Appendix B Project Implementation Schedule

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
Air Quality (Construction Phase)						
S3.7.1	Regular watering on construction work sites and exposed site surface should be conducted.	To minimize dust impacts	Contractor	All works sites and areas identified with heavy construction works	Construction phase	Air Pollution Control Ordinance (APCO)
S3.7.1	Paving should be provided to open haul road within works sites / works areas.	To minimize dust impacts	Contractor	Open haul roads within works site/area where appropriate	Construction phase	Air Pollution Control Ordinance (APCO)
S3.7.1	For the works sites close to the ASRs with the air sensitive facades at a separation distance of less than 10 m, provide with a combined height of up to 3m (i.e. 2.4m hoarding with 0.6m dust screen on top), subject to site constraints and status of ASRs; for the other work sites in general, provide hoarding of not less than 2.4m high from ground level along site boundary except for site entrance or exit.	To minimize dust impacts	Contractor	Along the site boundary, except for site entrance or exit	Construction phase	Air Pollution Control Ordinance (APCO)
S3.7.1	Dust control measures will be implemented in the CBP as required in *A Guidance Note on the Technical, Management and Monitoring Requirements for Specified Process – Cement Works (Concrete Batching Plant)* (BPM 3/2 (16)).	To minimize dust impacts	Contractor	Concrete batching plant	Construction phase	Air Pollution Control Ordinance (APCO)
S3.7.1	For the mucking-out operation at TBM launching shafts, regular watering should be provided at the unloading point of spoils generated by the TBM excavation.	To minimize dust impacts	Contractor	TBM launching shafts	Construction phase	Air Pollution Control Ordinance (APCO)

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S3.7.1	For the tunnelling works by drill-and-blast, a blast door should be provided to avoid the escape of fugitive dust from blasting. Water spaying should be applied to facilitate dust settlement. A filtration system comprising watering and dust collector with overall dust removal efficiency of at least 80% should be provided at the ventilation exhaust to treat dust-laden exhaust before release to the ambient.	To minimize dust impacts	Contractor	At the of openings at works sites for tunnelling works by drill-and-blast	Construction phase	Air Pollution Control Ordinance (APCO)
3.8.1	The following good site practices should be carried out: • Use of regular watering to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather; • Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering should be applied to aggregate fines; • Open stockpiles should 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; • Imposition of speed controls for vehicles on site haul roads; • Where possible, routing of vehicles and positioning of construction plant should be at the maximum possible distance from ASRs; and • 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.	To further minimize dust impacts	Contractor	All works sites and areas	Construction phase	Air Pollution Control Ordinance (APCO)

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
S3.8.3	To minimize the exhaust emission from NRMMs, the following measures should be applied as far as practicable: • Connect construction plant and equipment to main electricity supply and avoid use of diesel generators and diesel-powered equipment; • Avoid the use of exempted NRMMs as far as practicable; and • Deploy electrified NRMMS as far as practicable.	To minimize the exhaust emission from NRMMs	Contractor	All works sites and areas identified with NRMM associated works	Construction phase	Air Pollution Control Ordinance (APCO)
Airborne Noise Impact (Construction Phase)						
S4.5.18 to S.4.5.23	Adoption of Quieter Construction Methods where appropriate: • Use of TBM; • Use of large diameter bored piling; • Use of pre-casting and prefabrication technology; • Use of silent piling such as hydraulic press-in method; and • Use of rubber head poker vibrator.	To reduce noise impact from construction activities to nearby NSRs	Contractor	All works sites and areas where applicable	Detailed design stage and construction phase	EIAO-TM
S4.5.24	Good site practice and noise management techniques should be practised during construction: • Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; • Machines and plant (such as trucks) that may be in intermittent use should be shut down between work 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; • Silencers or mufflers which available on construction equipment should be properly fitted and maintained during the construction works;	To reduce noise impact from construction activities on nearby NSRs	Contractor	All works sites and areas	Detailed design stage and construction phase	EIAO-TM

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
	• Spoil transportation routes should be directed away from NSRs as far as practicable; • Mobile plant should be sited as far away from NSRs as possible and practicable; • Material stockpiles, site office and other structures should be effectively utilized, wherever practicable, to screen noise from on-site construction activities; and • Noise monitoring at selected NSRs should be conducted as far as practicable.					
S4.5.26 to S4.5.27	Use of quiet plant where appropriate, with reference to the PME listed in the GW-TM, the Quality Powered Mechanical Equipment (QPME)/ other commonly used PME listed in EPD web pages or PME specification published by equipment manufacturer	To reduce noise impact from construction activities to nearby NSRs	Contractor	All works sites and areas where applicable	Detailed design stage and construction phase	EIAO-TM
S4.5.28 to S4.5.35	• Use of temporary movable noise barrier, noise insulating fabric, silencer, and noise enclosure • Use of soundproof hammer bracket together with a temporary movable noise barrier or other equivalent mitigation measure(s) for excavator-mounted hydraulic breaker	To reduce noise impact from construction activities to nearby NSRs	Contractor	All works sites and areas where applicable	Detailed design stage and construction phase	EIAO-TM
S4.5.36	Installation of temporary noise barrier along the PWA works site boundary to screen noise for the NSR (i.e. POW-E3) at Pok Wai	To reduce noise impact from construction activities to nearby NSRs	Contractor	A section of PWA works site boundary	Detailed design stage and construction phase	EIAO-TM
S4.5.38	Avoid conducting construction activities during restricted hours as far as practicable. If such construction activities are unavoidable, quieter construction methods such as the use of QPME, quieter PME, quieter construction method (such as the use of hydraulic crusher/wire saw/hand-held concrete crusher instead of hydraulic breaker for demolition works), purpose-built noise barrier and noise enclosure should be adopted as far as practicable.	To reduce noise impact from construction activities to nearby NSRs during restricted hours	Contractor	All works sites and areas where applicable	Detailed design stage and construction phase	EIAO-TM, NCO

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
4.5.40	The Contractor should liaise with the representative of concerned school and/or the Examination Authority to ascertain the exact dates and times of all examination periods during the construction period and should avoid conducting noisy activities during the examination periods if the school is relied on opened windows for ventilation. With the avoidance of particular noisy construction activities during the examination periods, the mitigated construction noise impact at the concerned school would comply with the stipulated noise criterion.	To reduce noise impact from construction activities to nearby NSRs	Contractor	Works sites and areas of KSR(NOL) and C&C Tunnel section between PHD and KSR(NOL)	Construction phase	EIAO-TM, NCO
4.5.41	Construction Noise Management Plan(s) (CNMP(s)) should be prepared based on the best available information before the issue of tender and the commencement of construction works, subject to the contract arrangement of the Project and agreement with EPD. The plan should include a quantitative construction noise impact assessment with details on the construction method, plant inventory and recommended noise mitigation measures for the future contractors' further update on CNMP before commencement of construction works and implementation in order to minimise the construction noise impact and comply with the EIAO-TM. In addition, further review on the cumulative construction noise impact should be conducted as necessary in the later CNMP when the information of the concurrent project is available. The CNMP(s) should be certified by Certified Noise Modelling Professional of Hong Kong Institute of Qualified Environmental Professionals (HKIQEP) or equivalent.	To reduce noise impact from construction activities to nearby NSRs	Contractor	All works sites and areas	Detailed design stage and construction phase	EIAO-TM, NCO
Airborne Noise Impact (Operational Phase)						
S4.6.11	Selection of proper plant and adoption of acoustic treatment including acoustic louvers and noise enclosure with appropriate sound insulation material.	To achieve the predicted maximum allowable SWLs and	Contractor	All fixed plant sources where applicable	Detailed design stage and operational phase	IND-TM, EIAO-TM

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
		ensure compliance of noise levels at NSRs				
S4.6.12	Fixed Noise Sources Management Plan(s) (FNMP(s)) should be prepared before the issue of tender and before commencement of the installation of fixed plant, subject to the contract arrangement of the Project and agreement with EPD. The FNMP should contain the quantitative fixed noise sources impact assessment based on the best available information, accounting all design measures including noise mitigation measures. The FNMP(s) should be certified by Certified Noise Modelling Professional of HKIQEP or equivalent. In addition, Fixed Noise Audit Report (FNAR) should be prepared before commencement of the operation of the Project to demonstrate the compliance of the fixed plant noise sources of the Project with the maximum allowable SWLs determined in this EIA Report, or otherwise approved by the EPD in compliance with the requirements in EIAO-TM having due regard to the characteristics of tonality, impulsiveness and intermittency.	To achieve the predicted maximum allowable SWLs and ensure compliance of noise levels at NSRs	Contractor	All fixed plant sources where applicable	Detailed design stage and before operational phase	IND-TM, EIAO-TM
S4.7.1	The trough section should be covered by noise canopies and vertical louvre walls with natural ventilation feature. Locations of trough section, noise canopies and vertical louvre walls are indicated in **Appendix 4.14**. The NTD should be designed with concrete deck and vertical walls, where the internal surfaces would be lined with noise absorption materials with due consideration of engineering and operation constraints, to avoid noise nuisance to the NSRs nearby from train operation within NTD.	To minimize potential railway noise impact to NSRs.	MTRCL	Trough section and NTD	Detailed design stage and operational phase	EIAO-TM, NCO
Ground-borne Noise Impact (Construction Phase)						
S5.8.1	Close liaison with the representative of the planned education institution predicted with exceedance to confirm	To minimize impacts to the affected GBNSRs	Contractor	Education institutions predicted with	Construction phase	EIAO-TM, NCO

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
	the examination periods and to avoid TBM operation in the vicinity of the school within such periods.			exceedance during examination period		
Ground-borne Noise Impact (Operational Phase)						
S5.8.2	Review of the need of mitigation measures based on the findings of tunnel impact test after the completion of tunnel construction was recommended.	To minimize potential impacts to surrounding GBNSRs	Contractor	Project alignment where applicable	After the completion of tunnelling construction / before operational phase / when updated information is available	EIAO-TM, NCO
Water Quality Impact (Construction Phase)						
S6.8.1	<u>Construction Site Runoff and General Construction Activities</u> Control of potential pollution of nearby water bodies during the construction phase of the Project should be achieved by measures to: • prevent or minimise the likelihood of pollutants (generated from construction activities including demolition works) being in contact with rainfall or runoff; and • abate pollutants in the stormwater surface runoff prior to the discharge of surface runoff to the nearby water bodies.	To minimize impact from construction site run-off and general construction activities	Contractor	All works sites and areas	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, DSS-TM
S6.8.2	It is important that Best Management Practices (BMPs) of mitigation measures in controlling water pollution and good site management, as specified in the ProPECC PN 1/94 “Construction Site Drainage” are followed, where applicable,	To minimize impact from construction site	Contractor	All works sites and areas	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, DSS-TM

