

Appendix A

Implementation Schedule for Recommended Mitigation Measures

Table 12.1 Implementation Schedule for Recommended Mitigation Measures

EIA* Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to Address	Location of the Measure	Who to Implement the Measure?	When to Implement the Measure?	What Requirements or Standards for the Measure to Achieve?
S2.6	S2	Air Quality and Dust Mitigation Measures					<i>APCO (Cap. 311); Air Pollution Control (Construction Dust) Regulation; ELAO-TM</i>
		<u>During Land Resumption Stage</u> Land resumption of existing air sensitive receivers within the works limit of the DBL project.	To ensure that the affected existing air sensitive receivers within the works limit of the DBL project will be resumed.	Within works limit of DBL	HyD	Construction Phase	
		<u>During Construction Phase</u> Relevant dust control requirements set out in Parts I, III and IV of Schedule 1 of the Air Pollution Control (Construction Dust) Regulation should be met. The Contractor is required to adopt dust reduction measures while carrying out construction works. Reference is made to the Section 2.7 of the EIA Report.	To ensure that dust emission is minimised during the construction phase of the road works	All Construction Sites	HyD	Construction Phase	
S3.5.1	S3	Construction Noise Mitigation Measures					<i>NCO (Cap. 400); ELAO (Cap. 499); ELAO-TM; PP-TM; GW-TM; DA-TM</i>
		The following construction phase mitigation measures should be considered and adopted during construction phase by the Contractor: <ul style="list-style-type: none"> • Using Quiet Plant and Working Methods • Using Temporary and Movable Noise Barriers • Reducing the Numbers of Plants Operating in Critical Areas Close to NSRs • Using Noise Screening Structures or Purpose-built Noise Barriers along the Site Boundary • Adopting Good Site Practice For details, please refer to Section 3.5.1 of the EIA Report.	To reduce construction noise impact	All Construction Sites	HyD	Construction Phase	

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		<p><u>Special Measures to be Carried Out</u> To minimize the potential of adverse impact, the following measures are specifically recommended to be adopted for DBL:</p> <p>i) Purpose-built construction site hoardings are to be installed in such a way to act as an acoustic screen/noise barrier for active carriageway construction work proximity to NSRs in locations shown in Figure 3.20(A, B).</p> <p>The boundary wall or hoarding shall:</p> <ul style="list-style-type: none"> • have a mass per unit of surface area in excess of 7 kg/m² to prevent sound transmitted through the wall/screen; • have no gaps or openings at joints in the screen material; and • have a vertical height of 3m or higher to screen the NSRs. <p>Temporary noise barriers should be placed close to the noisy mechanical equipment in case the purpose-built site hoarding could not effectively screen the NSRs.</p> <p>ii) Quiet plant/power mechanical equipment of sound power level lowered than those listed in Table 3 of the GW-TM shall be used for all construction sites as far as possible.</p>	To protect affected NSRs from construction noise impacts	All Construction Sites	HyD	Construction Phase	
		<p><u>Specific Measures at NSRs</u></p> <p>In dealing with the construction noise at the four critical NSRs (E8, E13, E4 and E12), the mitigation measures as outlined in the Table 3.12 of the EIA report should be followed. The contractor is required to submit a construction noise mitigation proposal in consultant with the Environmental Team for Independent Environmental Checker and EPD's approval.</p> <p>The Contractor shall also liaise with the NSR E4 Lam Tei Gospel School for proper arrangement of construction work during examination periods and non-school dates.</p>	To protect critical NSRs	Near NSRs (E8, E13, E4 and E12)	HyD	Construction Phase	

