14 IMPLEMENTATION SCHEDULE AND RECOMMENDED MITIGATION MEASURES

Table 14.1 Implementation Schedule of Recommended Mitigation Measures

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
Air Quality Impact						
S3.8.1	Watering eight times a day on active works areas, exposed areas and paved haul roads	To minimize the dust impact	Contractor	All Active Work Sites	Construction Phase	APCO
S3.8.1	Enclosing the unloading process at barging point by a 3-sided screen with top tipping hall, provision of water spraying and flexible dust curtains	To minimize the dust impact	Contractor	Barging Points	Construction Phase	APCO
S3.8.7	Dust suppression measures stipulated in the Air Pollution Control (Construction Dust) Regulation and good site practices: • Use of regular watering to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather. • Use of frequent watering for particularly dusty construction areas and areas close to ASRs. • 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.	To minimize the dust impact	Contractor	All Construction Work Sites	Construction Phase	APCO and Air Pollution Control (Construction Dust) Regulation

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	• Open stockpiles shall be avoided or covered. Where possible, 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. • Provision of wind shield and dust extraction units or similar dust mitigation measures at the loading area of barging point, and use of water sprinklers at the loading area where dust generation is likely during the loading process of loose material, particularly in dry seasons/ periods. • Provision of not less than 2.4m high hoarding from ground level along site boundary where adjoins a road, streets or other accessible to the public except for a site entrance or exit. • Imposition of speed controls for vehicles on site haul roads. • Where possible, routing of vehicles and positioning of construction plant should be at the					

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	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. • Instigation of an environmental monitoring and auditing program to monitor the construction process in order to enforce controls and modify method of work if dusty conditions arise.					
Noise Impact						
Construction Phase						
S4.8	Use of quiet PME. Use of movable noise barriers for Excavator, Lorry, Dump Truck, Mobile Crane, Compactor, Concrete Mixer Truck, Concrete Lorry Mixer, Breaker, Mobile Crusher, Backhoe, Vibratory Poker, Saw, Asphalt Paver, Vibratory Roller, Vibrolance, Hydraulic Vibratory Lance and Piling (Vibration Hammer). Use of full enclosure for Air Compressor, Compressor, Bar Bender, Generator, Drilling Rig, Chisel, Large Diameter Bore Piling, Grout Mixer & Pump and Concrete Pump.	To minimize construction noise impact arising from the Project at the affected NSRs	Contractor	Work Sites	Construction Phase	EIAO-TM, NCO
S4.9	Good Site Practice:	To minimize construction noise	Project	Work Sites	Construction	EIAO-TM,

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	• Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program. • Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program. • Mobile plant, if any, should be sited as far away from NSRs as possible. • Machines and plant (such as trucks) that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum. • Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs. • Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities.	impact arising from the Project at the affected NSRs	Proponent		Period	NCO
S4.9	Scheduling of Construction Works during School Examination Period	To minimize construction noise impact arising from the Project at the affected	Contractor	Work Site near school	Construction Period	EIAO-TM, NCO

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		NSRs				
Operation Phase (Traffic Noise)						
S4.8	Direct mitigation measures for existing NSRs: • VB4-1: about 10m of 4m High Vertical Noise Barrier on Cha Kwo Ling Road; • VB4-2: about 40m of 4m High Vertical Noise Barrier on Cha Kwo Ling Road; • CT1: about 100m of 6m High Cantilever Noise Barrier with 4.2m Cantilever (at 45 °) on Cha Kwo Ling Road; • CT2: about 80m of 6m High Cantilever Noise Barrier with 3.7m Cantilever (at 90^{o}) on road EHC2; • FE1: about 400m Landscape deck provided on the entire extent of the Main line (Cha Kwo Ling Side); • FE2: about 130m of Full-enclosure provided on road S2; • FE3: about 120m of Full-enclosure provided on road EHC4; • FE4: about 200m of Full-enclosure provided on road P2;	To reduce traffic noise impact at nearby Existing NSRs	CEDD	Cha Kwo Ling Road; Lam Tin Interchange	Design stage & before commencement of operation phase	EIAO-TM

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	• SE1: about 310m of Semi-enclosure provided on road EHC2; • SE2: about 180m of Semi-enclosure provided on road S2; • SE3: about 30m of Semi-enclosure provided on road EHC4; • VB5-1: about 130m of 5m High Vertical Noise Barrier provided at road EHC4; • VB5-2: about 50m of 5m High Vertical Noise Barrier provided at road EHC4; • VB5-3: about 80m of 5m High Vertical Noise Barrier provided at road EHC1; • VB5-4: about 70m of 5m High Vertical Noise Barrier provided at road EHC1; • VB5-5: about 170m of 5m High Vertical Noise Barrier provided at road S3; • VB5-6: about 180m of 5m High Vertical Noise Barrier provided at road S1; • LNS1: about 190m of Low Noise Surfacing on North and South Bound Road P2; • LNS2: about 100m of Low Noise Surfacing on East and West Bound Po Yap Road; and			Road P2 and Po Yap Road		

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	• LNS3: about 200m of Low Noise Surfacing on East and West Bound Po Yap Road It should be noted that the exact length of the mitigation measures would be subject to minor refinement during the detailed design stage.					
S4.8	Direct mitigation measures for planned NSRs: • FE5: about 80m of Full-enclosure on road EHC4 It should be noted that the exact length of the mitigation measures would be subject to minor refinement during the detailed design stage.	To reduce traffic noise impact at nearby Planned NSRs	Project Proponent	• Road EHC4	Before occupation of Planned Residential Site at Ex-Cha Kwo Ling Kaolin Mine Site and TKO Area 66	EIAO-TM
Operation Phase (Fixed Plant Noise)						
S4.8	Good practice in order to minimise the nuisance on the neighbouring NSRs for all fixed plant noise: • Exhaust of Ventilation System and any opening of the building should be facing away from any NSRs • Louver or other acoustic treatment equipment applied to exhaust of Ventilation System	Minimise the operation fixed plant noise nuisance on the neighbouring NSRs	Project Proponent	TKOLTT Ventilation Buildings (both Yau Tong and TKO Side) and Pumping station at Road P2	Design stage and before commencement of operation of ventilation buildings and pumping station	EIAO-TM
Water Quality Impact						
Construction Phase						

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S5.6.24	The dry density of filling material for the TKO-LT Tunnel reclamation should be 1,900kg/m^3, with fine content of 25% or less.	Control potential impacts from filling activities	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO
S5.8.1	Non-dredged method by constructing steel cellular caisson structure with stone column shall be adopted for construction of seawall foundation. During the stone column installation (also including the installation of steel cellular caisson), silt curtain shall be employed around the active stone column installation points.	Control potential impacts from filling activities	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO
S5.8.2	Formation of seawall enclosing the reclamation for Road P2 (notwithstanding an opening of about 50m for marine access) shall be completed prior to the filling activities. The seawall opening of about 50m wide for marine access shall be selected at a location as indicatively shown in Appendix 5.10. No more than 3 filling barge trips per day shall be made with a maximum daily rate of 3,000m^3 (i.e. 1,000 m^3 per trip) for the filling operation at the reclamation area for Road P2. All filling works shall be carried out behind the seawall with the use of single silt curtain at the marine access.	Control potential impacts from filling activities	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO
S5.8.3	Other good site practices should be undertaken during filling operations include: • all marine works should adopt the environmental	Control potential impacts from filling activities and marine-	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO, Waste Disposal