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
	to prevent runoff with high level of SS from entering the surrounding waters.	run-off and general construction activities				
S6.8.3	All effluent discharged from the construction site should comply with the standards stipulated in the DSS-TM. The measures discussed below are recommended to protect water quality of the inland and coastal waters, and when properly implemented should be sufficient to adequately control site discharges so as to avoid water quality impacts.	To minimize impact from construction site run-off and general construction activities	Contractor	All works sites and areas	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, DSS-TM
S6.8.4	Surface runoff from construction sites should be discharged into storm drains via adequately designed sand/silt removal facilities such as sand traps, silt traps and sedimentation basins. Channels or earth bunds or sand bag barriers should be provided on site during construction to properly direct stormwater to such silt removal facilities. Perimeter channels should also be provided at site boundaries where necessary to intercept storm runoff from outside to the site so that it will not wash across the site. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks.	To minimize impact from construction site run-off and general construction activities	Contractor	All works sites and areas	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, DSS-TM
S6.8.5	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 prevent local flooding. Any practical options for the diversion and re-alignment of drainage should comply with both engineering and environmental requirements in order to provide adequate hydraulic capacity of all drains.	To minimize impact from construction site run-off and general construction activities	Contractor	All works sites and areas	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, DSS-TM
S6.8.6	Construction works should be programmed to minimize soil excavation works in rainy seasons (April to September) as far as practicable. If soil excavation cannot be avoided in these months or at any time of year when rainstorms are	To minimize impact from construction site run-off and general construction activities	Contractor	All works sites and areas	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, DSS-TM

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
	likely, for the purpose of preventing soil erosion, temporary exposed slope surfaces should be covered e.g. by tarpaulin, and temporary access roads should be protected by crushed stone or gravel, as excavation proceeds. Intercepting channels should be provided (e.g. along the crest / edge of excavation) to prevent storm runoff from washing across exposed soil surfaces. Arrangements should always be in place such that adequate surface protection measures can be safely carried out well before the arrival of a rainstorm.					
S6.8.7	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.	To minimize impact from construction site run-off and general construction activities	Contractor	All works sites and areas	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, DSS-TM
S6.8.8	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 facilities.	To minimize impact from construction site run-off and general construction activities	Contractor	All works sites and areas	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, DSS-TM
S6.8.9	If bentonite slurries are required for any construction works, they should be reconditioned and reused wherever practicable to minimise the disposal volume of used bentonite slurries. Temporary enclosed storage locations should be provided on-site for any unused bentonite that needs to be transported away after the related construction activities are completed. Requirements as stipulated in ProPECC PN 1/94 should be closely followed when handling and disposing bentonite slurries.	To minimize impact from construction site run-off and general construction activities	Contractor	All works sites and areas	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
S6.8.10	Open stockpiles of construction materials (e.g. aggregates, sand and fill material) on sites should be covered with tarpaulin or similar fabric.	To minimize impact from construction site run-off and general construction activities	Contractor	All works sites and areas	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, DSS-TM
S6.8.11	Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm runoff from getting into foul sewers. Discharge of surface runoff into foul sewers must always be prevented in order not to unduly overload the foul sewerage system.	To minimize impact from construction site run-off and general construction activities	Contractor	All works sites and areas	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, DSS-TM
S6.8.12	Good site practices should be adopted to remove rubbish and litter from construction sites so as to prevent the rubbish and litter from spreading over the site area. It is recommended to clean the construction sites on a regular basis.	To minimize impact from construction site run-off and general construction activities	Contractor	All works sites and areas	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, DSS-TM
S6.8.13	The following mitigation measures related to the transportation of the sediment should be implemented, where applicable, to minimize the potential water quality impact: • 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; and • Monitoring of the barge loading should be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels	To minimize the potential water quality impact	Contractor	All works sites and areas	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, DSS-TM

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	should be equipped with automatic self-monitoring devices as specified by the Director of Environmental Protection (DEP).					
S6.8.14	Discharge licence issued by the EPD for discharge of effluent from the construction site under the WPCO is needed. The discharge quality and quantity should meet the requirements specified in the discharge licence. All the runoff and wastewater generated from the works areas should be treated so that it satisfies all the standards listed in the DSS-TM. The beneficial uses of the treated effluent for other on-site activities such as dust suppression, wheel washing and general cleaning etc., can minimise water consumption and reduce the effluent discharge volume. If monitoring of the treated effluent quality from the works areas is required during the construction phase of the Project, the monitoring should be carried out in accordance with the relevant WPCO licence.	To minimize impact from effluent discharge	Contractor	All works sites and areas	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, DSS-TM
S6.8.15	<u>Groundwater infiltration and change in groundwater levels</u> Preventive or mitigation measures during construction period would be required to minimise the potential impact on groundwater system. Examples of preventive or mitigation measures are listed below: ▪ Adoption of close mode TBM at ecological sensitive area (e.g. wetland), if any, to prevent the groundwater ingress to tunnel excavation and control the ground settlement; ▪ Adoption of robust hydraulic cut-off to control groundwater inflow into the excavation; ▪ Provision of recharge well to mitigate the excessive groundwater drawdown out; ▪ Adoption of ground treatment if necessary to control groundwater inflow into the excavation;	To minimize impact on groundwater system	Contractor	All works sites and areas	Construction phase	WPCO, EIAO-TM, DSS-TM

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	▪ For mined or drill & blast tunnels, adoption of probing ahead before excavation to identify the geological features and water inflow ahead to determine the need for pre-excavation grouting and the type of temporary support. In case of excessive groundwater inflow observed, pre-excavation grouting should be applied as suitable mitigation measure; ▪ In the event of excessive drawdown being observed within the groundwater as a result of the tunnelling works even after incorporation of the water control strategies by the pre-grouting measures, post-grouting should be applied as far as practicable before the lining is cast; ▪ Provision of ground treatment for undrained tunnel (e.g. mined tunnel in soft and permeable ground) to enhance the properties of ground; and ▪ Monitoring of groundwater level and settlement during the construction.					
S6.8.17 to S6.8.19	<u>Groundwater from Contaminated Areas, Contaminated Site Runoff and Wastewater from Land Decontamination</u> Remediation of contaminated land, if any, should be properly conducted following the recommendations of the agreed Remediation Action Plan (RAP). Any excavated contaminated material and exposed contaminated surface should be properly housed and covered to avoid generation of contaminated runoff. Open stockpiling of contaminated materials should not be allowed. Any contaminated runoff or wastewater generated from the land decontamination processes should be properly collected and diverted to wastewater treatment facilities (WTF). The WTF should deploy suitable treatment processes (e.g. oil interceptor / activated carbon) to reduce the pollution level to an acceptable standard and remove any prohibited substances	To minimize impact from groundwater from contaminated areas, contaminated site run-off/ wastewater from land decontamination	Contractor	All works sites/areas confirmed with land contamination	Construction phase	WPCO, EIAO-TM, DSS-TM, Guidance Note for Contaminated Land Assessment and Remediation

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
	(such as total petroleum hydrocarbon) to an undetectable range. All treated effluent from the wastewater treatment system should meet the requirements as stated in DSS-TM and should be either discharged into the foul sewers or tankered away for proper disposal. No direct discharge of groundwater from contaminated areas should be adopted. Prior to any excavation works within the potentially contaminated areas, the baseline groundwater quality in these areas should be reviewed based on the past relevant site investigation data and any additional groundwater quality measurements to be performed with reference to *Guidance Note for Contaminated Land Assessment and Remediation* and the review results should be submitted to EPD under the Contamination Assessment Report (CAR) for examination. If the review results indicated that the groundwater to be generated from the excavation works would be contaminated, this contaminated groundwater should be either properly treated or properly recharged into the ground in compliance with the requirements of the DSS-TM. If wastewater treatment is to be deployed for treating the contaminated groundwater, the wastewater treatment unit should deploy suitable treatment processes (e.g. oil interceptor / activated carbon) to reduce the pollution level to an acceptable standard and remove any prohibited substances (such as total petroleum hydrocarbon) to an undetectable range. All treated effluent from the wastewater treatment plant should meet the requirements as stated in the DSS-TM and should be either discharged into the foul sewers or tankered away for proper disposal. If deployment of wastewater treatment is not feasible for handling the contaminated groundwater, groundwater recharging wells should be installed as appropriate for					

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	recharging the contaminated groundwater back into the ground. The recharging wells should be selected at places where the groundwater quality will not be affected by the recharge operation as indicated in section 2.3 of DSS-TM. The baseline groundwater quality should be determined prior to the selection of the recharge wells. Pollution levels of groundwater to be recharged should not be higher than pollutant levels of ambient groundwater at the recharge well. Groundwater monitoring wells should be installed near the recharge points to monitor the effectiveness of the recharge wells and to ensure that no likelihood of increase of groundwater level and transfer of pollutants beyond the site boundary. Prior to recharge, free products should be removed as necessary by installing the petrol interceptor. The Contractor should apply for a discharge licence under the WPCO through the Regional Office of EPD for groundwater recharge operation or discharge of treated groundwater.					
S6.8.20	<u>Construction Works in Close Proximity to Inland Water</u> The practices outlined in ETWB TC (Works) No. 5/2005 "Protection of Natural Streams / Rivers from Adverse Impacts Arising from Construction Works" should be adopted where applicable to minimise the water quality impacts on any natural streams or surface water systems. Relevant mitigation measures from the ETWB TC (Works) No. 5/2005 are listed below: • Use of less or smaller construction plants may be specified in works area close to the inland water bodies as far as practicable; • Temporary storage of material (e.g. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction materials should be located well away	To minimize impact from construction site run-off	Contractor	All works sites and areas	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, DSS-TM, ETWB TC(Works) No. 5/2005

