

Appendix D Implementation Schedule of Recommended Mitigation Measures
Table D1 Implementation Schedule for Air Quality Impact Control

EIA&EM&A Ref.	Recommended Mitigation Measures, Objectives of the Measures and Main Concerns to Address	Timing of implementation of Measures	Who to implement the measures?	Location	What requirements or standards for the measures to achieve?
Construction Phase					
S.3.5.3 of EIA Report; S.2.4 of EM&A Manual	As a best practice measure to ensure compliance with the Air Pollution Control (Construction Dust) Regulation it is suggested that the following control measures be incorporated into contract documentation: <ul style="list-style-type: none"> • Limitation of each active construction work front to occupy about 50m x 10m work area at any one time, and with a separation distance of more than 600m between two concurrent work areas; • Works area for site clearance shall be sprayed with water before, during and after the operation so as to maintain the entire surface wet; • All dusty materials shall be sprayed with water immediately prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet; • Hoarding of not less than 2.4 m above ground shall be provide, as far as practicable, along the Project Boundary which is next to the public areas; • Restricting heights not higher than 1.5m above ground from which materials are to be dropped, as far as practicable to minimise the 	Construction	Contractor	Within Project Boundary	APCO (Cap. 311); Air Pollution Control (Construction Dust) Regulation; EIAO-TM (Annex 4)

EIA&EM&A Ref.	Recommended Mitigation Measures, Objectives of the Measures and Main Concerns to Address	Timing of implementation of Measures	Who to implement the measures?	Location	What requirements or standards for the measures to achieve?
	fugitive dust arising from unloading/ loading; <ul style="list-style-type: none"> Any stockpile of dusty materials shall be covered entirely by impervious sheeting; and/ or placed in an area sheltered on the top and 4 sides; Immediately before leaving a construction site, all vehicles shall be washed to remove any dusty materials from its body and wheels; and Where a vehicle leaving a construction site is carrying a load of dusty materials, the load shall be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle. 				
Operation Phase					
Nil					

Table D2 Implementation Schedule for Noise Impact Control

EIA&EM&A Ref.	Recommended Mitigation Measures, Objectives of the Measures and Main Concerns to Address	Timing of implementation of Measures	Who to implement the measures?	Location	What requirements or standards for the measures to achieve?
Construction Phase					
S 4.5.4 EIA Report; S.3.16 of EM&A Manual	The following mitigation measures have been recommended: <ul style="list-style-type: none"> Good site practices to limit noise emissions at the source; Use of quality powered mechanical equipment (QPME); 	Construction	Contractor	Within Project Boundary	EIAO-TM; NCO; Noise from Construction Work Other Than Percussive Piling (GW-TM)

EIA&EM&A Ref.	Recommended Mitigation Measures, Objectives of the Measures and Main Concerns to Address	Timing of implementation of Measures	Who to implement the measures?	Location	What requirements or standards for the measures to achieve?
	<ul style="list-style-type: none"> • Use of temporary noise barrier, enclosure and/or noise insulation fabric to screen noise from relatively static PME; and • Alternative quiet construction method 				
S 4.5.4.1 EIA Report; S.3.16 of EM&A Manual	<p>Good site practices can reduce the noise impacts on affected NSRs, although the effectiveness of these practices can vary depending on actual site conditions, and hence it is difficult to quantify effectiveness. The recommended practices are as follows:</p> <ul style="list-style-type: none"> • PMEs should be kept to a minimum and the parallel use of them should be avoided; • Intermittent use of PME which can be shut down between work periods or throttled down to a minimum; • Mobile PME should be sited as far from NSRs as possible; • PME known to emit noise strongly in one direction should be orientated to direct away from the nearby NSRs; and • Only well-maintained plant should be operated on-site and PME should be serviced regularly during the construction programme 	Construction	Contractor	Within Project Boundary	EIAO-TM; NCO; Noise from Construction Work Other Than Percussive Piling (GW-TM)
S 4.5.4.2 of EIA Report; S.3.16 of EM&A Manual	For the use of quiet plant associated with the construction works, reference has been made to the PME listed in the QPME system and other commonly used PME listed in the	Construction	Contractor	Within Project Boundary	EIAO-TM; NCO; Noise from Construction Work