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		<u>**The above measures are to be followed and complied in the area at Ngau Hom Shek entrusted to SWC Project. Particular attention is drawn to the purpose-built site hoarding in Figure 3.20A and the requirement for quiet plant.</u>		Area at Ngau Hom Shek entrusted to SWC Project	HyD & HyD(SWC)	Construction Phase	
S3.5.2	S3	Operation Noise Mitigation Measures					<i>EIAO-TM</i>
		Details of proposed noise barriers can be referred to Figure 3.2 and are summarized as Table 3.13 of the EIA Report. These noise barriers shall be designed and constructed to comply with the <i>Guidelines On Design of Noise Barriers - Environmental Protection Department & Highways Department of the Hong Kong SAR, First Issue March, 2001</i> . The setup for typical type of proposed noise barriers is given in <i>Figures 10.6.3.6 & 10.6.3.7</i> .	To protect against road traffic noise impact on various existing and future sensitive receivers in HSKNDA areas.	Alignment of DBL	HyD	Design Phase and Operation Phase	
S3.5.2	S3	Future Traffic Noise Mitigation Measures for Yuen Long Highway Dual-4 Widening Project					<i>EIAO-TM</i>
		For the future Yuen Long Highway Widening Project, the project shall consider and investigate for the proposed noise barriers as given in Table 3.14 "Summary of Additional Noise Barriers Likely Required for Dual-4 Configuration of YLH (assumed dual-4-lanes)" Mitigation measure at source <i>listed out in S3.5.2.9 to S3.5.2.13</i> is to be investigated and provided to protect HSKNDA Area 3C NSRs.	To protect NSRs against the road traffic noise from future dual-4 widening of YLH	Yuen Long Highway	HyD (DBL project and YLH widening dual-4 project)	EIA stage for YLH Dual-4 Widening	
S3.5.3	S3	Measures for Consideration by HSKNDA Project					<i>EIAO-TM</i>
		HSKNDA Project Team to consider measures list out in S3.5.3 together with the Table 3.15 "Summary of Noise Barriers to be Considered by Future HSKNDA Project" and Table 3.19 "Summary of Mitigation Measures and Constraints for HSKNDA"	To protect future NSRs in HSKNDA against cumulative noise impacts with the planned roads of HSKNDA	Within planned roads of HSKNDA	TDD & PlanD		

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S4.5	S4	Construction Water Mitigation Measures					<i>WPCO (Cap. 358); EIAO-TM; ProPECC Note PN1/94</i>
		<p>Local Stream Courses, Pipeworks and Drains</p> <ul style="list-style-type: none"> • Supporting columns and piers for the elevated sections of the DBL should be located away from existing stream courses as far as possible. • In the sections where the proposed road alignment intersects with the local stream courses, re-alignment or diversion of the local stream courses would be required. • Box culverts and diversion channels should be constructed to divert the stream flows downstream. • The design of the diverted sections of the stream courses should minimise loss of flow section and avoid generating unstable flow conditions. • The construction period for re-alignment or diversion of stream courses should be shortened as far as possible through a better co-ordination with the other DBL construction activities so as to minimise the potential water quality during the construction of box culverts or diversion channels. • The contract documents should clearly specify the responsibilities of the Contractor to ensure that runoff from the works area should pass through silt traps and suitable sedimentation facilities prior to discharging into stream courses. • A construction site drainage layout and management plan should be developed by the Contractor to detail the procedures for control of construction site runoff. • The capacity of existing pipes, which would be affected by the DBL project due to the increased runoff from DBL, should be increased. • Upsizing of the existing pipes should be undertaken to increase the capacity of the affected pipes. 	To mitigate the impact of construction and wastewater to local stream courses, pipeworks and drains.	All DBL Construction Sites	HyD	Design and construction phase	
		<p>Excavation and Filling</p> <ul style="list-style-type: none"> • The site management should apply for a discharge licence from EPD for discharge of effluent. • The quality of the discharged effluent in terms of pH, 	To minimise water quality impacts arising from excavation and filling activities	All construction sites	HyD	Construction phase	

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		<p>suspended solids, chemical oxygen demand and other parameters as required should comply with the licence conditions.</p> <ul style="list-style-type: none"> • The Contractor should develop a construction site drainage layout and management plan with the consideration of the mitigation measures recommended in the <i>ProPECC PNI/94</i>. <p>Recommendations on mitigation measures are:</p> <ul style="list-style-type: none"> • In areas where excavation and filling are carried out, it is recommended to build temporary earth bunds or use sand bags to confine the runoff or wastewater generated from the construction activities. • Excavation works should be minimised in rainy season. • Open stockpiles of construction materials and dusty materials should be covered with tarpaulins during rainstorms. These materials should not be placed near the stream courses. • To minimise the release of soil particles into the local stream courses during rainstorms, digging of trenches and holes should be carried out in short sections. After finishing a section of works, trenches and holes should be immediately back-filled to minimise the inflow of rainwater during rainstorms. • To prevent storm runoff from washing across exposed soil surface, intercepting channels should be provided. • Haul roads should be paved with concrete and temporary access roads should be protected using crushed stone or gravel. The exposed slope surfaces should be lined or hydroseeded. • The reduction in flood storage capacity and changes in flow regimes should be regulated by provision of flow detention systems and suitable drainage arrangement. • The stream course, which traverses the Hung Shui Kiu New Development Area, would need improvement and the use of a detention tank is the preferred option based on the Drainage Impact Assessment • Drainage systems should be provided on site to collect all the contaminated runoff. • Installation of sediment basin/trap and/or oil/grit separator 					

