the exposed earth lies.</p> <ul style="list-style-type: none"> Dust filter will be installed at the portal exhaust at the entrance of the access tunnel. 					
S3.5.2	D2	<p>The following measures should be implemented for emission control on Non-Road Mobile Machinery (NRMM) System:</p> <ul style="list-style-type: none"> Regulated machines shall be used and exempted NRMMs should be avoided where practicable; Use cleaner fuel such as ULSD in diesel-operated construction plant to reduce sulphur dioxide emission; Use of electric PMEs where practicable; Use power supplied from power utilities when practicable (e.g. to replace generators); Switch off the engine of PMEs when idling; Implement regular and proper maintenance for plant and equipment; Employ plant and equipment of adequate size and power output and avoid overloading of the plant; Locate the PMEs away from sensitive receivers as far as possible; and Erect screen to shield the emission source from sensitive receivers where necessary and practicable. 	Minimise air quality impact at the nearby sensitive receivers	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> Air Pollution Control (NRMMs) (Emission) Regulation To control the air quality impact to meet HKAQO and EIAO-TM

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<i>Construction Noise</i>							
S4.4.4	N1	Use of quieter construction methods and equipment	Reduce the noise levels from construction works	Contractor	Construction works of Fresh Water Trunk Mains	Construction phase	<ul style="list-style-type: none"> Annex 5, EIAO-TM
S4.4.4	N2	<p>The following measures should be implemented:</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; 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 which available on construction equipment should be properly fitted and maintained during the construction works; spoil transportation routes should be directed away from NSRs as far as practicable; mobile plant should be sited as far away from NSRs as possible and practicable; material stockpiles, site office and other structures should be effectively utilised, where practicable, to 	Control construction airborne noise	Contractor	Construction works of Fresh Water Trunk Mains	Construction phase	<ul style="list-style-type: none"> Annex 5, EIAO-TM

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		<p>screen noise from on-site construction activities; and</p> <p>The future Contractor shall strictly follow the Recommended Pollution Control Clauses for Construction Contracts and the recommendations in the CNMP to ensure compliance with the contract provisions as well as the environmental ordinances and their regulations.</p>					
S4.4.4	N3	Use of quiet plant which should be made reference to the Powered Mechanical Equipment (PME) listed in the Technical Memorandum or the Quality Powered Mechanical Equipment (QPME) / other commonly used PME listed in Environmental Protection Department (EPD) web pages as far as possible which includes the Sound Power Level (SWLs) for specific PME and quiet PME.	Reduce the noise levels from plant items	Contractor	Construction works of Fresh Water Trunk Mains	Construction phase	<ul style="list-style-type: none"> Annex 5, EIAO-TM
S4.4.4	N4	Install movable temporary noise barriers (typical design is wooden framed barrier with a small-cantilevered upper portion of superficial density no less than 7kg/m ² on a skid footing with 25mm thick internal sound absorptive lining), retractable noise barriers and full enclosure, screen the noisy plants including water pump etc.	Minimise the construction noise levels through screening	Contractor	Construction works of Fresh Water Trunk Mains	Construction phase	<ul style="list-style-type: none"> Annex 5, EIAO-TM
Water Quality (Construction Phase)							
S5.7.1	W1	<p><u>Construction Runoff and General Construction Activities</u></p> <p>Best Management Practices (BMPs) as stipulated in ProPECC PN 2/23 should be followed as necessary, and effluent discharged should comply with DSS-TM:</p> <ul style="list-style-type: none"> All exposed earth areas should be completed and vegetated as necessary and as soon as possible after 	To reduce water quality impact from construction site runoff and general construction activities	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> WPCO ProPECC (PN2/23) EIAO DSS-TM ETWB

