

ANNEX A

IMPLEMENTATION SCHEDULE

Table A.1 Implementation Schedule of Recommended Mitigation Measures

EIA Reference	EM&A Reference	Recommended Environmental Protection Measures/ Mitigation/ Precautionary Measures	Location/ duration of recommended measures & timing of completion of recommended measures	Implementation Agent	Implementation Stage ⁽⁶⁾			Relevant Legislation & Guidelines
					D	C	O	
Water Quality								
S3.8	S2.1	Cage-type silt curtain will be installed around closed grab to control sediment loss from grab dredging.	During dredging works when grab dredgers are used	Contractor(s)		✓		-
S3.8	S2.1	Dredging should be conducted by either one Trailing Suction Hopper Dredger (TSHD) at rate of 256,200 m ³ /week or no more than two grab dredgers at a total rate of 100,000 m ³ /week.	During dredging works	CEDD / Contractor(s)		✓		-
S3.8	S2.1	Maximum rate of backfilling is 26,700 m ³ /day.	During backfilling works	CEDD / Contractor(s)			✓	-
S3.8	S2.1	Maximum rate of capping is 26,700 m ³ /day.	During capping works	CEDD / Contractor(s)			✓	-
S3.8	S2.1	All vessels and plants (e.g. closed grab) should be well maintained and inspected before use to limit any potential discharges to the marine environment.	During dredging, backfilling and capping works	Contractor(s)		✓	✓	-

(6) D = Design / Pre-construction Phase, C = Construction Phase (i.e. dredging of CMP), O = Operational Phase (i.e. backfilling / capping of CMP)

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					D	C	O	
S3.8	S2.1	All vessels must have a clean ballast system.	During dredging, backfilling and capping works	Contractor(s)		✓	✓	-
S3.8	S2.1	No overflow is permitted from TSHD.	During dredging works	Contractor(s)		✓		-
S3.8	S2.1	The Lean Mixture Overboard (LMOB) system of TSHD will only be in operation at the beginning and end of the dredging cycle when the drag head is being lowered and raised.	During dredging works	Contractor(s)		✓		-
S3.8	S2.1	Dredged marine mud will be disposed of in a gazetted marine disposal area in accordance with the Dumping at Sea Ordinance (DASO) permit conditions	During dredging works	Contractor(s)		✓		-
S3.8	S2.1	Care should be taken during lowering and lifting grabs to minimise unnecessary disturbance to the seabed.	During dredging works	Contractor(s)		✓		-
S3.8	S2.1	Disposal vessels will be fitted with tight bottom seals in order to prevent leakage of material during transport.	During dredging works	Contractor(s)		✓		-

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					D	C	O	
S3.8	S2.1	Barges will be filled to a level, which ensures that material does not spill over during transport to the disposal site and that adequate freeboard is maintained to ensure that the decks are not washed by wave action.	During dredging works	Contractor(s)		✓		-
S3.8	S2.1	After dredging, any excess materials will be cleaned from decks and exposed fittings before the vessel is moved from the dredging area.	During dredging works	Contractor(s)		✓		-
S3.8	S2.1	When the dredged material has been unloaded at the disposal areas, any material that has accumulated on the deck or other exposed parts of the vessel will be removed and placed in the hold or a hopper. Under no circumstances will decks be washed clean in a way that permits material to be released overboard. Dredgers will maintain adequate clearance between vessels and the seabed at all states of the tide and reduce operations speed to ensure that excessive turbidity is not generated by turbulence from vessel movement or propeller wash.	During dredging works	Contractor(s)		✓		-

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S3.8	S2.1	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. 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.	During dredging, backfilling and capping works	Contractor(s)		✓	✓	-
S3.8	S2.1	No solid waste is allowed to be disposed overboard.	During dredging, backfilling and capping works	Contractor(s)		✓	✓	-
S3.8	S2.1	Safe storage, handling and disposal of chemicals and oils to prevent the release into the marine environment.	During dredging, backfilling and capping works	Contractor(s)		✓	✓	-
S3.8	S2.1	Bunding of machinery areas (e.g. provision of drip tray for generators) and availability of spill clean-up kits would be in place to prevent spillage or leakage of fuel/chemical to reach the marine environment.	During dredging, backfilling and capping works	Contractor(s)		✓	✓	-

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S3.8	S2.1	A contingency / spill response plan would be in place to provide timely and effective response and remediation of spillage event.	During dredging, backfilling and capping works	CEDD / Contractor(s)		✓	✓	-
S3.11	S2.3	Marine water quality monitoring at selected WSRs is recommended for marine dredging, backfilling and capping of the Project.	Designated monitoring stations as defined in EM&A Manual / during dredging, backfilling and capping works	Environmental Team (ET)	✓	✓	✓	-
S3.11	S2.4	Sediment quality monitoring is also recommended for backfilling of the CMPs.	Designated monitoring stations as defined in EM&A Manual / during backfilling works	Environmental Team (ET)			✓	-
S3.11	S2.3.6; S10	Regular site audit would also be conducted throughout the Project.	During dredging, backfilling and capping works	Contractor(s) / Environmental Team (ET) / Independent Environmental Checker (IEC) / CEDD		✓	✓	-