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		is recommended to reduce the pollution levels of contaminated runoff.					
		<p>Construction of Foundation and Road Sections</p> <ul style="list-style-type: none"> • Recommendations on water quality impact mitigation measures outlined in <i>ProPECC PNI/94 – Construction Site Drainage</i> should be adopted. • The wastewater generated from bored pile foundation construction and related activities should be collected and recycled. • **Recommended mitigation measures against release of muddy wastewater from bored piling sites located approximately 15m to the northwest of Deep Bay Road into Deep Bay mudflat are: <ul style="list-style-type: none"> • a row of interlocking sheetpiles should be installed to essentially fence off the area from the nearby stream course; and • a wastewater treatment system comprising of chemical coagulation, sedimentation and pH control processes should be installed on site to treat the wastewater generated from the bored piling works. • **The above proposed mitigation measures should be included in the contract and reflected in the tender drawings. • **The Contractor should submit a construction site drainage layout and management plan prior to the commencement of the DBL construction works. • The treated effluent could be used for vehicle washing, dust suppression and general cleaning. • Bentonite slurries used in bore-pile or diaphragm wall construction should be reconditioned and reused wherever practicable to minimise the volume of used bentonite slurries to be disposed of. • A licensed waste collector should be deployed for collection and disposal of the used bentonite slurries. • Adequate surface channels should be constructed along the site boundaries to avoid release of surface and storm runoffs out of the sites. • The channel system to collect the runoffs in the 	To minimise impacts to Deep Bay waters and mudflat arising from foundation and road section construction	Construction sites and at bored piling sites located approx. 15m to the northwest of Deep Bay Road	HyD	Tender and construction phase	

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		<p>construction sites should be well designed prior to the commencement of the site formation works.</p> <ul style="list-style-type: none"> • Provision of drains at the lowest points of the sites could effectively collect the runoff. • Silt and sand traps, which remove large soil particles in the runoffs, should be provided in the channels. • Regular maintenance and cleaning of the channels would ensure that the channel system is in good conditions and is not obstructed by sediments. • Provision of oil/grit separator in the channel system is recommended to reduce the pollution levels of the potentially contaminated runoff. • Vehicle wheel washing facilities should be provided at all site exits to avoid the escape of soil and dirt from the construction sites. • The wastewater generated from the vehicle wheel washing facilities should be recycled wherever practicable. • Excess wastewater should be transferred to a suitable wastewater treatment system for removal of suspended solids. • It is recommended to pre-treat the wastewater generated from washing of concrete lorry mixers by discharging into a sedimentation pit, which provides a quiescent environment for the concrete particles to settle and consolidate. The upper layer water in the sedimentation pit with low concentrations of concrete particles should be further treated to the standards acceptable for final discharge. The concrete wastes deposited on the bottom of the pit should be removed regularly. • Covers should be provided to the newly constructed manholes to prevent any kinds of wastewater from entering into the drainage systems during the construction phase. • The pipes connected to the manholes need to be temporarily sealed to avoid debris and construction materials get into the drainage systems. • The site runoffs and wastewater generated from various construction activities should be treated. The wastewater treatment system for treating wastewater generated from bored piling works would be able to handle these types of 					

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		wastewater.					
		<p>On Site Sewage Generation</p> <ul style="list-style-type: none"> • Chemical toilets should be provided on site for collection and temporary storage of sewage. Alternatively, sewage tank should be provided. • The collected sewage should be tankered away by a licensed waste collector for off-site disposal at sewage treatment plants. • Mitigation of water quality impacts could be achieved through Best Management Practices (BMPs). • A detailed planning and sensible scheduling of construction works would minimise most of the impacts. • Elements of BMPs should include: 	To avoid water pollution due to sewage generated from workforce	All construction sites	HyD	Construction phase	
		<p>Clean Site Policy</p> <ul style="list-style-type: none"> • A clean site policy should be initiated from the top management and be implemented at all levels of the management and working teams. • The policy statement needs to be periodically reviewed and assessed for effectiveness. • Information related to the government's environmental protection regulations and guidelines should be provided to the site management for improving the environmental awareness of the site staff. • Mitigation measures to prevent water quality impacts could be included in the tender documents. • Any appointed sub-contractors are aware of their responsibilities in preventing water pollution when they bid for the project and carry out the construction works. 	To minimise water quality impacts through implementation of clean site policy	All construction sites	HyD	Construction phase	
		<p>Design and Planning</p> <p>The following items should be focused on:</p> <ul style="list-style-type: none"> • Site planning appropriate to site conditions • Re-alignment of the existing streams • Minimisation of storm water runoff • Adequacy of storm drain and grit/sand removal facilities • Measures to deal with generation of sewage 	To minimise water quality impacts through a good design and planning of the project	All construction sites	HyD	Design and planning	

