Annex A - Implementation Schedule of Recommended Mitigation Measures

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Relevant Legislation & Guidelines
				D	C	O	
Air Quality							
S3.7.1	Dust control measures stipulated in the *Air Pollution Control (Construction Dust) Regulation* will be implemented during the construction of the Project to control potential fugitive dust emissions.	Land site/ During Construction	Contractor(s)		✓		Air Pollution Control (Construction Dust)
S3.7.1	Regular water spraying on exposed area.	Land site/ During Construction, particularly dry season	Contractor(s)		✓		-
S3.7.1	Vehicle wheel-washing and body washing facilities shall be provided at the site entrance.	Land site/ During Construction	Contractor(s)		✓		-
S3.7.1	Shielding or covering with impervious sheet of stockpiled materials or exposed area when it is not used to reduce dust nuisance.	Land site/ During Construction	Contractor(s)		✓		-
S3.7.1	Site practices such as regular maintenance and checking of the diesel-driven PMEs will be adopted to avoid any black smoke emissions and to reduce gaseous emissions.	Land site/ During Construction	Contractor(s)		✓		-
S3.7.1	Open trench construction of the gravity sewers, each work front should be around 20m to 30m in length to control potential dust emission.	Land site / During construction	Contractor(s)		✓		-
S3.6.1	The existing sewage pumping station and rising mains will be cleaned and flushed out properly to clear away any remaining potential sources of odour emission, such as sewage sludge from the facilities. The decommissioning including removal of the pumping station and rising mains will take place after the cleaning and flushing out.	Land site/ During Construction	Contractor(s)		✓		-

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				D	C	O	
S3.9.1	Regular site inspections on a weekly basis will be carried out in order to confirm that the mitigation and control measures are properly implemented and are working effectively to ensure proper control of construction dust and gaseous emissions.	Land site/ During construction	ET/ IEC		✓		-
S3.7.2	To minimize odour problem, the sludge tankers for disposal of sludge shall be fully enclosed.	During operation	Contractor(s)			✓	-
S3.7.2	Sludge produced will be thickened and dewatered to 30% dry solids prior to disposal at the landfill.	During operation	Contractor(s)			✓	-
S3.7.2	Deodourizing facility using activated carbon filters and/or bio-trickling filters will be equipped for both TSTP and STKSTW, attaining the required odour removal efficiency at exhaust, as presented in *Table 3.4* of Chapter 3 of the EIA Report.	During operation	Contractor(s)	✓		✓	-
S3.7.2	The deodorization system would undergo maintenance annually or when the average odour removal efficiency of deodorization facility is smaller than the required odour removal efficiency.	During operation	Contractor(s)	✓		✓	-
S3.7.2	Ventilation system will be provided inside the TSTP and STKSTW to ensure adequate air change within the plant.	During operation	Contractor(s)	✓		✓	-
S3.9.2	A commissioning test is recommended to be performed for the operation phase to ascertain the effectiveness of the deodorization systems at the TSTP and STKSTW. Exhaust air flow rate, temperature of exhaust, odour concentrations at the outlet of the deodorization systems should be monitored during the commissioning test.	During operation	DSD			✓	-

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Relevant Legislation & Guidelines
				D	C	O	
S3.9.2	Weekly monitoring of odour emission at the exhausts at TSTP and STKSTW by taking odour samples is recommended to be conducted in the first two months of the first year of the operation.	During operation	DSD			✓	-
S3.9.2	Provided that the monitoring results show no non-compliance on a weekly basis during the first two months, it is recommended to reduce the frequency to monthly in the subsequent four months and further reduce to quarterly in the remaining six months of the first year if no non-compliance is found. If there is any non-compliance, the operator should inspect the deodorization unit. Frequency of odour monitoring should not be reduced unless no non-compliance is found. Quarterly odour monitoring is also recommended to continue in the second year of the operation. If compliance can be achieved consistently throughout the first two years of operation, the Project Proponent may propose and seek approval with EPD to reduce monitoring frequency to every six-month or yearly basis for subsequent years of operation.	During operation	DSD			✓	-
S3.9.2	Odour patrol is proposed during the period of maintenance or cleaning of the deodorization system for TSTP or STKSTW. It is generally defined as Level 0 to Level 4 in which Level 0 means no odour and Level 4 means unacceptable odour. If Level 3 – 4 is reported and the source of odour is confirmed to be originated from the exhaust of TSTP or STKSTW, the operator should be notified immediately and should investigate and rectify the problem of the cleaning or maintenance works within 24 hours in order	During operation	DSD			✓	-

