

Appendix B Implementation Schedule of Mitigation Measures

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
Construction Noise Control							
3.48	2.20	<p>Good Site Practice:</p> <ul style="list-style-type: none"> ♣ Only well-maintained plant shall be operated on-site and plant shall be serviced regularly during the construction program; ♣ Silencers or mufflers on construction equipment shall be utilized and shall be properly maintained during the construction program; ♣ Mobile plant, if any, shall be sited as far from NSRs as possible; ♣ Machines and plant (such as trucks) that may be in intermittent use shall be shut down between work periods or shall be throttled down to a minimum; ♣ Plant known to emit noise strongly in one direction shall, wherever possible, be orientated so that the noise is directed away from the 	To reduce construction noise impacts	Contractor	Work site	Construction phase	EIAO-TM and NCO

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		<p>nearby NSRs and;</p> <ul style="list-style-type: none"> ♣ Material stockpiles and other structures shall be effectively utilised, wherever practicable, in screening noise from on-site construction activities. 					
3.49	2.20	<p>Use of quieter plant for dump truck and Generator for the following reclamation tasks:</p> <ul style="list-style-type: none"> • Dredging • Filling Behind Seawall • Surcharging • Remove Surcharge 	To reduce construction noise impacts	Contractor	Work site	Construction phase	EIAO-TM and NCO
Construction Dust Control							
4.33	3.23	<p>Implementation of the Air Pollution Control (Construction Dust) Regulation and good site practices including but not limited to the following:</p> <ul style="list-style-type: none"> ♣ skip hoist for material transport shall be totally enclosed by impervious sheeting; ♣ all dusty materials shall be sprayed with water prior to 	To reduce construction dust impact	Contractor	Work site	Construction phase	EIAO-TM and APCO

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		<p>any loading, unloading or transfer operation so as to maintain the dusty materials wet;</p> <ul style="list-style-type: none"> ♣ stockpiles of aggregate or spoil shall be covered and water applied; ♣ the height from which excavated materials are dropped shall be controlled to a minimum practical height to limit fugitive dust generation from unloading; ♣ every vehicle shall be washed to remove any dusty materials from its body and wheels before leaving the construction sites and; ♣ the load of dusty materials carried by vehicle leaving a construction site shall be covered entirely by clean impervious sheeting to ensure dust materials do not leak from the vehicle. 					
Water Quality							
5.62	4.36	Measures to be implemented during dredging and filling	To minimize potential impacts on marine water	Contractor	Work Site Reclamation	– Construction	EIAO-TM ,

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		<p>works:</p> <ul style="list-style-type: none"> ♣ Dredging shall be undertaken using two grab dredgers with a maximum total production rate of 8,000 m³/day. ♣ Deployment of frame type silt curtain to fully enclose the grab while dredging works are in progress. The frame type silt curtain should be designed to enclose local pollution caused by the grab dredger and hung from a frame mounted on the dredger. This frame type silt curtain shall cover the entire water column from water surface down to the seabed, with ballast at the bottom. Mid-ballast may be added as necessary. The frame type silt curtain should be capable of reducing sediment loss to outside by at least 80%. ♣ To provide extra protection from sediment loss to the outside of bay area and any seagrass bed that may be present at the west end of reclamation, an additional floated type silt curtain would be deployed at the eastern and western end of 	<p>quality due to dredging and filling works for the reclamation formation</p>		Formation	phase	WPCO

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		<p>reclamation area. This layer of silt curtain should be formed from tough, abrasion-resistant permeable membranes, supported on floated booms in such a way as to ensure that egress of turbid waters from the enclosed dredging area shall be restricted. The design and location of the floated type silt curtains should not affect the normal operation of the log pond in Sunny Bay.</p> <p>♣ The Contractor should submit detailed proposal of the design and arrangement of the frame type and floated type silt curtain prior to installation for approval from the Engineer. To demonstrate the capability of reducing sediment loss rate to outside by 80% by the frame type silt curtain, a pilot test shall be conducted. Prior to commencing the pilot test, the details of it shall be submitted to the Director of Environmental Protection Department for agreement. After consent is given, the Contractor should install the silt curtains prior</p>					

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		<p>to dredging and remove them upon completion of dredging. Should a suspended solids removal efficiency less than 80% be demonstrated in the pilot test, an additional floated type silt curtain would be deployed near the eastern end of the bay and adjoining Cheung Sok.</p> <ul style="list-style-type: none"> ♣ All filling activities for the reclamation shall be carried out behind seawalls which have been constructed to above the high water level and at least 100m in advance of the filling point. In the event that the 100 metres lead of seawall construction is not practicable, other suitable barriers shall be implemented to provide an effective lead of 100 metres. ♣ If the seawall trenches are to be backfilled with sandfill, then the fill shall be placed by pumping down the arm of a trailing suction hopper dredger, which is positioned within the trench below the level of the surrounding seabed. 					