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	from watercourses when carrying out of the construction works; • Stockpiling of construction materials and dusty materials should be covered and located away from any watercourses; • Construction debris and spoil should be covered up and / or disposed of as soon as possible to avoid being washed into the nearby water receivers; • Construction activities, which generate large amount of wastewater, should be carried out in a distance away from the watercourses, where practicable; • Construction effluent, site run-off and sewage should be properly collected and / or treated; and • Proper shoring may need to be erected in order to prevent soil / mud from slipping into the inland water bodies.					
S6.8.21 to S6.8.22	<u>Construction Works in Inland Water</u> The construction method and sequence of the proposed construction works at Ho Pui Channel (W13) should be carefully designed so that all the construction works including any excavation would be undertaken within a dry zone and physically separated from the watercourses downstream. Impermeable sheet pile walls or cofferdam walls should be installed to fully enclose the construction works area (including all the excavation and piling works) in the watercourse prior to the commencement of any works in watercourse. Dewatering of the construction works area should be undertaken before the commencement of construction works to avoid water flow in the construction works area. Silt removal facilities should be used to clarify	To minimize impact from construction site run-off	Contractor	Works sites and areas near Ho Pui Channel	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, DSS-TM, ETWB TC(Works) No. 5/2005

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
	the effluent generated from the dewatering operation before discharging back to the watercourse / drainage system. Any construction works including excavation and piling activities should be undertaken in a dry zone surrounded by the impermeable sheet pile walls or cofferdam walls. All wastewater generated from the piling activities should be regarded as part of the construction site effluent, which should be properly collected and treated as appropriate to meet the standards stipulated in the DSS-TM before disposal. It is recommended that the construction works in watercourses should be undertaken in dry seasons, where practicable, when the water flow is low.					
S6.8.24	The pilling works for the temporary vehicular bridge in Ho Pui Channel should be conducted by phases. The method and sequence of the proposed bridge works in Ho Pui Channel should be carefully designed so that wastewater and sediment laden water generated from the pilling works would be confined and physically separated from the watercourse. All pilling, the associated construction works in the watercourse should be fully enclosed by concrete cofferdam/sheet pile. Concrete cofferdam should be constructed to isolate the construction activities from the river water. The detail design of the concrete cofferdams will be conducted by the Contractor during the construction phase to fulfil the requirements in Drainage Services Department (DSD) Technical Circular No. 1/2017 "Temporary Flow Diversions and Temporary Works Affecting Capacity in Stormwater System" for DSD approval in order to formulate feasible options of these temporary structure. Water pumps should be used to collect any construction site runoff and ingress/seepage water within the concrete cofferdam. The collected construction site surface runoff and ingress/seepage water should be diverted to the on-site wastewater treatment facilities for treatment to satisfactory	To minimize impact from construction site run-off	Contractor	Works sites and areas near Ho Pui Channel	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, DSS-TM, Technical Circular No. 1/2017 "Temporary Flow Diversions and Temporary Works Affecting Capacity in Stormwater System" by DSD

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
	levels before discharge. Discharge licence for discharging effluent from the construction site under the WPCO should be obtained from the EPD . The discharge quality and quantity should meet the requirements specified in the discharge licence and follow the DSS-TM.					
S6.8.25 to S6.8.28	<u>Removal or Diversion of Watercourses</u> The construction works for removal and diversion of watercourses should be undertaken within a dry zone. Cofferdams or similar impermeable sheet pile walls should be used as necessary to isolate the works areas from the neighbouring waters. The tentative works sequence for provision of a dry zone for the construction works is described as follows. Construction works at watercourse should be undertaken only after flow diversion or dewatering operation is fully completed to avoid water flow in the works area. Dewatering of watercourse should be performed by diverting the water flow to new or temporary drainage. Where necessary, cofferdams or similar impermeable sheet pile walls should be used to isolate the works areas from neighbouring waters. The permanent or temporary drainage for carrying the diverted flow from existing watercourse to be removed should be constructed and completed before dewatering of that existing watercourse. Construction of all the proposed permanent and temporary drainage should be undertaken in a dry zone prior to receiving any water flow. The Contractor should provide a dry zone for all the construction works to be undertaken in watercourses and stormwater drainage following the tentative works sequence as described above or using other approved methods as appropriate to suit the works condition. The flow diversion	To minimize impact from construction site run-off	Contractor	Watercourses that would require removal or diversion	Construction phase	WPCO, EIAO-TM, ProPECC PN 1/94, DSS-TM

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
	works should be conducted in dry season, where possible, when the flow in the watercourse is low. The wastewater and ingress water from the site should be properly treated to comply with the WPCO and the DSS-TM before discharge. The site practices outlined in the ProPECC PN 1/94 "Construction Site Drainage" and ETWB TC (Works) No. 5/2005 "Protection of natural streams/rivers from adverse impacts arising from construction works" should be adopted for the proposed demolition or diversion of watercourses where applicable.					
S6.8.29 to S6.8.30	<u>Removal or Filling of Ponds</u> Construction works at the existing ponds should be conducted after dewatering is completed if practicable. The drained water generated from the dewatering of these ponds to be removed should be temporarily stored as appropriate in storage tanks or containers for reuse on-site where practical and any surplus drained water should be tankered away for disposal or treated as necessary before disposal in compliance with the DSS-TM. It is recommended to drain ponds by stages to minimise the potential water quality impact. Dewatering works at ponds should be conducted within dry season as far as practicable to minimise the quantity of drained water. No direct discharge of drained water to the stormwater drainage system or marine water should be allowed.	To minimize impact from construction site run-off	Contractor	Ponds that would require removal or filling	Construction phase	WPCO, EIAO-TM, DSS-TM
S6.8.31 to S6.8.33	<u>Accidental Spillage of Chemicals</u> The Contractor should 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,	To minimise impact from accidental spillage	Contractor	All works sites and areas	Construction phase	WPCO, EIAO-TM, WDO, Waste Disposal (Chemical Waste)

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
	should be observed and complied with for control of chemical wastes. The Contractor is also recommended to develop management procedures for chemicals used and prepare an emergency spillage handling procedure to deal with chemical spillage in case of accident occurs. 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 leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges. 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.					(General) Regulation
S6.8.34 to S6.8.35	<u>Sewage Effluent from Construction Workforce</u> No discharge of sewage to the storm water system and marine water will be allowed. Adequate and sufficient portable chemical toilets should be provided in the works	To minimize impact from general construction activities	Contractor	All works sites and areas	Construction phase	WPCO, EIAO-TM, DSS-TM

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
	areas to handle sewage from construction workforce. A licensed waste collector should be employed to clean and maintain the chemical toilets on a regular basis. Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the surrounding environment. Regular environmental audit of the construction site should be conducted to provide an effective control of any malpractices and achieve continual improvement of environmental performance on site. It is anticipated that sewage generation during the construction phase of the project would not cause water pollution problem after undertaking all required measures.					
Water Quality Impact (Operational Phase)						
S6.8.16	Preventive or mitigation measures during operational phase would be required to minimise the potential impact on groundwater system. Examples of preventive or mitigation measures are listed below: • For drill & blast tunnels, adoption of undrained lining under the poor rock condition to mitigate the long term dewatering issue; • For drained tunnel section, provision of an individual groundwater drainage system within the tunnel to collect the groundwater inflow to public drainage system; and • Provision of ground treatment for undrained tunnel (e.g. mined tunnel in soft and permeable ground) to enhance the properties of ground.	To minimize impact on groundwater system	MTRCL	All underground railway facilities	Operational phase	WPCO, EIAO-TM, DSS-TM
S6.8.36	<u>Sewage and Wastewater Effluents Discharge</u> Most of the sewage and wastewater effluents generated from the operation of stations, ancillary buildings and depot	To minimize impact from sewage and	Contractor and/ or MTRCL	All stations, ancillary	Operational phase	WPCO, EIAO-TM, ProPECC PN 5/93

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
	would be connected to the public sewerage system and diverted to public sewers, subject to the availability of the planned foul sewerage system at the time of NOL operation. At some satellite locations without nearby public sewerage systems, sewage generated will be stored at MTR's Sewage Holding Tanks before being tankered away by MTR's competent contractor regularly. The sewerage generation of these satellite locations is anticipated to be minimal as they are unmanned and are mainly used by limited MTR staff. No direct discharge of sewage and wastewater effluents into the storm drains or inland/marine waters will be allowed.	wastewater discharge		buildings and NTD		
S6.8.37 to S6.8.42	<u>Stormwater Runoff</u> Best Management Practices (BMPs) for stormwater discharge are recommended to reduce stormwater pollution arising from the Project. Details are as follows: *Design Measures* • Exposed surface should be avoided to minimise soil erosion. The Site should be either hard paved or covered by landscaping area and plantation where appropriate. The condensed water arising form the operation of air conditioning system would also be properly collected and diverted to the draining system of the Project; and • The drainage system should be designed to avoid flooding. The drainage system will be designed to avoid any case of flooding based on at least 1 in 50 year return period. *Devices and Facilities* • Screening facilities such as standard gully grating and trash grille, with spacing which is capable of screening	To reduce stormwater pollution	MTRCL	All stations, ancillary buildings and NTD	Operational phase	WPCO, EIAO-TM

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
	large substances such as fallen leaves and rubbish should be provided at the inlet of drainage system; and • Silt traps and oil interceptors should be incorporated as appropriate during the detailed design to remove particles and oil, where appropriate. *Administrative Measures* • Good management measures such as regular cleaning and sweeping of road surface / open areas are suggested. Manholes and stormwater gullies provided at the Project sites should be regularly inspected and cleaned (e.g. monthly). Additional inspection and cleansing should be carried out before forecast heavy rainfall.					
Waste Management Implications (Construction Phase)						
S8.5.3	<u>Good Site Practice</u> The following good site practices are recommended throughout the construction: • Nomination of an approved personnel, such as a site manager, to be responsible for the implementation of good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site; • Training of site personnel in proper waste management and chemical waste handling procedures; • Provision of sufficient waste disposal points and regular collection of waste; • Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors;	To avoid and minimize impacts arising from waste management	Contractor	All works sites and areas and all waste transportation vehicles	Construction phase	WDO, Public Cleansing and Prevention of Nuisances Regulation (Cap. 132BK), 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 measures	When to implement the measures?	Requirements
	• The Contractor should prepare a Waste Management Plan (WMP) as part of the Environmental Management Plan (EMP) in accordance with the ETWB TCW No. 19/2005. The WMP should be submitted to the Engineer for approval. Mitigation measures proposed in the EIA Report and the EM&A Manual should be adopted; and • Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers.					
S8.5.4	<u>Waste Reduction Measures</u> The following recommendations are proposed to achieve reduction: • Segregate and store different types of waste in different containers, skip or stockpiles to enhance reuse or recycling of materials and their proper disposal; • Adopt proper storage and good site practices to minimise the potential for damage and/or contamination of construction materials; • Plan the delivery and stock of construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste; • Sort out demolition debris and excavated materials from demolition works to recover reusable/ recyclable portions (i.e. soil, broken concrete, metal etc.); • Provide training to workers on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling; and • Minimise over ordering and wastage through careful planning during purchasing of construction materials.	To minimize waste generation	Contractor	All works sites and areas	Construction phase	WDO