Marine Ecology

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S4.9.1	S3.1	Vessel operators will be required to control and manage all effluent from vessels. These kinds of wastewater shall be brought back to port where possible and discharged at appropriate collection and treatment system to prevent avoidable water quality impacts.	During dredging, backfilling and capping works	CEDD / Contractor(s)		✓	✓	-
S4.9.1	S3.1	A policy of no dumping of rubbish, food, oil, or chemicals will be strictly enforced.	During dredging, backfilling and capping works	CEDD / Contractor(s)		✓	✓	-
S4.9.1	S3.1	Only well-maintained and inspected vessels would be used to limit any potential discharges to the marine environment.	During dredging, backfilling and capping works	CEDD / Contractor(s)		✓	✓	-
S4.9.1	S3.1	Safe storage, handling and disposal of chemicals and oils to prevent the release into the marine environment.	During dredging, backfilling and capping works	Contractor(s)		✓	✓	-
S4.9.1	S3.1	Bunding of machinery areas and availability of spill clean-up kits would be in place to prevent spillage or leakage of fuel/chemical to reach the marine environment.	During dredging, backfilling and capping works	Contractor(s)		✓	✓	-

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S4.9.1	S3.1	The vessel operators for the construction activities of this Project will be required to use predefined and regular routes, make use of designated fairways to access the active CMPs, and would avoid traversing sensitive habitats such as existing and proposed marine parks	During dredging, backfilling and capping works	Contractor(s) / CEDD		✓		-
S4.9.1	S3.1	The vessel operators working on the construction activities of the Project will be given a briefing, alerting them to the possible presence of FP in the active CMP areas, and the guidelines for safe vessel operation in the presence of these animals. The vessels will avoid using high speed as far as possible.	During dredging, backfilling and capping works	Contractor(s) / CEDD		✓		-
S4.11	S3.2-S3.5	In order to verify the recolonisation of benthic assemblage on the capped CMPs, a benthic recolonisation monitoring programme is recommended.	After completion of capping works	Environmental Team (ET) / CEDD			✓	-
Fisheries								
S5.8	S4.1	Issuance of Marine Department Notice or other notifications is expected to reduce the risk of collision of increased marine traffic	During dredging, backfilling and capping works	Contractor(s) / CEDD		✓	✓	-

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		and fishing vessels to within acceptable levels.						
S5.8	S4.1	During construction and operation of the CMPs, works area will be established within and in the vicinity of the active CMP(s) within Key Area only to minimize the actual extent of fisheries habitats and fishing ground affected at any one time.	During dredging, backfilling and capping works	Contractor(s) / CEDD		✓	✓	-
S5.8	S4.1	Appropriate notification, communications, site protection and marking would be adopted to reduce navigation risks with fishing vessels.	During dredging, backfilling and capping works	Contractor(s) / CEDD		✓	✓	-
S5.8	S4.2-S4.5 & S7	Monitoring of fisheries resources and biomonitoring programme are recommended to address stakeholders' concerns on the level of fisheries resources and contamination of seafood in the vicinity of the Project	During dredging, backfilling and capping works	Environmental Team (ET) / CEDD		✓	✓	-

Waste Management

S6.4.1	S5.1	The Contractor(s) will open a billing account with the EPD in accordance with the Waste	During dredging, backfilling and capping works	Contractor(s)		✓	✓	<i>Waste Disposal (Charges for Disposal)</i>
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		Disposal (Charges for Disposal of Construction Waste) Regulation.						<i>of Construction Waste) Regulation</i>
S6.4.1	S5.1	A trip-ticket system will also be established in accordance with <i>DevB TC(W) No. 6/2010</i> to monitor the disposal of construction waste at landfill and to control fly-tipping.	During dredging, backfilling and capping works	Contractor(s)		✓	✓	<i>DEVB TC(W) No. 6/2010, Trip Ticket System for Disposal of Construction & Demolition Materials</i>
S6.4.1	S5.1	Training will be provided to workers on the concepts of site cleanliness and appropriate waste management procedures, including waste reduction, re-use and recycling. In particular, the training will emphasize no dumping of waste into the sea is allowed, particularly at marine-based work sites and on marine vessels	During dredging works	Contractor(s) / CEDD		✓		-
S6.4.2	S5.1	The management of dredged marine sediment requirement <i>ETWB TCW No. 34/2002</i> will be incorporated in the Contract for the construction of the Project.	During dredging, works	Contractor(s) / CEDD		✓		<i>DEVB TC(W) No. 34/2002 & Cap 466 Dumping at Sea Ordinance</i>
S6.4.2	S5.1	Disposal vessels will be fitted with tight bottom seals in order to prevent leakage of material during transport.	During dredging, works	Contractor(s)		✓		<i>Dumping at Sea Ordinance</i>