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	friendly construction methods as far as practically possible including the use of cofferdams to cover the construction area to separate the construction works from the sea; • floating single silt curtain shall be employed for all marine works; • all vessels should be sized so 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 hopper barges should be fitted with tight fitting seals to their bottom openings to prevent leakage of material; • excess material shall be cleaned from the decks and exposed fittings of barges before the vessel is moved; • adequate freeboard shall be maintained on barges to reduce the likelihood of decks being washed by wave action; • loading of barges and hoppers should be controlled to prevent splashing of filling material into the surrounding water. Barges or hoppers should not be filled to a level that will cause the	based construction				Ordinance (WDO)

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	overflow of materials or polluted water during loading or transportation; • any pipe leakages shall be repaired quickly. Plant should not be operated with leaking pipes; • construction activities should not cause foam, oil, grease, scum, litter or other objectionable matter to be present on the water within the site or dumping grounds; and • before commencement of the reclamation works, the holder of Environmental Permit has to submit plans showing the phased construction of the reclamation, design and operation of the silt curtain.					
S5.8.4	Site specific mitigation plan for reclamation areas using public fill materials should be submitted for EPD agreement before commencement of construction phase with due consideration of good site practices.	Control potential impacts from filling activities and marine-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAO-TM, WPCO
S5.8.5	It is important that appropriate measures are implemented to control runoff and drainage and prevent high loading of SS from entering the marine environment. Proper site management is essential to minimise surface water runoff, soil erosion and sewage effluents.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAO-TM, WPCO

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S5.8.6	Any practical options for the diversion and re-alignment of drainage should comply with both engineering and environmental requirements in order to ensure adequate hydraulic capacity of all drains.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Design Stage and Construction Phase	ProPECC PN 1/94, EIAO-TM, WPCO, TM-DSS
S5.8.7	Construction site runoff and drainage should be prevented or minimised in accordance with the guidelines stipulated in the EPD's Practice Note for Professional Persons, Construction Site Drainage (ProPECC PN 1/94). Good housekeeping and stormwater best management practices, as detailed in below, should be implemented to ensure that all construction runoff complies with WPCO standards and no unacceptable impact on the WSRs arises due to construction of the TKO-LT Tunnel. All discharges from the construction site should be controlled to comply with the standards for effluents discharged into the corresponding WCZ under the TM-DSS.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAO-TM, WPCO, TM-DSS
S5.8.8	Exposed soil areas should be minimised to reduce the potential for increased siltation, contamination of runoff, and erosion. Construction runoff related impacts associated with the above ground construction activities can be readily controlled through the use of appropriate mitigation measures	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAO-TM, WPCO

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	which include: • use of sediment traps; and • adequate maintenance of drainage systems to prevent flooding and overflow.					
S5.8.9	Construction site should be provided with adequately designed perimeter channel and pre-treatment facilities and proper maintenance. The boundaries of critical areas of earthworks should be marked and surrounded by dykes or embankments for flood protection. Temporary ditches should be provided to facilitate runoff discharge into the appropriate watercourses, via a silt retention pond. Permanent drainage channels should incorporate sediment basins or traps and baffles to enhance deposition rates. The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAO-TM, WPCO
S5.8.10	Ideally, construction works should be programmed to minimise surface excavation works during the rainy season (April to September). All exposed earth areas should be completed as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. If excavation of soil cannot be avoided during the rainy season, or at any	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAO-TM, WPCO

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	time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means.					
S5.8.11	Sedimentation tanks of sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8m^3 capacity, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity is flexible and able to handle multiple inputs from a variety of sources and particularly suited to applications where the influent is pumped.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAO-TM, WPCO
S5.8.12	Earthworks final surfaces should be well compacted and the subsequent permanent work or surface protection should be carried out immediately after the final surfaces are formed to prevent erosion caused by rainstorms. Appropriate drainage like intercepting channels should be provided where necessary.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAO-TM, WPCO
S5.8.13	Measures should be taken to minimize the ingress of rainwater into trenches. If excavation of trenches in wet seasons is necessary, they should be dug and backfilled in short sections. Rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAO-TM, WPCO

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	facilities.					
S5.8.14	Open stockpiles of construction materials (for examples, aggregates, sand and fill material) of more than $50m^3$ 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.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAO-TM, WPCO
S5.8.15	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. Discharge of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAO-TM, WPCO
S5.8.16	Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events, especially for areas located near steep slopes.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAO-TM, WPCO

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S5.8.17	Oil interceptors should be provided in the drainage system and regularly cleaned to prevent the release of oils and grease into the storm water drainage system after accidental spillages. The interceptor should have a bypass to prevent flushing during periods of heavy rain.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAO-TM, WPCO
S5.8.18	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 located wheel washing bay should be provided at every site exit, and wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAO-TM, WPCO
S5.8.19	Silt removal facilities, channels and manholes should be maintained and the deposited silt and grit should be removed regularly, at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAO-TM, WPCO
S5.8.20	It is recommended that on-site drainage system	Control potential	CEDD's	Work site	Construction	ProPECC PN

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	should be installed prior to the commencement of other construction activities. Sediment traps should be installed in order to minimise the sediment loading of the effluent prior to discharge into foul sewers. There shall be no direct discharge of effluent from the site into the sea.	impacts from construction site runoff and land-based construction	Contractors		Phase	1/94, EIAO-TM, WPCO
S5.8.21	All temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge should be adequately designed for the controlled release of storm flows. All sediment control measures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rain storms. The temporarily diverted drainage should be reinstated to its original condition when the construction work has finished or the temporary diversion is no longer required.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAO-TM, WPCO
S5.8.22	All fuel tanks and storage areas should be provided with locks and be located 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 the coastal waters.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAO-TM, WPCO, WDO
S5.8.23	Minimum distances of 100m shall be maintained between the existing or planned stormwater discharges and the existing or planned seawater	Control potential impacts from construction site runoff	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO, TM-DSS

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	intakes during construction and operational phases	and land-based construction				
S5.8.24	Under normal circumstances, groundwater pumped out of wells, etc. for the lowering of ground water level in basement or foundation construction, and groundwater seepage pumped out of tunnels or caverns under construction should be discharged into storm drains after the removal of silt in silt removal facilities.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAO-TM, WPCO
S5.8.25 - S5.8.27 & Table 5.18	Grouting would be adopted as measure to reduce the groundwater inflow into the tunnel. During the tunnel excavation, the inflow rate of groundwater into the tunnel will be measured during the excavation. The groundwater levels above the tunnel will also be monitored by piezometers. If the inflow rate exceeds the pre-determined groundwater control criteria or the groundwater drawdown exceeds the required limit, pre-excavation grouting will be required to reduce the groundwater inflow. No significant change of groundwater levels would therefore be expected. Any chemicals/ foaming agents which would be entrained to the groundwater should be biodegradable and non-toxic throughout the tunnel construction. Potential groundwater quality impact would be minimal as the used material is non-toxic	Control potential impacts from groundwater drawdown and contamination	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAO-TM, WPCO, Buildings Ordinance

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	and biodegradable. No adverse groundwater quality would therefore be expected. Prescriptive measures in the form of an Action Plan with pre-emptive and re-active to preserve the groundwater levels at all times during the tunnel construction are set out in Table 5.18.					
S5.8.28	Water used in ground boring and drilling for site investigation or rock / soil anchoring should as far as practicable be recirculated after sedimentation. When there is a need for final disposal, the wastewater should be discharged into storm drains via silt removal facilities.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Design Stage and Construction Phase	ProPECC PN 1/94, EIAO-TM, WPCO
S5.8.29 - S5.8.31	Wastewater generated from the washing down of mixing trucks and drum mixers and similar equipment should whenever practicable be recycled. The discharge of wastewater should be kept to a minimum. To prevent pollution from wastewater overflow, the pump sump of any water recycling system should be provided with an on-line standby pump of adequate capacity and with automatic alternating devices. Under normal circumstances, surplus wastewater may be discharged into foul sewers after treatment in silt removal and pH adjustment facilities (to within the pH range of 6 to 10). Disposal of wastewater into storm drains will require more elaborate treatment.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAO-TM, WPCO

