

Appendix A Implementation Schedule and Recommended Environmental Mitigation Measures

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Objectives of Measures and Main Concern to Address	Location	Implementation Agent	Relevant Standard or Requirement	Implementation Stages		
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Air Quality									
EIA Sections 3.5.4.2	EM&A Section 3.3	<p>The dust control measures detailed below shall also be incorporated into the Contract Specification where practicable as an integral part of good construction practice:</p> <ul style="list-style-type: none"> • Use of regular watering once per two hours to reduce dust emissions from all exposed site surfaces with dust emission and unpaved roads, particularly during dry weather; • Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering shall be applied to aggregate fines; • Open stockpiles shall be avoided or covered. Prevent placing dusty material storage piles near ASRs; • Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations; • Establishment and use of vehicle wheel and body washing facilities at the exit points of the site; • Imposition of speed controls for vehicles on unpaved site roads, 8km per hour is the recommended limit; • Routing of vehicles and position of construction plant should be at the maximum possible distance from ASRs; • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides; 	To minimise dust impacts	All works sites	Contractor	<p>Air Pollution Control Ordinance (APCO)</p> <p>Air Pollution Control (Construction Dust) Regulation</p> <p>HKAQO</p> <p>Technical Memorandum on Environmental Impact Assessment Process (EIAO-TM)</p>		✓	

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		<ul style="list-style-type: none"> Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high-level alarm which is interlocked with the material filling line and no overfilling is allowed; and 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. 							
EIA Section 3.5.2.25	EM&A Section 3.3	Watering on heavy construction work areas to reduce dust emission by 91.7%. Any potential dust impact and watering mitigation would be subject to the actual site condition.	To minimise dust impacts	All works sites	Contractor	APCO		✓	
EIA Section 3.5.4.3	EM&A Section 3.3	<p>In addition to the dust control measures mentioned above, the following good site practices are recommended to further control and reduce the emission from the use of non-road mobile machinery from the Project:</p> <ul style="list-style-type: none"> Connect construction plant and equipment to main electricity supply and avoid use of diesel generators and diesel-powered equipment; Avoid usage of exempted NRMMS as far as practicable; Deploy electrified NRMMS and PME as far as practicable; Switch off the engine of PME 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 PME away from sensitive receivers as far as possible; and 	To minimise gaseous and PM emissions from NRMMS and PME	All works sites	Contractor	APCO		✓	

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		<ul style="list-style-type: none"> Erect screen to shield the emission source from sensitive receivers where necessary and practicable. 							
EIA Section 3.7	EM&A Section 3.3	Implement regular dust monitoring under EM&A programme during the construction phase.	Monitoring of dust impact	Selected dust monitoring stations	Contractor	EIAO-TM		✓	
Noise (Construction Phase)									
EIA Section 4.5.4.2	EM&A Section 4.2.1	<p>The following quieter construction methods should be implemented:</p> <ul style="list-style-type: none"> Hydraulic concrete crusher should be used for rock breaking activities during site establishment, instead of traditional hydraulic breaker; Non-explosive chemical expansion agent should be used for concrete breaking activities during site establishment, instead of traditional hydraulic breaker; Self-compacting concrete will be used for concreting works, instead of traditional vibratory poker; Silent piling by Press-in Method (Press-in piling) will be used for sheet piling works, instead of traditional massive augering and piling machines. 	To minimise construction noise impact	All works sites	Contractor	EIAO-TM Noise Control Ordinance (NCO)		✓	
EIA Section 4.5.4.3	EM&A Section 4.2.1	Use of quieter Powered Mechanical Equipment is recommended to reduce the noise impact (See Table 4.8 of EIA).	To minimise construction noise impact	All works sites	Contractor	EIAO-TM NCO		✓	
EIA Section 4.5.4.4	EM&A Section 4.2.1	Noise barrier shall be placed as close to the PME as possible and a location intercepting the line of sight between the NSRs and PME. The barrier material shall have a surface density of at least 10 kg/m ² with internal sound absorptive material.	To minimise construction noise impact	All works sites	Contractor	EIAO-TM NCO		✓	
EIA Section	EM&A Section	Noise enclosure with covers at top and three sides shall be used to enclose the PME and the	To minimise construction noise	All works sites	Contractor	EIAO-TM		✓	