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		<p>earthworks have been completed. Exposed slope surfaces should be covered by tarpaulin or other means during rainy seasons. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas. Considering that pipe laying works would be carried out by open-cut method, it is not practicable to avoid excavations works in the wet season as this would affect the overall construction programme. For works area that is close to watercourses, excavation works shall avoid the rainy season as far as possible. Any excavation works shall be proceeded section by section.</p> <ul style="list-style-type: none"> • All open stockpiles of construction materials (for example, aggregates, sand and fill material) should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system. • Manholes at the vicinity of works area (including newly constructed ones) should always be adequately covered and temporarily sealed. • Precautions should 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 summarised in Appendix A2 of ProPECC PN 2/23. Particular attention should be paid to the control of silty surface runoff during storm events. • Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly. • Water used in water testing to check leakage of structures and pipes should be reused for other purposes 					<p>TC(Works) No. 5/2005</p>
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		<p>as far as practicable. Surplus unpolluted water could be discharged into storm drains.</p> <ul style="list-style-type: none"> • Earthworks final surfaces should be well compacted and the subsequent permanent work or surface protection should be carried out immediately after the final surfaces are formed. Appropriate drainage like intercepting channels should be provided where necessary. • Groundwater pumped out of wells, etc. for the lowering of ground water level in basement or foundation construction, and groundwater seepage pumped out of tunnels or caverns under construction should be discharged into storm drains after the removal of silt in silt removal facilities where necessary. • Water used in ground boring and drilling for site investigation or rock/soil anchoring should be recirculated after sedimentation as far as practicable. When there is a need for final disposal, the wastewater should be discharged into storm drains via silt removal facilities where necessary. • In the case that bentonite is used for construction, it should be reconditioned and reused wherever practicable to minimise the disposal volume of used bentonite slurries. Temporary enclosed storage locations should be provided on-site for any unused bentonite that needs to be transported away after the related construction activities are completed. • Good site practices should be adopted to remove rubbish and litter from construction sites. It is recommended to clean the construction sites on a regular basis. • Requirements to be incorporated in the Project contract 					
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		document should be established based on the water quality mitigation measures as mentioned above.					
S5.7.2	W2	<p><u>Sewage from Construction Workforce</u></p> <ul style="list-style-type: none"> No discharge of sewage to the stormwater system and marine water will be allowed. Adequate and sufficient portable chemical toilets should be provided in the works areas. Should there be any on-site kitchens or canteens, a temporary storage tank should be provided to collect wastewater. A registered collector should be employed to clean and maintain the chemical toilets on a regular basis; and Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the surrounding environment. Regular environmental audit of the construction site should be conducted to provide an effective control of any malpractices and achieve continual improvement of environmental performance on site. 	To minimise the water quality impact due sewage discharge from the construction workforce	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> ProPECC (PN2/23) EIAO DSS-TM HKPSG WPCO ETWB TC(Works) No. 5/2005
S5.7.3	W3	<p><u>Construction Works in Close Proximity of Inland Water</u></p> <p>The following mitigation measures should be followed:</p> <ul style="list-style-type: none"> Construction works close to the inland waters should be carried out in dry season as far as practicable where the flow in the surface channel or stream is low; Trenches should be dug and backfilled in short sections. Measures should be taken to minimise the ingress of rainwater into trenches; 	To minimise the water quality impact towards inland water bodies arising from construction sites	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> WPCO ProPECC (PN2/23) EIAO DSS-TM ETWB TC(Works) No. 5/2005