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S5.8.32	All vehicles and plant should be cleaned before they leave a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. A wheel washing bay should be provided at every site exit if practicable and wash-water should have sand and silt settled out or removed before discharging into storm drains. The section of construction road between the wheel washing bay and the public road should be paved with backfall to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAO-TM, WPCO
S5.8.33	Bentonite slurries used in diaphragm wall and bore-pile construction should be reconditioned and reused wherever practicable. If the disposal of a certain residual quantity cannot be avoided, the used slurry may be disposed of at the marine spoil grounds subject to obtaining a marine dumping licence from EPD on a case-by-case basis.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAO-TM, WPCO
S5.8.34	If the used bentonite slurry is intended to be disposed of through the public drainage system, it should be treated to the respective effluent standards applicable to foul sewer, storm drains or the receiving waters as set out in the WPCO Technical Memorandum on Effluent Standards.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAO-TM, WPCO
S5.8.35	Water used in water testing to check leakage of	Control potential	CEDD's	Work site	Construction	ProPECC PN

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	structures and pipes should be reused for other purposes as far as practicable. Surplus unpolluted water could be discharged into storm drains.	impacts from construction site runoff and land-based construction	Contractors		Phase	1/94, EIAO-TM, WPCO
S5.8.36	Sterilization is commonly accomplished by chlorination. Specific advice from EPD should be sought during the design stage of the works with regard to the disposal of the sterilizing water. The sterilizing water should be reused wherever practicable.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Design Stage and Construction Phase	ProPECC PN 1/94, EIAO-TM, WPCO
S5.8.37	Before commencing any demolition works, all sewer and drainage connections should be sealed to prevent building debris, soil, sand etc. from entering public sewers/drains.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAO-TM, WPCO
S5.8.38	Wastewater generated from building construction activities including concreting, plastering, internal decoration, cleaning of works and similar activities should not be discharged into the stormwater drainage system. If the wastewater is to be discharged into foul sewers, it should undergo the removal of settleable solids in a silt removal facility, and pH adjustment as necessary.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAO-TM, WPCO
S5.8.39	Acidic wastewater generated from acid cleaning, etching, pickling and similar activities should be	Control potential impacts from	CEDD's Contractors	Work site	Construction	ProPECC PN 1/94, EIAO-

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	neutralized to within the pH range of 6 to 10 before discharging into foul sewers. If there is no public foul sewer in the vicinity, the neutralized wastewater should be tinkered off site for disposal into foul sewers or treated to a standard acceptable to storm drains and the receiving waters	construction site runoff and land-based construction			Phase	TM, WPCO
S5.8.40	Wastewater collected from canteen kitchens, including that from basins, sinks and floor drains, should be discharged into foul sewer via grease traps capable of providing at least 20 minutes retention during peak flow.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAO-TM, WPCO
S5.8.41	Drainage serving an open oil filling point should be connected to storm drains via a petrol interceptor with peak storm bypass.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAO-TM, WPCO
S5.8.42	Vehicle and plant servicing areas, vehicle wash bays and lubrication bays should as far as possible be located within roofed areas. The drainage in these covered areas should be connected to foul sewers via a petrol interceptor. Oil leakage or spillage should be contained and cleaned up immediately. Waste oil should be collected and stored for recycling or disposal in accordance with the Waste Disposal Ordinance.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAO-TM, WPCO

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
S5.8.43	Construction work force sewage discharges on site are expected to be connected to the existing trunk sewer or sewage treatment facilities. The construction sewage may need to be handled by portable chemical toilets prior to the commission of the on-site sewer system. Appropriate numbers of portable toilets shall be provided by a licensed contractor to serve the large number of construction workers over the construction site. The Contractor shall also be responsible for waste disposal and maintenance practices.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAO-TM, WPCO
S5.8.44	Contractor must register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.	Control potential impacts from accidental spillage of chemicals	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO, WDO
S5.8.45	Any service shop and maintenance facilities should be located on hard standings within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken within the areas	Control potential impacts from accidental spillage of chemicals	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
	appropriately equipped to control these discharges.					
S5.8.46	Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The "*Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes*" published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows: • suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport; • chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents; and • storage area should be selected at a safe location on site and adequate space should be allocated to the storage area.	Control potential impacts from accidental spillage of chemicals	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO, WDO
S5.8.47	Collection and removal of floating refuse should be performed at regular intervals on a daily basis. The contractor should be responsible for keeping the water within the site boundary and the neighbouring water free from rubbish.	Control potential impacts from floating refuse and debris	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO
Operation Phase						

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
S5.8.49	The road drainage should be provided with adequately designed silt trap and oil interceptors, as necessary. The design of the operational stage mitigation measures for the road works shall take into account the guidelines published in ProPECC PN 5/93 "*Drainage Plans subject to Comment by the EPD*".	Control potential impacts from surface runoff of new road works	CEDD, HyD	Project site	Design Stage and Operational Phase	ProPECC PN 5/93, EIAO-TM, WPCO
S5.8.50	Regular maintenance and refuse collection are proposed at locations of embayed waters and locations with potential floating refuse entrapment problems.	Control potential impacts from floating refuse	MD	Project site	Operational Phase	EIAO-TM, WPCO, WDO
S5.8.51	All new sewage effluent generated from the Project should be properly collected and diverted to the public sewers. No direct discharge of sewage effluent into the marine water shall be allowed.	Control potential impacts from sewage generation	CEDD	Project site	Design Stage and Operational Phase	EIAO-TM, WPCO
S5.8.52	During the operational phase, contractor responsible for construction of tunnel section will conduct a 1-year post-monitoring (after the completion of the tunnelling works) on the groundwater levels above the tunnel. Details on this post-monitoring will be specified by the engineers during the design and construction stage of the Project. Grouting will be required for any unexpected groundwater drawdown. No significant change of groundwater levels would therefore be expected.	Control potential impacts from groundwater levels	CEDD's Contractors	Project site	Design Stage and Operational Phase	EIAO-TM, WPCO

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
Ecological Impact						
S6.8.4	***Measures to Minimize Disturbance*** • Use of Quiet Mechanical Plant during the construction phase should be adopted wherever possible. • Hoarding or fencing should be erected around the works area boundaries during the construction phase. The hoarding would screen adjacent habitats from construction phase activities, reduce noise disturbance to these habitats and also to restrict access to habitats adjacent to works areas by site workers; • Regular spraying of haul roads to minimize impacts of dust deposition on adjacent vegetation and habitats during the construction activities.	Minimize noise, human and traffic disturbance to terrestrial habitat and wildlife; and reduce dust generation	Design Team / Contractor	Land-based works area	Construction Phase	N/A
S6.8.5	***Standard Good Site Practice*** • Placement of equipment or stockpile in designated works areas and access routes selected on existing disturbed land to minimise disturbance to natural habitats. • Construction activities should be restricted to	Reduce disturbance to surrounding habitats	Contractor	Land-based works area	Construction Phase	N/A