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		<ul style="list-style-type: none"> Treatment facilities to handle site discharges 					
		<p>Environmental Team and Site Management</p> <ul style="list-style-type: none"> Formation of a site environmental team to ensure the proper implementation of mitigation measures to deal with the potential water pollution associated with the construction activities. The team to respond immediately to the water pollution issues happened on site; to identify any unforeseen issues; and to take remedial actions without delay. Implementation of the control measures outlined in <i>ProPECC Note PN1/94 on Construction Site Drainage</i>, where appropriate. The team members to carry out routine inspection and provide feedback to the site management forming a framework of continual improvement of the water quality protection work. Regular meetings with all the working parties to review the environmental performances of each individual party. Relevant environmental protection regulations and practical guidelines to be delivered and explained to the working parties in the meetings. 	To monitor performance of water pollution control	All construction sites	HyD	Construction phase	
		<p>Good Housekeeping</p> <p>The following areas need to be implemented to achieve good housekeeping on site:</p> <ul style="list-style-type: none"> Provision of designated areas for storage of raw materials, chemicals and toxic substances Control and keeping records of raw materials, chemicals and toxic substances being delivered to and out of the construction sites Provision of control areas for equipment maintenance and repair Provision of adequate sewage collection facilities at convenient locations Registration as a "Chemical Waste Producer" if necessary and provision of proper storage, labelling and disposal of chemical wastes generated from the construction activities Collection of site debris and solid wastes on a regular basis 	To minimise water quality impacts through good housekeeping	All construction sites	HyD	Construction phase	

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		<ul style="list-style-type: none"> • Notification to all working parties of no illegal disposal of wastewater and chemical wastes • Minimisation of the volume of wastewater generated from dust suppression activities and unattended water faucets • Provision of treatment facilities including sediment removal facilities and oil/grit separator to control site discharges to the standards in compliance with the requirements specified in the discharge licence 					
		<p>Monitoring and Audit</p> <ul style="list-style-type: none"> • Monitoring of the discharged effluent quality at the final discharge points during the construction phase should be undertaken to ensure that the effluent quality is in compliance with the discharge licence requirements. • **Under the SWC project, a works area would be demarcated at the immediate north of the interface between DBL and SWC along Deep Bay Road. Construction site runoff and wastewater generated in the works area and from the DBL section at Ngau Hom Shek should be collected and treated in the works area prior to discharging into the Deep Bay waters. Effluent quality at the discharge point in the works area should be monitored under the SWC project to ensure the compliance with discharge licence requirements. • **The SWC monitoring stations (W1, W2, W11 and W12) in the inter-tidal area near Ngau Hom Shek should be used to monitor the potential water quality impacts arising from both the SWC and DBL construction activities in the works area and the DBL section near Ngau Hom Shek. • The parameters to be monitored at the discharge point and monitoring frequency should meet the requirements specified in the discharge licence. • The ET and site management should be responsible for monitoring the quality of effluent discharged from the construction sites and be response to the any non-compliance of effluent discharge. • The pollution sources need to be identified and the effectiveness of mitigation measures should be reviewed to avoid the reoccurrence of the non-compliance. 	To minimise water quality impacts through monitoring and audit	All construction sites and works area near Ngau Hom Shek	HyD	Construction phase	