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5.63	4.37	<p>General working methods to be adopted during dredging and filling works:</p> <ul style="list-style-type: none"> ♣ Tight-closing grabs shall be used to minimize the loss of sediment to suspension during dredging works; ♣ all vessels shall be sized such that adequate clearance is maintained between vessels and the seabed in all tide conditions, to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash; ♣ all pipe leakages shall be repaired promptly and plant shall not be operated with leaking pipes; ♣ the decks of all vessels shall be kept tidy and free of oil or other substances that might be accidentally or otherwise washed overboard; ♣ adequate freeboard shall be maintained on barges to ensure that decks are not washed by wave action; ♣ all barges used for the transport of dredged materials shall be fitted with tight bottom seals to prevent leakage of material during 	To supplement the measures described above for dredging and filling works to further minimize potential impacts on water quality	Contractor	Work Site Reclamation Formation	– Construction phase	

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		<p>loading and transport;</p> <ul style="list-style-type: none"> ♣ construction activities shall not cause foam, oil, grease, scum, litter or other objectionable matter to be present in the water within and adjacent to the reclamation site; ♣ loading of barges shall be controlled to prevent splashing of material into the surrounding waters. Barges shall not be filled to a level that will cause the overflow of materials or sediment laden water during loading or transportation; ♣ the speed of vessels shall be controlled within the works area to prevent propeller wash from stirring up the seabed sediments; and ♣ "rainbowing" sand fill will not be permitted. 					
5.64	4.38	<p>Construction Runoff and Drainage:</p> <ul style="list-style-type: none"> ♣ Before commencing any site formation work, all sewer and drainage connections shall be sealed to prevent debris, soil, sand etc. from entering public sewers/drains. 	To minimize surface runoff and erosion, and also to retain and reduce any suspended solids prior to discharge	Contractor	Work site – land based construction activities	Construction phase	ProPECC PN 1/94; WPCO

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		<ul style="list-style-type: none"> ♣ Provision of perimeter channels to intercept storm-runoff from outside the site. These shall be constructed in advance of site formation works and earthworks. ♣ Sand/silt removal facilities such as sand traps, silt traps and sediment basins shall be provided to remove sand/silt particles from runoff to meet the requirements of the Technical Memorandum standard under the Water Pollution Control Ordinance. The design of silt removal facilities shall be based on the guidelines provided in ProPECC PN 1/94. All drainage facilities and erosion and sediment control structures shall be inspected monthly and maintained to ensure proper and efficient operation at all times and particularly during rainstorms. ♣ Water pumped out from foundation excavations shall be discharged into silt removal facilities. 					

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		<ul style="list-style-type: none"> ♣ Careful programming of the works to minimise surface excavations during the wet season. If excavation of soil cannot be avoided during the wet season, exposed slope surfaces shall be covered by a tarpaulin or other means. Other measures that need to be implemented before, during, and after rainstorms are summarized in ProPECC PN 1/94. ♣ Exposed soil surfaces shall be protected by paving or fill material as soon as possible to reduce the potential of soil erosion. ♣ Open stockpiles of construction materials or construction wastes on-site of more than 50m³ shall be covered with tarpaulin or similar fabric during rainstorms. 					

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5.65	4.39	<p>General Construction Activities:</p> <ul style="list-style-type: none"> ♣ Debris and rubbish generated on-site shall be collected, handled and disposed of properly to avoid entering the nearby coastal waters and stormwater drains. Stockpiles of cement and other construction materials shall be kept covered when not being used. 	To contain and minimize water quality impacts	Contractor	Work site	Construction phase	ProPECC PN 1/94; WPCO
5.66	4.40	<ul style="list-style-type: none"> ♣ Oils and fuels shall only be used and stored in designated areas which have pollution prevention facilities. All fuel tanks and storage areas shall be provided with locks and be sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank. The bund shall be drained of rainwater after a rain event. 					
5.67	4.41	<p>Sewage Effluent from Construction Workforce</p> <ul style="list-style-type: none"> ♣ Temporary sanitary facilities, such as portable chemical toilets, shall be 	To minimize water quality impacts	Contractor	Work site	Construction phase	

