

## 9 IMPLEMENTATION SCHEDULE OF THE PROPOSED MITIGATION MEASURES

**Table 9.1 Implementation Schedule for Noise Measures**

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve
S3.8	S2.3	<ul style="list-style-type: none"> <li>Provision of a landscaped deck along Roads D3A &amp; D4A.</li> </ul>	To reduce traffic noise impact at nearby NSRs	CEDD	Road D3A & D4A	Before population intake of Sites 4A1, 4B1, 4B2, 4B3, 4B4 & 4B5	EIAO-TM
S3.8	S2.3	<ul style="list-style-type: none"> <li>Provision of about 1090 m length of vertical noise barrier (connected to the deck) at Roads D3A &amp; D4A;</li> <li>Provision of about 60 m length of overhang vertical noise barrier (connected to the deck) at Road D4A; and</li> <li>Provision of staircases with noise barriers next to Sites 4A1 and 4B1</li> </ul> <p>It should be noted that the exact length of the mitigation measures would be subject to minor refinement during the detailed design stage.</p>	To reduce traffic noise impact at nearby NSRs	CEDD	Road D3A & D4A	Before population intake of Sites 4A1, 4B1, 4B2, 4B3, 4B4 & 4B5	EIAO-TM
S3.8	S2.3	Non-noise sensitive use areas within Sites 4A1 and 4B1.	To reduce traffic noise impact at nearby NSRs	LandsD / Future developer	Sites 4A1 and 4B1	Design & Construction Stages	EIAO-TM
S3.8	S2.3	Avoid sensitive façade with openable window facing Road D3A.	To reduce traffic noise impact at nearby NSRs	LandsD / Future developer	Sites 4A2, 4C1 4C2, 4C3, 4C4 & 4C5	Design & Construction Stages	EIAO-TM

**Table 9.2 Implementation Schedule for Air Quality Measures**

<b>EIA Ref.</b>	<b>EM&amp;A Ref.</b>	<b>Recommended Mitigation Measures</b>	<b>Objectives of the Recommended Measure &amp; Main Concerns to address</b>	<b>Who to implement the measure?</b>	<b>Location of the measure</b>	<b>When to implement the measure?</b>	<b>What requirements or standards for the measure to achieve</b>
S4.8	S3.4	Control measures stipulated in the approved KTD Schedule 3 EIA Report should be strictly followed.	Minimize cumulative dust impact.	Contractor	Work site	Construction Stages	EIAO-TM
S4.8	S3.4	<ul style="list-style-type: none"> <li>• Implementation of dust suppression measures stipulated in Air Pollution Control (Construction Dust) Regulation. The following mitigation measures, good site practices and a comprehensive dust monitoring and audit programme are recommended to minimize dust impacts.</li> <li>• Stockpiling site(s) should be lined with impermeable sheeting and bunded. Stockpiles should be fully covered by impermeable sheeting to reduce dust emission.</li> <li>• Misting for the dusty material should be carried out before being loaded into the vehicle.</li> <li>• Any vehicle with an open load carrying area should have properly fitted side and tail boards.</li> <li>• Material having the potential to create dust should not be</li> </ul>	Minimize cumulative dust impact.	Contractor	Work site	Construction Stages	EIAO-TM, AQO

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		<p>loaded from a level higher than the side and tail boards and should be dampened and covered by a clean tarpaulin.</p> <ul style="list-style-type: none"> <li>• The tarpaulin should be properly secured and should extend at least 300 mm over the edges of the sides and tailboards. The material should also be dampened if necessary before transportation.</li> <li>• The vehicles should be restricted to maximum speed of 10 km per hour and confined haulage and delivery vehicle to designated roadways insider the site. On-site unpaved roads should be compacted and kept free of lose materials.</li> <li>• Vehicle washing facilities should be provided at every vehicle exit point.</li> <li>• The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores.</li> <li>• Every main haul road should be scaled with concrete and kept</li> </ul>					

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		clear of dusty materials or sprayed with water so as to maintain the entire road surface wet. <ul style="list-style-type: none"> <li>• Every stock of more than 20 bags of cement should be covered entirely by impervious sheeting placed in an area sheltered on the top and the three sides.</li> <li>• Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.</li> </ul>					

**Table 9.3 Implementation Schedule for Water Quality Measures**

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve
S5.8	S4.4	<p><b>Construction Phase</b>  <u>Construction Site Run-off and General Construction Activities</u></p> <p>The site practices outlined in ProPECC PN 1/94 “Construction Site Drainage” should be followed as far as practicable to minimise surface run-off and the chance of erosion. Effluent discharged from the construction site should comply with the standards stipulated in the TM-DSS. The following measures are recommended to protect water quality and sensitive uses 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</p> <ul style="list-style-type: none"> <li>• 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. Channels or earth bunds or</li> </ul>	<p>To minimise water quality impacts from construction site run-off and general construction activities</p>	Contractor	Work Sites	Construction Stages	EIAO-TM, WPCO, ProPECC PN 1/94, TM-DSS