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4.5.4.5	4.2.1	open side shall be faced away to the NSRs. The enclosure shall have a surface density of at least 10kg/m ² with internal sound absorptive material.	impact			NCO			
EIA Section 4.5.4.6	EM&A Section 4.2.1	Noise insulating fabric can be adopted for certain PME such as piling machine. The fabric should be lapped such that there would be no openings or gaps on the joints.	To minimise construction noise impact	All works sites	Contractor	EIAO-TM NCO		✓	
EIA Section 4.5.4.9	EM&A Section 4.2.1	Good site practices that can further reduce the noise levels at NSRs. These include: <ul style="list-style-type: none"> • Only well-maintained plant should be operated on-site and plants should be serviced regularly during the construction period; • Mobile plant, if any, should be sited as far from NSRs as possible; • Plant known to emit noise strongly in one direction should, wherever possible, be properly orientated so that the noise is directed away from the nearby NSRs; • Use of site hoarding as a noise barrier to screen noise at low level NSRs; • Machines and plant that may be used intermittently should be shut down between works periods or should be throttled down to a minimum; and • Any material stockpiles and other structures should be effectively utilised, wherever practicable, to screen the noise from on-site construction activities. 	To minimise construction noise impact	All works sites	Contractor	EIAO-TM NCO		✓	
EIA Section 4.5.4.10	EM&A Section 4.2.2	Construction Noise Management Plan(s) (CNMP) with reference to Section 8 and Annex 21 of the EIAO-TM should be prepared to submit during pre-tender stage, if any, and before commencement of construction works, so that both the verification of the inventory of noise	To minimise construction noise impact	-	Contractor	EIAO-TM NCO	✓	✓	

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		sources, and the assessment of the effectiveness and practicality of all identified measures for mitigating the construction noise impact of the Project, would be performed during the design, tendering and implementation stage of the construction works.							
Noise (Operation Phase)									
EIA Section 4.8.2.1	EM&A Section 4.2.3 & 4.4	Noise commissioning test of the zero emission vehicles should be carried out prior to operation to verify the Sound Power Level (SWL) of the zero emission vehicles is 100dB(A) or below	To minimise zero emission vehicles noise impact	-	Contractor	EIAO-TM NCO			✓
Water Quality (Construction Phase)									
EIA Section 5.9.1.1	EM&A Section 5.2	There will be at most 2 piles installed concurrently for the marine facilities. Similarly, there will be at most 2 piles installed concurrently for the marine viaduct.	To minimize construction phase water quality impact	All works sites	Contractor	-		✓	
EIA Section 5.9.1.1	EM&A Section 5.2	Silt curtain would be set up to enclose the entire active work area before commencement of piling works for marine facilities and marine viaduct to control sediment dispersion.	To minimize construction phase water quality impact	All works sites	Contractor	-		✓	
EIA Section 5.9.1.1	EM&A Section 5.2	All vessels should be well maintained and inspected before use to limit any potential discharges to the marine environment.	To minimize construction phase water quality impact	All works sites	Contractor	-		✓	
EIA Section 5.9.1.1	EM&A Section 5.2	All vessels must have a clean ballast system.	To minimize construction phase water quality impact	All works sites	Contractor	-		✓	
EIA Section 5.9.1.1	EM&A Section 5.2	All vessels shall be sized such that adequate clearance is maintained between vessels and the sea bed at all states of the tide to ensure that undue turbidity is not generated by turbulence	To minimize construction phase water quality impact	All works sites	Contractor	Professional Persons Environmental Consultative Committee (ProPECC)		✓	

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		from vessel movement or propeller wash.				Practice Note (PN) 1/94			
EIA Section 5.9.1.1	EM&A Section 5.2	Marine works shall not cause foam, oil, grease, litter or other objectionable matter to be present in the water within and adjacent to the works site.	To minimize construction phase water quality impact	All works sites	Contractor	ProPECC PN1/94		✓	
EIA Section 5.9.1.1	EM&A Section 5.2	Wastewater from potentially contaminated area on working vessels should be minimized and collected. These kinds of wastewater should be brought back to port and discharged at appropriate collection and treatment system.	To minimize construction phase water quality impact	All works sites	Contractor	ProPECC PN1/94		✓	
EIA Section 5.9.1.1	EM&A Section 5.2	No solid waste is allowed to be disposed overboard.	To minimize construction phase water quality impact	All works sites	Contractor	-		✓	
EIA Section 5.9.1.1	EM&A Section 5.2	Best Management Practices (BMPs) of mitigation measures in controlling water pollution and good site management, as specified in the ProPECC PN 1/94 "Construction Site Drainage" are followed, where applicable, to prevent runoff with high level of SS from entering the surrounding waters.	To minimize construction phase water quality impact	All works sites	Contractor	ProPECC PN1/94		✓	
EIA Section 5.9.1.1	EM&A Section 5.2	At the start of site establishment, perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works. Channels, earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities.	To minimize construction phase water quality impact	All works sites	Contractor	-		✓	
EIA Section 5.9.1.1	EM&A Section 5.2	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	To minimize construction phase water quality impact	All works sites	Contractor	-		✓	