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		<ul style="list-style-type: none"> The use of less or smaller construction plants may be specified in areas close to the water; Temporary storage of materials (e.g. equipment, chemicals and fuel) and temporary stockpile of construction materials should be located well away from any watercourses during construction works; Stockpiling of construction materials and dusty materials should be covered and located away from any watercourses. Construction debris and spoil should be covered up and / or disposed of as soon as possible; and Proper shoring may need to be erected. 					
5.7.4	W4	<p><u>Sterilisation of Water Mains Prior to its Commission</u></p> <ul style="list-style-type: none"> A WPCO discharge license for discharge of effluent from the construction site shall be applied for the construction phase. Effluent from the sterilised water mains should be dechlorinated to ensure total residual chlorine concentrations have complied with the standards stipulated under the WPCO discharge license before discharge. The cleaning and flushing water should also be treated and desilted to ensure compliance with the requirements of the WPCO discharge license. Adequate temporary storage tanks with sufficient capacity or contacting time for dechlorination should be provided; Specific advice from EPD should be sought during the design stage of works with regards to the disposal of the sterilising water. Details of the chlorination and dechlorination treatment process, treatment facilities, treatment capacity, discharge volume, chemicals for dechlorination, implementation programme, sampling 	To minimise the water quality impact on nearby water bodies arising from residual chlorine due to sterilisation.	Contractor/ WSD	Fresh Water Trunk Mains	Construction Phase	<ul style="list-style-type: none"> WPCO ProPECC (PN2/23) EIAO-TM DSS-TM

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		<p>location(s), discharge location(s), monitoring frequency should be submitted to EPD; and</p> <ul style="list-style-type: none"> The total residual chlorine should be measured in-situ at the discharge point(s) to ensure the residual chlorine has complied with the requirements stipulated under the WPCO discharge license. If the dechlorinated water exceeds the allowed concentration, discharge must be suspended and the water should be circulated to a standby tank for further dechlorination and testing until the water quality comply with the discharge requirements. 					
S5.7.5	W5	<p><u>Accidental Chemical Spillage</u></p> <ul style="list-style-type: none"> The Contractor must be registered as a chemical waste producer if chemical wastes are produced from the construction activities. The Waste Disposal Ordinance (Cap. 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation, should be observed and complied with. The Contractor is also recommended to develop management procedures for chemicals used and prepare an emergency spillage handling procedure; and Any services and maintenance facilities should be located on hard standings within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with the potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges. The service and maintenance as well as any chemical 	To minimise water quality impact from accidental spillage of chemicals	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> WPCO ProPECC (PN2/23) EIAO-TM DSS-TM WDO

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		<p>storage area would be avoided to position near the watercourse;</p> <ul style="list-style-type: none"> • Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling, and Storage of Chemical Wastes published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes; • Suitable containers should be used to hold the chemical wastes; • Chemical waste containers should be suitably labelled; • Storage area should be selected at a safe location on-site and adequate space should be allocated to the storage area; and • The Contractor should devise a contingency plan for any accidental spillage and heavy rainfall event. 					
S5.7.6	W6	<p><u>Tunnelling and Underground Works</u></p> <p>The following groundwater control strategies and mitigation measures should be followed:</p> <ul style="list-style-type: none"> • The Contractor should undertake rigorous probing of the ground ahead of tunnelling/excavation works to identify zones of potential significant water inflow. In zones where significant water inflow could occur due to discrete, permeable features, grouting should be applied to reduce overall inflow of groundwater; 	To minimise water quality impact from accidental groundwater infiltration	Contractor	Modification works of Chamber G	Construction phase	<ul style="list-style-type: none"> • WPCO • ProPECC (PN2/23) • EIAO • DSS-TM

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		<ul style="list-style-type: none"> Where water inflow quantities are excessive, pre-grouting will be required to reduce the water inflow underground; In case there is still excessive drawdown of the groundwater table, even after the implementation of the water control strategies, post-grouting should be applied as far as practicable; and Waterproof lining will be installed after the formation of the tunnel and cavern; Regular groundwater table should be monitored during the tunnelling works. All the available limited groundwater monitoring points will initially be located at the portal until additional groundwater monitoring points are proposed at other locations during the detailed design stage; and In the event of seepage of groundwater occurs, groundwater should be collected inside the works areas before discharging to the existing stormwater drainage system via silt removal facilities. The discharges during construction phase shall comply with WPCO requirements. 					
Waste Management (Construction Phase)							
S6.3.3	WM1	<u>Good Site Practices</u> The following good site practices are recommended to 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 	Ensure proper waste management system throughout the construction	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> WDO ETWB TC(W) 19/2005