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S6.4.2	S5.1	Barges will be filled to a level, which ensures that of marine sediment and marine sediment laden water does not spill over during loading or transport to the disposal site and that adequate freeboard is maintained to ensure that the decks are not washed by wave action.	During dredging, works	Contractor(s)		✓		<i>Dumping at Sea Ordinance</i>
S6.4.2	S5.1	After dredging, any excess materials will be cleaned from decks and exposed fittings before the vessel is moved from the dredging area.	During dredging, works	Contractor(s)		✓		<i>Dumping at Sea Ordinance</i>
S6.4.2	S5.1	When the dredged material has been unloaded at the disposal areas, any material that has accumulated on the deck or other exposed parts of the vessel will be removed and placed in the hold or a hopper. Under no circumstances will decks be washed clean in a way that permits material to be released overboard.	During dredging, works	Contractor(s)		✓		-
S6.4.2	S5.1	Dredgers will maintain adequate clearance between vessels and the seabed at all states of the tide and reduce operations speed to ensure that excessive turbidity is not	During dredging, works	Contractor(s)		✓		-

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					D	C	O	
		generated by turbulence from vessel movement or propeller wash.						
S6.4.3	S5.1	The Contractor(s) will register as a chemical waste producer with the EPD. Chemical waste will be handled in accordance with the <i>Code of Practice on the Packaging, Handling and Storage of Chemical Wastes</i> .	During dredging, backfilling and capping works	Contractor(s)		✓	✓	<i>Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes</i>
S6.4.3	S5.1	Containers used for storage of chemical wastes will: <ul style="list-style-type: none"> ■ be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; ■ have a capacity of less than 450L unless the specifications have been approved by the EPD; and ■ display a label in English and Chinese in accordance with instructions prescribed in <i>Schedule 2 of the Regulations</i>. 	During dredging, backfilling and capping works	Contractor(s)		✓	✓	<i>Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes</i>

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S6.4.3	S5.1	<p>The storage area for chemical wastes will:</p> <ul style="list-style-type: none"> ■ be clearly labelled and used solely for the storage of chemical waste; ■ be enclosed on at least 3 sides; ■ have an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in that area, whichever is the greatest; ■ have adequate ventilation; ■ be covered to prevent rainfall entering (water collected within the bund must be tested and disposed of as chemical waste, if necessary); and ■ be arranged so that incompatible materials are appropriately separated. 	During dredging, backfilling and capping works	Contractor(s)		✓	✓	<i>Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes</i>
S6.4.3	S5.1	<p>Chemical waste will be disposed of:</p> <ul style="list-style-type: none"> ■ via a licensed waste collector; and ■ to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Centre which also offers a chemical waste collection service, and 	During dredging, backfilling and capping works	Contractor(s)		✓	✓	<i>Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes</i>

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					D	C	O	
		can supply the necessary chemical waste storage containers.						
S6.4.4	S5.1	General refuse will be stored in enclosed bins separately from chemical wastes. Floating refuse will be collected on an 'as needed' basis for disposal as general refuse. Workers will be prohibited from throwing rubbish into the sea and adequate bins will be provided on marine vessels and site office, if any. General refuse will be delivered separately from chemical wastes for offsite disposal on a regular basis to reduce odour, pest and litter impacts. General refuse from the marine vessels will be collected and disposed on shore.	During dredging, backfilling and capping works	Contractor(s)		✓	✓	-
S6.4.4	S5.1	Recycling bins will be provided at strategic locations on marine vessels to facilitate recovery of recyclable materials (including aluminium can, waste paper, glass bottles and plastic bottles) from the Project. Materials recovered will be sold for recycling.	During dredging, backfilling and capping works	Contractor(s)		✓	✓	-
S6.6	S5.2	During dredging works of the Project, site audits will be undertaken by the Project Proponent and the Contractor on a monthly	During dredging works	Contractor(s) / CEDD		✓		-

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					D	C	O	
		basis to determine if wastes are being managed in accordance with the recommended good site practices in this EIA Report. The audits will investigate all aspects of waste management, including waste generation, storage, handling, recycling, transportation and disposal, to prevent any dumping of waste into the sea or malpractice of waste disposal.						
Cultural Heritage								
S7.7	S6	N/A						
Hazard to Health								
S8.4	S7	A biomonitoring programme is recommended to address stakeholders' concerns on the contamination of seafood in the vicinity of the Project.	During backfilling works	Environmental Team (ET) / CEDD			✓	-
Air Quality								
S9.8.1	S8.1	Dust control measures stipulated in the <i>Air Pollution Control (Construction Dust) Regulation (Cap. 311R)</i> should be	During dredging, backfilling and capping works	Contractor(s) / CEDD		✓		<i>Air Pollution Control (Construction Dust) Regulation</i>