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	EPD website, which contains the SWLs for specific quiet PME.				Other Than Percussive Piling (GW-TM)
S 4.5.4.3 of EIA Report; S.3.16 of EM&A Manual	To alleviate the construction noise impact on the affected NSRs, construction noise barriers or enclosures would be erected to provide screening from the construction plant. A typical design which has been used locally is a wooden framed barrier with a small-cantilevered upper portion of superficial density no less than 10 kg/m ² on a skid footing with 50mm thick internal sound absorptive lining. No sound leaks should be allowed through the barriers due to holes, slits, cracks, openings or gaps.	Construction	Contractor	Within Project Boundary	EIAO-TM; NCO; Noise from Construction Work Other Than Percussive Piling (GW-TM)
S 4.5.4.4 of EIA Report; S.3.16 of EM&A Manual	Alternative quiet construction method such as silent piling by press-in method has been considered in the assessment. A sheet pile is clipped and pressed under the ground. Noise can be minimized by press-in sheet piles with drilling simultaneously for piling works at harder ground.	Construction	Contractor	Within Project Boundary	EIAO-TM; NCO; Noise from Construction Work Other Than Percussive Piling (GW-TM)
S 4.5.4.4 of EIA Report; S.3.16 of EM&A Manual	Hand-held breaker is proposed as alternative construction equipment for pneumatic excavator mounted breaker for ELS works in all work fronts under mitigated scenario.	Construction	Contractor	Within Project Boundary	EIAO-TM; NCO; Noise from Construction Work Other Than Percussive Piling (GW-TM)
S 4.5.4.4 of EIA Report; S.3.16 of EM&A Manual	Stationary concrete pump is proposed as alternative construction equipment for mobile plant of lorry mounted concrete	Construction	Contractor	Within Project Boundary	EIAO-TM; NCO; Noise from Construction Work

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	pump for geotechnical works in all work fronts under mitigated scenario.				Other Than Percussive Piling (GW-TM)
S 4.5.4.4 of EIA Report; S.3.16 of EM&A Manual	In-situ concrete mixing method using concrete mixer (electric) should be adopted for works at work front Zone 23A which construction noise level to the nearest NSR (i.e. N11) exceeds the construction noise criteria.	Construction	Contractor	Within Project Boundary	EIAO-TM; NCO; Noise from Construction Work Other Than Percussive Piling (GW-TM)
Operation Phase					
S 4.6.6 of EIA Report; S.3.17 of EM&A Manual	The recommended direct noise mitigation measures are as follows: <ul style="list-style-type: none"> • Vertical Noise barriers • Low Noise Road Surfacing 	Design; Operation	Project Proponent	Within Project Boundary	EIAO-TM; EIAO Guidance Note No. 12/2010; “Guidelines on Design of Noise Barriers”; “Guidance Notes on Low Noise Road Surfacing” (RD/GN/011C)

Table D3 Implementation Schedule for Water Quality Impact Control

EIA&EM&A Ref.	Recommended Mitigation Measures, Objectives of the Measures and Main Concerns to Address	Timing of implementation of Measures	Who to implement the measures?	Location	What requirements or standards for the measures to achieve?
Construction Phase					
S 5.7.1 of EIA Report; S.4.3 of EM&A Manual	Water used in dust suppression should as far as practicable be re-circulated after sedimentation. When there is a need for final disposal, the wastewater should be leaded to silt removal facilities before being discharged to the storm drain.	Construction	Contractor	Within Project Boundary	EIAO-TM; WPCO (Cap. 358); ProPECC Note PNI/94

EIA&EM&A Ref.	Recommended Mitigation Measures, Objectives of the Measures and Main Concerns to Address	Timing of implementation of Measures	Who to implement the measures?	Location	What requirements or standards for the measures to achieve?
S 5.7.1 of EIA Report; S.4.3 of EM&A Manual	All vehicles and plant should be cleaned before they leave a construction site to minimize the deposition of earth, mud, debris on roads. A wheel washing facility should be provided at every site exit if practicable and wheel-wash overflow shall be directed to silt removal facilities before being discharged to the storm drain. The Project Boundary between the wheel washing facility and the public road should be placed with sand bunds to prevent wheel-wash overflow from entering public road drains.	Construction	Contractor	Within Project Boundary	EIAO-TM; WPCO (Cap. 358); ProPECC Note PNI/94
S 5.7.1 of EIA Report; S.4.3 of EM&A Manual	Wastewater generated from the washing down of mixing trucks and drum mixers and similar equipment should whenever practicable be recycled. The discharge of wastewater should be kept to a minimum. To prevent pollution from wastewater overflow, the pump sump of any water recycling system should be provided with an on-line standby pump of adequate capacity and with automatic alternating devices. Under normal circumstances, surplus wastewater may be discharged into foul sewers after treatment in silt removal.	Construction	Contractor	Within Project Boundary	EIAO-TM; WPCO (Cap. 358); ProPECC Note PNI/94
S 5.7.1 of EIA Report; S.4.3 of EM&A Manual	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 works area. It is recommended to clean the	Construction	Contractor	Within Project Boundary	EIAO-TM; WPCO (Cap. 358); ProPECC Note PNI/94