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		machinery and equipment in order to avoid or minimize polluted runoff. Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m ³ capacities, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity shall be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped.							
EIA Section 5.9.1.1	EM&A Section 5.2	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.	To minimize construction phase water quality impact	All works sites	Contractor	-		✓	
EIA Section 5.9.1.1	EM&A Section 5.2	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.	To minimize construction phase water quality impact	All works sites	Contractor	ProPECC PN1/94		✓	
EIA Section 5.9.1.1	EM&A Section 5.2	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	To minimize construction phase water quality impact	All works sites	Contractor	ProPECC PN1/94		✓	

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		removed regularly and disposed of by spreading evenly over stable, vegetated areas.							
EIA Section 5.9.1.1	EM&A Section 5.2	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.	To minimize construction phase water quality impact	All works sites	Contractor	ProPECC PN1/94		✓	
EIA Section 5.9.1.1	EM&A Section 5.2	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.	To minimize construction phase water quality impact	All works sites	Contractor	ProPECC PN1/94		✓	
EIA Section 5.9.1.1	EM&A Section 5.2	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.	To minimize construction phase water quality impact	All works sites	Contractor	ProPECC PN1/94		✓	
EIA Section 5.9.1.1	EM&A Section 5.2	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	To minimize construction phase water quality impact	All works sites	Contractor	ProPECC PN1/94		✓	

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		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.							
EIA Section 5.9.1.1	EM&A Section 5.2	Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts.	To minimize construction phase water quality impact	All works sites	Contractor	EIAO-TM		✓	
EIA Section 5.9.1.1	EM&A Section 5.2	Appropriate numbers of chemical toilets will be provided by a licensed contractor to serve the construction workers over the construction sites to prevent direct disposal of sewage into the water environment. No onsite discharge from these chemical toilets will be allowed.	To minimize construction phase water quality impact	All works sites	Contractor	-		✓	
EIA Section 5.9.1.1	EM&A Section 5.2	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.	To minimize construction phase water quality impact	All works sites	Contractor	EIAO-TM		✓	
EIA Section 5.9.1.1	EM&A Section 5.2	The contractors shall ensure that leakages or spillages are contained and cleaned up immediately.	To minimize construction phase water quality impact	All works sites	Contractor	-		✓	
EIA Section 5.12.1.1	EM&A Section 5.7.7	During the marine construction period, impact monitoring should be undertaken 3 days per week, at mid-flood and mid-ebb tides, with sampling/measurement at all designated monitoring stations including control station as specified in EM&A Manual Table 5.1 and Table	To minimize construction phase water quality impact	Proposed marine facilities and marine viaduct between Airport Island and Tung Chung Town Centre	Contractor	EIAO-TM		✓	

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		5.2.							
Water Quality (Operational Phase)									
EIA Section 5.12.1.1	EM&A Section 5.7.12	Upon completion of all construction phase marine works, post construction phase monitoring should be carried out for 4 weeks in the same manner as the impact monitoring.	To minimize operational phase water quality impact	Proposed marine facilities	Project Proponent / Contractor	Water Pollution Control Ordinance (WPCO)			✓
EIA Section 5.12.1.1	EM&A Section 5.7.12	During the maintenance dredging period, impact monitoring should be undertaken 3 days per week, at mid-flood and mid-ebb tides, with sampling/measurement at all designated monitoring stations including control station as specified in EM&A Manual Table 5.2.	To minimize operational phase water quality impact	Proposed marine facilities	Project Proponent / Contractor	Water Pollution Control Ordinance (WPCO)			✓
EIA Section 5.9.2.1	EM&A Section 5.2	Cage type silt curtain will be provided during maintenance dredging. The maximum working rate for maintenance dredging is assumed to be 40m ³ per hour and only one closed grab dredger will be working in any time.	To minimize operational phase water quality impact	Proposed marine facilities	Project Proponent / Future operator	WPCO			✓
EIA Section 5.9.2.2	EM&A Section 5.2	Local connections to the public sewer would be installed and no direct discharge of sewage and wastewater to the nearby drainage system and marine waters would be allowed. Regular cleaning and removal of floating refuse should be conducted within the area of the marine facilities and coastal area around the Project to avoid excessive accumulation.	To minimize operational phase water quality impact	Proposed marine facilities	Project Proponent / Future operator	WPCO			✓
EIA Section 5.9.2.2	EM&A Section 5.2	Also, any new drainage outfall(s) under this Project will be located outside of the marine facilities.	To minimize operational phase water quality impact	Proposed marine facilities	Project Proponent / Future operator	WPCO			✓

