

Annex F

## Implementation Schedule

## **F1**                    **IMPLEMENTATION SCHEDULE**

### **F1.1**                    **INTRODUCTION**

This *Annex* summarises all the mitigation measures recommended in the *EIA Study* and presents them in the form of an Implementation Schedule in accordance with the requirements of Section 3.4.7.3 of the *EIA Study Brief No. ESB-166/2007*.

The Implementation Schedule has the following column headings:

#### ***EIA Ref***

This denotes the section number or reference from the EIA Report Main text.

#### ***EM&A Ref***

This denotes the sequential number of each of the recommended mitigation measures specified in the Implementation Schedule.

#### ***Recommended Mitigation Measures***

This denotes the recommended mitigation measures, courses of action or subsequent deliverables that are to be adopted, undertaken or delivered to avoid, reduce or ameliorate predicted environmental impacts.

#### ***Objectives of the Recommended Measure and Main Concerns to be Addressed***

This denotes the objectives of the recommended mitigation measures and main concerns to address.

#### ***Location***

This indicates the spatial area in which the recommended mitigation measures are to be implemented together with details of the programming or timing of their implementation.

#### ***Who to Implement the Measure***

This denotes where the responsibility lies for the implementation of the recommended mitigation measures.

#### ***When to Implement the Measure***

This denotes the stage at which the recommended mitigation measures are to be implemented either during the Design, Construction or Operation phases.

#### ***What Requirements or Standards for the Measure to Achieve***

This defines the controlling legislation that is required to be complied with.

**Table F1.1a Implementation Schedule**

EIA Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measure & Main Concerns to address	Location of the Measures	Who to implement the measure?	When to implement the measure? <sup>(1)</sup>			What requirements or standards for the measure to achieve?
						D	C	O	
<i>Noise – Construction Phase</i>									
4.7.1	N1	<p>Adopt good site practice listed below:</p> <ul style="list-style-type: none"> <li>• Only well-maintained plant will be operated on-site and plant should be serviced regularly during the construction program;</li> <li>• Silencers or mufflers on construction equipment should be utilized and will be properly maintained during the construction program;</li> <li>• Mobile plant, if any, will be sited as far from NSRs as possible;</li> <li>• Machines and plant (such as trucks) that may be in intermittent use will be shut down between work periods or should be throttled down to a minimum;</li> <li>• Plant known to emit noise strongly in one direction will, wherever possible, be orientated so that the noise is directed away from the nearby NSRs; and</li> <li>• Material stockpiles and other structures will be effectively utilised, wherever practicable, in screening noise from on-site construction activities.</li> <li>• Noisy construction activities, including piling,</li> </ul>	To minimise potential construction noise nuisance.	All construction work areas	Contractor		✓		<i>Noise Control Ordinance (NCO) and EIAO-TM Annex 5</i>

(1) D=Design; C=Construction; and O=Operation

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						D	C	O	
		excavation and earth-breaking works, will be carried out outside the examination periods of Kwong Ming Ying Loi School.							
4.7.1	N2	Use of quiet powered mechanical equipment	To minimise potential construction noise nuisance.	All construction work areas	Contractor		✓		Noise Control Ordinance (NCO) and EIAO-TM Annex 5
4.7.1	N3	Use of acoustic enclosure	To minimise potential construction noise nuisance.	All construction work areas	Contractor		✓		Noise Control Ordinance (NCO) and EIAO-TM Annex 5
4.7.1	N4	Adoption of Movable Noise Barriers. The barrier material shall have a surface mass of not less than 7 kg/m <sup>2</sup> on skid footing.	To minimise potential construction noise nuisance.	At locations shown in Figure 4.7 of the EIA Report	Contractor		✓		Noise Control Ordinance (NCO) and EIAO-TM Annex 5
4.9.1	N5	Weekly noise monitoring	Ensure noise generated from the Project meets the criteria	At monitoring locations shown in Figure 4.1 of the EM&A Manual	ET		✓		Noise Control Ordinance (NCO) and EIAO-TM Annex 5
<b>Noise – Operation Phase</b>									
4.9.2	N6	Traffic noise monitoring – twice at 6-month intervals within the first year upon completion of the Project.	Ensure noise generated from the Project meets the criteria	At monitoring locations shown in Figure 4.1 of the EM&A Manual	ET			✓	Noise Control Ordinance (NCO) and EIAO-TM Annex 5
<b>Air Quality – Construction Phase</b>									
5.7.1	AQ1	Adopt good site practices and dust control measures	To minimise potential	All construction work	Contractor		✓		Air Pollution Control