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		<p>effective disposal to an appropriate facility, of all wastes generated at the site;</p> <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; • Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; • Provision of wheel washing facilities at site exit before the trucks leave the works areas to minimise dust disturbance due to the trucks transportation to the public road network; and • The Contractor should prepare a Waste Management Plan (WMP) as part of the Environmental Management Plan (EMP) in accordance with the ETWB TCW No. 19/2005. The WMP should be submitted to the Engineer for approval. Mitigation measures proposed in the EIA Report and the EM&A Manual should be adopted. • Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; 			All waste transportation route where applicable		

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S6.3.3	WM2	<p><u>Waste Reduction Measures</u></p> <p>The following recommendations are proposed to achieve reduction of waste:</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 good site practices to minimise the potential for damage and contamination of construction materials; • Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste; • Sort out demolition debris and excavated materials from demolition works to recover reusable/ recyclable portions (i.e. soil, broken concrete, metal etc.); and • Provide training to workers on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling. 	Reduce waste generation	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> • WDO
S6.3.3	WM3	<p><u>Storage, Collection and Transportation of Waste</u></p> <p>The following recommendation should be implemented to minimise the impacts from storage, collection and transportation of waste:</p> <ul style="list-style-type: none"> • Non-inert C&D materials such as top soil should be handled and stored well to ensure secure containment of the materials; • Stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; and 	Minimise impact to the environment due to storage, collection and transport of waste	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> • WDO • Land (Miscellaneous Provisions) Ordinance • ETWB TCW No. 19/2005

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		<ul style="list-style-type: none"> • Different locations should be designated to stockpile each material to enhance reuse. • Carry out on-site sorting for C&D materials; • Remove waste in timely manner; • Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; and • A Construction and Demolition Material Management Plan (C&DMMP) should be prepared in accordance with Section 4.1.3 “Construction and Demolition Materials” of the Project Administration Handbook for Civil Engineering Works and will be submitted separately during EIA stage to Public Fill Committee (PFC) for approval; <p>The collection and transportation of waste to respective disposal sites may also induce adverse environmental impacts if not properly managed. The following recommendation should be implemented to minimise the impacts:</p> <ul style="list-style-type: none"> • Employ the trucks with cover or enclosed containers for waste transportation; • Obtain relevant waste disposal permits from the appropriate authorities; • Disposal of waste should be done at licensed waste disposal facilities; • Implement a trip-ticket system for each works contract in accordance with DEVB TCW No. 06/2010. • All dump trucks engaged on-site for delivery of inert and non-inert C&D material from the site to the 			All waste transportation route where applicable		

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		<p>designated disposal location, including PFRFs, landfill etc., should be equipped with Global Positioning System (GPS) or equivalent automatic system for real time tracking and monitoring of their travel routings and parking locations by the Contractor to prohibit illegal dumping and landfilling of materials.</p> <ul style="list-style-type: none"> The data collected by GPS or equivalent system should be recorded properly for checking and analysis the travel routing and parking locations of dump truck engaged on site by the contractor. 					
S6.3.3	WM4	<p><u>On-site Sorting of C&D Materials</u></p> <ul style="list-style-type: none"> Storage areas should be provided in the site for temporary storage of inert C&D materials during construction phase. All C&D materials arising from the construction would be sorted on-site to recover the inert C&D materials and reusable and recyclable materials prior to disposal off-site as far as practicable. Non-inert portion of C&D materials should be reused whenever possible and be disposal of at landfills as a last resort. The Contractor should devise a system to work for on-site sorting of C&D materials and promptly remove all sorted and processed material arising from the construction activities to minimise temporary stockpiling on-site. The system should include the identification of the source of generation, estimated quantity, arrangement for on-site sorting and/ or collection, temporary storage areas, and frequency of collection by recycling contractors or frequency of removal off-site. 	Minimise waste impacts from C&D materials handling	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> WDO ETWB TCW No. 19/2005 Land (Miscellaneous Provisions) Ordinance