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		<ul style="list-style-type: none"> When non-compliance of the effluent quality is detected, the ET should inform the site management and identify the sources of pollutants and causes of non-compliance. Remedial actions are required to ensure that the recommended mitigation measures are fully implemented and the non-compliance is suitably rectified. 					
S4.5	S4	Water Pollution Mitigation Measures Under Operation					<i>WPCO (Cap. 358); EIAO-TM;</i>
		<i>Storm Runoff from Road Sections</i> <ul style="list-style-type: none"> At the planning and design stages, the highway drainage systems should be properly planned to receive storm runoff from the DBL highway. <u>**Vacuum air sweepers/trucks should be deployed to remove the pollutants deposited on the end section of the DBL alignment at Ngau Hom Shek twice a week.</u> **The cleaning path of the vacuum air sweeper should mainly cover the region about 1 to 2 m from the road kerb. **The cleaning operation is more suitable to be carried out in the period with low traffic flow. **Standard HyD road gullies with silt traps should be installed in the road drainage systems to intercept and enable removal of the residual grit, particulate matter and pollutants in road runoff. **Regular cleaning of rubbish and sediment from the drainage systems following the normal highway maintenance practices is required to maintain the normal operation of the systems at all times. Oil and grease interceptors would be incorporated as part of drainage system in areas where vehicles may be parked, i.e. vehicle recovery and weighting station. 	To minimise water quality impacts from road runoff	End section of the DBL alignment near Ngau Hom Shek	HyD	Operation phase	
		<i>**Road Runoff from SWC Bridge</i> <ul style="list-style-type: none"> A road drainage system should be provided to collect road runoff from the road surface of the SWC bridge. The collected road runoff would either be discharged into the Deep Bay waters or be released to the mudflat depending on the location of the drainage pipe. 	To collect runoff from the SWC bridge	SWC alignment	HyD (SWC)	Design and operation phase	

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		<ul style="list-style-type: none"> Carry out bridge runoff monitoring to confirm the effectiveness of the cleaning frequency to remove vehicle-generated pollutants from the bridge 	To determine the effectiveness of the mitigation measure	SWC alignment	HyD (SWC)	Operation phase	
		<ul style="list-style-type: none"> Standard HyD road gullies incorporate silt traps that collect sediment should be provided on SWC bridge 	To collect road runoff	SWC alignment	HyD (SWC)	Design phase	
		<ul style="list-style-type: none"> SWC maintenance authority (HyD) should undertake regular cleaning of road by suction truck for removal of grits and pollutants twice a week. Each of the cleaning events should not be separated by more than four days. The removed pollutants should be tankered away for off site disposal at landfill sites. 	To prevent build-up of the pollutant load on the road surface and to prevent the pollutants from entering the Deep Bay waters and to Deep Bay mudflat	SWC alignment	HyD (SWC)	Operation phase	
		<p>**Accidental Spillage of Chemicals During Accidents An emergency response plan should be prepared.</p>	To prevent water pollution from accidental spillage of chemicals during accidents	DBL alignment	HyD and HyD (SWC)	Design and Operation phase	
S5.5	S5	**Construction Waste Management Measures		At all construction sites	HyD	Design and Construction phase	<p><i>EIAO-TM; WDO, Waste Disposal (Chemical Waste)(General) Regulation (Cap 354); Land (Miscellaneous Provision) Ordinance (Cap. 28); Public Health and Municipal Services Ordinance (Cap. 132); Dumping at Sea Ordinance; PELB's Waste Reduction Framework Plan (1998-2007); HKPSG; New Disposal Arrangements for Construction Waste; Code of Practice on the Packaging; Works Branch Technical</i></p>

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							<i>Circular No. 6/92, No. 22/92, No. 2/93, No. 2/93B, No. 16/96, No.4/98, No.4/98A, No. 5/98, No. 5/99, No. 5/99A, No.19/99, No.5/99, No. 25/99A, No.25/99C, No. 3/00 & No. 12/00; ProPECC PN 1/94; EPD-TC No. 1-1-92</i>
		<p>The Contractor should incorporate the recommendations in the EIA Report into a comprehensive on-site waste management plan. Such a management plan should incorporate site specific factors such as the designation of areas for the segregation and temporary storage of reusable and recyclable materials.</p> <p>Training and instruction of construction staff should be given at the site to increase awareness and draw attention to waste management issues and the need to minimise waste generation. The training requirement should be included in the site waste management plan.</p>	To ensure proper waste management	All construction sites	HyD	Construction Phase	
		<p>Waste management, control and mitigation measures shall be adopted for:</p> <ul style="list-style-type: none"> • Storage, Collection and Transport of Waste • Handling of Excavated/Fill Material • Handling of C&D Waste • Handling of Chemical Waste • Handling of General Refuse <p>as recommended in Section 5.5.3 of the EIA Report</p>	To ensure proper waste management	All construction sites	HyD	Construction Phase	
		<p>Handling of Surplus and Deficient Fill Materials Other potential demands or of fill for each year during the period works shall be check against and identified in the Public Fill Committee (PFC) database of Annual Fill and Surpluses. Given the changing nature of the database and the resource requirements of other concurrent projects, the sources of demand for fill at the actual time of construction should be established</p>	To identify the best ways to handle surplus or deficient fill materials	All construction sites	HyD	Design and Construction Phases	