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
	works areas that should be clearly demarcated. The works areas should be reinstated after completion of the works. • Waste skips should be provided to collect general refuse and construction wastes. The wastes should be properly disposed off-site in a timely manner. • General drainage arrangements should include sediment and oil traps to collect and control construction site run-off. • Open burning on works sites is illegal, and should be strictly prohibited. • Measures should also be put into place so that litter, fuel and solvents do not enter the nearby watercourses.					
S6.8.6	Measure to Minimize Groundwater Inflow • The drained tunnel construction method with groundwater inflow control measures would generally be adopted. • During the tunnel excavation, pre-excavation grouting could be adopted to reduce the groundwater inflow and ensure that the tunnel would meet the long term water tightness	Minimize groundwater inflow	Contractor	Tunnel	Construction Phase	N/A

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
	requirements.					
S6.8.8	***Measure to Minimize Impact on Corals*** <u>Coral translocation</u> • It is recommended to translocate the affected coral colonies, except the locally common *Oulastrea crispata*, within the reclamation area and bridge footprint to the other suitable locations as far as practicable. • The coral translocation should be conducted during the winter months (November-March) in order to avoid disturbance during their spawning period (i.e. July to October). • A detailed coral translocation plan with a description on the methodology for pre-translocation coral survey, translocation methodology, identification/proposal of coral recipient site, monitoring methodology for post-translocation should be prepared during the detailed design stage. • The coral translocation plan should be subject to approval by relevant authorities (e.g. EPD and AFCD) before commencement of the coral translocation.	Minimize loss of coral	Design team, contractor, project operator	Within reclamation areas and pier footprint	Prior construction	N/A

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
	• All the translocation exercises should be conducted by experienced marine ecologist(s) who is/are approved by AFCD prior to commencement of coral translocation. <u>Post translocation Monitoring</u> • A coral monitoring programme is recommended to assess any adverse and unacceptable impacts to the translocated coral communities • Information gathered during each post-translocation monitoring survey should include observations on the presence, survival, health condition and growth of the translocated coral colonies. These parameters should then be compared with the baseline results collected from the pre-translocation survey.					
S6.8.9 - S6.8.10	***Measure to Control Water Quality Impact*** • Deployment of silt curtains around the active stone column installation points, opening of newly installed seawall and marine works area. • Diverting of the site runoff to silt trap facilities before discharging into storm drain; • Proper waste and dumping management; and • Standard good-site practice for land-based	Control water quality impact, especially on suspended solid level; minimize the contamination of wastewater discharge, accidental chemical spillage and construction site run-off to the receiving	Design Team, contractor	Marine and land-based works area	Construction phase	WQO

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
	construction.	water bodies				
S6.8.11	***Compensation for Vegetation Loss*** • Felling of mature trees should be compensated by planting of standard or heavy standard trees within or in vicinity of the affected area as far as practicable. Such compensatory planting for trees should be provided with at least a 1:1 ratio. In addition, vegetation at the temporarily affected area should be reinstated with species similar to the existing condition.	Compensate for the vegetation loss	Design Team, contractor	Land-based works area	Construction phase	N/A
Fisheries Impact						
S7.7.3	***Measure to Control Water Quality Impact*** • Deployment of silt curtains around the active stone column installation points, opening of newly installed seawall and marine works area.	Control water quality impact, especially on suspended solid level	Design Team / Contractor	Marine work area	Construction phase	WQO
Waste Management						
Construction Phase						
S8.6.3	***Good Site Practices and Waste Reduction Measures*** • Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and	To reduce waste management impacts	Contractor	All work sites	Construction Phase	Waste Disposal Ordinance (Cap. 354) Land

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
	effective disposal to an appropriate facility, of all wastes generated at the site; • Training of site personnel in site cleanliness, proper waste management and chemical handling procedures; • Provision of sufficient waste disposal points and regular collection of waste; • Appropriate measures to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; and • Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors.					(Miscellaneous Provisions) Ordinance (Cap. 28)
S8.6.4	***Good Site Practices and Waste Reduction Measures (con't)*** • Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal; • Encourage collection of aluminium cans by providing separate labelled bins to enable this waste to be segregated from other general refuse generated by the workforce;	To achieve waste reduction	Contractor	All work sites	Construction Phase	Waste Disposal Ordinance (Cap. 354) Land (Miscellaneous Provisions) Ordinance (Cap. 28)

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
	• Proper storage and site practices to minimize the potential for damage or contamination of construction materials; and • Plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste.					
S8.6.5	***Good Site Practices and Waste Reduction Measures (con't)*** The Contractor shall prepare and implement a WMP as part of the EMP in accordance with ETWB TCW No. 19/2005 which describes the arrangements for avoidance, reuse, recovery, recycling, storage, collection, treatment and disposal of different categories of waste to be generated from the construction activities. Such a management plan should incorporate site specific factors, such as the designation of areas for segregation and temporary storage of reusable and recyclable materials. The EMP should be submitted to the Engineer for approval. The Contractor should implement the waste management practices in the EMP throughout the construction stage of the Project. The EMP should be reviewed regularly and updated by the Contractor.	To achieve waste reduction	Contractor	All work sites	Construction Phase	ETWB TCW No. 19/2005

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
S8.6.6	***Good Site Practices and Waste Reduction Measures (con't)*** C&D materials would be reused in the project and other local concurrent projects as far as possible.	To achieve waste reduction	Contractor	All work sites	Construction Phase	ETWB TCW No. 19/2005
S8.6.7	***Storage, Collection and Transportation of Waste*** Should any temporary storage or stockpiling of waste is required, recommendations to minimize the impacts include: • Waste, such as soil, should be handled and stored well to ensure secure containment, thus minimizing the potential of pollution; • Maintain and clean storage areas routinely; • Stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; and • Different locations should be designated to stockpile each material to enhance reuse.	To minimize potential adverse environmental impacts arising from waste storage	Contractor	All work sites	Construction Phase	-
S8.6.8	***Storage, Collection and Transportation of Waste (con't)*** • Remove waste in timely manner; • Waste collectors should only collect wastes	To minimize potential adverse environmental impacts arising from waste collection and disposal	Contractor	All work sites	Construction Phase	-

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
	prescribed by their permits; • Impacts during transportation, such as dust and odour, should be mitigated by the use of covered trucks or in enclosed containers; • Obtain relevant waste disposal permits from the appropriate authorities, in accordance with the Waste Disposal Ordinance (Cap. 354), Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 345) and the Land (Miscellaneous Provisions) Ordinance (Cap. 28); • Waste should be disposed of at licensed waste disposal facilities; and • Maintain records of quantities of waste generated, recycled and disposed.					
S8.6.9	***Storage, Collection and Transportation of Waste (con't)*** Implementation of trip ticket system with reference to DEVB TC(W) No. 6/2010, *Trip Ticket System for Disposal of Construction & Demolition Materials*, to monitor disposal of waste and to control fly-tipping at PFRFs or landfills. A recording system for the amount of waste generated, recycled and disposed (including	To minimize potential adverse environmental impacts arising from waste collection and disposal	Contractor	All work sites	Construction Phase	DEVB TCW No. 6/2010

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
	disposal sites) should be proposed.					
S8.6.11 - S8.6.13	***Sorting of C&D Materials*** • Sorting to be performed to recover the inert materials, reusable and recyclable materials before disposal off-site. • Specific areas shall be provided by the Contractors for sorting and to provide temporary storage areas for the sorted materials. • The C&D materials should at least be segregated into inert and non-inert materials, in which the inert portion could be reused and recycled in the reclamation as far as practicable before delivery to PFRFs. While opportunities for reusing the non-inert portion should be investigated before disposal of at designated landfills.	To minimize potential adverse environmental	Contractor	All work sites	Construction Phase	DEVB TCW No. 6/2010 ETWB TCW No. 33/2002 ETWB TCW No. 19/2005
S8.6.15 – S8.6.16	***Sediments*** • Sediment encountered may be reused as filling material on-site after cement stabilization. Cement-stabilization process is undertaken by mixing sediment and cement and will convert sediment to earth filling material. The treated sediment has to comply with Risk-Based Remediation Goals (RBRGs) before being reused in order not to raise any land	To ensure the sediment to be disposed of in an authorized and least impacted way	contractor	All works areas with sediments concern	Construction Phase	RBRG