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S6.3.3	WM5	<p><u>Reuse of C&D Materials</u></p> <p>Based on the construction programme, all inert C&D materials would be best reused on-site during the whole construction phase to minimise offsite disposal of inert C&D materials. Should there be any surpluses inert C&D materials necessary for off-site disposal, it is recommended to be disposed at public fill reception facilities.</p>	Minimise waste impacts from C&D materials handling	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> ● WDO ● ETWB TCW No. 19/2005 ● Land (Miscellaneous Provisions) Ordinance
S6.3.3	WM6	<p><u>Specification of Inert C&D Materials to be Delivered Off-site</u></p> <p>In case there are surplus inert C&D materials generated in the Project and are required to delivered to the PFRFs, the inert C&D materials should fulfil the following requirements:</p> <ul style="list-style-type: none"> ● Reclaimed asphalt pavement will not be mixed with other materials when delivered to the PFRFs; ● Moisture content of inert C&D materials will be lowered to 25% max. when delivered to the public fill reception facilities; ● Inert C&D materials delivered to the public fill reception facilities should be a size less than 250mm; and ● Inert construction waste shall not be in liquid form such that it can be contained and delivered by dump truck as far as possible. Inert C&D materials in liquid form shall be solidified before delivering to the public fill reception facilities. 	Reduce waste generation	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> ● WDO ● ETWB TCW No. 19/2005 ● Land (Miscellaneous Provisions) Ordinance

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S6.3.3	WM7	<p><u>Use of Standard Formwork and Planning of Construction Materials purchasing</u></p> <p>Standard formwork should also be used as far as practicable in order to minimise the arising of non-inert C&D materials. The use of more durable formwork (e.g. metal hoarding) or plastic facing should be encouraged in order to enhance the possibility of recycling. The purchasing of construction materials should be carefully planned in order to avoid over ordering and wastage.</p>	Reduce waste generation	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> N.A.
S6.3.3	WM8	<p><u>Chemical Waste</u></p> <p>For those processes which generated chemical waste, it may be possible to find alternatives to eliminate the use of chemicals, to reduce the generation quantities or to select a chemical type of less impact on environment, health and safety as far as possible. Wherever possible, opportunities for the reuse and recycling of materials will be taken.</p> <p>If chemical wastes are produced at the construction site, the contractors should register with EPD as chemical waste producers. Storage, handling, transport and disposal of chemical waste should be arranged in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published by the EPD. Chemical waste should be stored in appropriate containers and collected by a licensed chemical waste collector. Chemical wastes (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while the chemical waste that cannot be recycled should be disposed of at either the CWTC, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.</p>	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

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S6.3.3	WM9	<p><u>General Refuse</u></p> <p>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 regular basis. Arrangements should be made with the recycling companies to collect the recycle waste as required. It is expected that such arrangements would minimise potential environmental impacts.</p> <p>The Contractor should implement an education programme for workers relating to avoiding, reducing, reusing and recycling general waste. Participation in a local collection scheme should be considered by the Contractor to facilitate waste reduction.</p>	Minimise production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> WDO
Land Contamination							
S7.5	LC1	No land contamination is anticipated, mitigation measures are therefore not required.	-	-	-	-	-
Ecology (Construction Phase)							
S8.6	E1	Good site practice should be enforced, and effective mitigation measures are required. In particular, the Practice Note for Professional Persons (ProPECC Note PN2/23) on Construction Site Drainage provides guidelines for the handling and disposal of construction discharges. It should be followed strictly to control site runoff and wastewater generated during the construction phase. Other mitigation measures during construction phase are listed as follows:	General good site practice to minimise indirect ecological disturbance to habitats and wildlife	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> ProPECC (PN2/23) EIAO-TM