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		<p>listed below:</p> <ul style="list-style-type: none"> <li>Any stockpile of dusty material will be covered entirely with impervious sheeting or sprayed with water so as to maintain the entire surface wet;</li> <li>Where a site boundary adjoins a road, or other area accessible to the public, hoarding shall be provided a long the entire length of that portion of the site boundary;</li> <li>All dusty materials will be sprayed with water immediately prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet;</li> <li>Where a vehicle leaving the works site is carrying a load of dusty materials, the load will be covered entirely with clean impervious sheeting to ensure that the dusty materials do not leak from the vehicles;</li> <li>The working area of any demolition, excavation or earth moving operation will be sprayed with water or dust suppression chemicals immediately after the operation so as to maintain the entire surface wet;</li> <li>The construction plants will be regularly maintained to avoid the emissions of black smoke; and</li> <li>The construction plants will be switched off when not in use to avoid gaseous emissions.</li> </ul>	dust nuisance	areas			<p><i>(Construction Dust) Regulations</i></p> <p><i>HKAQO and EIAO-TM Annex 4</i></p>
<i>Water Quality – Construction Phase</i>							

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						D	C	O	
6.6.1	WQ1	<u>Construction Site Run-off and Drainage</u>							
		<ul style="list-style-type: none"> <li>Silt removal facilities such as silt traps or sedimentation facilities should be provided to remove silt particles from runoff to meet the requirements of the WPCO-TM standard. The design of silt removal facilities should be based on the guidelines provided in <i>ProPECC PN 1/94</i>. All drainage facilities and erosion and sediment control structures should be inspected monthly and maintained to ensure proper and efficient operation at all times and particularly during rainstorms.</li> <li>Careful programming of the works to minimise surface excavations for the Project during the wet season. If excavation of soil cannot be avoided during the wet season, exposed slope surfaces should be covered by tarpaulin or other means. Other measures that need to be implemented before, during, and after rainstorms are summarised in <i>ProPECC PN 1/94</i>.</li> <li>Exposed soil surfaces should be protected by paving or fill material as soon as possible to reduce the potential of soil erosion.</li> <li>Open stockpiles of construction materials or construction wastes on-site of more than 50m<sup>3</sup> should be covered with tarpaulin or similar fabric during rainstorms. These materials should not be placed near water courses.</li> <li>A Drainage Management Plan (DMP) should be</li> </ul>	To minimise potential water quality impacts arising from the construction works	All construction work areas	Contractor		✓		<i>ProPECC PN 1/94</i> <i>Water Pollution Control Ordinance (WPCO)</i> <i>EIAO-TM Annex 6</i>

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						D	C	O	
		prepared by the Contractor and submitted to EPD before the commencement of any construction works to detail the procedures for control of construction site runoff. No site run-off or drainage should be allowed enter the nearby WSRs.							
6.6.1	WQ2	<u>General Construction Activities</u>							
		<ul style="list-style-type: none"> <li>Debris and refuse generated on-site should be collected, handled and disposed of properly to avoid entering the nearby WSRs. Stockpiles of cement and other construction materials should be kept covered when not being used.</li> <li>Oils and fuels should only be used and stored in designated areas which have pollution prevention facilities. All fuel tanks and storage areas should be provided with locks and be sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest container or 20% by volume of the chemical waste stored in that area, whichever is the greatest. The bund should be drained of rainwater after a rain event.</li> </ul>	To minimise potential water quality impacts arising from the construction works	All construction work areas	Contractor		✓		<i>ProPECC PN 1/94</i> <i>Water Pollution Control Ordinance (WPCO)</i> <i>EIAO-TM Annex 6</i>
6.6.1	WQ3	<u>Sewage generated from On-site Workforce</u>							
		<ul style="list-style-type: none"> <li>Temporary sanitary facilities, such as portable chemical toilets, should be employed on-site. A licensed contractor would be responsible for appropriate disposal and regular maintenance of these facilities.</li> </ul>	To minimise potential water quality impacts arising from the construction works	All construction work areas	Contractor		✓		<i>ProPECC PN 1/94</i> <i>Water Pollution Control Ordinance (WPCO)</i> <i>EIAO-TM Annex 6</i>
6.6.1	WQ4	<u>Piling Activities</u>							
			To minimise potential	All construction work					<i>ProPECC PN 1/94</i>