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EIA Section 5.9.2.3	EM&A Section 5.2	Spillage clean up equipment should be provided at the marine facilities to allow quick response in case of emergency.	To minimize operational phase water quality impact	Proposed marine facilities	Project Proponent / Future operator	WPCO			✓
EIA Section 5.9.2.4	EM&A Section 5.2	A surface water drainage system of the ATCL should be provided to collect road runoff to the new drainage system with new storm water outfall and adequate designed pollution removal devices such as silt trap and, as necessary, oil/grease trap, which should be regularly cleaned and maintained to ensure proper functioning.	To minimize operational phase water quality impact	Proposed marine facilities	Project Proponent / Future operator	WPCO	✓		✓
Waste Management (Construction Phase)									
EIA Section 6.5.1.2	EM&A Section 6.2	<p><u>Good Site Practices</u></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 minimize 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; Provision of wheel washing facilities at site exit before the trucks leave the works areas to minimize dust disturbance due to the trucks 	Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	All works sites	Contractor	EIAO-TM Waste Disposal Ordinance (WDO) DEVB TC(W) No. 6/2010 PNAP ADV-19		✓	

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		transportation to the public road network; and <ul style="list-style-type: none"> The Contractor should prepare a Waste Management Plan (WMP) as part of the Environmental Management Plan (EMP) in accordance with the PNAP ADV-19. The WMP should be submitted to the Project Manager/ Representatives of project proponent for approval. Mitigation measures proposed in the EIA Report and the EM&A Manual should be adopted. 							
EIA Section 6.5.1.3	EM&A Section 6.2	<u>Waste Reduction Measures</u> <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 minimize the potential contamination of construction materials. Plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste. Provide training to workers on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling. 	Segregation to minimise waste generation during construction	All works sites	Contractor	EIAO-TM WDO		✓	
EIA Sections 6.5.1.4 – 6.5.1.5	EM&A Section 6.2	<u>Storage, Collection and Transportation of Waste</u> <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/ temporary stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away. 	Proper storage, collection and transportation of wastes to minimize the environmental impacts on site and at the transportation route	All works sites	Contractor	WDO PNAP ADV-19 EIAO-TM DEVB TC(W)		✓	

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		<ul style="list-style-type: none"> Different locations should be designated to stockpile each material to enhance reuse. 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. Disposal of waste should be done at licensed waste disposal facilities. In order to monitor the disposal of C&D materials at PFRFs and landfills and to control fly-tipping, a trip-ticket system should be established in accordance with DEVB TCW No. 6/2010. A recording system for the amount of waste generated, recycled and disposed, including the disposal sites, should also be set up. Warning signs should be put up to remind the designated disposal sites. CCTV should be installed at the vehicular entrance and exit of the site as additional measures to prevent fly-tipping. 				No. 6/2010			
EIA Sections 6.5.1.7 - 6.5.1.9	EM&A Section 6.2	<u>C&D Material</u> <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. Implement a trip-ticket system for each works contract in accordance with DEVB TCW No. 06/2010 to ensure that the disposal of C&D 	Segregation to minimise cross contamination and minimise waste generation during construction	All works sites	Contractor	EIAO-TM DEVB TC(W) No. 6/2010		✓	

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		<p>materials is properly documented.</p> <ul style="list-style-type: none"> All dump trucks carrying inert C&D materials to the designated locations shall equipped with GPS or equivalent devices so that the travel routes and parking locations can be tracked and monitored. A real-time GPS tracking system connecting to the internet or intranet will allow efficient tracking and monitoring to avoid illegal dumping or landfilling of C&D materials. The data collected by GPS or equivalent system should be recorded properly for checking by Environmental Team (ET) and Independent Environmental Checker (IEC) regularly. <p><i>On-site Sorting of C&D Materials</i></p> <ul style="list-style-type: none"> Storage areas should be located within the site during construction phase for temporary storage of inert C&D materials. 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 also be reused whenever possible and be disposal of at landfills as a last resort. The Contractor would be responsible for on-site sorting of C&D materials and promptly remove all sorted and processed material arising from the construction activities to minimize temporary stockpiling on-site. <p><i>Reuse of C&D Materials</i></p> <ul style="list-style-type: none"> Reuse suitable inert C&D materials on-site as 							

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		<p>far as practicable.</p> <ul style="list-style-type: none"> Reuse suitable excavated rock by reworking at approved quarries (e.g. Crushed as aggregates). Sorting of demolition debris and excavated materials from demolition works to recover reusable/ recyclable portions (e.g. Soil, broken concrete, metal). Protect recyclable material to keep it in usable condition. 							
EIA Section 6.5.1.10-6.5.1.13	EM&A Section 6.2	<p><u>Land-based and Marine-based Sediment</u></p> <ul style="list-style-type: none"> Excavated marine sediment should be reused as far as possible within the Project Site before considering disposal. Subject to availability of suitable location and review on the backfilling method, part or all of the marine sediment would be reused on site. Possible methods for the reuse of marine sediment on site including the reuse as backfilling materials after mixing with cement should be explored. The criteria for reuse of treated sediments are proposed with reference to the Unconfined Compressive Strength (UCS) and the Universal Treatment Standards (UTS), which specify the Toxicity Characteristics Leaching Procedure (TCLP) test limits as given in Section 4.1 and Table 4.6 of the Practice Guide for Investigation and Remediation of Contaminated Land. A pilot trial will be carried out for the concerned sediments in order to confirm the treatment options. The following mitigation measures shall be adopted to minimise the potential 	Handling excavated sediment	All works sites where applicable	Contractor	DASO PNAP ADV-21		✓	