EIA&EM&A Ref.	Recommended Mitigation Measures, Objectives of the Measures and Main Concerns to Address	Timing of implementation of Measures	Who to implement the measures?	Location	What requirements or standards for the measures to achieve?
	construction sites on a regular basis. Adequate refuse collection points shall be provided on-site.				
S 5.7.1 of EIA Report; S.4.3 of EM&A Manual	Surface runoff from construction sites should be discharged into storm drains via sand/silt removal facilities such as sedimentation basin/tank. Earth bunds or waterfilled barriers with geotextile sheet should be provided on Project Boundary to intercept surface runoff from outside the site so that it will not wash across the site and to prevent surface runoff flowing out of the site. Bunds or sandbags should also be used within the site to direct surface runoff into the silt removal facilities. Stagnant surface runoff should be pumped to the silt removal facilities before discharged into storm drains.	Construction	Contractor	Within Project Boundary	EIAO-TM; WPCO (Cap. 358); ProPECC Note PNI/94
S 5.7.1 of EIA Report; S.4.3 of EM&A Manual	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 without having previously passed through sedimentation tank, 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.	Construction	Contractor	Within Project Boundary	EIAO-TM; WPCO (Cap. 358); ProPECC Note PNI/94

EIA&EM&A Ref.	Recommended Mitigation Measures, Objectives of the Measures and Main Concerns to Address	Timing of implementation of Measures	Who to implement the measures?	Location	What requirements or standards for the measures to achieve?
S 5.7.1 of EIA Report; S.4.3 of EM&A Manual	Silt removal facilities 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.	Construction	Contractor	Within Project Boundary	EIAO-TM; WPCO (Cap. 358); ProPECC Note PNI/94
S 5.7.1 of EIA Report; S.4.3 of EM&A Manual	Surface excavation should be carefully programmed to avoid wet-season operation. If it is unavoidable, any exposed top soils should be covered with a tarpaulin or other means. For the purpose of preventing soil erosion, temporary exposed slope surfaces should be covered e.g. by tarpaulin, as excavation proceeds. 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.	Construction	Contractor	Within Project Boundary	EIAO-TM; WPCO (Cap. 358); ProPECC Note PNI/94
S 5.7.1 of EIA Report; S.4.3 of EM&A Manual	Open stockpiles (e.g. aggregates, sand and fill material) should also be covered with a tarpaulin to avoid erosion during rainstorms. The washing of material from the stockpiles directly into the storm drains should be prevented by passing the runoff through sedimentation tank. 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 a rainstorm.	Construction	Contractor	Within Project Boundary	EIAO-TM; WPCO (Cap. 358); ProPECC Note PNI/94

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S 5.7.1 of EIA Report; S.4.3 of EM&A Manual	Drainage traps such as grease traps and petrol interceptors will be installed at each of the drainage outlets to filter out chemical pollutants from surface runoff.	Construction	Contractor	Within Project Boundary	EIAO-TM; WPCO (Cap. 358); ProPECC Note PNI/94
S 5.7.1 of EIA Report; S.4.3 of EM&A Manual	Mitigation such as providing drip tray/proper storage of chemical containers will be strictly implemented during the construction works. In case of any leakage on bare ground, oil and grease decontamination kit will be available on-site for clean-up of oil leakage. Any fuels should be stored in bunded areas such that spillage can be easily collected.	Construction	Contractor	Within Project Boundary	EIAO-TM; WPCO (Cap. 358); ProPECC Note PNI/94
S 5.7.1 of EIA Report; S.4.3 of EM&A Manual	The contractor shall prepare an oil / chemical clean-up plan in the Waste Management Plan in the Waste Management Plan before the commencement of construction works. It should ensure that leakages or spillages are contained and cleaned up immediately.	Construction	Contractor	Within Project Boundary	EIAO-TM; WPCO (Cap. 358); ProPECC Note PNI/94
S 5.7.1 of EIA Report; S.4.3 of EM&A Manual	Waste oil should be collected and stored for recycling or disposal, in accordance with the Waste Disposal Ordinance (Cap. 354). 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 disposal of	Construction	Contractor	Within Project Boundary	EIAO-TM; WPCO (Cap. 358); ProPECC Note PNI/94

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	chemical wastes. 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.				
S 5.7.1 of EIA Report; S.4.3 of EM&A Manual	Portable chemical toilets would be provided for handling the sewage effluent generated by the workforce. The number of the chemical toilets required for the construction sites would be subject to later detailed design, the capacity of the chemical toilets, and contractor's site practices.	Construction	Contractor	Within Project Boundary	EIAO-TM; WPCO (Cap. 358); ProPECC Note PNI/94
S 5.7.1 of EIA Report; S.4.3 of EM&A Manual	Portable chemical toilets shall be appropriately located on-site in proximity to all major works areas where they shall remain and be maintained in good working order for the convenience of the workforce during the construction phase.	Construction	Contractor	Within Project Boundary	EIAO-TM; WPCO (Cap. 358); ProPECC Note PNI/94
S 5.7.1 of EIA Report; S.4.3 of EM&A Manual	The provision of temporary toilet facilities within the Water Gathering Ground, if any, is subject to approval of the Director of Water Supplies. As a minimum requirement, temporary toilet facilities must be located more than 30m from any watercourse.	Construction	Contractor	Within Project Boundary	EIAO-TM; WPCO (Cap. 358); ProPECC Note PNI/94
S 5.7.1 of EIA Report; S.4.3 of EM&A Manual	A licensed contractor would be employed to provide appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance.	Construction	Contractor	Within Project Boundary	EIAO-TM; WPCO (Cap. 358); ProPECC Note PNI/94
S 5.7.1 of EIA Report;	Notices would be posted at conspicuous locations to remind the workers not to	Construction	Contractor	Within Project Boundary	EIAO-TM; WPCO (Cap. 358);