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		employed on-site. A licensed contractor shall be responsible for appropriate disposal and maintenance of these facilities.					
5.68	4.42	<p>Stormwater Runoff</p> <ul style="list-style-type: none"> ♣ Silt traps to be installed on storm drains serving developed and landscaped/managed areas. The silt trap to be installed at the last point in the drainage system before discharge to the sea. 	To ensure that pollutants in stormwater discharges are minimised as far as practicable	Project Proponent	Storm drains serving developed & landscaped/managed areas	Operation phase	
<i>Waste Management</i>							
6.43	5.5	<p><i>Marine Sediment</i></p> <ul style="list-style-type: none"> ♣ The contaminated material must be dredged and transported with great care. Mitigation measures, including the use of closed grab dredgers, shall be incorporated. ♣ The dredged contaminated sediment must be effectively isolated from the environment upon final disposal and shall be disposed of at the East Sha Chau Contaminated Mud 	To minimize potential impacts on water quality	Contractor	Works site	Construction Phase	ETWB 34/2002 TCW

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6.44	5.6	<p>Pits.</p> <p>During transportation and disposal of the dredged marine sediments:</p> <ul style="list-style-type: none"> ♣ Bottom opening of barges shall be fitted with tight fitting seals to prevent leakage of material. Excess material shall be cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved. ♣ Monitoring of the barge loading shall be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels shall be equipped with automatic self-monitoring devices as specified by the Director of Environmental Protection. ♣ Barges or hopper barges shall not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation. 					

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6.45	5.7	<p>Good site practices during the construction activities include:</p> <ul style="list-style-type: none"> ♣ Nomination of an approved personnel, such as a site manager, to be responsible for 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 proper waste management and chemical handling procedures. ♣ Provision of sufficient waste disposal points and regular collection for disposal. ♣ Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers. ♣ Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors. 	To minimize adverse waste management related impacts	Contractor	Works site	Construction Phase	
6.46	5.8	<p>Waste reduction measures:</p> <ul style="list-style-type: none"> ♣ Segregation and storage of different types of waste in 	Recommendations to achieve waste reduction	Contractor	Works site	Design & Construction	

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		<p>different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal.</p> <ul style="list-style-type: none"> ♣ To encourage collection of aluminium cans by individual collectors, separate labelled bins shall be provided to segregate this waste from other general refuse generated by the work force. ♣ Proper storage and site practices to minimise the potential for damage or contamination of construction materials. ♣ Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste. ♣ A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites). 				Phase	
6.48	5.10	General refuse shall be stored in enclosed bins or compaction units separate from C&D material. A reputable waste collector shall be employed by the contractor to remove	To minimize environmental impacts during handling, transportation and disposal of general refuse	Contractor	Works site	Construction Phase	

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		general refuse from the site, separately from C&D material. An enclosed and covered area is recommended to reduce the occurrence of 'wind blown' light material					
6.49 6.50	5.11 5.12	Excavated material comprising reclamation fill material from the excavation works for the road formation shall be reused on-site as backfilling material as far as practicable. In order to monitor the disposal of C&D material and solid wastes at public filling facilities and landfills and to control fly-tipping, a trip-ticket system shall be implemented in accordance with ETWB TCW No. 31/2004.	To minimize environmental impacts from collection and transportation of C&D material for off-site disposal	Contractor	Works site	Construction Phase	
6.51	5.13	If chemical wastes are produced at the construction site, the Contractor shall register with the EPD as a Chemical Waste Producer and follow the guidelines stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Good quality containers compatible with the chemical wastes shall be used, and incompatible chemicals shall be stored separately. Appropriate labels shall be	To minimize environmental impacts during handling, transportation and disposal of chemical wastes	Contractor	Works site	Construction Phase	

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		securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosives, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. The Contractor shall use a licensed collector to transport and dispose of the chemical wastes generated at the Chemical Waste Treatment Centre at Tsing Yi, or other licenced facility.					
<i>Terrestrial Ecology</i>							
7.71	6.4	Placement of equipment or stockpile in designated works areas and access routes selected on existing disturbed land.	To minimise disturbance to habitats.	Contractor	Whole site	Construction Phase	
7.71	6.4	Construction activities shall be restricted to the work areas that shall be clearly demarcated.	To minimise disturbance to natural habitats outside of works area.	Contractor	Whole site	Construction Phase	
7.71	6.4	The work areas shall be reinstated immediately after completion of the works.	To minimise disturbance to habitats.	Contractor	Whole site	Construction Phase	