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						D	C	O	
		<ul style="list-style-type: none"> <li>Silt removal facilities such as silt traps or sedimentation facilities should be provided to remove silt particles from groundwater to meet the requirements of the WPCO-TM standard. The design of silt removal facilities should be based on the guidelines provided in ProPECC PN 1/94. All drainage facilities and erosion and sediment control structures should be inspected and maintained on a regular basis to ensure proper and efficient operation at all times and particularly during rainstorms.</li> </ul>	water quality impacts arising from the construction works	areas	Contractor		✓		<i>Water Pollution Control Ordinance (WPCO)</i>  <i>EIAO-TM Annex 6</i>
<b>Water Quality – Operation Phase</b>									
6.6.2	WQ5	Standard HyD road gullies will be installed along the road drainage system to trap any silt and grit in the first flush of runoff.	To minimise potential water quality impacts on surface water.	All construction work areas	HyD/ Contractor	✓	✓	✓	WPCO  <i>Technical Memorandum Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Inshore Waters (Water-TM)</i>  <i>EIAO-TM Annex 6</i>
<b>Waste Management – Construction Phase</b>									
7.5.1	WM1	All the necessary waste disposal permits are obtained prior to the commencement of construction work.	To ensure compliance with relevant statutory requirements	Before construction works commence	Contractor	✓	✓		WDO
7.5.1	WM2	<u>Management of Waste Disposal</u>  The construction contractor will open a billing account	To ensure that adverse	All construction work	Contractor		✓		WDO

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						D	C	O	
		<p>with the EPD. Every construction waste or public fill load to be transferred to the Government waste disposal facilities such as public fill reception facilities, sorting facilities, landfills will required a valid "chit" which contains the information of the account holder to facilitate waste transaction recording and billing to the waste producer. A trip-ticket system will also be established to monitor the disposal of construction waste at the Landfill and to control fly-tipping. The trip-ticket system will be included as one of the contractual requirements and implemented by the contractor.</p> <p>A recording system for the amount of waste generated, recycled and disposed of (including the disposal sites) will be established.</p>	environmental impacts are prevented	areas					<p><i>Waste Disposal (Charges for Disposal of Construction Waste) Regulation;</i></p> <p><i>Works Bureau Technical Circular No.31/2004; and</i></p> <p><i>Annex 5 and Annex 6 of Appendix G of ETWBTC No. 19/2005)</i></p>
7.5.1	WM3	<p align="center"><u>Measures for the Reduction of Construction Waste Generation</u></p>							
		Inert and non-inert construction waste will be segregated and stored in different containers or skips to facilitate reuse or recycling of the inert waste and proper disposal of the non-inert construction waste. Specific areas of the work site will be designated for such segregation and storage if immediate use is not practicable.	To reduce construction waste generation	All construction work areas	Contractor	✓			<p>WDO</p> <p><i>EIAO-TM Annex 7</i></p>
7.5.2	WM4	<p align="center"><u>Management of Waste Disposal</u></p>							
		The construction contractor will open a billing account with the EPD. Every construction waste or public fill load to be transferred to the Tuen Mun Area 38 Public Filling Area or other approved designated public fill	To reduce construction waste generation	All construction work areas	Contractor	✓			<p>WDO</p> <p><i>Waste Disposal (Charges for Disposal of Construction</i></p>

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						D	C	O	
		facilities will require a valid "chit".  A trip-ticket system will also be established to monitor the disposal of construction waste at the Tuen Mun Area 38 Public Filling Area or other approved designated public fill facilities, and to control fly-tipping.							<i>Waste) Regulation &amp; Works Bureau Technical Circular No.31/2004</i>
7.5.3	WM5	<u>Chemical Waste</u>  The construction contractor will register as a chemical waste producer with the EPD. Chemical waste will be handled in accordance with the <i>Code of Practice on the Packaging, Handling and Storage of Chemical Wastes</i> .	To ensure proper handling of chemical waste	All construction work areas	Contractor		✓		WDO  <i>Code of Practice on the Packaging, Handling and Storage of Chemical Wastes</i>
7.5.4	WM6	<u>Staff Training</u>  At the commencement of the construction works, training will be provided to workers on the concepts of site cleanliness and on appropriate waste management procedures, including waste reduction, reuse and recycling.	To ensure that adverse environmental impacts are prevented	All construction work areas	ET		✓		-
7.8	WM7	<u>Environmental Monitoring &amp; Audit Requirements</u>  Monthly audits of the waste management practices will be carried out during the construction phase to determine if wastes are being managed in accordance with the good site practices described in this <i>EIA Report</i> . The audits examine all aspects of waste management including waste generation, storage, recycling, transport and disposal.	To ensure that adverse environmental impacts are prevented	All construction work areas	Contractor		✓		WDO