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
S8.5.5 to S8.5.6	<u>Storage, Collection and Transportation of Waste</u> The following recommendation should be implemented to minimise the impacts: • Non-inert C&D materials such as top soil should be handled and stored well to ensure secure containment of the materials; • 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. The collection and transportation of waste from works areas to respective disposal sites as well as imported fill materials from fill bank to works areas may also induce adverse environmental impacts if not properly managed. The following recommendation should be implemented to minimise the impacts : • Remove waste in timely manner; • Employ the trucks with cover or enclosed containers for waste transportation; • Obtain relevant waste disposal permits from the appropriate authorities; • Disposal of waste should be done at licensed waste disposal facilities; • All dump trucks engaged on site for delivery of inert and non-inert C&D material from the site to the designated disposal location, including PFRFs, landfill etc., should be equipped with GPS or equivalent system for tracking and monitoring of their travel	To avoid and minimize impacts arising from waste management	Contractor	All works sites and areas and all waste transportation vehicles	Construction phase	WDO, Land (Miscellaneous Provision) 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 measures	When to implement the measures?	Requirements
	routings and parking locations by the Contractor to prohibit illegal dumping and landfilling of materials; and • The data collected by GPS or equivalent system should be recorded properly for checking and analysis the travel routing and parking locations of dump truck engaged on site.					
S8.5.7	<u>Construction and Demolition Materials</u> Wherever practicable, C&D materials should be segregated from other wastes to avoid contamination and ensure acceptability at PFRFs areas or reclamation sites. The following mitigation measures should be implemented in handling the C&D materials: • Carry out on-site sorting; • Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; • Implement a trip-ticket system for each works contract in accordance with DEVB TCW No. 06/2010 to ensure that the disposal of C&D materials is properly documented and verified; • All dump trucks engaged on site for delivery of inert and non-inert C&D material from the site to the designated disposal location, including PFRFs, landfill etc., should be equipped with GPS or equivalent system for tracking and monitoring of their travel routings and parking locations by the Contractor to prohibit illegal dumping and landfilling of materials; and	To avoid and minimize impacts arising from waste management	Contractor	All works sites and areas	Construction phase	WDO, DEVB TCW No. 06/2010

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
	• The data collected by GPS or equivalent system should be recorded properly for checking and analysis the travel routing and parking locations of dump truck engaged on site.					
S8.5.8 to S8.5.9	<u>On-site Sorting of C&D Materials</u> Storage or stockpiling of C&D materials is not anticipated as the C&D materials generated would be removed from site immediately due to lack of space on sites; however, should any temporary storage or stockpiling of C&D materials is required, recommendations to minimise 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. The materials could be segregated according to the categories as shown below: • Excavated materials suitable for reuse; • Excavated materials for delivery to PFRFs; • Sediments for delivery to sea disposal; and • Non-inert C&D materials for delivery to landfills.	To avoid and minimize impacts arising from waste management	Contractor	All works sites and areas	Construction phase	WDO
S8.5.10 to S8.5.12	<u>Re-use of C&D materials</u> The following potential measures are identified to maximise	To avoid and minimize impacts	Contractor	All works sites and areas	Construction phase	WDO

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
	the re-use/recycle of C&D materials generated from the Project: • Re-use suitable material from excavation works for backfilling as far as practicable if temporary storage area availability, site condition and programme allow; • Re-use suitable excavated rock by reworking at approved quarries (e.g. crushed as aggregates); • Sorting of demolition debris and excavated materials from demolition works to recover reusable/recyclable portions (i.e. soil, broken concrete, metal, etc.); • Protect recyclable material to keep it in usable condition; and • Provide recycle bins on site to increase awareness for general refuse items such as aluminum cans, paper to facilitate segregation of waste streams and maximise recovery. In order to maximise the quantity of C&D materials that can be re-used or recycled, each type of material should be carefully segregated and sorted at designated areas as far as practicable to avoid cross-contamination and to maintain the quality of the product. Arrangement with recycling contractors should be made to ensure the recyclables sorted from the waste stream are collected with reasonable care. Opportunities to use the recycled materials in other works areas of the project/ other projects should also be explored.	arising from waste management				
S8.5.13 to S8.5.14	<u>Specification of Inert C&D Materials to be Delivered Off-site</u> In case there are surplus inert C&D materials generated in the Project and are required to be delivered to the PFRFs, the inert C&D materials should fulfil the following	To avoid and minimize impacts arising from waste management	Contractor	All works sites and areas	Construction phase	WDO

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
	requirements: • Remove waste in timely manner; • Waste collectors should only collect waste prescribed by their permit; • Impacts during transportation, such as dust and odour, should be mitigated by the use of covered trucks or in enclosed containers; • Reclaimed asphalt pavement should not be mixed with other materials when delivered to the PFRFs; • Moisture content of inert C&D materials should be lowered to 25% max. when delivered to the PFRFs; • Inert C&D materials delivered to the PFRFs should be of a size less than 250mm; • Inert construction waste should not be in liquid form such that it can be contained and delivered by dump truck instead of tanker truck. Inert C&D materials in liquid form should be solidified before delivering to the PFRFs ; • Waste should be disposed of at licensed waste disposal facilities; and • Maintain records of quantities of waste generated, recycled and disposed. Nevertheless, the acceptance criteria of inert C&D materials to PFRFs are subject to the Fill Management Division of CEDD.					
S8.5.15	<u>Other Mitigation Measures</u> Other mitigation measure to avoid or minimise the quantity of C&D material generated from NOL Main Line construction are described below: • Plan carefully to ensure material is not over ordered;	To avoid and minimize impacts arising from waste management	Contractor	All works sites and areas	Construction phase	WDO

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
	• Avoid use of timber by adopting alternative material as far as practicable, e.g. steel formwork; • Avoid use of bamboo scaffolding by adopting metal scaffolding as far as practicable ; • Plan construction activities carefully to improve the efficiency of resources; • Design works to optimise material use and reduce C&D waste; • Apply pre-cast elements to minimise concrete waste as far as practicable; • Design for manufacture and assembly to reduce use of formwork/ temporary works; • Plan and stock construction materials carefully to minimise the amount of waste generated and avoid unnecessary waste generation; • Timber and woody materials in non-inert C&D materials should be delivered to the Yard Waste Recycling Centre in Y-Park for recycling as far as practicable prior to disposal at the designated landfill site; and • Encourage use of re-usable/ recyclable packaging materials by suppliers.					

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
S8.5.16 to S8.5.17	If chemical wastes are produced at the construction site, the Contractor should register with EPD as chemical waste producers. Storage, handling, transportation and disposal of chemical waste should be arranged in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published by the EPD. Chemical waste should be stored in appropriate containers and collected by a licensed chemical waste collector. Chemical wastes (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while the chemical wastes that cannot be recycled should be disposed of at either the approved Chemical Waste Treatment Centre (CWTC) at Tsing Yi, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation. A trip-ticket system should be adopted to monitor the disposal of chemical waste.	To avoid and minimize impacts arising from waste management	Contractor	All works sites and areas	Construction phase	WDO, Code of Practice on the Packaging, Labelling and Storage of Chemical Waste
S8.5.18 to S8.5.20	General refuse should be stored in enclosed bins separately from construction and chemical wastes. Recycling bins should also be placed to encourage recycling. Preferably enclosed and covered areas should be provided for general refuse collection and routine cleaning for these areas should also be implemented to keep areas clean. A reputable waste collector should be employed to remove general refuse on a regular basis. The recyclable component of general refuse, such as aluminum 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. Recycling bins should be placed in prominent places to promote waste separation at-source. Arrangements should be made with the recycling companies to collect the recycle waste as	To avoid and minimize impacts arising from waste management	Contractor	All works sites and areas	Construction phase	WDO, 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 measures	When to implement the measures?	Requirements
	required. The Contractor should implement an education programme for workers relating to avoiding, reducing, reusing and recycling general waste. Participation in a local collection scheme should be considered by the Contractor to facilitate waste reduction.					
S8.5.21 to S8.5.22	The sediment should be excavated, handled, transported and disposed of in a manner that would minimise adverse environmental impacts. For minimization of sediment disposal, beneficial reuse should be considered on site as far as practicable during the detailed design and construction stages before the disposal of excavated sediment. Possible methods for the reuse of land-based marine sediment on site including the reuse of land-based marine sediment as backfilling materials after mixing with cement should be explored. The criteria for reuse of treated sediments are proposed with reference to the Unconfined Compressive Strength (UCS) and the Universal Treatment Standards (UTS), which specify the Toxicity Characteristics Leaching Procedure (TCLP) test limits as given in *Section 4.1* and *Table 4.6* of the *Practice Guide for Investigation and Remediation of Contaminated Land*.	To avoid and minimize impacts arising from waste management	Contractor	All works sites and areas confirmed with sediments	Construction phase	WDO, Practice Guide for Investigation and Remediation of Contaminated Land
S8.5.23 to S8.5.31	For off-site marine disposal, the requirements and procedures specified under PNAP ADV-21 should be followed. The MFC of CEDD is managing the disposal facilities in Hong Kong for the excavated sediment, while EPD is the authority of issuing marine dumping permit under the DASO.	To avoid and minimize impacts arising from waste management	Contractor	All works sites and areas confirmed with sediments	Construction phase	WDO, DASO. ADV-21

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
	For the purpose of site allocation and application of marine dumping permit and if considered necessary by EPD (Marine Dumping Section), a separate SSTP should be submitted to EPD for agreement under DASO. Additional SI works, based on the approved SSTP, should then be carried out in order to confirm the disposal arrangements of the excavated sediment. A Sediment Quality Report (SQR), reporting the chemical and biological screening results and the estimated quantities of sediment under different disposal options, should then be submitted to EPD for agreement under DASO. To ensure disposal space is allocated for the Project, the Project Proponent should be responsible for obtaining agreement from MFC on the allocation of the disposal site. The contractor(s), on the other hand, should be responsible for the application of the marine dumping permit under DASO from EPD for the sediment disposal. The excavated sediments is expected to be loaded onto the barge at public barging point of which the exact location will be determined by the contractor(s) and agreed by EPD/CEDD and transported to the designated disposal sites allocated by MFC. The excavated sediment would be disposed of according to its determined disposal options and PNAP ADV-21. Stockpiling of excavated sediments should be avoided as far as possible. If temporary stockpiling of excavated 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					

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
	the ground, nearby drains and surrounding water bodies. The stockpiles should be placed on surface 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 excavation and transportation of the sediment, the excavated sediments should be wetted during excavation / material handling and should be properly covered when placed on trucks or 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. In case off-site marine disposal is unavoidable, the mitigation measures to handle the excavated sediment are summarised as follows: • All construction plants and equipment shall be designed and maintained to minimise the risk of sediments being released into the water column or deposited in the locations other than designated locations; • All vessels should be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to minimise that undue turbidity is not generated by turbulence from vessel movement or propeller wash; and • Adequate freeboard shall be maintained on barges to ensure that decks are not washed by wave action.					