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Relevant Legislation & Guidelines
				D	C	O	
	to restore the level to below Level 2.						
Noise							
S4.8	Use of quiet PME / quiet construction method	Noise Control / During construction	Contractor(s)		✓		Technical Memorandum on Noise from Construction Work Other than Percussive Piling
S4.8	Movable noise barriers of 3 m in height with skid footing should be used and located within a few metres of stationary plant and mobile plant such that the line of sight to the NSR is blocked by the barriers. The length of the barrier should be at least five times greater than its height. The noise barrier material should have a superficial surface density of at least 7 kg m-2 and have no openings or gaps.	Noise Control / During construction	Contractor(s)		✓		A Practical Guide for the Reduction of Noise from Construction Works
S4.8	Only well-maintained plant will be operated on-site and plant will be serviced regularly during the construction phase;	Noise Control / During construction	Contractor(s)		✓		-
S4.8	Silencers or mufflers on construction equipment will be utilised and will be properly maintained during the construction phase;	Noise Control / During construction	Contractor(s)		✓		-
S4.8	Mobile plant, if any, will be sited as far away from NSRs as possible;	Noise Control / During construction	Contractor(s)		✓		-
S4.8	Machines and plant (such as trucks) that may be in intermittent use will be shut down between work periods or will be throttled down to a minimum;	Noise Control / During construction	Contractor(s)		✓		-
S4.8	Plant known to emit noise strongly in one direction will, wherever possible, be orientated so that the noise is directed away	Noise Control / During construction	Contractor(s)		✓		-

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Relevant Legislation & Guidelines
				D	C	O	
	from the nearby NSRs; and						
S4.8	Material stockpiles and other structures will be effectively utilised, wherever practicable, in screening noise from on-site construction activities.	Noise Control / During construction	Contractor(s)		✓		-
S4.8	The construction activities should be planned and carried out in sequence rather than simultaneously at each location. Therefore, only one unit of each type of equipment should be operated at any one time.	Noise Control / During construction	Contractor(s)		✓		-
S4.8	Open trench construction of the gravity sewers, each work front should be around 20m to 30m in length.	Noise Control / During construction	Contractor(s)		✓		-
S4.8	All the equipment will be totally enclosed inside building structure.	During design	DSD	✓			
S4.8	Quieter equipment should be chosen	During design	DSD	✓			-
S4.8	Include noise levels specification when ordering new equipment items	During operation	DSD			✓	-
S4.8	All openings, including louvres for ventilation and machine room doors should be oriented away from the NSRs	During design	DSD	✓			-
S4.8	Silencers, acoustic louvres or acoustic doors should be used	During design	DSD	✓			-
S4.8	Develop and implement a regularly scheduled equipment maintenance programme so that equipment items are properly operated and serviced. The programme should be implemented by properly trained personnel.	During operation	DSD			✓	-
S4.11	Designated monitoring stations as defined in EM&A Manual/During construction phase	Environmental Team (ET)			✓		-
Water Quality							
S5.9.2	The trenchless HDD construction of outfall pipeline would proceed from the landside. Also, the construction of diffuser would be	Marine Dredging/ During construction	Contractor(s)		✓		

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Relevant Legislation & Guidelines
				D	C	O	
	conducted after the dry excavation of marine sediment in the cofferdam. It is expected that the construction of diffuser would be conducted similar to other land-based construction works. Appropriate site practices and mitigation measures for land-based construction works are provided below in Section 0.						
S5.9.3	Furthermore, a number of standard measures and good site practices should be implemented to avoid / minimize the potential impacts from marine construction. These measures include: • All vessels should be well maintained and inspected before use to limit any potential discharges to the marine environment; • All vessels must have a clean ballast system; • No discharge of sewage/grey wastewater should be allowed. Wastewater from potentially contaminated area on working vessels should be minimized and collected. These kinds of wastewater should be brought back to port and discharged at appropriate collection and treatment system; and • No soil waste is allowed to be disposed overboard.	Marine Dredging/ During construction	Contractor(s)		✓		Dumping at Sea Ordinance (DASO)
S5.9.4	<u>General Construction Activities</u> Standard site practices outlined in ProPECC PN 1/94 "Construction Site Drainage" will be followed as far as practicable in order to reduce surface runoff, minimize erosion, and also to retain and reduce any SS prior to discharge. These practices include the	Land site & drainage/ During construction	Contractor(s)		✓		ProPECC PN 1/94 TM Standard under the WPCO