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S.4.3 of EM&A Manual	discharge any sewage or wastewater into the nearby environment during the construction phase of the Project.				ProPECC Note PN1/94
S 5.7.1 of EIA Report; S.4.3 of EM&A Manual	<p>The practices outlined in ETWB TC(W) No. 5/2005 “Protection of natural streams/rivers from adverse impacts arising from construction works” should also be adopted where applicable to minimize the water quality impacts upon any natural streams or surface water systems. Relevant mitigation measures from the ETWB TC (Works) No. 5/2005 are listed below:</p> <ul style="list-style-type: none"> • Construction works close to the inland waters should be carried out in dry season as far as practicable where the flow in the surface channel or stream is low. • The use of less or smaller construction plants may be specified in areas close to the water courses to reduce the disturbance to the surface water. • Temporary storage of materials (e.g. equipment, chemicals and fuel) and temporary stockpile of construction materials should be located well away from any water courses during carrying out of the construction works. • Stockpiling of construction materials and dusty materials should be covered 	Construction	Contractor	Within Project Boundary	EIAO-TM; WPCO (Cap. 358); ProPECC Note PN1/94; ETWB TC(W) No. 5/2005

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	<p>and located away from any water courses.</p> <ul style="list-style-type: none"> • 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. • Proper shoring may need to be erected in order to prevent soil or mud from slipping into the watercourses. • Fencing should be erected on the sides facing the nearest stream course to trap all wind-blown litters such as paper, plastic bags, bottles and boxes within the site from entering the nearby water bodies. • The proposed works site inside or in the proximity of natural rivers and streams should be temporarily isolated, such as by placing of cofferdam with silt curtain with lead edge at bottom and properly supported props, to prevent adverse impacts on the stream water qualities. Other protective measures should also be taken to ensure that no pollution or siltation occurs to the water gathering grounds of the work site. • The natural bottom and existing flow 				

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	in the river should be preserved as much as possible to avoid disturbance to the river habitats. If temporary access track on riverbed is unavoidable, this should be kept to the minimum width and length. Temporary river crossings should be supported on stilts above the riverbed.				
S 5.7.1 of EIA Report; S.4.3 of EM&A Manual	The contractor shall also comply with the “Condition of Working within Water Gathering Ground” during Project construction. Any effluent discharged from the proposed development at points within gathering grounds should comply fully at all times with standards for effluents stipulated in Table 2 and paragraph 8.4 of the “Technical Memorandum on Effluent Standards” issued under section 21 of the WPCO.	Construction	Contractor	Within Project Boundary	EIAO-TM; WPCO (Cap. 358); ProPECC Note PNI/94; Condition of Working within Water Gathering Ground

EIA&EM&A Ref.	Recommended Mitigation Measures, Objectives of the Measures and Main Concerns to Address	Timing of implementation of Measures	Who to implement the measures?	Location	What requirements or standards for the measures to achieve?
Operation Phase					
S 5.7.2 of EIA Report; S.4.3 of EM&A Manual	Road gullies should be provided to direct and collect all surface runoff to the drainage system. The capacity should be properly designed to cater for all surface water.	Design; Operation	Project Proponent	Within Project Boundary	EIAO-TM; WPCO (Cap. 358); ProPECC Note PNI/94
S 5.7.2 of EIA Report; S.4.3 of EM&A Manual	Road gullies with standard design should be incorporated during the detailed design to remove particles present in stormwater runoff. Screening facility such as standard gully grating, with spacing which is capable of screening off large substances such as fallen leaves and rubbish should be provided at the inlet of drainage system.	Design; Operation	Project Proponent	Within Project Boundary	EIAO-TM; WPCO (Cap. 358); ProPECC Note PNI/94
S 5.7.2 of EIA Report; S.4.3 of EM&A Manual	Road drains should be properly maintained and cleaned regularly to ensure good service condition. Good management measures such as regular cleaning of road gullies and sweeping of road surface should be carried out prior to occurrence rainstorm.	Operation	Project Proponent	Within Project Boundary	EIAO-TM; WPCO (Cap. 358); ProPECC Note PNI/94

Table D4 Implementation Schedule for Waste Management Control

EIA&EM&A Ref.	Recommended Mitigation Measures, Objectives of the Measures and Main Concerns to Address	Timing of implementation of Measures	Who to implement the measures?	Location	What requirements or standards for the measures to achieve?
Construction Phase					
S 6.6 of EIA Report; S.5.2 of EM&A Manual	An on-site environmental co-ordinator should be identified at the outset of the works. The co-ordinator shall prepare an Environmental Management Plan (EMP) incorporating waste management in	Construction	Contractor	Within Project Boundary as well as transportation routes to designated areas	ETWB TC(W) No. 19/2005