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
	The Contractor shall monitor all vessels transporting the excavated sediment to ensure that no dumping outside the approved location takes place. The Contractor shall keep and produce logs and other records to demonstrate compliance and that journeys are consistent with designated locations and copies of such records shall be submitted to the Engineers. • The Contractor shall comply with the conditions in the dumping permit issued under the Dumping at Sea Ordinance; • All bottom dumping vessels (hopper barges) shall be fitted with tight fittings seals to their bottom openings to prevent leakage of materials;. • The excavated sediment shall be placed into the disposal pit by bottom dumping; and • Discharge shall be undertaken rapidly and the hoppers shall be closed immediately. Sediments adhering to the sides of the hopper shall not be washed out of the hopper and the hopper shall remain closed until the barge returns to the disposal site. If mixing of excavated sediment with cement is to be used for backfilling on-site, the following mitigation measures should be followed: • The loading, unloading, handling, transfer or storage of bulk cement should be carried out in an enclosed system as far as practicable. • Mixing process and other associated material handling activities should be properly scheduled to minimise potential noise impact and dust emission. • The mixing facilities should be sited as far apart as practicable from the nearby noise sensitive receivers					

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
	and be sited under covers to minimise dust nuisance to the nearby receivers.					
Waste Management Implications (Operational Phase)						
S8.5.32 to S8.5.33	<u>General Refuse</u> The recyclable component of general refuse, such as aluminum cans, paper and cleansed plastic containers should be separated from other waste. Recycling of recyclable waste should be encouraged. Provision and collection of recycling bins for different types of recyclable waste should be set up by the operator. It is recommended to place clearly labelled recycling bins in prominent places which could be accessed conveniently to promote waste separation at-source. Scrap materials from railway maintenance activities should be sorted out and recovered for their resalable value as far as practicable. Routine cleaning for these areas should also be implemented to keep areas clean. General refuse should be separated from chemical waste by providing separated bins for storage to maximise the recyclable volume as far as practicable. A reputable waste collector should be employed to remove municipal solid waste regularly to minimise odour, pest and litter impacts. Arrangements should be made with the recycling companies to collect the recycle waste as required. It is expected that such arrangements would minimise potential environmental impacts.	To monitor the disposal of general waste	MTRCL	All stations, ancillary buildings and sidings	Operational phase	WDO, Public Health and Municipal Services Ordinance (Cap. 132)
S8.5.34 to S8.5.38	<u>Chemical Waste</u> For those processes which generated chemical waste, it may be possible to find alternatives to eliminate the use of	To monitor the disposal of chemical waste	MTRCL	All stations, ancillary	Operational phase	WDO, Code of Practice on the Packaging, Labelling and

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
	chemicals, to reduce the generation quantities or to select a chemical type of less impact on environment, health and safety as far as possible. Wherever possible, opportunities for the reuse and recycling of materials will be taken. Subject to operational needs, if chemical waste is to be produced, MTR Corporation should register with EPD as chemical waste producers as appropriate in accordance with the Waste Disposal (Chemical Waste) (General) Regulation. The requirements given in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes should be followed, where applicable, in handling of these chemical wastes. A trip-ticket system should be operated in accordance with the Waste Disposal (Chemical Waste) (General) Regulation to monitor all movements of chemical wastes which will be collected by a licensed collector to a licensed facility for final treatment and disposal. 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, oxidising, irritant, toxic, harmful, corrosive, etc. Chemical wastes (e.g. spent lubricant oil, used fluorescent tubes) should be collected and disposed of at appropriate facility like CWTC by licensed collectors.			buildings and sidings		Storage of Chemical Waste
Land Contamination						

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
S9.14.1 to S9.14.2	Recommended Further Works Site re-appraisal of the whole Project Site (including identified accessible sites, partially accessible sites and inaccessible sites) was recommended with details summarised in Section 4.3 of the CAP. (**Appendix 9.1** refers). Findings of the re-appraisal and strategy of the recommended SI will be presented in a supplementary CAP. Upon approval of the supplementary CAP and completion of the SI works, a Contamination Assessment Report (CAR) would be prepared to present findings of the SI works. If contamination was identified, a RAP will be prepared to recommend specific remediation measures. Except for land remediation works, no construction works by mean of excavation shall be carried out at the respective identified contaminated areas (if any) prior to the endorsement of the closure assessment. Upon completion of the remediation works, if any, a Remediation Report (RR) will also be prepared to demonstrate that the clean-up works are adequate. The CAR, RAP and RR should be submitted to EPD for approval.	To confirm no potential land contamination on the inaccessible sites and avoid potential impacts to future occupants	Contractor	Inaccessible sites during the course of EIA Study	Prior to the commencement of the construction works by means of excavation at the potentially contaminated sites	Guidance Note for Contaminated Land Assessment and Remediation, Guidance Manual for Use of Risk-based Remediation Goals for Contaminated Land Management, Practice Guide for Investigation and Remediation of Contaminated Land
S9.14.3	Possible Remediation Measures Appropriate remediation methods should be selected in the RAP based on the SI findings. The possible remediation methods and the selection criteria are detailed in Section 7 of the CAP (**Appendix 9.1** refers).	To avoid potential impacts to future occupants	Contractor	All works sites/ works area identified with potential land contamination	Prior to the commencement of the construction works at the potentially contaminated sites	Guidance Note for Contaminated Land Assessment and Remediation, Practice Guide for Investigation and Remediation of

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
						Contaminated Land, Guidance Manual for Use of Risk-based Remediation Goals for Contaminated Land Management
S9.14.4	<u>Mitigation Measures for Remediation Works</u> Mitigation measures for the remediation works would depend on the nature / extent of contamination and the method of treatment. The mitigation measures will be recommended in the RAP and would typically include the following: • Excavation profiles must be properly designed and executed with attention to the relevant requirements for environment, health and safety; • Excavation shall be carried out during dry season as far as possible to minimise contaminated runoff from contaminated soils; • Supply of suitable clean backfill material (or treated soil) after excavation; • Stockpiling site(s) should be lined with impermeable sheeting and bunded. Stockpiles should be fully covered by impermeable sheeting to reduce dust emission; • Pollution control measures for air emissions (e.g. from biopile blower and handling of cement), noise	To control land remediation work	Contractor	All works sites/ works area identified with potential land contamination and all transportation vehicles containing any excavated materials	Prior to the commencement of the construction works at the potentially contaminated sites	Guidance Note for Contaminated Land Assessment and Remediation, Guidance Manual for Use of Risk-based Remediation Goals for Contaminated Land Management, Public Cleansing and Prevention of Nuisances Regulation (Cap. 132BK) APCO, WDO,

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	emissions (e.g. from blower or earthmoving equipment), and water discharges (e.g. runoff control from treatment facility) shall be implemented and complied with relevant regulations and guidelines; • Vehicles containing any excavated materials should be suitably covered to limit potential dust emissions or contaminated wastewater run-off, and truck bodies and tailgates should be sealed to prevent any discharge during transport or during wet conditions; • Speed control for the trucks carrying contaminated materials should be enforced; and • Vehicle wheel and body washing facilities at the site's exit points should be established and used.					WPCO
Ecology (Terrestrial and Aquatic) (Construction Phase)						
S10.9.5.2	<u>Avoidance of Direct Injury / Mortality of Roosting Bats</u> A bat inspection should be conducted before the commencement of demolition of the existing structure to ensure no bat is roosting in the structure. Bat exclusion devices e.g. non-transparent mat could be installed over the entrance and other possible entry/exit point before commencement of demolition works at the deserted Pok Wai Public School to prevent the bats from utilizing the classroom as day-roost to avoid direct injury or mortality of the roosting bats.	To minimize the direct impacts to the potential day roost of Himalayan Leaf-nosed Bats	Contractor	PWA	Before commencement of demolition works at the Pok Wai Public School	EIAO-TM, EIAO Guidance Note. 3/2010
S10.9.5.3	<u>Minimisation of Disturbance</u> Mitigation measures should be implemented to minimise the disturbance impacts (e.g. noise, glare and dust) to the surrounding habitats and their associated wildlife arising	To minimize the disturbance impacts to the surrounding habitats and their associated wildlife arising from the	Contractor	All works sites and areas where applicable	Construction phase	EIAO-TM, EIAO Guidance Note. 3/2010

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
	from the construction activities, including but not limited to the following: • Noise mitigation measures by effective placing of temporary noise barriers where practicable as screening, noise enclosure for relatively fixed plant source, shut down of machines and plants that are in intermittent use, and the use of quiet power mechanical equipment (PME) to limit noise emissions at source (refer to Airborne Noise Impact Section above for details); • Glare reduction measures such as restriction of construction hours, hoarding provision, night-time lighting control and avoidance of any directional lightings to the adjoining habitats and roosts to minimise the impact to nearby nocturnal fauna especially avifauna and bat; and • Dust suppression measures (such as regular watering on heavy construction works areas and at the unloading point of spoils generated by the TBM excavation, installation of blast door at the opening of tunnelling works by drill-and-blast, proper storage of construction materials, and environmental control measures as stipulated in the Air Pollution Ordinance (Construction Dust) Regulation) to avoid and minimise emission and dispersal dust, which would cover vegetation and potentially discourage usage of nearby wildlife (refer to Air Quality Section above for details).	construction activities				
S10.9.5.4	Site screen of 3 m high should be erected around the works site and works area of SMA, which are located adjacent to wetlands before commencement of construction activities. The purpose is to shield the avifauna in the nearby wetlands from the disturbance of human activities during construction phase. Such hoarding would be non-transparent and in dull	To minimize the disturbance impacts to the surrounding habitats and their associated wildlife arising from the	Contractor	Around the works sites and works areas of SMA, which are located	Construction phase	EIAO-TM, EIAO Guidance Note. 3/2010