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Relevant Legislation & Guidelines
				D	C	O	
	following: • Silt removal facilities such as silt traps or sedimentation facilities will be provided to remove silt particles from runoff to meet the requirements of the TM standard under the WPCO. The design of silt removal facilities will be based on the guidelines provided in *ProPECC PN 1/94*. All drainage facilities and erosion and sediment control structures will be inspected on a regular basis and maintained to confirm proper and efficient operation at all times and particularly during rainstorms. Deposited silt and grit will be removed regularly. • Earthworks to form the final surfaces will be followed up with surface protection and drainage works to prevent erosion caused by rainstorms. • Appropriate surface drainage will be designed and provided where necessary. • The precautions to be taken at any time of year when rainstorms are likely together with the actions to be taken when a rainstorm is imminent or forecasted and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94. • Oil interceptors will be provided in the drainage system where necessary and regularly emptied to prevent the release of oil and grease into the storm water drainage system after accidental spillages.						

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Relevant Legislation & Guidelines
				D	C	O	
	• Temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge, if any, will be adequately designed for the controlled release of storm flows. • The temporary diverted drainage, if any, will be reinstated to the original condition when the construction work has finished or when the temporary diversion is no longer required.						
S5.9.5	As the Project site is next to the shoreline, infiltration of seawater during excavation is anticipated. Appropriate infiltration control, such as cofferdam wall, should be adopted to limit groundwater inflow to the excavation works areas in the Project site. Groundwater pumped out from excavation area should be discharged into the storm system via silt removal facilities.	Land site & drainage/ During construction	Contractor(s)		✓		
S5.9.6	If needed, appropriate numbers of portable toilets shall be provided by a licensed contractor to serve the construction workers over the construction site to prevent direct disposal of sewage into the water environment.	Land site & drainage/ During construction	Contractor(s)		✓		
S5.9.7	<u>Spillage of Chemicals</u> Site drainage should be well maintained and good construction practices should be observed to ensure that oil, fuels, solvents and other chemicals are managed, stored and handled properly and do not enter the nearby streams or marine water.	Land site & drainage/ During construction	Contractor(s)		✓		
S5.9.8	The assumed design on flow rate, effluent quality, outfall location and diffuser / outfall shall be taken into account into the final design to ensure water quality performance on the TSTP and expanded STKSTW	During operation	DSD	✓		✓	

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Relevant Legislation & Guidelines
				D	C	O	
	operation.						
S5.9.9	The following design measures are also provided in the TSTP and the expanded STKSTW to avoid the risk of emergency discharge: • Provision of dual power supply and backup generator to eliminate the risk of power failure; • Provision of standby equipment (online and on-shelf) for all treatment units; • Operation of STKSTW is under 24-hour monitoring by Shift Team of Sha Tau Kok (for new STKSTW) and/or Shek Wu Hui STW in order to allow inspection and any necessary repair works by DSD at the earliest possible time; • A remote control and monitoring system (SCADA) will also be installed to allow off-site DSD staff (Shift Team) to monitor the operation of STKSTW; and • Provision of on-site storage of raw sewage up to 6 hours for the TSTP and STKSTW.	During operation	DSD	✓		✓	
S5.9.10	Additional measures provided to avoid plant failure associated fine screen include: • 2 duties + 1 standby fine screens would be provided; • Uninstalled spare parts would be provided; • Monitoring equipment of fine screens would be installed; • Routine inspection and scheduled maintenance works would be strengthened and carried out regularly; and	During operation	DSD	✓		✓	

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Relevant Legislation & Guidelines
				D	C	O	
	• Equipment and necessary measures such as lifting opening would be provided to shorten the time required for replacement of screen.						
5.9.12	To avoid cross-connection of the reclaimed water supply to the potable water supply, the pipes for the reclaimed water will be specially arranged to differentiate them from that of the potable water pipe, e.g. clearly labelled with warning signs and notices, colour-coded, and/or using different pipe size.	During operation	DSD	✓		✓	
5.9.12	Caution would also be taken to avoid the use of high pressure jet in cleansing and landscape irrigation to minimize aerosol formation from the reclaimed effluent.	During operation	DSD	✓		✓	
S5.12.1	Marine water quality monitoring at selected WSRs is recommended for installation, maintenance and removal of sheetpile and sediment removal works under this Project. Site audit would also be conducted throughout the marine and land-based construction under this Project. Details environmental monitoring procedures and audit requirements are provided in the standalone EM&A manual.	Marine Dredging/ During construction	Environmental Team / Independent Environmental Checker		✓		
S5.12.2	Marine water quality monitoring at selected WSRs is recommended for the first year of (1) interim operation of the TSTP, (2) operation of phase 1 and (3) phase 2 expansion of the STKSTW. Follow-up water quality monitoring should be commenced within 24 hours after an emergency discharge event and continue until the recovery of water	During operation	Environmental Team / DSD			✓	