EIA&EM&A Ref.	Recommended Mitigation Measures, Objectives of the Measures and Main Concerns to Address	Timing of implementation of Measures	Who to implement the measures?	Location	What requirements or standards for the measures to achieve?
	accordance with the requirements set out in the ETWB TC(W) No. 19/2005, Environmental Management on Construction Sites. The EMP shall include monthly and yearly Waste Flow Tables (WFT) that indicate the amounts of waste generated, recycled and disposed of (including final disposal site), and which should be regularly updated;			for off-site disposal of materials	
S 6.6 of EIA Report; S.5.2 of EM&A Manual	The reuse/ recycling of all materials on site shall be investigated prior to treatment/ disposal off- site;	Construction	Contractor	Within Project Boundary as well as transportation routes to designated areas for off-site disposal of materials	Waste Disposal Ordinance (WDO); ETWB TC(W) No. 19/2005
S 6.6 of EIA Report; S.5.2 of EM&A Manual	Good site practices shall be adopted from the commencement of works to avoid the generation of waste, reduce cross contamination of waste and to promote waste minimisation;	Construction	Contractor	Within Project Boundary as well as transportation routes to designated areas for off-site disposal of materials	WDO
S 6.6 of EIA Report; S.5.2 of EM&A Manual	All waste materials shall be sorted on-site into inert and non-inert C&D materials, and where the materials can be recycled or reused, they shall be further segregated. Inert material, or public fill will comprise stone, rock, masonry, brick, concrete and soil which is suitable for land reclamation and site formation whilst non-inert	Construction	Contractor	Within Project Boundary as well as transportation routes to designated areas for off-site disposal of materials	WDO

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	materials include all other wastes generated from the construction process such as plastic packaging and vegetation (from site clearance);				
S 6.6 of EIA Report; S.5.2 of EM&A Manual	The Contractor shall be responsible for identifying what materials can be recycled/reused, whether on-site or off-site. In the event of the latter, the Contractor shall make arrangements for the collection of the recyclable materials. Any remaining non-inert waste shall be collected and disposed of to the Public Filling Areas whilst any inert C&D materials shall be re-used on site as far as possible. Alternatively, if inert material cannot be reused on-site, the materials can be delivered to a public fill reception facilities after obtaining the appropriate licence;	Construction	Contractor	Within Project Boundary as well as transportation routes to designated areas for off-site disposal of materials	WDO
S 6.6 of EIA Report; S.5.2 of EM&A Manual	With reference to ETWB TC(W) No. 6/2010, Trip-ticket System for Disposal of Construction and Demolition Material, a trip ticket system should be established at the outset of the construction to monitor the disposal of C&D and solid wastes from the site to public filling facilities and landfills;	Construction	Contractor	Within Project Boundary as well as transportation routes to designated areas for off-site disposal of materials	ETWB TC(W) No. 6/2010
S 6.6 of EIA Report; S.5.2 of EM&A Manual	Under the Waste Disposal (Chemical Waste) (General) Regulation, the Contractor shall register as a Chemical Waste Producer if chemical wastes such as spent lubricants and paints are generated on site. Only licensed chemical waste	Construction	Contractor	Within Project Boundary as well as transportation routes to designated areas	Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Labelling and Storage

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	collectors shall be employed to collect any chemical waste generated at site. The handling, storage, transportation and disposal of chemical wastes shall be conducted in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes and A Guide to the Chemical Waste Control Scheme both published by EPD;			for off-site disposal of materials	of Chemical Wastes; Guide to the Chemical Waste Control Scheme
S 6.6 of EIA Report; S.5.2 of EM&A Manual	A sufficient number of covered bins shall be provided on site for the containment of general refuse to prevent visual impacts and nuisance to the sensitive surroundings. These bins shall be cleared daily and the collected waste disposed of to the refuse transfer station. Further to the issue of ETWB TC(W) No. 8/2010, Enhanced Specification for Site Cleanliness and Tidiness, the Contractor is required to maintain a clean and hygienic site throughout the Project works;	Construction	Contractor	Within Project Boundary as well as transportation routes to designated areas for off-site disposal of materials	ETWB TC(W) No. 8/2010; ETWB TC(W) No. 19/2005
S 6.6 of EIA Report; S.5.2 of EM&A Manual	All chemical toilets, if any, shall be regularly cleaned and the night-soil collected and transported by a licensed contractor to a Government Sewage Treatment Works facility for disposal;	Construction	Contractor	Within Project Boundary as well as transportation routes to designated areas for off-site disposal of materials	ETWB TC(W) No. 8/2010; ETWB TC(W) No. 19/2005
S 6.6 of EIA Report;	Tool-box talks should be provided to workers about the concepts of site cleanliness and appropriate waste	Construction	Contractor	Within Project Boundary as well as transportation	ETWB TC(W) No. 19/2005