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		<p>environmental impacts:</p> <ul style="list-style-type: none"> • Cement mixing process should be enclosed to minimize odour/ dust emissions. • Loading, unloading, handling, transferring and storing for treated and untreated sediment should be carried out in a good site practices that prevents or minimizes dust emissions. • An impermeable surfacing shall be placed under the mixing areas and a cover should be employed to prevent dust emission and possible cross contamination. • Good housekeeping should be maintained at the mixing and treatment area. • Treated and untreated sediment should be clearly separated and stored separately. • Surface runoff from the mixing and treatment area should be properly collected and stored separately, and then properly treated to levels in compliance with the relevant effluent standards as required by the Water Pollution Control Ordinance before final discharge. • Prior to the cement mixing operation, safety training and environmental training should be provided to all related site staff and workers. 							

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		<ul style="list-style-type: none"> For the Cement S/S works, at least one safety officer shall be provided by the Main Contractor to identify possible hazards and ensure the implementation of all relevant safety measures. Skilled and qualified personnel should be employed to carry out the work and the plant operator must obtain valid certificate to complete the job. The safety officer must ensure that sufficient trainings will be provided to all workers with respect to the safety awareness and safety precaution of work. Backhoe / Excavator should be examined by Registered Professional Engineer according to statutory requirements before use. Only the plant operators with valid qualified certificates should be allowed to operate the relevant plants All workers in site area should wear appropriate personal protective equipment, such as safety helmet, safety shoes, gloves, goggles and protective coveralls (if necessary). No person should approach to the backhoe / excavator during their operation. Workers, vehicles, instruments, and equipment in touch with the marine sediment will be properly decontaminated by cleaned with non-phosphate detergent and rinsed with distilled water between each excavation and sampling event and before leaving 							

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		<p>the site.</p> <ul style="list-style-type: none"> The excavated area should be vacated and fenced off and adequate warning signs should be displayed. Excavation works should be done within short period of time. No excavation should be held during the rainy days to avoid the migration of contaminants on site. Smoking, eating or drinking during activities with exposure to the contaminated materials should be prohibited. Marine disposal option for the marine sediment should only be considered as the last resort upon exhaustion of reuse options. In case off-site disposal is unavoidable, the below mitigation measures shall be adopted to handle the sediment: <ul style="list-style-type: none"> All construction plant and equipment shall be designed and maintained to minimise the risk of sediments being released into the water column or deposited in the locations other than designated location. All vessels should be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to minimise that undue turbidity is not generated by turbulence from vessel movement or propeller wash. Adequate freeboard shall be maintained 							

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		<p>on barges to ensure that decks are not washed by wave action.</p> <ul style="list-style-type: none"> All marine sediments shall be transported to the designated location by water-tight containers and dump trucks with tarpaulin cover. The requirements and procedures for dredged/excavated sediment specified under the PNAP ADV-21 should be followed. The Contractor must ensure that all the necessary waste disposal and marine dumping permits or licences are obtained prior to the commencement of the construction works. All dumping vessels have to be approved in a marine dumping permit issued under the DASO. Each of the vessels has to be installed with an automatic recording equipment, namely the Front End Mobile Unit (FEMU), which is a key component of the Real Time Tracking & Monitoring of Vessel (RTTMV) System of EPD. The FEMU transmits self-monitoring data direct from the barge at sea to the Control Centre at EPD through GPRS mobile communication network. The transportation route avoiding the ecological sensitive areas shall be proposed when applying the dumping permit. 							
EIA Sections 6.5.1.14	EM&A Section 6.2	<p><u>Chemical Wastes</u></p> <ul style="list-style-type: none"> For those processes which generated chemical waste, it may be possible to find 	Control the chemical waste and ensure proper storage,	All works sites	Contractor	Waste Disposal ((Chemical Waste)General)		✓	

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Objectives of Measures and Main Concern to Address	Location	Implementation Agent	Relevant Standard or Requirement	Implementation Stages		
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and 6.5.1.15		<p>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> <ul style="list-style-type: none"> The Contractor shall register as Chemical Waste Producers with the EPD. Chemical waste should be handled in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes as follows: <ul style="list-style-type: none"> The containers used for storing chemical waste should be suitable for the substance to be held, resistant to corrosion, maintained in good conditions and securely closed; The containers should have a capacity of <450L unless the specifications have been approved by the EPD; The label on the containers should be clearly labelled in English and Chinese and comply with the requirements prescribed in Schedule 2 of Waste Disposal (Chemical Waste) (General) Regulation; The storage area for the chemical waste should be used solely for the storage of chemical wastes; The storage area should be enclosed on at least three sides by a wall, partition or fence with a height of not less than two 	handling and disposal			<p>Regulation</p> <p>Code of Practice on the Packaging, Labeling and Storage of Chemical Waste</p>			