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Relevant Legislation & Guidelines
				D	C	O	
	quality. Monitoring of effluent quality would also be required for WPCO permit requirement. Detailed environmental monitoring procedures are provided in the standalone EM&A manual.						
Waste Management & Land Contamination							
S6.6.1	An Environmental Management Plan (EMP) in accordance with ETWB TCW No. 19/2005 – "Environmental Management on Construction Sites" should be prepared by the main Contractor of each construction contract upon appointment. The EMP should describe the arrangements for avoidance, reduction, reuse, recovery, recycling, storage, collection, treatment and disposal of different categories of waste to be generated from the construction activities.	During construction	Contractor(s)		✓		ETWB TCW No. 19/2005 – "Environmental Management on Construction Sites"
S6.6.3	An appropriate person, such as site agent or environmental officer should be nominated, to be responsible for good site practices, arrangement for collection and effective disposal of all wastes generated at the site to an approved facility. Training of construction staff should be undertaken by the Contractor about the concept of site cleanliness and appropriate waste management procedures. Requirements for staff training should be included in the EMP.	During construction	Contractor(s)		✓		
S6.6.4	Good planning and site management practices should be employed to eliminate over ordering or mixing of construction materials to reduce wastage. Proper storage and site practices will minimise the damage or contamination of construction materials. Regular cleaning and maintenance of the waste storage area should be provided.	During construction	Contractor(s)		✓		
S6.6.5	A recording system for the amount of wastes	During construction	Contractor(s)		✓		DEVB TCW No. 6/2010,

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Relevant Legislation & Guidelines
				D	C	O	
	generated, recycled and disposed (including the disposal sites) should be implemented in accordance with DEVB TCW No. 6/2010. In order to monitor the disposal of C&D materials and solid wastes at public fill reception facilities and landfills and to control fly-tipping, a trip-ticket system should be included.						Trip Ticket System for Disposal of Construction & Demolition Materials
S6.6.6	Imported soft fill and rocks, if required, should be sourced from CEDD's fill bank, other projects or other approved sources instead of using new materials. Approval from the Engineer and all other relevant parties should be obtained by the Contractor before importation of the fill materials.	During construction	Contractor(s)		✓		
S6.6.7	All waste materials should be segregated into categories covering: • inert C&D materials suitable for public filling facilities; • recyclable materials / waste • remaining non-inert C&D materials for landfill; • spent bentonite for public filling facilities; • chemical waste; and • general refuse for landfill.	During construction	Contractor(s)		✓		ETWB TC(W) No. 19/2005, Environmental Management on Construction Sites
S6.6.8	Proper segregation and disposal of construction waste should be implemented. Separate containers should be provided for inert and non-inert wastes.	During construction	Contractor(s)		✓		ETWB TC(W) No. 19/2005, Environmental Management on Construction Sites
S6.6.9	The reuse of excavated materials within this Project should be adopted as far as practicable. The opportunity of reusing the material in other projects in North District should also be explored.	During construction	Contractor(s)		✓		DEVB TCW No. 6/2010, Trip Ticket System for Disposal of Construction & Demolition Materials

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Relevant Legislation & Guidelines
				D	C	O	
S6.6.11	The reuse of inert C&D materials such as soil, rock and broken concrete should be maximised. Waste should be separated into fine, soft and hard materials.	During construction	Contractor(s)		✓		DEVB TCW No. 6/2010, Trip Ticket System for Disposal of Construction & Demolition Materials
S6.6.12	Prior to export of material from the site, the potential for it to be reused should be assessed. Most C&D materials can easily be reused with minimum processing. Waste separation methods should be followed to ensure that C&D waste is separated at source. Suitable soft materials should be used for landscaping and grading of embankments. Fine material should be separated out and used as topsoil.	During construction	Contractor(s)		✓		DEVB TCW No. 6/2010, Trip Ticket System for Disposal of Construction & Demolition Materials
S6.6.13	The feasibility of using recycled aggregates in lieu of virgin materials should be rigorously considered during the detailed design and construction phases. In general, recycled aggregates are suitable for use as fill materials in earthworks, road sub-base formation, and drainage works. Recycled aggregates can also be used in concrete (up to Grade 35) for mass concrete walls and other minor structures such as planter boxes, toe wall planters and pavement, etc.	Incorporating into design; During construction	Contractor(s)	✓	✓		DEVB TCW No. 6/2010, Trip Ticket System for Disposal of Construction & Demolition Materials
S6.6.14, S6.6.30	All C&D materials should be sorted on-site into inert and non-inert components by the Contractor. Non-inert C&D materials (C&D waste) such as wood, glass and plastic should be reused and recycled before disposal to a designated landfill as a last resort. Inert C&D materials (public fill) should be reused on-site or in other projects approved by relevant parties before disposed of at public fill reception facilities. Steel and other metals if any should be recovered from C&D materials and recycled.	During construction	Contractor(s)		✓		DEVB TCW No. 6/2010, Trip Ticket System for Disposal of Construction & Demolition Materials