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S.5.2 of EM&A Manual	management procedures, including waste reduction, reuse and recycling;			routes to designated areas for off-site disposal of materials	
S 6.6 of EIA Report; S.5.2 of EM&A Manual	The Contractor shall comply with all relevant statutory requirements and guidelines and their updated versions that may be issued during the course of Project construction.	Construction	Contractor	Within Project Boundary as well as transportation routes to designated areas for off-site disposal of materials	EIAO-TM
S 6.6 of EIA Report; S.5.2 of EM&A Manual	The following recommendations for storage, collection and transportation of waste should be implemented to minimize impacts: <ul style="list-style-type: none"> • Waste such as soil should be handled and stored well to ensure secure containment; • Covering materials during heavy rainfall; • Stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; • Locating stockpiles to minimise potential visual impacts; and Minimising land intake of stockpile area as far as possible.	Construction	Contractor	Within Project Boundary as well as transportation routes to designated areas for off-site disposal of materials	WDO; Land (Miscellaneous Provisions) Ordinance
Operation Phase					
Nil					

Table D5
Implementation Schedule for Ecological Impact

EIA&EM&A Ref.	Recommended Mitigation Measures, Objectives of the Measures and Main Concerns to Address	Timing of implementation of Measures	Who to implement the measures?	Location	What requirements or standards for the measures to achieve?
Construction Phase					
S 7.8 of EIA Report; S.6.2 of EM&A Manual	Protection measures shall be implemented to avoid any possible construction impacts upon the ecology. These measures shall include the followings: <ul style="list-style-type: none"> • A detailed vegetation survey will be conducted within the proposed works areas as well as the Conservation Area before construction to identify any plant species of conservation importance before construction activities to be carried out. • Protection zone shall be implemented with adequate space and labels. No construction activities or storage shall be carried out inside the designated protection zone. 	Construction	Contractor	Within Project Boundary	DEVB TC(W) No. 7/2015; EIAO-TM
S 7.8 of EIA Report; S.6.2 of EM&A Manual	To minimize habitat loss to the nearby habitats and associated wildlife, the following mitigation measures should be implemented: <ul style="list-style-type: none"> • Confining the works within the Project Boundary; • Controlling access of site staff to avoid damage to the vegetation in surrounding areas • Placement of equipment or stockpile in the existing disturbed / urbanized area within the works area of the Project to 	Construction	Contractor	Within Project Boundary	DEVB TC(W) No. 7/2015; EIAO-TM; ProPECC PN 1/94

EIA&EM&A Ref.	Recommended Mitigation Measures, Objectives of the Measures and Main Concerns to Address	Timing of implementation of Measures	Who to implement the measures?	Location	What requirements or standards for the measures to achieve?
	minimize disturbance to vegetated areas <ul style="list-style-type: none"> • Reinstatement and enhancement of temporarily affected habitats • Controlling of runoff • Reducing Glare / Lighting • Good site practice implemented to further minimize impacts from disturbance such as noise, air quality and water quality issues 				
S 7.7.19 of EIA Report; S 6.2 of EM&A Manual	To reduce collision from birds, the design of noise barrier will avoid / minimise the use of transparent / reflective materials or adopt bird-friendly design on the surfaces.	Construction	Contractor	Within Project Boundary	HyD's Practice Notes No. BSTR/PN/003 – Revision D
S 7.8 of EIA Report; S 6.2 of EM&A Manual	Other relevant mitigation measures as implemented under the noise, air quality and water quality chapters.	Construction	Contractor	Within Project Boundary	/
Operation Phase					
Nil					

Table D6 Implementation Schedule for Land Contamination Assessment and Remediation

EIA&EM&A Ref.	Recommended Mitigation Measures, Objectives of the Measures and Main Concerns to Address	Timing of implementation of Measures	Who to implement the measures?	Location	What requirements or standards for the measures to achieve?
Construction Phase					
S 8.8 of EIA Report; S.7.3 of EM&A Manual	Site re-appraisal is required for the identified potentially contaminated sites as well as other areas within the Project Boundary to address any change in land use	Construction	Contractor	Within Project Boundary	EIAO-TM; Guidance Note for Contaminated Land Assessment and

EIA&EM&A Ref.	Recommended Mitigation Measures, Objectives of the Measures and Main Concerns to Address	Timing of implementation of Measures	Who to implement the measures?	Location	What requirements or standards for the measures to achieve?
	that may give rise to potential land contamination issues as soon as the sites become accessible and a supplementary Contamination Assessment Plan (CAP) should be submitted and endorsed by EPD before site investigation. A Contamination Assessment Report (CAR) which includes the site investigation sampling and testing results will be prepared for EPD's agreement upon completion of the site investigation. If contamination was identified, Remediation Action Plan (RAP) shall be also prepared and submitted to EPD for agreement prior to the commencement of the remediation works. Upon completion of the remediation, a Remediation Report (RR) shall be submitted to EPD for agreement. No construction works of site should be carried out prior to the agreement of the RR.				Remediation; Practice Guide for Investigation and Remediation of Contaminated Land; Guidance Manual for Use of Risk-based Remediation Goals for Contamination Management.
S 8.8 of EIA Report; S.7.3 of EM&A Manual	As general measures, the following environmental and safety precautionary measures should be implemented during construction works, in order to minimize the potential impact on health and contamination exposure to the site workers: <ul style="list-style-type: none"> • Exposure to any contaminated materials can be minimised by the wearing of appropriate clothing and personal 	Construction	Contractor	Within Project Boundary	EIAO-TM