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		<p>metres or the total height of containers in stack, whichever is less;</p> <ul style="list-style-type: none"> Where containers of liquid chemical wastes are stored, the area should be designed with impermeable floor and provided with a bund with capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in the area, whichever is greatest; Adequate ventilation should be allowed in the storage area by leaving some space between the top of the enclosure walls and the ceiling, or provision of louvers on the sides of the enclosure walls; The storage area should be sufficiently covered to prevent rainfall entering (water collected within the bund must be tested and disposed of as chemical waste, if necessary); Separate containers should be used for packing different types of waste or waste arising from different sources and process to minimise mixing of incompatible materials; Drip tray should be provided to chemical waste containers. The drip tray should be clean up regularly. Clean up should be done before foreseeable inclement weather such as typhoon or heavy rain; and Waste oils, chemicals or solvents shall 							

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		not be disposed of to drain.							
EIA Sections 6.5.1.16 and 6.5.1.17	EM&A Section 6.2	<p><u>General Refuse</u></p> <ul style="list-style-type: none"> General refuse should be stored in enclosed bins or compaction units separately from C&D materials/ wastes and chemical wastes. Sufficient bins shall be provided for storage of general refuse as required under the Public Cleansing and Prevention of Nuisances Regulation. 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 and shall be disposed of to the nearest landfill or refuse transfer station. Burning of refuse on construction sites is prohibited. Disposal of general refuse is recommended before foreseeable inclement weather such as typhoon or heavy rain. Segregation and storage of different types of waste should be promoted to facilitate the reuse and recycling of the materials. Separately labelled bins for the deposition of aluminum cans, paper and plastic bottles etc. Should be provided as far as practicable. Arrangements should be made with the recycling companies to collect the recycle waste as required. 	Minimize production of the general refuse and avoid odour, pest and litter impacts	All works sites	Contractor	EIAO-TM Public Cleansing and Prevention of Nuisances Regulation (Cap. 132BK)		✓	

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		<ul style="list-style-type: none"> 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. 							
EIA Section 6.5.1.18	EM&A Section 6.2	<p><u>Floating Refuse</u></p> <ul style="list-style-type: none"> Tool-box training shall be provided to site workers to ensure proper site waste management and good site practice are implemented. Weekly inspection shall also be carried out to ensure no floating refuse is found within the Project Area. If any floating refuse is accidentally trapped in the marine waters within the Project Area, it will be collected by the Contractor and recycled as far as possible, the remaining waste will be disposed of as general refuse. 	Minimize production of the floating refuse and avoid odour, pest and litter impacts	All works sites	Contractor	WDO Public Cleansing and Prevention of Nuisances Regulation (Cap. 132BK)		✓	
Waste Management (Operational Phase)									
EIA Section 6.5.2.1	EM&A Section 6.2	<p><u>Municipal Solid Waste (MSW)</u></p> <ul style="list-style-type: none"> Designated areas will be assigned for proper storage and collection of MSW generated on site. Clearly labelled recycling bins at designated locations which could be accessed conveniently should be provided. A reputable waste collector should be employed to remove MSW regularly. 	Minimize production of the MSW and ensure proper storage, handling and disposal	All works sites	Project Proponent / Future operator	WDO Public Cleansing and Prevention of Nuisances Regulation (Cap. 132BK)			✓
EIA Section	EM&A Section 6.2	<p><u>Chemical Waste</u></p>	Control the chemical waste and ensure	All works sites	Project Proponent /	Waste Disposal ((Chemical			✓

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Objectives of Measures and Main Concern to Address	Location	Implementation Agent	Relevant Standard or Requirement	Implementation Stages		
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6.5.2.2-6.5.2.3		<ul style="list-style-type: none"> If chemical waste is produced, AAHK or its operator(s) would be required to register with the EPD as a Chemical Waste Producer(s). The guidelines stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes should be followed in handling of chemical waste. Appropriate containers with proper labels should be used for storage of chemical wastes. Chemical wastes should be collected and delivered to designated outlet by a licensed chemical waste collector. Chemical waste shall be disposed of at appropriate facility such as the CWTC by licensed collectors. Prepare an Emergency Response Plan (ERP) to prevent and handle chemical spillages caused by the operations of depot during the operational stage. The ERP shall include the spill prevention and precaution, responses action and procedures for spill clean up and disposal. If any spillage occurs, AAHK or its operator(s) shall Inform Environmental Protection Department, Fire Services Department and Police in the case where the spillage of chemicals would cause serious contamination of an area or risk of pollution. 	proper storage, handling and disposal		Future operator	Waste)General) Regulation Code of Practice on the Packaging, Labeling and Storage of Chemical Waste			
EIA Section 6.5.2.5	EM&A Section 6.2	<u>Floating Refuse</u> <ul style="list-style-type: none"> Adequate rubbish bins shall be provided at marine facilities and ATCL. Regular inspection and collection of floating 	Minimize production of the floating refuse and avoid odour, pest and litter impacts	All works sites	Project Proponent / Future operator	WDO Public Cleansing and			✓