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		during detailed design in consultation with the PFC.					
S6.4, 6.5, 6.6	S6	Land Contamination Mitigation Measures					<i>EIAO-TM; ProPECC PN 3/94; EPD's 1999 Guidance Notes for Investigation and Remediation of Contaminated Sites of: Petrol Filling Stations; Boatyards, and Car Repair/Dismantling Workshops (Guidance Notes)</i>
		<p>Considering the rapid changing of landuses in the areas, the CAP should be updated with reference to concurrent site conditions. It shall be necessary to carry out a site appraisal to review the findings of the EIA, including the number and location of sampling points and testing parameters. Such revised CAP should be submitted to EPD for approval before the actual sampling works begin. This should be included in the finalised CAP in agreement with EPD. Upon receipt of the EPD's approval, the CAP shall be implemented and the findings of the investigations shall be reported in the Contamination Assessment Report (CAR).</p> <p>If land contamination is confirmed, a Remediation Assessment Plan (RAP) shall be prepared, and both the CAR and the RAP shall be submitted as a combined report to the EPD for approval prior to the implementation of any remedial technology. If applicable and required in consultation with the EPD, the contaminated site shall be remediated in accordance with the approved CAR/RAP.</p> <p>Implementation of the RAP can begin once the CAR and RAP submissions are approved by the EPD.</p> <p>The CAP together with the sampling and testing work should be planned to start after the land is available to DBL through early negotiations or resumption and the subsequent CAR and RAP</p>	To review the findings of EIA and formulate CAP and CAR to assess the land contamination	At identified sites: Areas C1, C3, D, F, G, J, L M, B and K as in Section 6.4 of the EIA Report	HyD	After land resumption and during Construction Phase	

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		should be approved by the EPD before commencement of any construction work which may disturb the ground of the concerned sites. Contaminated soil should be remediated before construction work could be started on the concerned sites.					
		<u>During Construction Phase</u> Standard good practice shall be implemented during the construction phase to minimise any potential exposure to contaminated soil or groundwater. These measures are outlined in Section 6.5.1 of the EIA Report.	To minimize exposure to contaminated soil and groundwater during construction phase	Identified contaminated sites in the CAR	HyD	Construction Phase	
S7.5 S8.3	S7	Mitigation Measures on Ecological Impacts					<i>EIAO (Cap. 499); EIAO-TM; Wild Animals Protection Ordinance (Cap. 170); Forests and Countryside Ordinance (Cap.96); Marine Parks Ordinance (Cap. 476); The Animals and Plants (Protection of Endangered Species) Ordinance (Cap. 187); PELB's Technical Circular 1/97; CITES; Ramsar Convention; Bonn Convention; Convention on Biological Diversity</i>
		<u>**Recommended mitigation measures should be implemented as shown in Table 7.32. Proposed Mitigation for Ecological Impacts. These measures are specified for construction phase and operation phase.</u>	Mitigation for ecological impacts	At all DBL Facilities	HyD	Construction and Operation Phase	
		<u>**A compensatory wetland is proposed to compensate for the habitat loss as given in Table 7.33. Details of proposed DBL wetland compensation area.</u>	Compensate for habitat loss	Ngau Hom Shek	Design & Construction by HyD and maintained	Design & Construction & Operation Phase	

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		<u>A Habitat Creation and Management Plan should be prepared for the approval by AFCD.</u>			by AFCD		
S9.5	S8	Mitigation Measures on Cultural Heritage Impacts					<i>EIAO (Cap. 499); EIAO-TM; A&MO</i>
		<p><i>The Chung Shan Cemetery (Permitted Burial Ground No. 22)</i> The entire cemetery and each grave in the cemetery shall be recorded in details to the satisfaction of AMO of LCSD. The form of the recording should include written text, photographs, basic measurements and location plans. The content of the recording should include:</p> <ul style="list-style-type: none"> • The scale and distribution of the cemetery as well as the arrangement and grouping of the graves; • The types and structures of the graves; and • The hosts of the graves and the content of gravestone inscriptions; <p>The recording of the graves should be undertaken by a qualified archaeologist and the results submitted to the AMO for study and record before the commencement of grave relocation.</p>	Record the affected Chun Shan Cemetery	Burial Ground No. 22 affected by DBL	HyD	Before construction of the Burial Ground No.22	
		<p><u>**The Ngau Hom Shek Beach Site with Archaeological Significance</u></p> <ul style="list-style-type: none"> • <u>The western part of the Ngau Hom Shek Beach Site is located within the range of direct impact of DBL and the landing point of SWC. A rescue excavation therefore should be carried out in the project area with earthworks and building works in this area by the project proponent. The remaining part of the site would not be directly affected by the construction but it should be protected from potential indirect impact with a layer of soil (30 cm minimum) covered on the top.</u> • <u>The total size of the rescue excavation at the Ngau Hom Shek Beach Site is tentatively estimated 100 square metres (pending the specific design of earthwork and building works). The average depth of cultural deposit is around 1.5 metres according to the result of augering</u> 	Archaeological Survey and Salvage Excavation	Ngau Hom Shek Beach Site	HyD (SWC)	Before construction of the site	