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
	contamination issue. The adoption of RBRGs to assess stabilized sediment has been proposed in the current C&DMMP. MFC has no adverse comment on the current C&DMMP. The sediment quality indicates that all sediments comply with most stringent RBRGs except for one sediment sample (TKO-EBH501 3-3.95m) with lead exceeding the RBRG. Except for the sediment sample (TKO-EBH501 3-3.95m), the chemical screening results do not indicate sediment as contaminated soil. It is anticipated that reuse of sediment except sediment sample (TKO-EBH501 3-3.95m) will not lead to land contamination. • Despite exceedance of RBRG, onsite reuse of sediment under sample (TKO-EBH501 3-3.95m) as filling material after cement stabilization is also a suitable treatment. Sediment quality indicates the sediment sample (TKO-EBH501 3-3.95m) exceed RBRG for lead. While cement stabilization will immobilize metal contaminants, it is capable to treat the exceedance on lead. The stabilized material should comply with UTS of Lead and UCS. If the treated material do not comply with UTS or UCS, re-stabilization have to be undertaken to					

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
	meet compliance of UTS and UCS before reusing the treated sediment as filling material. However, further agreement on final disposal/treatment on sediment under sample (TKO-EBH501 3-3.95m) has to be sought from DEP.					
S8.6.17 – S8.6.20	***Sediments (con't)*** • Requirements of the *Air Pollution Control (Construction Dust) Regulation*, where relevant, shall be adhered to during boring, excavation, transportation and disposal of sediments or cement stabilization of sediment. • A treatment area should be confined for carrying out the cement stabilization mixing and temporary stockpile. The area should be designed to prevent leachate from entering the ground. Leachate, if any, should be collected and discharged according to the *Water Pollution Control Ordinance* (WPCO). • In order to minimise the potential odour / dust emissions during boring, excavation and transportation of the sediment, the excavated sediments should be kept wet during excavation/boring and should be properly covered when placed on barges/trucks. Loading	To determine the best handling and treatment of sediment	Contractor	All works areas with sediments concern	Construction Phase	

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
	of the excavated sediment to the barge should be controlled to avoid splashing and overflowing of the sediment slurry to the surrounding water. • In order to minimise the exposure to contaminated materials, workers should, when necessary, wear appropriate personal protective equipments (PPE) when handling contaminated sediments. Adequate washing and cleaning facilities should also be provided on site.					
S8.6.21	***Sediments (con't)*** • Alternatively, excavated sediment can be treated with marine disposal. The basic requirements and procedures for excavated sediment disposal specified under ETWB TC(W) No. 34/2002 shall be followed. MFC is responsible for the provision and management of disposal capacity and facilities for the excavated sediment, while the permit of marine dumping is required under the *Dumping at Sea Ordinance* and is the responsibility of the DEP.	To ensure the sediment to be disposed of in an authorized and least impacted way	contractor	All works areas with sediments concern	Construction Phase	ETWB TC(W) No. 34/2002 & Dumping at Sea Ordinance
S8.6.23	***Sediments (con't)*** • For allocation of sediment disposal sites and application of marine dumping permit, separate SSTP has to be submitted to EPD for agreement	To determine the best handling and disposal option of sediment	Contractor	All works areas with sediments concern	Construction Phase	ETWB TC(W) No. 34/2002 & Dumping at Sea Ordinance

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
	under DASO. Additional site investigation, based on the SSTP, maybe carried out in order to confirm the disposal arrangements for the proposed sediments removal. A Sediment Quality Report (SQR) shall then be required for EPD agreement under DASO prior to the tendering of the construction contract, discussing in details the site investigation, testing results as well as the delineation of each of the categories of excavated materials and the corresponding types of disposal.					
S8.6.24 - S8.6.28	***Sediments (con't)*** • The excavated sediments is expected to be loaded onto the barge and transported to the designated disposal sites allocated by the MFC. The excaveted sediment would be disposed of according to its determined disposal options and *ETWB TC(W) No. 34/2002*. • Stockpiling of contaminated sediments should be avoided as far as possible. If temporary stockpiling of contaminated sediments is necessary, the excavated sediment should be covered by tarpaulin and the area should be placed within earth bunds or sand bags to prevent leachate from entering the ground,	To ensure handling of sediments are in accordance to statutory requirements	Contractor	All works areas with sediments concern	Construction Phase	ETWB TC(W) No. 34/2002 & Dumping at Sea Ordinance

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
	nearby drains and surrounding water bodies. The stockpiling areas should be completely paved or covered by linings in order to avoid contamination to underlying soil or groundwater. Separate and clearly defined areas should be provided for stockpiling of contaminated and uncontaminated materials. Leachate, if any, should be collected and discharged according to the Water Pollution Control Ordinance (WPCO). • In order to minimise the potential odour / dust emissions during boring and transportation of the sediment, the excavated sediments should be kept wet during excavation/boring and should be properly covered when placed on barges. Loading of the excavated sediment to the barge should be controlled to avoid splashing and overflowing of the sediment slurry to the surrounding water. • The barge transporting the sediments to the designated disposal sites should be equipped with tight fitting seals to prevent leakage and should not be filled to a level that would cause overflow of materials or laden water during loading or transportation. In addition, monitoring of the barge loading shall be					

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	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 DEP. • In order to minimise the exposure to contaminated materials, workers should, when necessary, wear appropriate personal protective equipments (PPE) when handling contaminated sediments. Adequate washing and cleaning facilities should also be provided on site. • Another possible arrangement for Type 3 disposal is by geosynthetic containment. A geosynthetic containment method is a method whereby the sediments are sealed in geosynthetic containers and, at the disposal site, the containers would be dropped into the designated contaminated mud pit where they would be covered by further mud disposal and later by the mud pit capping, thereby meeting the requirements for fully confined mud disposal.					
S8.6.26	***Chemical Wastes*** If chemical wastes are produced at the construction site, the Contractor would be required to register	To ensure proper management of	Contractor	All works sites	Construction Phase	Code of Practice on the Packaging,

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
	with the EPD as a Chemical Waste Producer and to 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 should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the Chemical Waste Treatment Centre at Tsing Yi, or other licensed facility, in accordance with the *Waste Disposal (Chemical Waste) (General) Regulation*.	chemical waste				Labelling and Storage of Chemical Wastes Waste Disposal (Chemical Waste) (General) Regulation
S8.6.27	***General Refuse*** General refuse should be stored in enclosed bins or compaction units separate from C&D material. A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material. Preferably an enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light	To ensure proper management of general refuse	Contractor	All works sites	Construction Phase	Public Health and Municipal Services Ordinance (Cap. 132)

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	material.					
Operation Phase						
S8.6.30 - S8.6.31	***Chemical Wastes*** • The requirements given in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes would be followed in handling of chemical waste as in construction phase. A trip-ticket system would be adopted by the operator to monitor disposal of chemical waste. • Non-recyclable chemical waste should be disposed of at appropriate facility like CWTC by licensed collectors. Recyclable chemical waste should be collected and transported off-site by licensed collectors.	To avoid environmental impacts in handling, storage and disposal of chemical waste	Operator	All facilities	Operation waste	Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes Waste Disposal (Chemical Waste) (General) Regulation
S8.6.32 - S8.6.33	***General Refuse*** • Recycling of waste paper, aluminium cans and plastic bottles should be encouraged, it is recommended to place clearly labelled recycling bins at designated locations which could be accessed conveniently. Other general refuse should be separated from chemical and industrial waste by providing separated bins for storage to maximize the recyclable volume.	To separate general refuse from other waste types and proper disposal of the refuse	Operator	All facilities	Operation Phase	Public Health and Municipal Services Ordinance (Cap. 132)