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		<p>sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities. Perimeter channels should be provided on site boundaries where necessary to intercept storm run-off 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.</p> <ul style="list-style-type: none"> <li>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. Minimum distance of 100 m should be maintained between</li> </ul>					

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		<p>the discharge points of construction site run-off and the existing saltwater intakes.</p> <ul style="list-style-type: none"> <li>Construction works should be programmed to minimize soil excavation works in rainy seasons (April to September). If excavation in soil cannot be avoided in these months or at any time of year when rainstorms are 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 in such a way that adequate surface protection measures can be safely carried out well before the arrival of a</li> </ul>					

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		<p>rainstorm.</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> <li>• Open stockpiles of construction materials (e.g. aggregates, sand and fill material) on sites should be covered with tarpaulin or</li> </ul>					



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		<p>similar fabric during rainstorms.</p> <ul style="list-style-type: none"> <li>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 run-off from getting into foul sewers. Discharge of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system.</li> <li>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.</li> </ul>					
S5.8	S4.4	<p><i>Boring and Drilling Water</i></p> <p>Water used in ground boring and</p>	<p>To minimise water quality impacts from construction site run-off</p>	Contractor	Work Sites	Construction Stages	EIAO-TM, WPCO, ProPECC PN 1/94, TM-DSS

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		drilling for site investigation or rock / soil anchoring should as far as practicable be re-circulated after sedimentation. When there is a need for final disposal, the wastewater should be discharged into storm drains via silt removal facilities.	and general construction activities				
S5.8	S4.4	<p><i>Wheel Washing Water</i></p> <p>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 bay should be provided at every site exit if practicable and wash-water should have sand and silt settled out or removed before discharging into storm drains. The section of construction road between the wheel washing bay and the public road should be paved with backfall to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.</p>	To minimise water quality impacts from construction site run-off and general construction activities	Contractor	Work Sites	Construction Stages	EIAO-TM, WPCO, ProPECC PN 1/94, TM-DSS
S5.8	S4.4	<p><i>Acid Cleaning, Etching and Pickling Wastewater</i></p> <p>Acidic wastewater generated from acid cleaning, etching, pickling and</p>	To minimise water quality impacts from construction site run-off and general construction activities	Contractor	Work Sites	Construction Stages	EIAO-TM, WPCO, ProPECC PN 1/94, TM-DSS

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		similar activities should be neutralized to within the pH range of 6 to 10 before discharging into foul sewers.					
S5.8	S4.4	<p><i>Effluent Discharge</i></p> <p>There is a need to apply to EPD for a discharge licence for discharge of effluent from the construction site under the WPCO. The discharge quality must 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 TM-DSS. Minimum distance of 100 m should be maintained between the discharge points of construction site effluent and the existing seawater intakes and the planned WSR mentioned in S5.3.1 as appropriate. 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</p>	To minimise water quality impacts from construction site run-off and general construction activities	Contractor	Work Sites	Construction Stages	EIAO-TM, WPCO, ProPECC PN 1/94, TM-DSS

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		works areas is required during the construction phase of the Project, the monitoring should be carried out in accordance with the relevant WPCO licence which is under the ambit of regional office (RO) of EPD.					
S5.8	S4.4	<p><u>Accidental Spillage</u></p> <p>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.</p> <p>Any service shop and maintenance facilities should be located on hard standings within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control</p>	To minimise water quality impacts from construction site run-off and general construction activities	Contractor	Work Sites	Construction Stages	EIAO-TM, WPCO, WDO

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		<p>these discharges.</p> <p>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:</p> <ul style="list-style-type: none"> <li>• Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport.</li> <li>• Chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents.</li> <li>• Storage area should be selected at a safe location on site and adequate space should be allocated to the storage area.</li> </ul>					
S5.8	S4.4	<u>Sewage Effluent from Construction Workforce</u>	To minimise water quality impacts from	Contractor	Work Sites	Construction Stages	EIAO-TM, WPCO,

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		<p>The construction workforce on site will generate sewage. It is recommended to provide sufficient chemical toilets in the works areas. A licensed waste collector should be deployed to clean the chemical toilets on a regular basis.</p> <p>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 will provide an effective control of any malpractices and can encourage 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.</p>	<p>construction site run-off and general construction activities</p>				
S5.8	S4.4	<p><b>Operation Phase</b></p> <p>A surface water drainage system will be provided to collect road runoff. The following measures are recommended to ensure road</p>	<p>To minimise water quality impacts due to road run-off</p>	<p>Design &amp; Construction Phases: CEDD                      Operation Phase: DSD</p>	<p>Road D3A &amp; D4A</p>	<p>Design, Construction &amp; Operation Stages</p>	<p>EIAO-TM, WPCO</p>