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Objectives of Measures and Main Concern to Address	Location	Implementation Agent	Relevant Standard or Requirement	Implementation Stages		
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		<p>refuse should be carried out.</p> <ul style="list-style-type: none"> If any floating refuse is found within the Project area, it will be collected and recycled as far as possible, the remaining waste will be disposed of as general refuse. 				Prevention of Nuisances Regulation (Cap. 132BK)			
EIA Section 6.5.2.6 – 6.5.2.7	EM&A Section 6.2	<p><u>Marine-based Sediment during Maintenance Dredging</u></p> <p>The below mitigation measures shall be adopted to handle the sediments:</p> <ul style="list-style-type: none"> All construction plant and equipment shall be designed and maintained to minimise the risk of sediments being released into the water column or deposited in the locations other than designated location. All vessels should be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to minimise that undue turbidity is not generated by turbulence from vessel movement or propeller wash. Adequate freeboard shall be maintained on barges to ensure that decks are not washed by wave action. All marine sediments shall be transported to the designated location by water-tight containers and dump trucks with tarpaulin cover. The requirements and procedures for dredged/excavated sediment specified under the PNAP ADV-21 should be followed. The Contractor must ensure that all the necessary waste disposal and marine dumping permits 	Handling excavated sediment	Marine Facilities	Project Proponent / Future operator	DASO PNAP ADV-21			✓

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		<p>or licences are obtained prior to the commencement of the construction works.</p> <ul style="list-style-type: none"> All dumping vessels have to be approved in a marine dumping permit issued under the DASO. Each of the vessels has to be installed with an automatic recording equipment, namely the Front End Mobile Unit (FEMU), which is a key component of the Real Time Tracking & Monitoring of Vessel (RTTMV) System of EPD. The FEMU transmits self-monitoring data direct from the barge at sea to the Control Centre at EPD through GPRS mobile communication network. The transportation route avoiding the ecological sensitive areas shall be proposed when applying the dumping permit. 							
Ecology									
EIA Section 7.9.1.2	EM&A Section 7.2	The mitigation measures designed to mitigate indirect disturbances to surrounding habitats and associated wildlife.	To minimise construction phase ecological impacts	All works sites	Contractor	-		✓	
EIA Section 7.9.1.3	EM&A Section 7.2	The mitigation measures designed to mitigate impacts to water quality to acceptable levels (compliance with assessment criteria) are expected to mitigate impacts to marine ecological resources.	To minimise construction and operation phase marine ecological impacts	All works sites	Contractor	-		✓	✓
EIA Section 7.9.1.3	EM&A Section 7.2	Speed restriction of 10 knots for all vessels used during the construction and operation of the Project.	To minimise vessel collision risk with CWDs	At the Project's marine works areas and areas with potential high dolphin usage, including existing and proposed marine parks	Future marine vessel operators	-		✓	✓

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Fisheries (Construction Phase)									
EIA Section 8.10.1.2	EM&A Section 5.2	Appropriate notification, communications, site protection and marking would be adopted to reduce navigation risks with fishing vessels.	To avoid construction phase fisheries impact	Proposed marine work sites area	Contractor	EIAO-TM		✓	
Cultural Heritage									
EIA Section 9.6.1.3	EM&A Section 9.2.3	As a precautionary measure, the project proponent and his/her contractor are required to inform AMO immediately when any antiquities or supposed antiquities under the Antiquities and Monuments Ordinance (Cap. 53) are discovered during the seabed disturbance works in the MF Site and the ATCL Site	To avoid potential construction phase Cultural Heritage impact	Areas of proposed marine work sites	Project Proponent / Contractor / and Sub-contractors	EIAO-TM Annexes 10 and 19 and the Guidelines for CHIA in Appendix H of EIA Study Brief (ESB-342/2021)		✓	
Landscape and Visual (Construction Phase)									
EIA Section 10.9.2	EM&A Section 10.2	CM1 - Preservation of Existing Trees and Other Vegetation All the existing Trees to be retained and not to be affected by the Project should be carefully protected during the construction phase in accordance with DEVB TCW No. 4/2020 – titled “Tree Preservation” and the latest “Guidelines on Tree Preservation during Development” issued by GLTM Section of DEVB, including provision of Tree Protection Zones (TPZs). Any existing vegetation in landscaped areas and natural terrain not to be affected by the Project should also be carefully preserved. Therefore, these existing landscape elements can maintain their qualities throughout the construction phase.	To preserve existing vegetation.	Refer to EIA Figures 10.10a-h	Project Proponent / Contractor	DEVB (GLTM) TC(W) No. 4/2020 LAO PN. No. 2/2020	✓	✓	
EIA Section 10.9.2	EM&A Section 10.2	CM2 - Transplanting of Affected Trees Trees unavoidably affected by the works should be transplanted where practical. The requirement shall follow the “Guidelines on Tree	To transplant particular interest and high amenity value trees unavoidably affected by the works.	Refer to EIA Figures 10.10a-h	Project Proponent / Contractor	DEVB (GLTM) TC(W) No. 4/2020 LAO PN. No.	✓	✓	