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
	• A reputable licensed waste collector should be employed to remove general refuse on a daily basis to minimize odour, pest and litter impacts.					
Impact on Cultural Heritage						
Construction Phase						
S9.6.4	***Dust and visual impacts*** • Temporarily fenced off buffer zone with allowance for public access (minimum 1 m) should be provided; • The open yard in front of the temple should be kept as usual for annual Tin Hau festival; • Monitoring of vibration impacts should be conducted when the construction works are less than 100m from the temple.	To prevent dust and visual impacts	Contractors	Works areas	Construction Phase	EIAO; GCHIA; AMO.
S9.6.4	***Indirect vibration impact*** • Vibration level is suggest to be controlled within a peak particle velocity (ppv) limit of 5mm/s measured inside the historical buildings; • Monitoring of vibration should be carried out during construction phase. • Tilting and settlement monitoring should will be applied on the Cha Kwo Ling Tin Hau Temple	To prevent indirect vibration impact	Contractors	Work areas	Construction Phase	Vibration Limits on Heritage Buildings by CEDD; GCHIA; AMO.

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	as well. • A proposal with details for the mitigation measures and monitoring of impacts on built heritage shall be submitted to AMO for comments before commencement of work.					
Landscape and Visual Impact						
Construction Phase						
Table 10.8.1	CM1 - Construction area and contractor's temporary works areas to be minimised to avoid impacts on adjacent landscape.	Avoid impact on adjacent landscape areas	CEDD (via Contractor)	General	Construction planning and during construction period	N/A
Table 10.8.1	CM2 - Reduction of construction period to practical minimum.	Minimise duration of impact	CEDD (via Contractor)	N/A	Construction planning	N/A
Table 10.8.1	CM3 - Topsoil, where the soil material meets acceptable criteria and where practical, to be stripped and stored for re-use in the construction of the soft landscape works. The Contract Specification shall include storage and reuse of topsoil as appropriate.	To allow re-use of topsoil	CEDD (via Contractor)	General	Site clearance	As per the Particular Specification
Table 10.8.1	CM4 - Existing trees at boundary of site and retained trees within site boundary to be carefully protected during construction. Detailed Tree	To minimize tree loss	CEDD (via Contractor)	As per approved Tree Removal Application(s)	Site clearance and throughout construction	ETWB TC 3/2006 and as per tree

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	Protection Specification shall be provided in the Contract Specification, under which the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works areas. (Tree protection measures will be detailed at Tree Removal Application stage).				period	protection measures in Particular Specification
Table 10.8.1	CM5 - Trees unavoidably affected by the works shall be transplanted where practicable. Where possible, trees should be transplanted direct to permanent locations rather than temporary holding nurseries. A detailed tree transplanting specification shall be provided in the Contract Specification and sufficient time for preparation shall be allowed in the construction programme.	To maximize preservation of existing trees	CEDD (via Contractor)	As per approved Tree Removal Application(s)	Site clearance	ETWB TC 3/2006 and as per tree protection measures in Particular Specification
Table 10.8.1	CM6 - Advance screen planting of fast growing tree and shrub species to noise barriers and hoardings. Trees shall be capable of reaching a height >10m within 10 years.	To maximize screening of the works	CEDD (via Contractor)	At Lam Tin Interchange and edge of Road P2 landscape deck, TKO	Beginning of construction period	N/A
Table 10.8.1	CM7 - Hydroseeding or sheeting of soil stockpiles with visually unobtrusive material.	To reduce visual intrusion	CEDD (via Contractor)	General	Throughout construction period	As per Particular Specification
Table	CM8 - Control of night-time lighting by hooding all lights and through minimisation of night working	To reduce visual	CEDD (via	General	Throughout construction	N/A

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
10.8.1	periods.	intrusion	Contractor)		period	
Table 10.8.1	CM9 - Screening of works areas with hoardings with appropriate colours compatible with the surrounding area	Reduction of visual intrusion	CEDD (via Contractor)	Project site boundary	Erection of site hoardings	N/A
Table 10.8.1	CM10 - Avoidance of excessive height and bulk of site buildings and structures	Reduction of visual intrusion and integration with environment	CEDD (via Contractor)	Built structures	Design and construction stage	N/A
Table 10.8.1	CM11 - Limitation of run-off into freshwater streams, ponds and sea areas	Avoidance of contamination of water courses and water bodies	CEDD (via Contractor)	TKO reclamation, TKO tunnel portal, Cha Kwo Ling roadworks	Throughout construction period	N/A
Table 10.8.1	CM12 - Minimise area of reclamation and design the edges sensitively to tie in with adjacent coastline character	Minimise loss of Junk Bay and integration with existing coastline	CEDD (via Contractor)	Temporary reclamation for barging points at TKO and Lam Tin and permanent reclamation for TKO Interchange slip roads and Road P2	Construction planning and reclamation stages	N/A
Operation Phase						
Table 10.8.2	OM1 - Compensatory Tree Planting for all felled trees to the satisfaction of relevant Government Departments. Required numbers and locations of	To mitigate the loss of existing trees and fulfill Tree	CEDD (via Contractor)	As per approved Tree Removal Application (s)	Construction phase	ETWB TC (W) 3/2006

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
	compensatory trees shall be determined and agreed separately with Government during the Tree Felling Application process.	Preservation requirements				
Table 10.8.2	OM2 - Screen tree planting along the site boundary of the site featuring trees capable of reaching a height >10m within 10 years. Offsite screen planting by agreement may also be considered should space within the site be insufficient.	To mitigate visual impacts	CEDD (via Contractor)	Site boundaries generally; specifically as per landscape design construction drawings.	Construction phase	N/A
Table 10.8.2	OM3 - Slope greening works on all disturbed, new or reinstated slopes including trees, shrubs, groundcover and climbers. For slopes which are not feasible for planting, sensitive design of hard landscape treatment with appropriate material and color should be provided. The use of unobtrusive colours and tones for all hard elements on slopes (concrete channels, access stairs, railings, catch pits etc) including pigmented concrete and paints.	Slope erosion control and mitigation of visual impacts	CEDD (via Contractor)	Slopes generally and as per landscape design construction drawings	Construction phase	GEO 1/2011 – Technical Guidelines on Landscape Treatment for Slopes
Table 10.8.2	OM4 - Sensitive design of buildings and structures in terms of scale, form, height and bulk (visual weight)	To mitigate visual impacts	CEDD (via Contractor)	All built structures	Design and construction phase	N/A
Table 10.8.2	OM5 - Use appropriate (visually unobtrusive and non-reflective) building materials and colours in	To mitigate visual impacts	CEDD (via Contractor)	All built structures	Design and construction phase	N/A