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				D	C	O	
S6.6.15	Good quality reusable topsoil should be stockpiled for later landscaping works. Stockpiles should be less than 2m in height, formed to a safe angle of repose and hydroseeded or covered with tarpaulin to prevent erosion during the rainy season and to minimise dust generation.	During construction	Contractor(s)		✓		Air Pollution Control (Construction Dust) Regulation (Cap 311R)
S6.6.16	Control measures for temporary stockpiles on-site should be taken in order to minimize the noise, generation of dust, pollution of water and visual impact.	During construction	Contractor(s)		✓		Air Pollution Control (Construction Dust) Regulation (Cap 311R); WPCO (Cap 358)
S6.6.17	The identification of final disposal sites for C&D materials generated by the construction works will be considered during the detailed design stage of the Project when the volume and types of C&D materials can be more accurately estimated. The Public Fill Committee and Marine Fill Committee of CEDD should be consulted on designated outlets for public fill and sediment, whilst EPD should be consulted on landfills for C&D waste. The public fill to be disposed to public fill reception facilities must consist entirely of inert construction materials. Disposal of C&D waste to landfill must not have more than 50% by weight of inert material. The C&D waste delivered for landfill disposal should contain no free water and the liquid content should not exceed 70% by weight.	During design and construction	Contractor(s)	✓	✓		DEVB TCW No. 6/2010, Trip Ticket System for Disposal of Construction & Demolition Materials; Waste Disposal Ordinance
S6.6.18	In order to avoid dust or odour impacts, any vehicles leaving a works area carrying C&D waste or public fill should have their load covered up before leaving the construction site.	During construction	Contractor(s)		✓		Air Pollution Control (Construction Dust) Regulation (Cap 311R)
S6.6.20	With reference to the Sediment Quality Report in the EIA, only Category L sediment	During construction	Contractor(s)		✓		ETWB TCW No. 34/2002; Dumping at Sea

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Relevant Legislation & Guidelines
				D	C	O	
	was identified. In accordance with ETWB TCW No. 34/2002, Type 1 – Open Sea Disposal should be adopted for the disposal of 3,040 m^3 excavated sediment during construction of the proposed outfall diffuser. The location of marine disposal site should be sought with MFC/CEDD. The Contractor shall obtain a Marine Dumping Permit in accordance with the Dumping at Sea Ordinance. The Contractor should provide separate submissions (e.g. Sediment Sampling and Testing Plan / Sediment Quality Report) to EPD / DASO authoirty when applying for the marine dumping permit under the Dumping at Sea Ordinance.						Ordinance (DASO)
S6.6.21	Bentonite slurry used in the drilling works should be treated and recycled at the works area in STKSTW. Any bentonite that is not suitable for recycling should be suitably dewatered before disposed of at public fill reception facilities.	During construction	Contractor(s)		✓		
S6.6.22, S6.6.37	Where the construction / operation processes produce chemical waste, the Contractor must register with EPD as a chemical waste producer. Wastes classified as chemical wastes are listed in the Waste Disposal (Chemical Waste) (General) Regulation. These wastes are subject to stringent disposal routes. EPD requires information on the particulars of the waste generation processes including the types of waste produced, their location, quantities and generation rates. A nominated contact person must be registered with EPD..	During construction and operation	Contractor(s)		✓	✓	Waste Disposal (Chemical Waste) (General) Regulation
S6.6.23, S6.6.37	Storage, handling, transport and disposal of chemical waste should be arranged in accordance with the Code of Practice on the	During construction and operation	Contractor(s)		✓	✓	Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes