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		<ul style="list-style-type: none"> • Erect fences along the boundary of the works area before the start of works to prevent vehicle movements and encroachment of personnel onto adjacent natural habitats. Regularly check the boundaries to ensure that they are not breached; • Avoid any damage and disturbance, particularly to minimise risk of filling and illegal dumping, to the adjacent habitats during construction; • Avoid directing lighting from works sites towards adjacent habitats and any other ecologically sensitive areas; • Prohibit and prevent open fires within the site boundary during construction and provide temporary fire-fighting equipment in work areas to minimise the possibility of hill fires; • Cover excavated material or stockpiles of construction material with tarpaulin during rain events to prevent the washing of these materials into adjacent watercourses and ponds; • Cover stockpiles of loose material and carrying out dust suppression spraying on all access roads to mitigate dust generation; • Provide waste skips to collect general refuse and construction waste, which should be disposed regularly and properly off-site; • Proper selection of quiet plant aiming to reduce the tonality at NSRs; • Installation of silencer / acoustic enclosure / acoustic louvre for the exhaust of ventilation system; and 					

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S8.6	E2	To minimise the impacts to the groundwater table, groundwater control strategies listed in EM&A Log Ref W6 of the EIA Report should be duly followed.	To minimise the potential impacts to the groundwater table	Contractor	Modification works of Chamber G	Construction phase	<ul style="list-style-type: none"> ● WPCO ● EIAO-TM
S8.6	E3	Regular audit and site inspection should be conducted to ensure the recommended mitigation measures are properly implemented.	Perform environmental monitoring and auditing	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> ● EIAO-TM
<i>Fisheries (Construction Phase)</i>							
S9.5	F1	Good site practises as specified in the Practice Note for Professional Persons on Construction Site Drainage, Environmental Protection Department, 2023 (ProPECC PN 2/23) should be followed to prevent potential indirect impacts on the pond area.	Minimise potential hydrological impacts to fish ponds	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> ● ProPECC (PN2/23) ● EIAO-TM
S9.5	F2	Standard mitigation measures to control site runoff and other pollutants caused by construction activities and good site practices will be implemented.	Minimise potential hydrological impacts to fish ponds	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> ● EIAO-TM
S9.5	F3	Excavated material and other inert construction wastes produced will also be transferred to proper recipients.	Minimise hindrance to fisheries operations	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> ● EIAO-TM
S9.5	F4	Temporary traffic arrangements should be instigated to maintain or provide alternative access to ponds during construction phase.	Minimise hindrance to fisheries operations	Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> ● EIAO-TM

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<i>Landscape and Visual (Construction Phase)</i>							
S10.7	LV1	<u>Careful Site Planning and Management</u> <ul style="list-style-type: none"> Site layout and works area including temporary access road(s), stockpiling area(s), temporary construction storage shall be carefully planned to preserve existing landscape resources and trees as far as practicable. Good site practices shall be enforced to eliminate eyesores from unappealing stockpiling/ storage areas and/or construction activities. 	<p>To minimise site clearance, tree removal and disturbance to existing Landscape Resources.</p> <p>To minimise visual obstruction to VSRs</p>	WSD / Contractor	All construction sites	Detailed Design and Construction Phase	
S10.7	LV2	<u>Careful Design of Slope Works, if any</u> <p>Slope stabilisation methods (i.e. insertion of soil nails and establishment of grillage, etc.) shall be carefully formulated to minimise the loss of tree and landscape cover as far as practicable.</p>	To minimise tree removal and to create a slope surface better blending with the surrounding environment.	WSD / Contractor	All construction sites	Detailed Design and Construction Phase	
S10.7	LV3	<u>Tree Preservation</u> <ul style="list-style-type: none"> In accordance with DEVB TC (W) No.4/2020 – Tree Preservation or its latest version, existing trees shall be retained on site as far as practicable. Adequate tree protection measures shall be provided for the Trees to be retained on site. Relevant guidelines on tree care and protection promulgated by Greening, Landscape and Tree Management Section (GLTMS) of Development Bureau (DEVB) shall be observed and followed. Incorporating requirements for preservation and protection of existing trees in construction contracts. 	To minimise tree removal.	WSD / Contractor	All construction sites	Construction Phase	<ul style="list-style-type: none"> DEVB TCW No. 4/2020 Relevant guidelines on tree care and protection promulgated by GLTMS of DEVB