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
	buildings and structures.					
Table 10.8.2	OM6 - Streetscape and highway elements (e.g. paving, signage, street furniture, lighting etc.) sensitively designed in a manner that responds to the local context, and minimises potential negative landscape and visual impacts. Lighting units to be directional and minimise unnecessary light spill.	To mitigate visual impacts	CEDD (via Contractor)	Streetscapes associated with modification of existing roads and new road construction	Design and construction phase	N/A
Table 10.8.2	OM7 - Greening measures on elevated road sections.	To mitigate visual impacts	CEDD (via Contractor)	Elevated road sections	Construction/ operation	ETWB TCW No. 10/2005
Table 10.8.2	OM8 - Sensitive design of footbridges, noise barriers and enclosures with greening (screen planting/climbers/green roofs) and chromatic measures.	To mitigate visual impacts	CEDD (via Contractor)	Footbridges at Road P2, noise barriers at TKO and Lam Tin Interchanges	Construction/ operation	DEVB and Hyd's Guidelines on greening and design of noise barriers
Table 10.8.2	OM9 - Additional greening measures for streetscape and buildings associated with infrastructure for further enhancement and optimization of the overall greening effect within the Project Area	To mitigate visual impacts	CEDD (via Contractor)	Streetscapes , elevated road sections , footbridges at Road P2, noise barriers at TKO and Lam Tin Interchanges	Construction/ operation	DEVB and Hyd's Guidelines on greening and design of noise barriers
Landfill Gas Hazard						

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
Design and Construction Phase						
S11.5.9	A Safety Officer, trained in the use of gas detection equipment and landfill gas-related hazards, should be present on site throughout the groundworks phase. The Safety Officer should be provided with an intrinsically safe portable instrument, which is appropriately calibrated and able to measure the following gases in the ranges indicated below: Methane 0-100% LEL and 0-100% v/v Carbon dioxide 0-100% Oxygen 0-21%	Protect the workers from landfill gas hazards	Contractor	Project sites within the Sai Tso Wan Landfill Consultation Zone	Construction phase	EPD's Landfill Gas Hazard Assessment Guidance Note
S11.5.10 - S11.5.25	***Safety Measures*** • For staff who work in, or have responsibility for "at risk" area, such as all excavation workers, supervisors and engineers working within the Consultation Zone, should receive appropriate training on working in areas susceptible to landfill gas, fire and explosion hazards. • An excavation procedure or code of practice to minimize landfill gas related risk should be devised and carried out. • No worker should be allowed to work alone at	Protect the workers from landfill gas hazards	Contractor	Project sites within the Sai Tso Wan Landfill Consultation Zone	Construction phase	EPD's Landfill Gas Hazard Assessment Guidance Note Labour Department's Code of Practice for Safety and Health at Work in Confined Space

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
	any time in or near to any excavation. At least one other worker should be available to assist with a rescue if needed. • Smoking, naked flames and all other sources of ignition should be prohibited within 15m of any excavation or ground-level confined space. "No smoking" and "No naked flame" notices should be posted prominently on the construction site and, if necessary, special areas should be designed for smoking. • Welding, flame-cutting or other hot works should be confined to open areas at least 15m from any trench or excavation. • Welding, flame-cutting or other hot works may only be carried out in trenches or confined spaces when controlled by a "permit to work" procedure, properly authorized by the Safety Officer (or, in the case of small developments, other appropriately qualified person). • The permit to work procedure should set down clearly the requirements for continuous monitoring for methane, carbon dioxide and oxygen throughout the period during which the hot works are in progress. The procedure should also require the presence of an appropriately					

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
	qualified person, in attendance outside the 'confined area', who should be responsible for reviewing the gas measurements as they are made, and who should have executive responsibility for suspending the work in the event of unacceptable or hazardous conditions. Only those workers who are appropriately trained and fully aware of the potentially hazardous conditions which may arise should be permitted to carry out hot works in confined areas. • Where there are any temporary site offices, or any other buildings located within the Sai Tso Wan Landfill Consultation Zone which have enclosed spaces with the capacity to accumulate landfill gas, then they should either be located in an area which has been proven to be free of landfill gas (by survey using portable gas detectors); or be raised clear of the ground by a minimum of 500mm. This aims to create a clear void under the structure which is ventilated by natural air movement such that emission of gas from the ground are mixed and diluted by air. • Any electrical equipment, such as motors and extension cords, should be intrinsically safe.					

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
	• During piping assembly or conduiting construction, all valves/seals should be closed immediately after installation. As construction progresses, all valves/seals should be closed to prevent the migration of gases through the pipeline/conduit. All piping /conduiting should be capped at the end of each working day. • During construction, adequate fire extinguishing equipment, fire-resistant clothing and breathing apparatus (BA) sets should be made available on site. • Fire drills should be organized at not less than six monthly intervals. • The contractor should formulate a health and safety policy, standards and instructions for site personnel to follow. • All personnel who work on the site and all visitors to the site should be made aware of the possibility of ignition of gas in the vicinity of excavations. Safety notices (in Chinese and English) should be posted at prominent position around the site warning danger of the potential hazards. • Service runs within the Consultation Zone					

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
	should be designated as "special routes"; utilities companies should be informed of this and precautionary measures should be implemented. Precautionary measures should include ensuring that staff members are aware of the potential hazards of working in confined spaces such as manholes and service chambers, and that appropriate monitoring procedures are in place to prevent hazards due to asphyxiating atmospheres in confined spaces. Detailed guidance on entry into confined spaces is given in Code of Practice on Safety and Health at Work in Confined Spaces (Labour Department, Hong Kong). • Periodically during ground-works construction within the 250m Consultation Zone, the works area should be monitored for methane, carbon dioxide and oxygen using appropriately calibrated portable gas detection equipment. The monitoring frequency and areas to be monitored should be set down prior to commencement of ground-works either by the Safety Officer or an approved and appropriately qualified person.					
S11.5.26 -	***Monitoring***	Protect the workers from landfill gas	Contractor	Project sites within the Sai Tso Wan	Construction	EPD's Landfill Gas Hazard

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
S11.5.31	• Routine monitoring should be carried out in all excavations, manholes, chambers, relocation of monitoring wells and any other confined spaces that may have been created. All measurements in excavations should be made with the extended monitoring tube located not more than 10 mm from the exposed ground surface. Monitoring should be performed properly to make sure that the area is free of landfill gas before any man enters into the area. • For excavations **deeper than 1m**, measurements should be carried out: – at the ground surface before excavation commences; – immediately before any worker enters the excavation; – at the beginning of each working day for the entire period the excavation remains open; and – periodically throughout the working day whilst workers are in the excavation. • For excavations **between 300mm and 1m deep**, measurements should be carried out:	hazards		Landfill Consultation Zone	phase	Assessment Guidance Note

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
	– directly after the excavation has been completed; and – periodically whilst the excavation remains open. • For excavations **less than 300mm deep**, monitoring may be omitted, at the discretion of the Safety Officer or other appropriately qualified person. • Depending on the results of the measurements, actions required will vary and should be set down by the Safety Officer or other appropriately qualified person. • The exact frequency of monitoring should be determined prior to the commencement of works, but should be at least once per day, and be carried out by a suitably qualified or qualified person before starting the work of the day. Measurements shall be recorded and kept as a record of safe working conditions with copies of the site diary and submitted to the Engineer for approval. The Contractor may elect to carry out monitoring via an automated monitoring system.					
S11.5.32	The hazards from landfill gas during the construction stage within the Sai Tso Wan	Protect the workers from landfill gas	Contractor	Project sites within the Sai Tso Wan	Construction phase	EPD's Landfill Gas Hazard