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	Packaging, Labelling and Storage of Chemical Wastes published by EPD, and should be collected by a licensed chemical waste collector.						
S6.6.24, S6.6.37	Suitable containers should be used for specific types of chemical wastes, containers should be properly labelled (English and Chinese in accordance with instructions prescribed in Schedule 2 of the Regulations), resistance to corrosion, safely stored and securely closed. Stored volume should not be kept more than 450 liters unless the specification has been approved by the EPD. Storage area should be enclosed by three sides by a wall, partition of fence that is at least 2 m height or height of tallest container with adequate ventilation and space.	During construction and operation	Contractor(s)		✓	✓	Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes
S6.6.25, S6.6.37	Hard standing, impermeable surfaces draining via oil interceptors should be provided in works area compounds. Interceptors should be regularly emptied to prevent release of oils and grease into the surface water drainage system after accidental spillages. The interceptor should have a bypass to prevent flushing during periods of heavy rain. Oil and fuel bunkers should be bunded and/or enclosed on three sides to prevent discharge due to accidental spillages or breaches of tanks. Bunding should be of sufficient capacity to accommodate 110% of the volume of the largest container or 20% of the total volume of waste, whichever is largest. Waste collected from any grease traps should be collected and disposed of by a licensed contractor.	During construction and operation	Contractor(s)		✓	✓	Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes
S6.6.26,	Lubricants, waste oils and other chemical	During construction	Contractor(s)		✓	✓	Waste Disposal (Chemical Waste) (General) Regulation

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Relevant Legislation & Guidelines
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S6.6.37	wastes are likely to be generated during the maintenance of vehicles and mechanical equipment. Used lubricants should be collected and stored in individual containers which are fully labelled in English and Chinese and stored in a designated secure place. If possible, such waste should be sent to oil recycling companies, and the empty oil drums collected by appropriate companies for reuse or refill.	and operation					Schedule 2
S6.6.27	The registered chemical waste producer (i.e. the Contractor) has to arrange for the chemical waste to be collected by licensed collectors. The licensed collector should regularly take chemical waste to a licensed chemical waste treatment facility (such as the Chemical Waste Treatment Centre in Tsing Yi). A trip ticket system operates to control the movement of chemical wastes.	During construction	Contractor(s)		✓		Waste Disposal (Chemical Waste) (General) Regulation; DEVB TCW No. 6/2010, Trip Ticket System for Disposal of Construction & Demolition Materials
S6.6.28	No lubricants, oils, solvents or paint products should be allowed to discharge into water courses, either by direct discharge, or as contaminants carried in surface water runoff from the construction site.	During construction	Contractor(s)		✓		WPCO (Cap 358)
S.6.6.29	All wooden materials used on-site should be kept separate from other wastes to avoid damage and to facilitate reuse. Timber which cannot be reused should be sorted out from other waste and stored separately from all inert waste before being disposed of to landfill.	During construction	Contractor(s)		✓		
S6.6.32	General refuse generated on-site should be stored in enclosed bins or skips and collected separately from other construction and chemical wastes and disposed of at designated landfill. A temporary refuse collection point should be set up by the Contractor at the works area to facilitate the collection of refuse by licensed waste collector. The removal of waste from the	During construction	Contractor(s)/ Licensed waste collector		✓		

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Relevant Legislation & Guidelines
				D	C	O	
	site should be arranged on a daily or at least on every second day by the Contractor to minimise any potential odour impacts, minimise the presence of pests, vermin and other scavengers and prevent unsightly accumulation of waste.						
S6.6.33	The recyclable component of the municipal waste generated by the workforce, such as aluminium cans, paper and cleansed plastic containers should be separated from other waste. Provision and collection of recycling bins for different types of recyclable waste should be set up by the Contractor. The Contractor should also be responsible for arranging recycling companies to collect these materials.	During construction	Contractor(s)		✓		
S6.6.35	Dewatered sludge should be delivered by sealed sludge tanker for treatment at the Sludge Treatment Facility in Tuen Mun.	During operation	Contractor(s)			✓	Waste Disposal Ordinance (WDO) (CAP 354)
S6.6.36	Screenings should be collected and stored in covered containers before disposed of at landfill. Likewise, worn membrane filters and general refuse should be properly stored and disposed of at landfill.	During operation	Contractor(s)			✓	Waste Disposal Ordinance (WDO) (CAP 354)
Ecology							
S7.7.3	Erect fences along the boundary of the works area before the commencement of works to prevent vehicle movements and encroachment of personnel onto adjacent areas.	All area / During construction	Contractor(s)		✓		-
S7.7.3	Regularly check the work site boundaries to ensure that they are not breached and that damage does not occur to surrounding areas.	All area / During construction	Contractor(s) / Environmental Team (ET)		✓		-
S7.7.3	Avoid any damage and disturbance, particularly those caused by filling and illegal dumping, to the surrounding habitats through proper management of waste	All area / During construction	Contractor(s)		✓		-