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
	colour to avoid the risk of potential bird collision. Such hoarding would be non-transparent and in dull colour to avoid the risk of potential bird collision.	construction activities		adjacent to wetlands		
S10.9.5.5	<u>Establishment of Buffer Zone, Phasing of Works and Control of Working Hours</u> A buffer zone from the Kam Po Road Egretry and ANR should be established to mitigate the potential indirect impacts on the Egretry and ANR. A pre-construction survey should be conducted for areas within 100m from the boundaries of works site/area to confirm the location and status of the Egretry and ANR. Noisy construction works using PME within 100 m from the Egretry and ANR should be scheduled outside the breeding season through careful phasing of works. No noisy construction works should be undertaken within 100m from the Egretry and ANR approximately 30 minutes before sunset, until the ardeids leave the roosting location of the following day (i.e. around 30 minutes after sunrise).	To minimize potential disturbance impacts on Kam Po Road Egretry and ANR	Contractor	Works site and area within 100 m from Kam Po Road Egretry and ANR	Construction phase	EIAO-TM, EIAO Guidance Note. 3/2010
S10.9.5.7 to S10.9.5.8	<u>Avoidance of Bird Collision</u> Use of opaque and dull colour site hoarding with non-transparent panels as the noise enclosure and adopt non-glaring tinted materials, as per *Guidelines on Design of Noise Barriers (EPD & HyD, 2003)* and *Practice Notes No. BSTR/PN/003 (Revision E) Noise Barriers with Transparent Panels* (HyD, 2020). Tall landscape plants should also be avoided in the green roof system to avoid potential collision to commuting	To avoid and minimise bird mortality from collision	MTRCL and Contractor	All works sites and areas, stations, ancillary buildings and NTD where glass panels are installed	Detailed design stage, construction and operational phase	EIAO-TM, EIAO Guidance Note. 3/2010, *Guidelines on Design of Noise Barriers (EPD & HyD, 2003)* and *Practice Notes*

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
	ardeids above the Station. Window walls or reflective materials should be avoided at the northeastern corner of service building, which is the nearest to the conjunction of MWC S-KP-1 and Ho Pui Channel. In general, all glass panels should be coated with either anti-bird-collision film superimposing dark patterns or one-way transparent film to make the panels opaque on the outside. Dense tree or shrub stands should also be avoided near the glass panel in terms of landscape design.					*No. BSTR/PN/003 (Revision E) Noise Barriers with Transparent Panels* (HyD, 2020)
S10.9.5.9 to S10.9.5.10	<u>Protection of Plant Species of Conservation Importance</u> Avoid direct impact to flora species of conservation importance recorded in the vicinity of works sites/areas as far as practicable during construction phase. All the unavoidably affected flora individuals of conservation importance should be transplanted to nearby suitable habitat(s) prior to the commencement of site clearance as a last resort. A Detailed Vegetation Survey should be undertaken in the identified affected area (i.e. SPAUT area) by a suitably qualified botanist / ecologist to identify any potentially affected plant species of conservation importance and to ascertain their presence, update their physical conditions and determine the abundance and locations of the flora species of conservation importance prior to the commencement of any site clearance works. A Protection and Transplantation Proposal including the subsequent monitoring for the affected individuals should be prepared and conducted by a suitably qualified local ecologist / botanist with at least 7 years relevant experience. The Proposal should be submitted for approval from EPD at least one month before works	To minimize the impacts on plant species of conservation importance	Contractor	All works sites and areas with Species of Conservation Importance identified	Before site clearance works and during Construction phase	EIAO-TM, DEVB TC(W) No. 7/2015

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
	commencement. In case plant preservation or transplantation is not practical as recommended by the qualified ecologist / botanist (e.g. due to poor health and low survive rate of the plant), other mitigation measures (e.g. compensation by seedling planting) should be considered.					
S10.9.5.11	Control of Construction Runoff During construction phase, surface runoff from construction sites should be discharged into storm drains via appropriately designed sand/silt removal facilities such as sand traps, silt traps and sedimentation basins. Channels or earth bunds or sandbag barriers should be provided on site during construction works to properly direct stormwater to such silt removal facilities. Perimeter channels should be provided on site boundaries where necessary to intercept storm runoff from outside the site so that it will not wash across the site. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks.	To minimise impact from construction site run-off and general construction activities	Contractor	All works sites and areas	Construction phase	EIAO-TM, DEVB TC(W) No. 7/2015, ProPECC PN 1/94
S10.9.5.12 to S10.9.5.15	Minimization of Groundwater Infiltration Appropriate measures during the underground tunnel construction should be implemented to minimise the groundwater infiltration during tunnel construction. The water control strategies include: • Probing Ahead: The Contractor will undertake rigorous probing of the ground ahead of tunnel excavation works to identify zones of significant water inflow. The probe drilling results will be evaluated to determine specific grouting requirements in line with the tunnel advance. In such zones of significant water inflow that could occur	To minimise the groundwater infiltration during tunnel construction	Contractor	All works sites of underground tunnel construction	Construction phase	WPCO, EIAO-TM, DSS-TM

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
	as a result of discrete, permeable features, the intent would be to reduce overall inflow by means of cut–off grouting executed ahead of the tunnel advance; • Pre–grouting: Where water inflow quantities are excessive, pre–grouting will be required to reduce the water inflow into the tunnel. The pre–grouting will be achieved via a systematic and carefully specified protocol of grouting; • In principle, the grout pre–treatment would be designed on the basis of probe hole drilling ahead of the tunnel face; and • The installation of waterproof lining would also be adopted after the formation of the tunnels Recharge wells would be installed as necessary to mitigate the excessive groundwater drawdown and minimize the potential impact on groundwater system. In the event of excessive drawdown being observed within the ground water table as a result of the tunnelling works even after incorporation of the water control strategies, post–grouting should be applied as far as practicable as described below: • Post–grouting: Groundwater drawdown will be most likely due to inflows of water into the tunnel that have not been sufficiently controlled by the pre–grouting measures. Where this occurs, post grouting will be undertaken before the lining is cast. Whilst unlikely to be required in significant measure, such a contingency should be allowed for reduction in permeability of the tunnel surround (by grouting) to limit inflow to acceptable levels.					

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
	These measures or other similar methods, as approved by the Engineer to suit the works condition, shall be applied to minimize the groundwater infiltration. In case seepage of groundwater occurs, groundwater should be pumped out from the areas and discharged to the drainage system via silt trap. Groundwater from dewatering process should also be discharged to the drainage system via silt removal facilities (refer to Water Quality Section above for details).					
S10.9.5.16	<u>Good Site Practices</u> Recommendations for good site practices during the construction phase include: • Nomination of approved personnel, such as a site manager, to be responsible for implementation of good site practices, arrangements for waste collection and effective disposal to an appropriate facility; • Training of site personnel in site cleanliness, concepts of waste reduction, reuse and recycling, proper waste management and chemical waste handling procedures; • Provision of sufficient waste reception/ disposal points, and regular collection of waste; • Adoption of appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; • Provision of regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; • Adoption of a recording system for the amount of wastes generated, recycled and disposed (including the disposal sites); and • Preparation of Waste Management Plan (WMP), as part of the Environmental Management Plan (EMP).	To avoid adverse impacts arising from the construction activities	Contractor	All works sites and areas	Construction phase	EIAO-TM, EIAO Guidance Note. 3/2010

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
S10.9.5.17	Good practices (i.e. avoidance of night-time activities) would be adopted for the materials storage site in proximity to Sha Po ANR.	To avoid potential disturbance to Sha Po ANR	Contractor	Materials storage site adjoining Castle Peak Road – Tam Mei	Construction phase	EIAO-TM, EIAO Guidance Note. 3/2010
S10.9.6.8, S10.9.6.11	Wetland Compensation would be provided for direct impacts on wetlands of moderate ecological values or above on 1:1 ratio. The design of wetland compensatory area will be further elaborated and presented in Habitat Creation and Management Plan (HCMP) for agreement with AFCD.	To mitigate the direct loss of wetland	MTRCL	Affected wetland with moderate ecological values or above	Detailed design stage, construction and operation phases	EIAO-TM
S10.9.6.35 to S10.9.6.36	The bat shelter would be provided before the end of hibernation period and the demolition of the concerned classroom. In view of the potential indirect disturbance impacts arising from the construction of PWA in vicinity, disturbance minimization measures would be implemented. Details for the provision of a bat shelter will be further studied and submitted before the construction of bat shelter, detailing the location, design, management, maintenance and monitoring requirement for agreement with AFCD.	To mitigate the direct loss of potential day roosting site at deserted Pok Wai Public School	MTRCL	Woodland south of the existing bat roost	Detailed design stage, pre-construction (i.e. before the end of hibernation period and the demolition of the concerned classroom) and operational phases	EIAO-TM
Ecology (Terrestrial and Aquatic) (Operational Phase)						
S10.9.5.11	<u>Control Runoff</u> Best Management Practices (BMPs) for stormwater discharge are recommended to reduce stormwater pollution arising from the Project. Screening facilities such as standard gully grating and trash grille, with spacing which is capable of screening large substances such as fallen leaves and rubbish should be provided at the inlet of drainage	To minimise impact from stormwater pollution	MTRCL	All stations, ancillary buildings and sidings	Detailed design stage and operational phase	EIAO-TM, DEVB TC(W) No. 7/2015, ProPECC PN 1/94

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
	system. Road gullies with standard design and silt traps and oil interceptors should be incorporated during the detailed design to remove particles present in stormwater runoff.					
Fisheries Impact (Construction Phase)						
S11.7.4 to S11.7.5	<u>Control of Site Runoff</u> Measures and good site practices stipulated in the ProPECC PN 1/94 “Construction Site Drainage” and in ETWB TC (Works) No. 5/2005 “Protection of Natural Streams / Rivers from Adverse Impacts Arising from Construction Works” to minimise surface run-off and the chance of erosion should be followed to minimise potential impacts to nearby fisheries resources. Relevant good site practices include: • Construction works near watercourses should be programmed to minimise soil excavation in the wet season (i.e. April to September). If soil excavation cannot be avoided in these months or at any time of year when rainstorms are likely, temporarily exposed slope surfaces should be covered (e.g. by tarpaulin), and temporary access roads should be protected by crushed stone or gravel, as excavation proceeds; • Construction works close to the inland waters should be carried out in the dry season as far as practicable where the flow in the surface channel or stream is low; • Surface run-off from construction sites should be discharged into storm drains via adequately designed sand / silt removal facilities such as sand traps, silt traps and sedimentation basins; • Open stockpiles of construction materials (e.g. aggregates, sand and fill material) on sites should be covered with tarpaulin or similar fabric. Intercepting channels should be provided (e.g. along the crest / edge of excavation) to prevent storm run-off from	To minimize surface run-off and the chance of erosion	Contractor	All works sites and areas	Construction phase	ProPECC PN 1/94, ETWB TC (Works) No. 5/2005