EIA* Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to Address	Location of the Measure	Who to Implement the Measure?	When to Implement the Measure?	What Requirements or Standards for the Measure to Achieve?
		<p><u>on the site.</u></p> <ul style="list-style-type: none"> <u>The coastal area at Ngau Hom Shek to the immediate west to the DBL alignment was not accessible for archaeological survey at the EIA stage but the possibility of identifying significant archaeological remains cannot be completely excluded, although the archaeological potential of this area is low. It is recommended therefore to conduct a further archaeological survey and, if necessary, to carry out a rescue excavation in the project area with earthworks and building works by the project proponent after land resumption and before the commencement of construction works. The areas where archaeological survey, rescue excavation and protection from indirect impact are required in coastal Ngau Hom Shek are indicated by Figure 9.31 of EIA Report.</u> <u>The archaeological survey and excavation should be conducted by a qualified archaeologist who should apply for a Licence under the provision of the A&MO (Cap.53). The entire process of licence approval takes minimum two months after submitting the application. The programme and details of the archaeological works should be agreed with the AMO.</u> 					
		<p><i>The Ngau Hom Shek Hill Site with Archaeological Significance</i></p> <ul style="list-style-type: none"> The Ngau Hom Shek Hill Site of the prehistoric period is located slightly outside and above the impact zone of the proposed DBL (Figure 9.22 of the EIA Report), the construction therefore will not cause direct adverse impact to this site. It should be emphasized, however, the site area should be protected from indirect impact potentially caused by the construction and facilities and activities related to the construction should be kept away from this site during the entire process of construction. 	Protect Ngau Hom Shek Hill Site	Ngau Hom Shek Hill Site	HyD	During Construction Phase	
		<p><i>The Lam Tei Site with Archaeological Significance</i></p> <p>The size of the Lam Tei Site is around 3,200 square metres and the site is entirely located within the impact zone of the DBL</p>	Salvage Excavation	Lam Tei Site	HyD	Before construction of the site	

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		<p>alignment (Figure 9.32 – 2). A rescue excavation therefore should be carried out in the project area with earthworks and building works in this area by the project proponent before the commencement of the DBL project.</p> <p>It is recommended to allocate 20 small test pits of 2 m x 2 m first in the excavation to locate the central area of the site with concentrated structural features. The initial test pits with important findings will then be expanded. The total size of salvage excavation is estimated 200 square metres and fieldwork will be completed within two months.</p>					
		<p><i>The Tsing Chuen Wai Site with Archaeological Significance</i></p> <ul style="list-style-type: none"> The central area with concentrated deposit of tiles of the Tsing Chuen Wai Site of the Ming dynasty is around 4,800 square metres in size and this area is entirely located within the impact zone of the DBL alignment (Figure 9.32 – 1 of the EIA Report). A rescue excavation therefore should be carried out in the project area with earthworks and building works in this area by the project proponent before the construction of the site. It is recommended to allocate three long test trenches along the traces of tiles on the tiers of the low terrace, with a size of 30 m x 3m, 20 m x 3m and 10 x 3 m, respectively. Besides, additional four square test pits of 5 m x 5 m will be allocated in other parts of the site. The total size of rescue excavation at this site is 280 square metres and the fieldwork is estimated taking two and half months. 	Salvage Excavation	Tsing Chuen Wai Site	HyD	Before construction of the site	
S10.5.2	S9	Mitigation Measures on Visual and Landscape Impacts					<p><i>EIAO (Cap.499.S.16); EIAO- TM; HKPSG; PELB-TC No. 3/94; WBTC No. 14/2002, no. 7/2002, 25/93, NO. 17/2002; 19/98; Geo Publication no.1/2000; HyD Guidance Note No. LU/GN/001; HyD</i></p>