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		<p>runoff will comply with the standards stipulated in the TM for discharges into storm water drains:</p> <ul style="list-style-type: none"> <li>• The road drainage should be directed through silt traps in the gully inlets to remove silt and grit before entering the public storm water drainage system; and</li> <li>• The silt traps should be regularly cleaned and maintained in good working condition.</li> </ul>					

**Table 9.4 Implementation Schedule for Waste Management Measures**

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve
S6.7	S5.2	<ul style="list-style-type: none"> <li>• Prepare a Waste Management Plan, which becomes a part of the Environmental Management Plan, in accordance with the requirements stipulated in ETWB TC(W) No. 19/2005, approved by the Engineer/Supervising Officer of the Project based on current practices on construction sites</li> <li>• Training of site personnel in site cleanliness, proper waste management and chemical waste handling procedures</li> <li>• Provision of sufficient waste disposal points and regular collection for waste</li> <li>• Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers</li> <li>• Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors</li> <li>• Separation of chemical wastes</li> </ul>	Good Site Practices and Waste Reduction Measures	Contractor	Work Sites	Construction Stages	Waste Disposal Ordinance (Cap. 354)  Waste Disposal (Chemical Waste) (General) Regulation  Land (Miscellaneous Provisions) Ordinance (Cap. 28)  ETWB TC(W) No. 19/2005



EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve
		for special handling and appropriate treatment					
S6.7	S5.2	<ul style="list-style-type: none"> <li>• Sorting of demolition debris and excavated materials from demolition works to recover reusable/recyclable portions</li> <li>• Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal.</li> <li>• Encourage collection of aluminium cans by providing separate labelled bins to enable this waste to be segregated from other general refuse generated by the work force.</li> <li>• Proper storage and site practices to minimise the potential for damage or contamination of construction materials.</li> <li>• Plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste.</li> <li>• Training should be provided to workers about the concepts of</li> </ul>	Good Site Practices and Waste Reduction Measures	Contractor	Work Sites	Construction Stages	Waste Disposal Ordinance (Cap. 354)  Waste Disposal (Chemical Waste) (General) Regulation  Land (Miscellaneous Provisions) Ordinance (Cap. 28)

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve
		site cleanliness and appropriate waste management procedures, including waste reduction, reuse and recycle.					

**Table 9.5 Implementation Schedule for Landscape and Visual Measures**

<b>EIA Ref.</b>	<b>EM&amp;A Ref.</b>	<b>Recommended Mitigation Measures</b>	<b>Objectives of the Recommended Measure &amp; Main Concerns to address</b>	<b>Who to implement the measure?</b>	<b>Location of the measure</b>	<b>When to implement the measure?</b>	<b>What requirements or standards for the measure to achieve</b>
S7.9	S6.5.1	<p>Construction Site Control</p> <p>CM1 - Minimized construction area and contractor's temporary works areas</p> <p>CM2- Control of night-time lighting and glare by hooding all lights</p> <p>CM3 - Erection of decorative mesh screens or construction hoardings around works areas in visually unobtrusive colours.</p> <p>CM4 - Reduction of construction period to practical minimum.</p> <p>CM5 - Limitation of / Ensuring no run-off into surrounding landscape and adjacent seawater areas</p> <p>CM6 - Temporary or advance landscape should be provided along the temporary access roads to the Cruise Terminal until such time as road D3 is open.</p>	Good site practices and to minimize landscape and visual impact	CEDD and its contractors	Work Sites	Construction Stages	EIAO-TM
S7.9	S6.5.1	Design and Construction of the Works, including Hard work and Soft work	To minimize landscape and visual impact	CEDD and its management and	Work Sites	Design Stage and Operation Stage	EIAO-TM

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve
		<p>OM1 - All above ground structures shall be sensitively designed with regard to the form, material and finishes and shall respond to the existing and planned urban context.</p> <p>OM2 - Streetscape elements shall be sensitively designed in a manner that responds to the existing and planned urban context.</p> <p>OM3 - Attractive soft landscape in areas adjoining any visible structures such as tall buffer screen tree/shrub/ climber planting, vertical greening and roof greening where appropriate should be incorporated so as to provide a visual softening and greening effect and soften hard engineering structures and facilities.</p> <p>OM4 - Structure, ornamental tree/shrub/climber planting should be provided along roadside amenity strips to enhance the townscape quality, where space is available.</p>		maintenance agents			

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve
		<p>OM5 - Appropriate design of street lighting to avoid glare and light pollution to surrounding areas.</p> <p>OM6 - Avoidance of excessive height and bulk of the associated landscaped deck to the central boulevard</p> <p>OM7 - Elegant engineering design, sensitive architectural and chromatic treatment and generous planting of the associated landscaped deck to the central boulevard. The form, color and surface detailing of these structures should be carefully considered to reduce their apparent height and bulk (visual weight).</p> <p>OM8 - Sensitive design of noise barriers &amp; enclosures with greening (screen planting/climbers/green roofs) and chromatic measures</p> <p>OM9 - Compensatory tree planting for felled trees</p>					