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S10.7	LV4	<p><u>Tree Transplanting / Compensatory Tree Planting</u></p> <ul style="list-style-type: none"> Trees unavoidably affected by the project shall be transplanted as far as practicable in accordance with DEVB TC (W) No.4/2020 – Tree Preservation or its latest version and the latest guidelines promulgated by Greening, Landscape and Tree Management Section of Development Bureau. Affected trees that are not suitable for transplantation and to be felled shall be compensated in not less than 1:1 in quantity either on-site or off-site in accordance with approved TPRP(s) and in accordance with DEVB TC (W) No.4/2020 – Tree Preservation or its latest version, subject to the approved Tree Preservation and Removal Plan. Tree species selected shall be compatible with surrounding existing vegetation. 	<p>To minimise the loss of trees.</p> <p>To compensate for the loss of trees.</p> <p>To provide quality and sustainable landscape that is compatible with the site context.</p>	WSD / Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> DEVB TCW No. 4/2020 Relevant guidelines on tree care and protection promulgated by GLTMS of DEVB
S10.7	LV5	<p><u>Regular Inspection of Retained Trees</u></p> <ul style="list-style-type: none"> Regular site inspection shall be conducted by tree specialist. The performance of the retained trees shall be monitored throughout the Construction period on a monthly basis by a qualified Arborist. The Contractor shall submit monthly record photo throughout the construction period for all retained trees, to demonstrate the trees' health condition. The monthly record photos shall be prepared by a tree specialist or a qualified arborist, and endorsed by a registered Landscape Architect (RLA). 	To closely monitor the retained trees' health condition.	WSD / Contractor	All construction sites	Construction phase	<ul style="list-style-type: none"> DEVB TCW No. 4/2020 Relevant guidelines on tree care and protection promulgated by GLTMS of DEVB

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S10.7	LV6	<u>Minimisation of Light Impact</u> Lighting at construction sites shall be carefully controlled at night.	To avoid disturbance to nearby VSRs.	WSD / Contractor	All construction sites	Construction phase	
S10.7	LV7	<u>Reinstatement of Temporarily Disturbed Areas</u> Temporarily disturbed areas shall be reinstated.	To reinstate the disturbed landscape.	WSD / Contractor	All construction sites	Construction phase	
<i>Cultural Heritage (Construction Phase)</i>							
S11.5.5	CH1	Inform AMO immediately when any antiquities or supposed antiquities under the Antiquities and Monuments Ordinance (Cap. 53) are discovered.	As a precautionary measure	WSD / Contractor	Excavation work sites of the Project	Construction phase	<ul style="list-style-type: none"> Antiquities and Monuments Ordinance (Cap. 53)
<i>Hazard to Life</i>							
S12.2	H1	The Contractor should ensure that there is no liquid chlorine storage at NTMWTW before the commencement of the construction works of this Project. No potential risk is anticipated, mitigation measures are therefore not required for both construction and operational phase.	-	-	-	-	-

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EM&A Project							
S13.3	EM1	An Independent Environmental Checker needs to be employed as per the EM&A Manual.	Control EM&A performance	WSD	All construction sites	Construction Phase	<ul style="list-style-type: none"> ● EIAO Guidance Note No.4/2010 ● EIAO-TM
S13.3-13.5	EM2	1) An Environmental Team needs to be employed as per the EM&A Manual. 2) An environmental impact monitoring needs to be implementing by the Environmental Team to ensure all the requirements given in the EM&A Manual are fully complied with.	Perform environmental monitoring and auditing	Contractor/ WSD	All construction sites	Construction Phase	<ul style="list-style-type: none"> ● EIAO Guidance Note No.4/2010 ● EIAO-TM