EIA* Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to Address	Location of the Measure	Who to Imple-ment the Measure?	When to Implement the Measure?	What Requirements or Standards for the Measure to Achieve?
							<i>practice Note No. LU/PN/001; HyDTC No. 10/2001 – Visibility of Directional Signs.</i>
		<p>**During Construction Phase Recommended landscape and visual mitigation measures for impacts caused during the construction process are summarized as follows:</p> <ul style="list-style-type: none"> ▪ Control of night-time lighting ▪ Replanting of disturbed vegetation should be undertaken and this should use predominantly native plant species. ▪ Screen hoarding, using decorative graphic and chromatic devise should be erected around the works wherever possible to screen works within the road corridor. ▪ Planting should be undertaken at the earliest possible stage during construction, and opportunities should be sought for undertaking any advance planting. ▪ Excavated topsoil to be conserved for reuse (maximum height of stockpiling is not exceed 2m) ▪ Transplanting mature trees with good amenity value. <p>Note: * Denotes general good working practices to be employed.</p>	To minimize landscape and visual impacts during construction phase	At all construction sites and DBL	HyD	Construction and Operation phase	
		<p>**During Operation Phase Recommended landscape and visual mitigation measures for impacts caused during the operation phase are summarized as follows:</p>	To minimize landscape and visual impacts during construction phase	At all construction sites and DBL	HyD	Construction and Operation phase	
		<ul style="list-style-type: none"> ▪ Tree and shrub planting should be implemented at the road leading from the SWC to reduce the visual impact to the Deep Bay Road users ▪ Climbing plants should be used to soften the appearance of viaduct columns ▪ Woodland tree and shrub planting should be undertaken at the cut slope so as to compensate for vegetation lost during construction. Any affected slope areas should be hydroseeded and planted with woodland species, avoid shotcreting. 					

EIA* Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to Address	Location of the Measure	Who to Imple-ment the Measure?	When to Implement the Measure?	What Requirements or Standards for the Measure to Achieve?
		<ul style="list-style-type: none"> ▪ Native shrub planting should be undertaken to screen the proposed works and blend it into the landscape. ▪ A wide buffer planting zone comprising berm and tree planting should be provided to screen the proposed works from the future residents at HSK NDA ▪ Planting should be implemented at the interchanges to reduce the visual impact to the future residents at the adjacent HSK NDA ▪ Planting should be specified to be undertaken at the earliest practical time in the construction period (entire site) ▪ Size and extent of noise barriers should be reduced as much as possible. Where noise barriers are unavoidable, sensitive architectural styling and chromatic treatment of the noise barriers is important in minimizing their visual impact on motorist and in elevated views from surrounding residential receivers. The advice from ACABAS should be fully incorporated. ▪ Planting should be incorporated where possible to screen the road in low level views from adjacent areas, and to tone down the extent of hard paving and reduce the amount of glare, especially in elevated views from the high rise tower blocks ▪ More ornamental tree and shrub planting should be undertaken at interchanges, to create a more colourful and decorative environment ▪ Sensitive architectural design of engineering and other built structures, including form and finishes, this will include but not limited to: barriers, paved surfaces, retaining walls, walls, columns, buildings, surface drainage elements on slope, and other structures, light standards, etc. The advice from ACABAS should be fully incorporated. ▪ Lighting of road should be designed to minimise glare to all receivers. ▪ Transplanting of Mature Tree stock 					
S11	All	Environmental Monitoring and Audit					With reference to EM&A Manual
		The following areas identified in the impact assessments shall require EM&A during construction and/or operational phase:	To monitoring and audit the construction and operational phase of the	Areas covered DBL Project and Sensitive	HyD	Construction Phase and Operation	

EIA* Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to Address	Location of the Measure	Who to Imple-ment the Measure?	When to Implement the Measure?	What Requirements or Standards for the Measure to Achieve?
		<ul style="list-style-type: none"> • Noise • Air Quality Impact • Waste Management • Water Quality • Land Contamination • Ecology • Cultural Heritage 	Project	Receivers		Phase	

Note:

**

highlighted DBL mitigation measures for SWC Project of Highways Department to observe and comply with when carried out works at the entrusted area at Ngau Hom Shek.

Measures

Special/Critical mitigation measures in this DBL Project are **bold and underlined**.

HyD

Highways Department

TDD

Territory Development Department

PlanD

Planning Department

AFCD

Agricultural, Fisheries and Conservation Department