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Relevant Legislation & Guidelines
				D	C	O	
	disposal.						
S7.7.3	To avoid/ minimise the potential disturbance on the Night Roosting Site for Great Egret if confirmed to be continuing their usage before the construction activities, major noisy works such as concrete breaking will not be undertaken within an area of 100m from the Night Roosting Site after 16:00 under normal working hours. (i.e. 16:00 to 07:00 of the following day).	During construction	Contractor(s)		✓		-
S7.7.3	Strong artificial lighting should not be used in the area at night to avoid disturbance to the roosting ardeids.	During construction	Contractor(s)		✓		-
S7.10.2	Undertake Pre-construction survey to reconfirm the usage of the Night Roosting Site for Great Egret. Should the Night Roosting Site be confirmed to be abandoned (and verified by AFCD), no additional measures will be required.	During detailed design	Contractor(s) / Environmental Team (ET)	✓			-
Fisheries							
S8.7	As a good practice, it is recommended to establish a communication plan as a precautionary approach to inform the mariculturists, relevant stakeholders (e.g. Sha Tau Kok District Rural Committee) and relevant government departments (e.g. AFCD, EPD, MD) of the emergency discharge situation at STKSTW such that appropriate response actions can be formulated.	During operation	DSD			✓	-
Landscape & Visual							
Table 9.6	**Preservation of Existing Vegetation:** Existing trees designated to be retained in-situ	To protect existing landscape resources during construction stage	Contractor(s)		✓		DEVB TCW No. 7/2015 – Tree Preservation

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Relevant Legislation & Guidelines
				D	C	O	
	will be properly protected. Tree protection measures to be undertake shall be in accordance with DEVB TC(W) 7/2015 on "Tree Preservation" and Guidelines on Tree Preservation during Development" by DEVB. This may include the clear demarcation and fencing-off of tree protection zones, tight site supervision and monitoring to prevent tree damage by construction activities, and periodic arboricultural inspection and maintenance to uphold tree health. A total of around 108 nos. of trees will be retained in-situ within the tree survey area. Under current proposal, no tree is recommended to be transplanted since the trees in conflict with the proposed works are not suitable to be transplanted. However, should transplantation be proposed in the detailed design stage after an update tree survey, the recommended final recipient sites should be adjacent to their current locations. Enough time should be reserved for tree transplantation works to increase the survival rate of the transplanting trees. To ensure the survival of transplanted trees, protection work should be considered. The tree transplantation proposal will be submitted to relevant authorities for approval together with the formal tree removal application. Tree transplanting works shall be undertaken in accordance with Guidelines on Tree Transplanting by DEVB.						
Table 9.6	**Control of Site Construction Activities:** Construction site controls shall be enforced, where possible, to ensure that the landscape	To reduce construction disturbance during construction stage	Contractor(s)		✓		EIAO-TM

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Relevant Legislation & Guidelines
				D	C	O	
	and visual impacts arising from the construction phase activities are minimised. These construction site controls should include but not limited to the following: · Storage of materials should be carefully arranged to minimise potential landscape and visual impact. · The location and appearance of site accommodation should be carefully designed to minimise potential landscape and visual impact. · Site lighting should be carefully designed to prevent light spillage, · Extent of the works area and construction period should be minimised as far as practicable. · Screen hoarding with compatible design to blend into the surrounding natural environmental should be considered (Screen hoarding may not be practicable for works of upgrading existing rising mains due to the spatial constraints of the works area along the Shun Hing Street). · Temporary works areas should be reinstated at the earliest possible opportunity.						
Table 9.7	**Suitable design of the proposed TSTP:** ▪ Colour of natural tones and non-reflective building materials shall be used for any outward facing building facades to avoid visual and glare disturbance	To reduce landscape and visual impact during construction	DSD /Contractor(s)	✓	✓		EIAO-TM