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
	washing across exposed soil surfaces. Arrangements should always be in place in such a way that adequate surface protection measures can be safely carried out well before the arrival of rainstorm; • 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. • Good site practices should be adopted to remove rubbish and litter from construction sites so as to prevent the rubbish and litter from spreading from the site area. It is recommended to clean the construction sites on a regular basis; and • Silt removal facilities, channels and manholes should be maintained and the deposited silt and grit should be removed regularly (as well as at the onset of and after each rainstorm) to prevent overflows and localized flooding.					
S11.7.6 to S11.7.7	The impacts from construction noise would be temporary and negligible with the following good site practices in place during the construction phase; such as: • 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; • Machines and plant (such as trucks) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum;	To avoid adverse impacts on fishponds from construction activities nearby	Contractor	All works sites and areas where applicable	Construction phase	EIAO-TM

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
	• Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby fishponds; • Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction programme; • Use of movable barrier for certain powered mechanical equipment (PME); and • Use of noise enclosure or acoustic shed to cover stationary PME.					
S11.7.8 to S11.7.10	<u>Minimising Chance of Accidental Spillage and Potential Contamination of Surface Water and Groundwater</u> 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. 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 leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges. 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:	To minimising chance of accidental spillage and potential contamination of surface water and groundwater	Contractor	All works sites and areas	Construction phase	WDO (Cap 354) , Waste Disposal (Chemical Waste) General Regulation

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
	• 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.					
S11.7.11	*Other Good Site Practice* Recommendations for good site practices during the construction phase include: • Nomination of approved personnel, such as a site manager, to be responsible for implementation of good site practices, arrangements for waste collection and effective disposal to an appropriate facility; • Training of site personnel in site cleanliness, concepts of waste reduction, reuse and recycling, proper waste management and chemical waste handling procedures; • Provision of sufficient waste reception/ disposal points, and regular collection of waste; • Adoption of appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; • Provision of regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; • Adoption of a recording system for the amount of wastes generated, recycled and disposed (including the disposal sites); and	To avoid adverse impacts on fishponds	Contractor	All works sites and areas	Construction phase	EIAO-TM, EIAO Guidance Note. 3/2010

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
	• Preparation of Waste Management Plan (WMP), as part of the Environmental Management Plan (EMP).					
Landscape and Visual Impact (Construction Phase)						
Table 12.9	*CM1 – Tree Preservation and Transplantation* Tree without impact from the proposed works should be retained and any existing trees unavoidably affected by the works should be transplanted as far as possible in accordance with LAO Practice Note 6/2023.	To minimize the landscape and visual impact on surrounding setting	Contractor	All works sites and areas	Construction phase	LAO Practice Note 6/2023
Table 12.9	*CM2 – Control of Night-time Lighting Glare* Control of night-time lighting glare to prevent light overspill to the nearby VSRs and into the sky. Relevant best practices as suggested in the "Charter on External Lighting" and "Guidelines on Industry Best Practices for External Lighting Installations" promulgated by ENB shall be adopted.	To minimize the landscape and visual impact on surrounding setting	Contractor	All works sites and areas	Construction phase	EIAO-TM, Charter on External Lighting, and Guidelines on Industry Best Practices for External Lighting Installations
Table 12.9	*CM3 – Erection of Decorative Screen Hoarding* Erection of decorative screen hoarding or hoarding compatible with the surrounding setting.	To minimize the landscape and visual impact on surrounding setting	Contractor	All works sites and areas	Construction phase	EIAO-TM
Table 12.9	*CM4 – Management of Construction Activities and Facilities* Construction facilities and activities on work sites and areas should be carefully managed and controlled on the height and disposition /arrangement to minimise any potential adverse landscape and visual impacts.	To minimize the landscape and visual impact on surrounding setting	Contractor	All works sites and areas	Construction phase	EIAO-TM
Landscape and Visual Impact (Operational Phase)						
Table 12.10	*OM1 - Aesthetically Pleasing Design of Aboveground Structures*	To blend in the structures to the	MTRCL	All aboveground structures	Detailed design stage and operational phase	EIAO-TM

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
	Aesthetically pleasing design as regard to the form, material and finishes should be incorporated to Stations, Entrance, Ancillary Buildings and other associated engineering facilities so as to blend in the structures to the adjacent landscape and visual context.	adjacent landscape and visual context,				
Table 12.10	*OM2 – Buffer Screen Planting* Buffer screen planting, including shrub to provide screening to ventilation building, engineering structures and associated facilities.	To provide ornamental value and enhance the landscape character of the streets.	MTRCL	All aboveground structures where applicable	Detailed design stage and operational phase	EIAO-TM
Table 12.10	*OM3 – Roof Greening* Roof greening at the roof area of the proposed structures as far as practical to enhance the landscape quality of the structures and mitigate any potential visual impact on adjacent VSRs at high level.	To enhance the landscape quality of the structures and mitigate any potential visual impact to adjacent VSRs.	MTRCL	All aboveground structures where applicable	Detailed design stage and operational phase	EIAO-TM
Table 12.10	*OM4 – Compensatory Tree Planting* Compensatory tree planting in accordance with LAO Practice Note 6/2023	To compensate the felled trees	MTRCL	All works sites and areas where applicable	Detailed design stage and operational phase	LAO Practice Note 6/2023
Table 12.10	*OM5 – Landscape Treatments on Slope or Retaining Structure* Landscape treatments on slope or retaining structure should be made reference to GEO Publication No. 1/2011 – Technical Guidelines on Landscape Treatment for Slopes	To enhance the landscape quality of the slope or retaining structure	MTRCL	All works sites and areas where applicable	Detailed design stage and operational phase	GEO Publication No. 1/2011 – Technical Guidelines on Landscape Treatment for Slopes

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
Cultural Heritage (Construction Phase)						
S13.5.3.1 & Table 13.9	<u>Cartographic and Photographic Record</u> Cartographic and photographic record, and other documentation means (including 3D scanning), should be conducted at two other identified items including Pok Wai Public School (POW17) and Fung Kat Vegetable Marketing Co-operative Society Ltd. (VEG04) prior to the commencement of any construction works at the respective locations and the record should be shared with AMO for record purposes and future use, such as research, exhibition and educational programmes.	To record the other identified items for future conservation/ interpretation.	MTRCL	Fung Kat Vegetable Marketing Co-operative Society Ltd., Pok Wai Public School	Prior to the commencement of the construction works at the concerned areas	EIAO-TM
S13.5.3.2 to S13.5.3.4 & Table 13.9	<u>Monitoring of Ground-borne Vibration, Tilting and Ground Settlement</u> Monitoring of ground-borne vibration, tilting and ground settlement, is proposed to be employed for the other identified item (i.e. San Yau Vegetable Marketing Co-operative Society Ltd. (VEG02)) during the construction phase under Buildings Ordinance. The monitoring should be incorporated with a set of Alert, Alarm and Action (3As) system strictly following the requirements set out in Practice Note for Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineers - Ground-borne Vibrations and Ground Settlements Arising from Pile Driving and Similar Operations (PNAP APP-137) on vibration-sensitive and dilapidated buildings. If the alert level is exceeded, the monitoring frequency should be increased. If the alarm level is exceeded, the design of the construction may have to be amended. If the action level is exceeded, all works should be stopped. The actual 3As criteria shall be further confirmed via an	To avoid/ minimise impacts from construction activities on other identified items.	Contractor	San Yau Vegetable Marketing Co-operative Society Ltd. and locations of concerned other identified items where necessary	Construction phase	EIAO-TM Buildings Ordinance

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
	assessment on the effects of ground-borne vibrations, settlements and tilting on VEG02. Prior agreement and consent should be sought from the owner(s), stakeholder(s) and relevant Government department(s) for the installation of monitoring points on the building before commencement of the works. Record of monitoring should be submitted regularly to the Buildings Department during the construction under Buildings Ordinance. Buildings Department should be alerted in case any irregularities are observed. Should the construction method of the tunnel boring machine (TBM) tunnel resort to blasting, the abovementioned mitigation measures should be applied to all other identified items located within 100m from the underground works sites and areas under the same 3As system.					
S13.5.3.5 & Table 13.9	Temporary Change of Access There would be a temporary change of access to San Yau Vegetable Marketing Co-operative Society Ltd. (VEG02) during the construction phase. To ensure the smooth and continuous operation of the Society, a safe access route should be maintained for the users of the Society.	To ensure the operation of San Yau Vegetable Marketing Co-operative Society Ltd. during construction phase.	Contractor	Access roads to San Yau Vegetable Marketing Co-operative Society Ltd.	Construction phase	-
S13.6.6.1 to S13.6.6.4 & Table 13.14	Survey-cum-Excavation Archaeological potential areas encroach on the north of AUT Station, and south of NTM Station and NTD. Considering their high archaeological potential and potential direct impact to archaeology, archaeological survey-cum-excavation at these areas is recommended. In principle, archaeological survey should be conducted within the Long Ha ASA and Ngau Tam Mei ASA with an	To fully retrieve the archaeological data before commencement of site formation and construction works.	MTRCL	Long Ha Archae-ologically Sensitive Area (ASA) and Ngau Tam Mei ASA, including the north of AUT Station, south of NTM	Prior to the commencement of the site formation and construction works at the concerned areas	EIAO-TM

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
	aim to locate the precise horizontal extent and nature of the archaeological deposits (if any). Should key archaeological findings occurred, excavation works should be applied to retrieve archaeological data completely before the commencement of site formation and construction works. Survey-cum-excavation works should be carried out after land resumption and before the commencement of site formation and construction works, subject to future land resumption status and discussion with AMO in later stage. Further archaeological field survey at NTM-TP3 should be carried out after land resumption and before site formation and construction works to remove the fill soil and reveal the pre-filled natural soil in order to retrieve adequate archaeological information. The survey-cum-excavation should be conducted by an archaeologist who should have obtained a *Licence to Excavate and Search for Antiquities* from the Antiquities Authority prior to the commencement of the fieldworks. The scope, methodology and programme of the survey-cum-excavation should be agreed with AMO. Should archaeological deposits discovered in the archaeological fieldworks, mitigation measures should be proposed and agreed with AMO.			Station and NTD.		
S13.6.6.5 to S13.6.6.6 & Table 13.14	<u>Archaeological Survey</u> Archaeological survey is required after land resumption and before site formation and construction works at the south of SAT Station. The survey should satisfy the licence requirements and provide a more comprehensive analysis on the archaeological potential within the Licence Area. The survey should be conducted by an archaeologist who	To satisfy the licence requirements and provide a more comprehensive analysis on the archaeological potential within the Licence Area.	MTRCL	South of SAT Station	Prior to the commencement of the site formation and construction works at the concerned area	EIAO-TM