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7.71	6.4	Waste skips shall be provided to collect general refuse and construction wastes. The wastes shall be disposed of timely and properly off-site.	To ensure proper disposal of waste and prevent dumping.	Contractor	Whole site	Construction Phase	
7.71	6.4	Drainage arrangements shall include sediment traps.	To collect and control construction run-off.	Contractor	Whole site	Construction Phase	
7.71	6.4	Open burning on works sites shall be strictly prohibited.	To prevent accidental hill-fires.	Contractor	Whole site	Construction Phase	
7.71	6.4	Landscaping works on newly reclaimed land shall make use of native plant species.	To enhance ecological value of landscaped areas.	Contractor	Whole site	Construction Phase	
Marine Ecology							
7.153	6.8	Implement water quality mitigation measures (as specified above).	To minimize impacts on mudflat and potential seagrass bed.	Contractor	Work Site Reclamation Formation	Construction Phase	
7.164	6.9	All vessel operators working on the project shall be given a briefing, alerting them to the possible presence of dolphins in the area, and setting out guidelines for safe operations around cetaceans.	To minimise impacts on dolphins	Contractor	Whole site	Construction Phase	

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7.164	6.9	All vessels will be subject to a speed limit of 10 knots within the Project Site Boundary.	To minimise impacts on dolphins	Contractor	Whole site	Construction Phase	
7.164	6.9	The vessel operators shall be required to use predefined and regular routes. As far as possible operators shall follow the same routes used for the existing/ongoing Sunny Bay reclamation, as these may become known to the dolphins using North Lantau waters.	To minimise impacts on dolphins	Contractor	Whole site	Construction Phase	
7.164	6.9	A policy of no dumping of rubbish, food, oil or chemicals shall be strictly enforced. This shall also be covered in the contractors' briefing.	To minimise impacts on dolphins	Contractor	Whole site	Construction Phase	
7.164	6.9	Every attempt shall be made to minimise the effects of the construction of the Project on the water quality	To minimise impacts on dolphins	Contractor	Whole site	Construction Phase	
Fisheries							
		No fisheries specific mitigation recommended					
Cultural Heritage							

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		No cultural heritage specific mitigation recommended					
Visual and Landscape							
10.89	8.3	provide advance screen planting, if possible subject to detailed design stage and minimize felling of existing road side trees	To minimize visual impact	Project Proponent / Contractor	Whole site	Construction Phase	
10.89	8.3	sensitively designed site hoarding in both colour and form to help screen views of construction works	To minimize landscape impact	Project Proponent / Contractor	Whole site	Construction Phase	
10.89	8.3	operational time restrictions to limit after-dark welding and lighting	To minimize visual impact	Project Proponent / Contractor	Whole site	Construction Phase	
10.89	8.3	minimize nighttime glaze, only applied for safety, limit light intensity on site	To minimize visual impact	Project Proponent / Contractor	Whole site	Construction Phase	
10.90	8.4	selection of fast growing, wind and salt tolerated, broad canopy trees and lower story shrub mixes	To minimize visual impact	Project Proponent	Bridge structures	Design Phase	
10.90	8.4	provide planting along the edges of reclamation, at low level of columns/abutments at the reclamation area to soften and screen the bridge structures and columns	To minimize landscape impact	Project Proponent	Whole site	Design Phase	
10.90	8.4	design edge parapets and columns of bridge structures in	To minimize visual impact	Project Proponent	Bridge structures	Design phase	

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		similar shape and colour to existing bridge structures in the Sunny Bay interchange area					
10.90	8.4	Selection of rib pattern finish of column similar to existing structures in Sunny Bay interchange area	To minimize visual impact	Project Proponent	Bridge structures	Design phase	
10.90	8.4	Provide cladding panels, in glass fiber reinforced concrete with rubble stone patterns subjected to detailed design, at columns and abutment walls support the steel decking section of Slip Roads 5 and 6	To minimize visual impact	Project Proponent	Bridge structures	Design phase	
10.91	8.5	provide regular maintenance to the planting area	To minimize visual impact	Project Proponent	Whole site	Operation Phase	
10.91	8.5	development of Sunny Bay Tourism Area Gateway should be carefully planned to reduce cumulative impacts upon landscape character and resources	To minimize visual impact	Future Project Proponent of Sunny Bay Tourism Area Gateway	(not application)	Operation Phase	