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Relevant Legislation & Guidelines
				D	C	O	
	▪ Responsive lighting design - Directional and full cut off lighting is recommended within the boundaries of STKSTW to minimise light spillage to the surroundings; - Minimise geographical spread of lighting, only applying for safety at the key access points of the STKSTW; and - Limited lighting intensity to meet the minimum safety and operation requirement.						
Table 9.7	**Suitable design of the proposed STKSTW:** ▪ Colour of natural tones and non-reflective building materials shall be used for any outward facing building facades to avoid visual and glare disturbance ▪ Responsive lighting design - Directional and full cut off lighting is recommended within the boundaries of STKSTW to minimise light spillage to the surroundings; - Minimise geographical spread of lighting, only applying for safety at the key access points of the STKSTW; and - Limited lighting intensity to meet the minimum safety and operation requirement.	To reduce landscape and visual impact during operation	DSD /Contractor(s)	✓		✓	EIAO-TM
Table 9.7	**Amenity / Compensatory Planting**: 0.15ha planting area (0.03ha amenity planting area and 0.12ha compensatory planting area) have been reserved in the preliminary design. i. 0.12ha of compensatory planting area is allocated for planting of 31 heavy standard trees (total DBH of 3.1m) to compensate the loss of 18 trees proposed to be felled (total DBH of 3.1m). The proposed compensation	To mitigate the impact due to tree removal	DSD /Contractor(s)	✓		✓	DEVB TCW No. 7/2015 – Tree Preservation

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Relevant Legislation & Guidelines
				D	C	O	
	ratio is 1:1.72 and 1:1 in terms of tree number and total DBH respectively. The proposed new trees shall be native species of amenity value and at the same time of low maintenance requirements. Recommended tree species include *Schima superb, Cinnamomum burmannii a*nd *Schefflera heptaphylla*. This preliminary compensation proposal will form part of the tree removal application which will be controlled by the DEVB TC(W) 7/2015 – Tree Preservation. Tree risk assessment to all trees within the project site would be undertaken where applicable in accordance with Guidelines for Tree Risk Assessment and Management Arrangement; ii. Apart from compensatory tree planting, amenity planting of shrubs will be provided within the 0.03ha amenity planting area. A minimum of 1,380 shrubs will be planted. Recommended native shrub species include *Litsea rotundifolia, Rhaphiolepis indica* and *Rhodomyrtus tomentosa*. iii. the entire 0.15ha planting area (i.e. amenity and compensatory planting area) will be hydroseeded by native grass species *Eremochloa ophiuroides* to provide ground cover greening.						
Table 9.6	**Amenity enhancement**: Utilization of green roof and vertical greening to mitigate the visual impact of taller structures and soften the façade of STKSTW.	To enhance local landscape	DSD /Contractor(s)	✓		✓	EIAO-TM
Cultural Heritage							
S10.3.50	Undertake trenchless excavation in the vicinity of the Tin Hau Temple and provide a	During construction	Contractor(s)		✓		Antiquities and Monuments Ordinance; EIAO-TM; and Guidelines for Cultural Heritage Impact Assessment

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Relevant Legislation & Guidelines
				D	C	O	
	buffer zone of 10m between the works area for the open cut section and the Tin Hau Temple.						
S10.3.51	A condition survey and vibration impact assessment will be undertaken and if construction vibration monitoring and structural strengthening measures are required.	During construction	Contractor(s)		✓		Antiquities and Monuments Ordinance; EIAO-TM; and Guidelines for Cultural Heritage Impact Assessment
S10.3.52	Vibration and settlement monitoring will also be undertaken during the construction works to ensure that safe levels of vibration are not exceeded, if it is recommended in the condition survey report.	During construction	Contractor(s)		✓		Antiquities and Monuments Ordinance; EIAO-TM; and Guidelines for Cultural Heritage Impact Assessment
S10.3.53	If the maximum level is exceeded all works must stop and the structure must be examined to determine if it has been damaged. The contractor must also take measures, such as using smaller pneumatic drills to ensure that the levels are reduced to acceptable limits.	During construction	Contractor(s)		✓		Antiquities and Monuments Ordinance; EIAO-TM; and Guidelines for Cultural Heritage Impact Assessment
S10.3.54	If at any time during the construction period the foundation of the structure is affected by the works; the works will be immediately suspended and the AMO notified. If the works cause any damage to the structures, the proponent should be responsible for the restoration and repair at their own cost. A method statement should be submitted to AMO for comment and the works should be under AMO's supervision.	During construction	Contractor(s)		✓		Antiquities and Monuments Ordinance; EIAO-TM; and Guidelines for Cultural Heritage Impact Assessment
S10.3.55	Protective covering will be provided as an additional mitigation measure to the Tin Hau Temple.	During construction	Contractor(s)		✓		Antiquities and Monuments Ordinance; EIAO-TM; and Guidelines for Cultural Heritage Impact Assessment