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
	should obtain a *Licence to Excavate and Search for Antiquities*. The scope and work programme of the survey should be agreed with AMO prior to commencement.					
S13.6.6.7 to S13.6.6.8 & Table 13.14	<u>Archaeological Watching Brief</u> Archaeological watching brief is recommended to be carried out by an archaeologist for Mai Po Lung (South) ASA at the northwest of SAT Station during the course of excavation works. An archaeologist should obtain a *Licence to Excavate and Search for Antiquities* from the Antiquities Authority prior the commencement of the fieldworks. The scope, methodology and programme of the archaeological works should be agreed with AMO.	To ensure protection to the archaeological information and preservation of any potential archaeological deposits.	MTRCL	Northwest of SAT Station	Construction phase	EIAO-TM
S13.6.6.13 & Table 13.14	If antiquities or supposed antiquities under the Antiquities and Monuments Ordinance (Cap. 53) are discovered during the construction phase, the project proponent is required to inform AMO immediately for discussion of appropriate mitigation measures to be agreed by AMO before implementation by the project proponent to the satisfaction of AMO.	As a precautionary measure in case of discovery of antiquities or supposed antiquities.	MTRCL	All works site/ areas	Construction phase	EIAO-TM Antiquities and Monuments Ordinance (Cap.53)
Cultural Heritage (Operational Phase)						
S13.5.3.7 and 13.6.6.14	In view of no impact on cultural heritage resources during the operational phase, mitigation measure is not required.	-	-	-	-	-
Hazard to Life (Construction Phase)						
S14.9.5.1	<u>Recommendations for Meeting the ALARP Requirements</u> • The truck should be designed and improved to reduce the amount of combustibles in the cabin. The fuel carried in the fuel tank should also be minimized to reduce the duration of any fire. • The accident frequency of the explosive truck should be minimized through the implementation of a	To meet the ALARP requirements stipulated in the EIAO-TM	Contractor	Works site/areas where trucks with explosives would operate	Construction phase	EIAO-TM

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
	defensive driving attitude and a dedicated training programme for both driver and his attendants which includes regular briefing sessions. Moreover, drivers should be selected based on good safety record and providing regular medical checks for the driver. • The required quantity of explosives should only be transported for a particular blast to avoid any unused explosives send back to the magazine. • The contractor should combine the explosive deliveries for a given work area as far as practicable. • A minimum headway between two consecutive truck convoys of 10 mins should be maintained whenever practicable. • To reduce the explosive truck fire involvement frequency, a better emergency response and training should be implemented to ensure adequate fire extinguishers are used and attempt is made to evacuate the area of the incident or securing the explosive load if possible. All explosive vehicles should also be equipped with bigger capacity AFFF-type extinguishers.					
S14.9.5.2 to S14.9.5.3	<u>General Recommendations</u> Each blasting activities including storage and transport of explosives should be supervised and audited by competent site staff to ensure strict compliance with the blasting permit conditions. For the storage and transport of explosives, the recommendation listed below should also be considered: • The security plan should address different alert security level to reduce opportunity for arson or deliberate initiation of explosives. • Emergency plan like magazine operation manual	To ensure compliance with blasting permit conditions	Contractor	All blasting 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 measures	When to implement the measures?	Requirements
	should be developed to address uncontrolled ire in magazine area and during transport of explosives. • Adverse weather working guideline should be developed to clearly define procedure for transport of explosives during thunderstorm.					
S14.9.6.1	<u>Good Practices to be Implemented for Use of Explosives</u> The good practice could be made reference to the latest guideline including, but not limited to, Practice Note for Authorized Persons and Registered Structural Engineers – Control of Blasting (APP-72) by Buildings Department (BD). Following are some Typical Items regarding Good Practices to Blasting Works extracted from the APP-72, for detail, please reference to the latest APP-72 by BD. • Carry out checking of the registered contractor's blasting method statement; • Check (including both document and site checks) and satisfy, for each blast, that the registered contractor's blast design and precautionary measures comply with the plans approved by the Building Authority and the blasting permit requirements; • Verify on site that the ground conditions and geology are as stated or assumed in the blasting assessment, and that the provisions in the method statement and the preventive, protective and precautionary measures are adequate for the conditions as encountered on site; • Ensure that the preventive measures, if required, have been properly carried out prior to commencement of the blasting works; • Prepare regular reports with records of the condition of the site, sensitive receivers, adjacent grounds, structures and services etc. after each phase of blasting operation and completion of related works.	To minimise the hazard-to-life impact and ensure that any blasting carried out will not adversely affect services, utilities, slopes, retaining walls, buildings and structures through ground vibrations or other effects.	Contractor	All blasting sites	Construction phase	EIAO-TM , Practice Note for Authorized Persons and Registered Structural Engineers (APP-72) by Buildings Department (BD)

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
	• Inspect the construction of preventive works, if required, for the sensitive receivers; • Inspect the provision and installation of all necessary protective and precautionary measures prior to each blast, in accordance with the blast design; • Monitor the site operations and working methods to ensure that they meet the safety requirements set out in the blasting permit; and • Inspect and monitor the conditions of all sensitive receivers regularly and carry out reviews of the quality of monitoring for the sensitive receivers before and after each blast.					
S14.9.6.2 to S14.9.6.4	<u>Good Practices to be Implemented for Magazine Site</u> The good practice could be made reference to the latest guideline including, but not limited to, "Guidance Note No. GN 8 How to Apply for a Mode A Store Licence for Storage of Blasting Explosives" by CEDD. While the design, operation and maintenance of the magazine should follow Mines Division guidelines and industry best practice. Some other good practices listed below can also be implemented: • To ensure the undertaken work activities during the operation of the magazine are properly controlled, a suitable work control system such as an operational manual including Permit-to-Work system should be introduced. • Good house-keeping should be maintained within the magazine to ensure that combustible materials are not allowed to accumulate. • The magazine store should not have any open drains, traps, pits or pocket which any molten ammonium nitrate could flow and be confined in the even of a fire. • Regular checking of the magazine building should be	To minimize the hazard-to-life impact and ensure that overnight store of explosives will not adversely affect services, utilities, slopes, retaining walls, buildings and structures through ground vibrations or other effects.	Contractor	Magazine site	Construction phase	EIAO-TM , "Guidance Note No. GN 8 How to Apply for a Mode A Store Licence for Storage of Blasting Explosives" by Civil Engineering and Development Department (CEDD)

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
	conducted for water seepage through the roof, walls or floor. • Caked explosives shall be disposed of in an appropriate manner. • Permission to remain the secured fenced off magazine store area shall not be given to explosives delivery vehicles. • Speed limit control should be implemented within the magazine area in order to reduce the risk of a vehicle impact or incident within the magazine area.					
S14.9.6.5	<u>Good Practices to be Implemented for Transport of Explosives</u> Contractor should implement all good practices to minimize the hazard-to-life even further and ensure that transport of explosives will not result in adverse impact. A summary of these good practices is given below for reference. The good practice could made reference to the latest guideline including, but not limited to "Guidance Note No. GN 2 Approval of an Explosives Delivery Vehicle" and "Guidance Note No. GN 3 Application and Handling of a Removal Permit" by CEDD: • Typical Removal Permit Conditions o A placard as specified in the section 80 of Dangerous Goods (Control) Regulation must be displayed in a conspicuous place on the vehicle carrying explosives. o No unnecessary waiting or parking of the vehicle is permitted at any place along the transportation route. o The vehicle carrying the explosives is prohibited from passing through any tunnel on a public road.	To minimize the hazard-to-life impact and ensure that transport of explosives will not result in adverse impact.	Contractor	Transportation routes of explosives	Construction phase	EIAO-TM , "Guidance Note No. GN 2 Approval of an Explosives Delivery Vehicle", "Guidance Note No. GN 3 Application and Handling of a Removal Permit" by CEDD

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
	○ Except with the permission in writing of the Authority, the vehicle must not carry more than 200kg net explosives content of explosives at any one time. The vehicle for moving explosives shall be a licensed vehicle equipped with effective fire-extinguishers and maintained in good running conditions at all time. ○ The vehicle shall use the intended route of transportation specified in the application for this conveyance permit. ○ The vehicle with explosives on board is prohibited from refuelling at any fuel station. ○ Conveyance of blasting explosives or entertainment fireworks shall only be undertaken by the vehicle/s and driver/s approved by the Authority and in the presence of a Resident Explosives Supervisor and a Shot Firer or a Fireworks Master/Assistant. When carrying explosives/fireworks, the approved vehicle/s shall display the correct dangerous goods placards and warning signs. ○ Explosives and detonators must be conveyed on separate vehicles or in separate compartments on the vehicle. Electric detonators must be carried in an approved and properly labelled wooden container; and ○ The Permittee is required to input the actual date and time of the use of this Permit in Centralised Explosives Licensing and Management System (CELIMS) after the conveyance of the explosives as soon as reasonably practicable. If the Permit is unused before its expiry date, the Permittee is also required to provide reason(s) for not using the Permit in CELIMS.					

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
	• Safer Design of the Explosive Carrying Vehicle o Fire screen could be installed between the cabin and the load of the vehicle to reduce the chance of fire escalating to the load and cause explosion. • Reduction of Accident Involvement Frequency o Different administrative measures can be implemented to reduce the accident involvement frequency and increase the situational awareness of the driver during the transportation of explosives; o Administrative measures can include “Tool-box” talk training regarding the safety precautions when transporting explosives; o Ensuring that the detonators and the cartridged emulsion are under good conditions and well-intact within their packaging before transporting; and o Recruiting experienced driver with good safety record and checking their health condition in a regular basis. • Reduction of Fire Involvement o Carrying fire extinguishers or other active fire protection devices with higher standard and higher capacity onboard of the Explosives Carrying Vehicle; o Create a contingency plan with consideration of different scenarios that may occur, such as the action that the driver should take in case of fire near the Explosives Carrying Vehicle in the middle of traffic jam; o Regulations for the drivers should be set, such as hot work should be prohibited when handling explosives to avoid any sources of ignition; and					

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Requirements
	○ Working Guidelines should be developed to provide clear instructions to the drivers when encountering different situations like extreme weather.					