**Landscape and Visual – Construction Phase**

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						D	C	O	
8.7.11	LV1	<i>LMM 5 – Early Planting Works.</i> Where technically feasible, new plantings are to be installed as early as possible during the construction works.	To reduce construction impacts on Landscape	Where technically feasible	Contractor	✓	✓		<i>EIAO-TM Annexes 10, 18, ETWB TCW 2/2004, ETWB TCW 3/2006</i>
8.7.11	LV2	<i>LMM 6 – Site hoardings to be compatible with the surrounding environment.</i> Where possible site hoardings to be coloured to complement the surrounding areas. Colours such as green and light brown are recommended.	To reduce construction impacts on Landscape	All construction work areas	Contractor		✓		<i>EIAO-TM Annexes 10, 18, ETWB TCW 2/2004, ETWB TCW 3/2006</i>
<b><i>Landscape and Visual –Operation Phase</i></b>									
8.7.11	LV3	<i>Cultivation of areas compacted during construction.</i> Areas compacted during the construction phase that are not required during the operation phase, are to be cultivated to a depth of up to 300mm in accordance with the future Landscape Specification.	To assist in establishment of vegetation to reduce landscape impacts	All construction work areas where new plantings are to be installed	Contractor/ HyD	✓	✓	✓	<i>EIAO-TM Annexes 10, 18, ETWB TCW 2/2004, ETWB TCW 3/2006</i>
8.7.11	LV4	<i>Soil stabilisation and planting.</i> During the design phase, a soil stabilisation and embankment planting strategy will be developed to ensure that land affected by slope excavation can be replanted. Soil preparation and the selection and provision of suitable growing medium is to be completed in accordance with the relevant best practice guidelines.	To reduce landscape impacts	All construction work areas in slope areas	Contractor/ HyD	✓	✓	✓	<i>EIAO-TM Annexes 10, 18, ETWB TCW 2/2004, ETWB TCW 3/2006</i>
8.7.11	LV5	<i>Tree and Shrub Planting.</i> All planting of trees and shrubs is to be carried out in accordance with the relevant best practice guidelines. Plant densities are to be provided in future detailed design documents and are to be selected so as to achieve a finished landscape that matches the surrounding, undisturbed, equivalent landscape types.	To reduce landscape impacts	All available following construction	Contractor/ HyD	✓	✓	✓	<i>EIAO-TM Annexes 10, 18, ETWB TCW 2/2004, ETWB TCW 3/2006</i>

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						D	C	O	
8.7.11	LV6	<i>LMM 4 - Relocation.</i> Landscape Resources of value to be re-located where practically feasible.	To reduce landscape impacts and retain valuable LRs	As required	Contractor/ HyD	✓	✓	✓	<i>EIAO-TM Annexes 10, 18, ETWB TCW 2/2004, ETWB TCW 3/2006</i>
8.8.9	LV7	<i>Design of Structures.</i> Built structures, in particular noise barriers that will be setback and reprovisioned will be utilise appropriate designs to complement the surrounding landscape. Materials and finishes will also be considered during detailed design.	To reduce visual impacts	Noise barriers	Contractor/ HyD	✓	✓	✓	<i>EIAO-TM Annexes 10, 18, ETWB TCW 2/2004, ETWB TCW 3/2006</i>
8.8.9	LV8	<i>Design of noise barriers.</i> The 2.5m high vertical noise barrier for the planned schools will be in the form of concrete structure installed with barrier panels to align with the existing provision in the vicinity and to integrate into the landscape.	To reduce visual impacts	Noise barriers	Contractor/ HyD	✓	✓	✓	<i>EIAO-TM Annexes 10, 18, ETWB TCW 2/2004, ETWB TCW 3/2006</i>
8.8.9	LV9	<i>Plantings</i> In addition to the landscape mitigation plantings proposed, appropriate new plantings will be installed as appropriate to help integrate the new structures into the surrounding landscape.	To reduce visual impacts	All construction work areas	Contractor/ HyD	✓	✓	✓	<i>EIAO-TM Annexes 10, 18, ETWB TCW 2/2004, ETWB TCW 3/2006</i>