EIA&EM&A Ref.	Recommended Mitigation Measures, Objectives of the Measures and Main Concerns to Address	Timing of implementation of Measures	Who to implement the measures?	Location	What requirements or standards for the measures to achieve?
	protective equipment; <ul style="list-style-type: none"> • Adequate training and instructions of the potential hazards associated with the contaminated materials shall be provided to site staff and workers; • Measures shall be implemented to prevent non-workers from approaching the identified potential contamination areas in order to avoid exposure to contaminants; • Where appropriate, the use of bulk handling equipment should be maximised to reduce the potential contacts between excavated contaminated materials and associated workers; • All temporary stockpiles of the materials shall be completely covered with waterproof material to avoid leaching of contaminants, especially during rainy season; and • Surface water shall be diverted around any contaminated areas or stockpiles to minimise potential runoff into excavations. 				
Operation Phase					
Nil					

Table D7 Implementation Schedule for Landscape and Visual Impact

EIA&EM&A Ref.	Recommended Mitigation Measures, Objectives of the Measures and Main Concerns to Address	Timing of implementation of Measures	Who to implement the measures?	Location	What requirements or standards for the measures to achieve?
Construction Phase					

EIA&EM&A Ref.	Recommended Mitigation Measures, Objectives of the Measures and Main Concerns to Address	Timing of implementation of Measures	Who to implement the measures?	Location	What requirements or standards for the measures to achieve?
Table 9.13 of EIA Report; Table 8.1 of EM&A Manual	Preservation of Existing Vegetation – The proposed Project should avoid disturbance to existing trees as far as practicable.	Design; Construction	Project Proponent; Contractor	Within Project Boundary	EIAO-TM Annex 18; DEVB TC(W) No. 6/2015; DEVB TC(W) No. 7/2015
Table 9.13 of EIA Report; Table 8.1 of EM&A Manual	Preservation of Existing Vegetation – Trees not in conflict with the Project will be protected by fencing as appropriate to prevent canopy and root zone damage from excavation works, vehicles and material storage.	Construction	Contractor	Within Project Boundary	EIAO-TM Annex 18; DEVB TC(W) No. 6/2015; DEVB TC(W) No. 7/2015
Table 9.13 of EIA Report; Table 8.1 of EM&A Manual	Works Area and Temporary Works Areas – The landscape of these works areas should be restored to its original status or new amenity area following the completion of the construction phase. Construction site controls shall be enforced, where possible, to ensure that the landscape and visual impacts arising from the construction phase activities are minimized including the storage of materials, the location and appearance of site accommodation and the careful design of site lighting to prevent light spillage. Screen hoarding will be erected around the temporary works area.	Construction	Contractor	Within Project Boundary	EIAO-TM Annex 18; DEVB TC(W) No. 6/2015; DEVB TC(W) No. 7/2015

EIA&EM&A Ref.	Recommended Mitigation Measures, Objectives of the Measures and Main Concerns to Address	Timing of implementation of Measures	Who to implement the measures?	Location	What requirements or standards for the measures to achieve?
Table 9.13 of EIA Report; Table 8.1 of EM&A Manual	Programme for Compensatory Planting – Replanting of disturbed vegetation should be undertaken at the earliest possible stage during the construction phase of the project to maximize its effect during the operation phase.	Construction	Contractor	Within Project Boundary	EIAO-TM Annex 18; DEVB TC(W) No. 6/2015; DEVB TC(W) No. 7/2015
Table 9.13 of EIA Report; Table 8.1 of EM&A Manual	Tree Transplantation – Trees have been recommended for transplanting for their moderate transplanting success, and it is recommended to relocated the tree to a permanent receptor site within the Project Boundary directly after the completion of a 2 stages root preparation period (with a minimum of 60 days interval) as far as practicable, and the work should follow the Highways Guidelines HQ/GN/13 - Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation, as well as the latest guidelines issued from the Greening, Landscape and Tree Management Section of the Development Bureau.	Construction	Contractor	Within Project Boundary	EIAO-TM Annex 18; DEVB TC(W) No. 6/2015; DEVB TC(W) No. 7/2015; HQ/GN/13
Table 9.13 of EIA Report; Table 8.1 of EM&A Manual	Details regarding the transplantation will be submitted in the tree survey report to relevant government departments for approval in accordance with ETWB TC(W) No. 29/2004, DEVB TC (W) No.7/2015 and “Guidelines on Tree Transplanting”, GLTMS of DEVB.	Design	Project Proponent	Within Project Boundary	EIAO-TM Annex 18; DEVB TC(W) No. 6/2015; DEVB TC(W) No. 7/2015; ETWB TC(W) No. 29/2004