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Objectives of Measures and Main Concern to Address	Location	Implementation Agent	Relevant Standard or Requirement	Implementation Stages		
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		Transplanting" released by GLTM Section of DEVB.				2/2020 DEVB (GLTM) – Guidelines on Tree Transplanting S 2.6 of TRAM Guidelines			
EIA Section 10.9.2	EM&A Section 10.2	CM3 - Compensatory Tree Planting Compensatory tree planting should be provided to compensate for felled trees during construction according to DEVB TCW No. 4/2020 – titled "Tree Preservation" and satisfaction of relevant Government departments. Sufficient planting area shall be provided for the growth of trees. Required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Felling Application.	To enhance ecological value and improve overall value of landscape setting.	Refer to EIA Figures 10.10a-h	Project Proponent / Contractor	DEVB (GLTM) TC(W) No. 4/2020 LAO PN. No. 2/2020 GEO Publication No. 1/2011 CEDD Greening Master Plan DEVB (GLTM) Street Tree Selection Guide HKIA Approved Plant Species List	✓	✓	
EIA Section 10.9.2	EM&A Section 10.2	CM4 - Control of Night-time Lighting Glare Lighting for the construction works at night, if any, should be carefully controlled to prevent light overspill to the nearby VSRs and into the sky.	Control the lighting impacts to the VSRs during construction phase at nighttime	All works sites	Contractor	ENB Guidelines on Industry Best Practices for External Lighting Installations	✓	✓	
EIA Section	EM&A Section	CM5 - Erection of Decorative Screen Hoardings	To minimise the potential landscape and	All works sites	Contractor	-		✓	

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10.9.2	10.2	Decorative Hoardings, with designs and forms compatible with the surrounding settings, should be erected during the construction phase to minimise the potential landscape and visual impacts from the construction works and activities, e.g. avoiding unintended destruction of existing trees and other landscape elements, and reducing visual bulkiness of the screen hoardings, etc.	visual impacts due to the construction works and activities.						
EIA Section 10.9.2	EM&A Section 10.2	CM6 - Management of Construction Activities and Facilities The layout and arrangement of construction site facilities which include site office and temporary storage area should be properly managed and construction activities at the site should be carefully supervised and controlled to minimise potential adverse landscape and visual impacts.	To minimise any potential adverse landscape and visual impacts.	All works sites	Contractor	-		✓	
EIA Section 10.9.2	EM&A Section 10.2	CM7 - Reinstatement of Temporarily Disturbed Landscape Areas All hard and soft landscape areas disturbed temporarily during construction shall be reinstated on like-to-like basis, to the satisfaction of the relevant Government Departments.	To reinstate to equal or better quality of temporarily disturbed landscape areas.	Refer to EIA Figures 10.10a-h	Contractor	-		✓	
Landscape and Visual (Operational Phase)									
EIA Section 10.9.2	EM&A Section 10.2	OM1 - Aesthetically Pleasing Design of Aboveground / Above Sea Structures The proposed structures in regard of layouts, forms, materials, and finishes shall be sensitively designed so as to blend in the structures to the adjacent landscape and visual context.	To minimise any potential adverse landscape and visual impact.	Refer to EIA Figures 10.10a-h	Project Proponent / Future operator	-	✓	✓	✓

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EIA Section 10.9.2	EM&A Section 10.2	<p>OM2 - Provision of Amenity Planting and Landscape Features</p> <p>Amenity planting and landscape features shall be provided to soften the proposed above-ground structures on HKP Island and to create attractive open spaces.</p>	To maximize the greening effect throughout the Project.	Refer to EIA Figures 10.10a-h	Project Proponent / Future operator	<p>CEDD Greening Master Plan</p> <p>DEVB (GLTM) Street Tree Selection Guide</p> <p>HKIA Approved Plant Species List</p>	✓	✓	✓

Remarks: D = Design Stage, C = Construction Stage, O = Operational Stage