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		implemented during the construction phase where appropriate.						
S9.8.1	S8.1	Requirements stipulated in the <i>Air Pollution Control (Fuel Restriction) Regulations, Air Pollution Control (Marine Light Diesel) Regulation, Air Pollution Control (Fuel for Vessels) Regulation</i> and the <i>Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation</i> will also be followed to control emissions from the marine vessels and other associated PMEs.	During dredging, backfilling and capping works	Contractor(s) / CEDD		✓		<i>Air Pollution Control (Fuel Restriction) Regulations, Air Pollution Control (Marine Light Diesel) Regulation, Air Pollution Control (Fuel for Vessels) Regulation and the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation</i>
S9.8.1.1	S8.1	The following air quality and odour mitigation measures should be incorporated during construction phase: <ul style="list-style-type: none"> Ultra-low sulphur diesel (ULSD) will be used for all PMEs, as defined as diesel fuel containing not more than 0.005% sulphur by weight) as stipulated in <i>Environment, Transport and Works Bureau Technical Circular (ETWB-</i> 	During dredging works	Contractor(s) / CEDD		✓		<i>ETWB TC(W)) No. 19/2005</i>

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		<p><i>TC(W) No 19/2005</i> on Environmental Management on Construction Sites;</p> <ul style="list-style-type: none"> ■ The engine of the PMEs during idling shall be switched off; ■ Regular maintenance of PMEs shall be conducted to prevent black smoke emission; ■ All PMEs shall comply with the prescribed emission standards and approved with a proper label by EPD; ■ Number of trips would be monitored and vessel travelling routes would be kept away from the ASRs as far as possible; 						
S9.8.1.2	S8.1	<ul style="list-style-type: none"> ■ Loading of the dredged marine sediment to the TSHD and hopper barges should be controlled to avoid splashing and overflowing of the sediment slurry to the surrounding water; ■ Dredged marine sediment on board the TSHD and hopper barges should be properly covered as far as practicable to minimise the exposed area and 	During dredging works	Contractor(s) / CEDD		✓		-

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		<p>potential fugitive dust and odour emissions during its transportation. If the dredged marine sediment is found to be malodorous, it shall be removed from site as soon as possible; and</p> <ul style="list-style-type: none"> ■ Dredged marine sediment on board the TSHD and hopper barges should be transferred to disposal sites at the SDFs/ CMPs as capping materials as soon as possible to minimise potential fugitive dust and odour emissions. 						
9.8.2	S8.2	Dust control measures stipulated in the <i>Air Pollution Control (Construction Dust) Regulation (Cap 311R)</i> should be implemented during the operation phase where appropriate.	During backfilling and capping works	Contractor(s) / CEDD			✓	<i>Air Pollution Control (Construction Dust) Regulation</i>
9.8.2	S8.2	The sediments on board the hopper barges / TSHD to be disposed of at the formed CMPs should be transported to the formed CMPs as soon as possible to minimise potential fugitive dust and odour emissions.	During backfilling and capping works	Contractor(s) / CEDD			✓	-
9.8.2	S8.2	Requirements stipulated in the <i>Air Pollution Control (Fuel Restriction) Regulations, Air</i>	During backfilling and capping works	Contractor(s) / CEDD			✓	<i>Air Pollution Control (Fuel Restriction)</i>

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Contaminated Sediment Disposal Facility to the West of Lamma Island

EIA Reference	EM&A Reference	Recommended Environmental Protection Measures/ Mitigation/ Precautionary Measures	Location/ duration of recommended measures & timing of completion of recommended measures	Implementation Agent	Implementation Stage ⁽⁶⁾			Relevant Legislation & Guidelines
					D	C	O	
		<i>Pollution Control (Marine Light Diesel) Regulation, Air Pollution Control (Fuel for Vessels) Regulation and Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation will be followed to control emissions from the hopper barges and other associated PMEs.</i>						<i>Regulations, Air Pollution Control (Marine Light Diesel) Regulation, Air Pollution Control (Fuel for Vessels) Regulation and Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation</i>
9.11.1	S8.1 & S10	Regular site audits are recommended to ensure that these specific air quality mitigation measures are properly implemented throughout the construction phase	During dredging works	Environmental Team (ET) / CEDD		✓		-
9.11.2	S8.2 & S10	Regular site audit are recommended to ensure that the specific air quality mitigation measures are properly implemented throughout the operation phase	During backfilling and capping works	Environmental Team (ET) / CEDD			✓	-
Noise								
S10.6	S9	N/A						