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
	Landfill Consultation Zone should be minimized by suitable precautionary measures recommended in *Chapter 8 of the Landfill Gas Hazard Assessment Guidance Note*.	hazards		Landfill Consultation Zone		Assessment Guidance Note
S11.5.34	***Building Protection Design Measures*** Engineering measures for building structures with ground level or below ground rooms / voids (such as buildings, plant rooms, workshops) including the following should be adopted in the detailed design: • Gas-resistant polymeric membranes which can be incorporated into the floor or wall construction as a continuous sealed layer. Membranes should be able to demonstrate low gas permeability and resistant to possible chemical attack and may incorporate aluminum wafers to improve performance; • Other building materials, e.g. dense well-compacted concrete or steel shuttering which provide a measure of resistance to gas permeation; • Creation of a clear void under the structure which is ventilated by natural structure and provides preferential pathways for release of gas;	Protect the operation of the Tseung Kwan O-Lam Tin Tunnel and associated facilities from landfill gas hazards	Contractor	Buildings within the Sai Tso Wan Landfill Consultation Zone	Design phase	EPD's Landfill Gas Hazard Assessment Guidance Note

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
	• Synthetic composite geotextiles which provide a free-venting cellular structure and provide preferential pathways for release of gas; • Provision of mechanical ventilation to ensure sufficient air change at all time.					
S11.5.35	***Design Measures for Sub-Surface Building Services*** Generic protection measures for the sub-surface building services including the following are recommended: • A gas barrier used to prevent movement of gas through services may form part of a more extensive barrier to prevent general mitigation towards the development. The gas barrier may be made of clay (or clay-rich soils), bentonite or polymeric membranes (e.g. HDPE). In the case of water pipes and sewers which are not always fully filled, water traps e.g. U-bends, should be provided to effectively seal off the conduit and prevent gas-phase transport; • Vent pipes or gridded manhole covers may be used to avoid build-up of gas in underground utilities manholes. Venting stacks may be built into inspection chambers or connected to	Protect the operation of the Tseung Kwan O-Lam Tin Tunnel and associated facilities from landfill gas hazards	Contractor	Sub-surface buildings within the Sai Tso Wan Landfill Consultation Zone	Design phase	EPD's Landfill Gas Hazard Assessment Guidance Note

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
	collection pipes in high permeability drainage layers adjacent to gas barriers. Under all circumstances, care should be taken when accessing any manhole chambers especially those which are not fitted with vents and necessary safety procedures must be followed; and • For building services penetrating through the ground, collar seal should be adopted to prevent gas ingress into the room where the service pipes/cables enter the building.					
S11.5.36	***Design Measures for Tunnels within Consultation Zone*** The recommendations given below are designed to reduce the risk of gas ingress to the tunnels sections that falls within the Sai Tso Wan Landfill Consultation Zone. • A low permeability gas membrane to be incorporated into the lining of the tunnel sections that fall within the landfill Consultation Zone. • Adopt a conservative lapping and sealing method for the membrane lining and ensure rigorous protection/inspection measures are	Protect the operation of the Tseung Kwan O-Lam Tin Tunnel and associated facilities from landfill gas hazards	Contractor	Tunnels within the Sai Tso Wan Landfill Consultation Zone	Design phase	EPD's Landfill Gas Hazard Assessment Guidance Note

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
	enabled during the placement/sealing and joining of the gas membrane during construction. • Consider the cost-effectiveness of the use of additional internal join/surface sealants/liners/finishes, etc, with the proposed construction joint design or pursue superior designs at the tunnel interface specifically to combat cracking and aid watertightness over the lifetime of the tunnels. • Provision of mechanical ventilation to ensure sufficient air change at all time.					
S11.5.37 - S11.5.38	***Design of LFG Precautionary Measures*** • When the detailed design of the Project is available, the detailed design consultant / contractor is required to undertake review on this assessment taking into account of the more readily available detailed information to finalize the design of the landfill gas precautionary measures recommended in this report. The detailed design of gas precautionary measures and a landfill gas monitoring programme should be submitted to EPD for vetting. • The design of the landfill gas precautionary	Protect the operation of the Tseung Kwan O-Lam Tin Tunnel from landfill gas hazards	Contractor	All facilities within the Sai Tso Wan Landfill Consultation Zone	Design phase	EPD's Landfill Gas Hazard Assessment Guidance Note

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
	measures to be adopted on-site should be performed by a competent professional person who has knowledge on LFG precautionary measures. The design should also be checked and certified by a qualified independent consultant. The contractor should ensure that the required precautionary measures are implemented and constructed in accordance with the design and maintenance and monitoring programme should be established as a precautionary measure.					
S11.5.39	Along with the detailed precautionary measure designs, the monitoring programme and detailed actions should be submitted to EPD for approval in the detailed design stage.	Review and agree the detailed precautionary measure designs during the operational phase	Construction contractor	All facilities within the Sai Tso Wan Landfill Consultation Zone	Design phase	EPD's Landfill Gas Hazard Assessment Guidance Note
Operational Phase						
S11.5.32 & S11.5.46	In the operational phase, if it is necessary to carry out construction or maintenance works, landfill gas precautionary measures same as those recommended for the construction stage above should be followed.	Protect the workers from landfill gas hazards	Maintenance or construction contractor	Construction sites within the Sai Tso Wan Landfill Consultation Zone	Operational phase	EPD's Landfill Gas Hazard Assessment Guidance Note
S11.5.40 - S11.5.42	***Guidance for Entry into Service Rooms / Voids, Manholes and Chambers*** • During the operation phase, any service voids,	Protect the workers from landfill gas hazards	Maintenance contractor	Service Rooms / Voids, Manholes and Chambers within the Sai Tso Wan Landfill	Operational phase	EPD's Landfill Gas Hazard Assessment

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
	manholes, chambers or culvert within the proposed site, which is large enough to permit access to personnel should be subject to entry safety procedures. Works in confined spaces are controlled by *the Factories and Industrial Undertakings (Confined Spaces) Regulation* of *the Factories and Industrial Undertakings Ordinance* and *the Code of Practice for Safety and Health at Work in Confined Space* should be followed to ensure compliance with the Regulation. • In general, when work is being undertaken in confined spaces, sufficient approved resuscitation equipment, breathing apparatus and safety torches should be made available. Persons involved in or supervising such work should be trained and practiced in the use of such equipment. A permit-to-work system for entry into confined spaces should be developed by an appropriately qualified person and the system should be consistently employed. The safety measures recommended in *Chapter 8 of the Landfill Gas Hazard Assessment Guidance Note* should also be strictly followed. • All the access to confined spaces should be restricted only to authorized personnel who are			Consultation Zone		Guidance Note Factories and Industrial Undertakings (Confined Spaces) Regulation of the Factories and Industrial Undertakings Ordinance Labour Department's Code of Practice for Safety and Health at Work in Confined Space

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
	aware of the landfill gas hazard. No general public should be permitted or allowed to access the service voids, manholes, chambers or wells.					
S11.5.43-S11.5.45	***Other Safety Measures and LFG Monitoring During Operation*** • Operational staff and maintenance workers should be informed of the potential LFG hazards, and appropriate safety procedures (such as guidance for entering confined area as indicated above) should be followed. • During operation, regular monitoring of methane, carbon dioxide and oxygen should be done at the tunnel, subway, and any other underground structures within the landfill consultation zone a precautionary measure. • Inspection and LFG monitoring should be carried out at buildings and enclosures (e.g. administration building, ventilation building, workshop, tunnel etc) prior to the operation as preventive measures. The monitoring should be continued through the operation of the Project. In particular for the first year of operation, monthly monitoring is recommended. Should the monitoring reveal the presence of landfill gas within the tunnel, buildings or other	Protect the workers from landfill gas hazards.	Operator and Maintenance contractor	All facilities within the Sai Tso Wan Landfill Consultation Zone	Operational phase	EPD's Landfill Gas Hazard Assessment Guidance Note

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
	confined area, the seal of the joints shall be inspected and consideration shall be given to seal the cracks.					