EIA&EM&A Ref.	Recommended Mitigation Measures, Objectives of the Measures and Main Concerns to Address	Timing of implementation of Measures	Who to implement the measures?	Location	What requirements or standards for the measures to achieve?
Operational Phase					
Table 9.14 of EIA Report; Table 8.2 of EM&A Manual	Integrated design approach – The alignment and structures associated with the widened road should be integrated, as far as technically feasible, with existing roadside structures and the landscape context to reduce the potential cumulative impact of the proposed works. The location and orientation of the associated structures should where possible avoid landscape and visually sensitive areas such as woodland, shrubland and agricultural fields.	Design	Project Proponent	Within Project Boundary	EIAO-TM Annex 18
Table 9.14 of EIA Report; Table 8.2 of EM&A Manual	The architectural design should seek to reduce the apparent visual mass of the engineering structures through the use of textured finishes and colour blocking. Earth tones are preferred as these match the existing landscape and visual context.	Design	Project Proponent	Within Project Boundary	EIAO-TM Annex 18; HKPSG
Table 9.14 of EIA Report; Table 8.2 of EM&A Manual	Roadside Planting – These planting areas will utilize largely native tree and shrub species either with high canopy and thin foliage to allow visual access in the views from the adjacent landscape to the distant roadside or rural landscape or dense foliage at selected locations to provide shaded environment for pedestrians and the creation. Native tree planting on the existing and proposed cut slopes will improve the ecological connectivity between existing woodland	Design; Operation	Project Proponent	Within Project Boundary	EIAO-TM Annex 18; HKPSG

EIA&EM&A Ref.	Recommended Mitigation Measures, Objectives of the Measures and Main Concerns to Address	Timing of implementation of Measures	Who to implement the measures?	Location	What requirements or standards for the measures to achieve?
	habitats with the advantage of creating a more coherent landscape framework.				
Table 9.14 of EIA Report; Table 8.2 of EM&A Manual	Compensatory Planting Proposals – In accordance with DEVB TC(W) No. 7/2015, the compensatory planting proposal should has the basic primary objective of planting compensatory trees in a ratio not less than 1:1 in terms of quantity as far as practicable. The soil specification will follow the Clause 3.0 of the Section 3 Landscape Softworks and Establishment Works of the General Specification for Civil Engineering Works (2006 ed.) and a layer of mulching not less than 50mm shall be applied to the planting areas. The size of the trees to be planted would be 100mm in girdle width (DBH) and planted with a spacing not less than 5m interval to promote healthy establishment and development of a decent growth form. With the implementation of the proposed compensatory planting plan, there will be no net loss of trees in terms of quantity as far as practicable.	Design; Operation	Project Proponent	Within Project Boundary	EIAO-TM Annex 18; HKPSG and BD; DEVB TC(W) No. 7/2015
Table 9.14 of EIA Report; Table 8.2 of EM&A Manual	Treatment of Retaining Wall and Slopes – The design and implementation of the aesthetic appearance of the retaining wall and slopes will be undertaken in accordance with GEO Publication No. 1/2011 - Technical Guidelines on Landscape Treatment for Slopes (2011), WBTC No. 29/93 on control of Visual Impact of Slopes	Design; Operation	Project Proponent	Within Project Boundary	EIAO-TM Annex 18; GEO Publication No. 1/2011

EIA&EM&A Ref.	Recommended Mitigation Measures, Objectives of the Measures and Main Concerns to Address	Timing of implementation of Measures	Who to implement the measures?	Location	What requirements or standards for the measures to achieve?
	and WBTC No. 17/2002 on Improvement to the Appearance of Slopes. The engineered structures will be aesthetically enhanced through the use of soft landscape works including tree and shrub planting to give these man-made features a more natural appearance and blending them into the local rural landscape. Light standard sized tree planting will be used on the face of soil cut slopes with a gradient of less than 30 degrees, at the crest and toe of the slope, and within berm planters. These smaller, younger plants will adapt to their new growing conditions more quickly than larger sized stock and establish a naturalistic effect more rapidly. Slopes with a gradient of greater than 30 degrees will be hydroseeded using a mixture of native trees and shrubs. Vertical greening measures shall also be considered on engineering structures. This includes the use of climbing and trailing plants both planted at the crest and toe of the features, and within pockets within the slopes. It is proposed that native species be used to enhance the ecological value of the road corridor and minimize potential maintenance requirements. These measures will be applied to the retaining walls and newly regraded slopes features.				
Table 9.14 of EIA Report;	Provision of Visually Pleasing Aesthetic Treatment on Noise Barriers –	Design; Operation	Project Proponent	Within Project Boundary	EIAO-TM Annex 18

EIA&EM&A Ref.	Recommended Mitigation Measures, Objectives of the Measures and Main Concerns to Address	Timing of implementation of Measures	Who to implement the measures?	Location	What requirements or standards for the measures to achieve?
Table 8.2 of EM&A Manual	Translucent plexiglass with aesthetic pattern will be fully considered for design of noise barrier to enhance visual interest.				